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DRAFT CORRECTIVE MEASURES STUDY INVESTIGATION CAMP MOSSCRIPT SOLID WASTE MANAGEMENT UNIT 73 WITH TRANSMITTAL NAVAL ACTIVITY PUERTO RICO
2/4/2010
NAVFAC SOUTHERN

DEPARTMENT OF THE ARMY
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MD 21010-5403

MCHB-TS-EGW 4 Feb 10

MEMORANDUM FOR U.S. Environmental Protection Agency – Region II (Mr. Adolph Everett, P.E.), 290 Broadway, 22nd Floor, New York, New York 10007-1866

SUBJECT: Corrective Measures Study Investigation Report No. 38-EH-0995-08, Camp Moscrip Solid Waste Management Unit 73, Naval Activity Puerto Rico, Ceiba, Puerto Rico, 28 March – 11 April 2008 and 11-16 January 2009

1. The US Army Public Health Command (Provisional) [USAPHC Prov], formerly US Army Center for Health Promotion and Preventive Medicine (USACHPPM) on behalf of the Navy is providing you with copies of subject draft report. We have enclosed two hard copies (Appendix E provided on CD-ROM only) and two electronic copies provided on CD-ROM. This document is being submitted in accordance with the EPA approved Final Corrective Measures Study Work Plan for SWMU 73. Additional distribution is indicated below.

2. If you have any questions regarding this submittal, please contact Mr. Mark Davidson at (843) 743-2124.

Wayne A. Fox

WAYNE A. FOX
Program Manager
Ground Water and Solid Waste

CF (w/encl):
USAR (Ira Silverberg)
USEPA (Tim Gordon)
Tech Law, Inc (Anthony Scacifero)
USEPA (Carl Soderberg)
LANTDIV (Bonnie Capito)
BRAC PGM MGMT (Mark Davidson)
NAPR (Pedro Ruiz)
PR Env Quality (Gloria Toro/Wilmarie Rivera)
PR US Fish & Wildlife (Felix Lopez)
M Baker Inc (Mark Kimes)

U.S. Army Public Health Command
(Provisional)

USAPHC

DRAFT
CORRECTIVE MEASURES STUDY INVESTIGATION
REPORT NO. 38-EH-0995-08
CAMP MOSCRIP SOLID WASTE MANAGEMENT UNIT 73
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
28 MARCH – 11 APRIL 2008 AND 11-16 JANUARY 2009

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Name: __**Mark E. Davidson**_____

Title: __**BRAC Envr. Coordinator**___

Date: ____**1 Feb 2010**_____

DEPARTMENT OF THE ARMY
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MD 21010-5403

DRAFT
EXECUTIVE SUMMARY
CORRECTIVE MEASURES STUDY INVESTIGATION
REPORT 38-EH-0995-08
CAMP MOSCRIP SWMU 73
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO
28 MARCH – 11 APRIL 2008 AND 11-16 JANUARY 2009

1.0 INTRODUCTION.

The Corrective Measures Study (CMS) Investigation Report for Solid Waste Management Unit (SWMU) 73 (the former Defense Reutilization and Marketing Office (DRMO) Scrap Metal Recycling Yard), Naval Activity Puerto Rico (NAPR), Ceiba, Puerto Rico (hereafter referred to as "Camp Moscrip") was conducted during two field efforts (the first from 28 March 2008 through 11 April 2008 and the second from12 January 2009 through 16 January 2009). This report was prepared under the Resource Conservation and Recovery Act Administrative Order on Consent between the U.S. Environmental Protection Agency (EPA) and the Department of the Navy (EPA Docket No. 02-2007-7301). The CMS was conducted in accordance with the CMS Work Plan for SWMU 73 and approved by the EPA on 26 February 2008 with conditional approval for the follow-up sampling on 2 December 2008.

The Department of the Army, Army Reserve Command and the Department of the Navy finalized a Memorandum of Agreement (MOA) where the Army accepted the parcel of land that contained SWMU 73 from the Navy during September 2009. As part of the MOA, the Department of the Army executed the environmental requirements under the Order between the EPA and Department of the Navy. All Army-generated documents for SWMU 73 were submitted to the EPA through the Navy.

1.1 Purpose of Report.

The purpose of this report is to provide the results of a site characterization and determine a pathforward at SWMU 73. Environmental media samples were collected and analyzed for suspect contaminants of concern (COCs) based on previous land uses and environmental studies. The data generated during this study were used to determine potential risks to human health and the environment as a result of past activities on site. Corrective action objectives (CAOs) were developed and considered to address potential risks identified from the evaluation of the data.

1.2 Objectives.

The report objective is to comply with the EPA Administrative Order on Consent which requires that a CMS be conducted at SWMU 73.

- Characterize surface soils, subsurface soils, and groundwater to determine level and extent of COCs at SWMU 73.
- Develop and consider CAOs based on realistic ecological and health exposure pathways.
- Determine a corrective action, if required, for SWMU 73.

2.0 SUMMARY OF ECOLOGICAL AND HUMAN HEALTH RISK ASSESSMENT.

Media areas evaluated during the risk assessment included surface soil (defined as soils from 0-1 foot in depth), subsurface soils (defined as soils from 1-3 feet in depth), and groundwater. Risk-based CAOs were developed using the same exposure parameters as the risk assessment in order to represent the potentially exposed populations as closely as possible while still providing a degree of conservatism.

2.1 Ecological.

A screening-level ERA was conducted using sampling data for surface soil, subsurface soil, and groundwater at SWMU 73. Various chemicals were retained as contaminants of potential concern and further evaluated in a more refined Step 3a of the ecological risk assessment. Although some chemicals in soil exceeded the target level of 1, they were not recommended for further evaluation. Chemicals in groundwater were not recommended for further evaluation.

2.2 Human Health.

Several rounds of environmental field sampling have been conducted at SWMU 73. Samples were collected from surface soil, subsurface soil, and groundwater. The reported concentrations were used as the basis for a risk assessment evaluating several receptor groups including construction workers, industrial workers, trespassers, and hypothetical residents. A potential elevated noncarcinogenic hazard was identified for two receptors: the hypothetical future child resident and the construction worker. In both cases, Aroclor 1254 accounted for the majority of the hazard. Though there is a significant degree of uncertainty associated with this initial finding, the site was originally meant to undergo a streamlined evaluation process; therefore, CAOs were developed for this substance for both receptors.

Since the elevated hazard index for both receptors was primarily due to Aroclor 1254, a CAO was only calculated for this substance. The resulting CAOs are 328 µg/kg for the hypothetical child resident and 4360 µg/kg for the construction worker. These levels were compared with the reported site concentrations to give an indication of the rate at which the CAOs are exceeded. This comparison indicated that only two samples returned concentrations above the future residential child CAO of 328 µg/kg. Both samples were actually nondetect results that were

subsequently included at the reporting limit and remained in the dataset. However, their inclusion significantly impacts the exposure point concentration (EPC) for Aroclor 1254. Without these two results included in the dataset the calculated EPC would be significantly reduced subsequently eliminating this compound as a significant contributor to the site hazard. A similar comparison was done for the construction worker CAO. Only one of the elevated concentrations is above the construction worker CAO. As discussed previously, this CAO is much more suitable for evaluating the site since the designated future use of the area is clearly industrial and not residential. However, the only sample exceeding this CAO is a nondetected value.

3.0 RECOMMENDED ACTION.

No further action is recommended at SWMU 73 based on the findings of the ecological and human health evaluation.

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ACRONYMS AND ABBREVIATIONS

AUF	Area Use Factor
BAF	Bioaccumulation Factor
$BAFi_x$	Surface Soil-Biota BAF for Chemical x and Food Item i
Ba_{mammal}	Biotransfer Factor for Mammals
BCF	Bioconcentration Factor
$BCFi_x$	Surface Soil-Biota BCF for Chemical x and Food Item i
$BCF_{s\text{-}om}$	Bioconcentration Factor for Soil to Omnivorous Mammals
$BCF_{tp\text{-}om}$	Bioconcentration Factor for Plants to Omnivorous Mammals
BERA	Baseline ecological risk assessment
BW	Body Weight
BW_j	Body Weight for Receptor j
CMS	Corrective Measures Study
CAO	Corrective Action Objective
CAO_x	Corrective Action Objective for Chemical x
COC	Contaminant of Concern
COPC	Chemical of Potential Concern
$C_{om,x}$	COPC Concentration in Omnivorous Mammals
C_{sx}	Maximum COPC Concentration in Soil
$C_{ti(x)}$	COPC Concentration in Invertebrates
C_{tp}	Maximum COPC Concentration in Terrestrial Plants
CSM	Conceptual Site Model
d	day
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DEHP	Di(2-ethylhexyl)phthalate
DI_x	Dietary Intake for Chemical
DLS	Directorate of Laboratory Services
DRMO	Defense Reutilization and Marketing Office
dw	dry weight
ECP	Environmental Condition of Property
EPA	U.S. Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
FCM	Food Chain Multiplier
FC_{xi}	Maximum Concentration of Chemical "x" in Food Item "i"
FIR	Food Ingestion Rate
FIR_j	Food Ingestion Rate for Receptor j
F_{tp}	Fraction of Diet Comprised of Terrestrial Plants
FW	Fresh Weight
HI	Hazard Index
HQ	Hazard Quotient
ICV	Initial Calibration Verification

IDW	Investigative Derived Waste
Ir_f	Ingestion Rate of Food
kg	kilogram
LCS	Laboratory Control Sample
LLPAH	Low Level Polycyclic Aromatic Hydrocarbon
LOAEL	Low Observable Adverse Effect Level
log K_{ow}	Octanol-Water Partition Coefficient
MATC	Maximum Acceptable Toxicant Concentration
MCL	Maximum Contaminant Level
MGD	Million Gallons per Day
mg	milligram
MOA	Memorandum of Agreement
NAPR	Naval Activity Puerto Rico
NOAEL	No Observable Adverse Effect Level
NSRR	Naval Station Roosevelt Roads
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDF_i	Proportion of Diet Composed of Food Item i
PDF_{ij}	Proportion of Diet Composed of Food Item i for Receptor j
PDS	Proportion of diet composed of surface soil
PDS_j	Proportion of diet composed of surface soil for receptor j
P_{ti}	Percentage of Invertebrates in Diet that is Contaminated
P_{tp}	Percentage of Plants in Diet that is Contaminated
P_s	Proportion of Soil in Diet that is Contaminated
PVC	Poly Vinyl Chloride
QA/QC	Quality Assurance/Quality Control
RCRA	Resource, Conservation, and Recovery Act
RSL	Regional Screening Level
SC_x	Maximum Concentration of Chemical x in Surface Soil
SLERA	Screening level ecological risk assessment
SVOC	Semivolatile Organic Constituent
SV_x	Medium-Specific Screening Value
SV_{xj}	Ingestion Based Screening Value for Chemical i Applied to Receptor j
SWMU	Solid Waste Management Unit
TL2	Trophic Level 2
TL3	Trophic Level 3
TL4	Trophic Level 4
UCL	Upper Confidence Limit
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
VOC	Volatile Organic Constituent
w_x	Dry-To-Wet Weight Conversion Factor

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1.0 INTRODUCTION.

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1.1 Purpose of Report.

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1.2 Objectives.

The report objective is to comply with the EPA Administrative Order on Consent which requires that a CMS be conducted at SWMU 73 (EPA, 2007).

Use of trademarked name(s) does not imply endorsement by the U.S. Army but is intended only to assist in the identification of a specific product.

- Characterize surface soils, subsurface soils, and groundwater to determine level and extent of COCs at SWMU 73.

- Develop and consider CAOs based on realistic ecological and health exposure pathways.

- Determine a corrective action, if required, for SWMU 73.

1.3 Organization of the CMS Investigation Report.

This CMS report was organized into 11 sections and followed the recommended report organization outline generated by Baker. Sections 1 and 2 present the purpose and objectives of the CMS report and provide a brief summary of the background of NAPR. Topography, regional geology, hydrology, and hydrogeology for NAPR are included within Section 3. Section 4 provides a description of the 2008/09 CMS investigation field work activities including soil and groundwater sampling, quality assurance/quality control (QA/QC) procedures, and other investigation considerations. Section 5 presents and discusses the physical results of the CMS investigation including the site geology/hydrogeology and other current conditions observed during the investigation. Section 6 presents the results of the chemical analysis performed on the environmental media samples and QA/QC samples collected during the CMS investigation. Analytical results from previous investigations are also included in this section for purposes of developing a comprehensive view of site contamination. Section 7 discusses the ecological risk assessment (ERA) and development of CAOs based on protection of potential ecological receptors. Similarly, Section 8 provides an evaluation of human health risks and develops CAOs based on protection of potential human receptors. A summary of the ecological and human health assessment is provided in Section 9. Section 10 provides recommendations.

1.4 References.

Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto Rico, Ceiba, Puerto Rico. January 2008.

EPA, 2007. RCRA § 7003 Administrative Order on Consent. In the Matter of: United States The Department of the Navy, Naval Activity Puerto Rico formerly Naval Station Roosevelt Roads, Puerto Rico. U.S. Environmental Protection Agency, EPA Docket No. 02-2007-7301. January 29, 2007.

2.0 BACKGROUND.

2.1 NAPR Description and History.

NAPR, formerly known as Naval Station Roosevelt Roads (NSRR), occupies over 8,800 acres on the northern side of the east coast of Puerto Rico (Figure 1) along Vieques Passage with Vieques Island lying to the east about 10 miles off of the harbor entrance. Noncontiguous property owned as part of the installation includes the islands of Piñeros and Cabeza de Perro.

The installation is located within the town of Ceiba, approximately 35 miles southeast of San Juan and 5 miles south of Fajardo. Sensitive environments include wildlife habitat, wetlands, and mangrove which comprise approximately 4,955 acres within the installation (Baker, 2008).

The installation was commissioned as a Naval Operations Base in 1943 and was designated as NSRR in 1957. The NSRR was permanently closed on March 31, 2004, and the U.S. Naval Forces Southern Command was relocated to the Naval Station Mayport, Florida. The mission of the NAPR is to protect the physical assets remaining, comply with environmental regulations, and sustain the value of the property until final disposal (Baker, 2008).

2.2 SWMU 73 Description and History.

SWMU 73 is located inside of the loop formed by the three roads: Breton Road, Antietam Road, and Barnes Street at NAPR (Figure 2) at geographic coordinates 18°13'51" latitude and 65°36'32" longitude. The site contains concrete pads, concrete storage bins, hardpacked gravel surfaces, and a wooded area; approximately 80% of the SWMU is wooded. The portion of the site outside of the wooded area is surrounded by a chain-link fence and is located along the eastern boundary.

SWMU 73 primarily served as the scrap metal recycling yard for the DRMO with active operations during the 1970s through 2004. Previous uses of the property are not known, but little activity outside of a road and possible staging area was observed from aerial photographs taken in 1936, 1958, 1961, and 1964. Beyond the boundary of the yard itself, it was decided that SWMU 73 would include the surrounding area of secondary growth bounded by Barnes Road to the east and partially encircled by Antietam Road and Breton Road to the north and west due to the amount of debris observed within the area.

2.3 Previous Investigations.

A Phase I Environmental Condition of Property (ECP) commenced in 2004. The assessment identified a number of areas of presumed petroleum, oils, and lubricants stained surface soils and stressed vegetation within and surrounding the gravel storage area. Known as ECP Site 19 at the time, the site was determined to require a Phase II investigation.

A follow-up 2004 Phase II ECP was conducted to target locations determined to be suspect during the Phase I assessment. The Phase II work evaluated nine surface soil samples, three subsurface soil sample locations, and three groundwater samples from within the confines of SWMU 73 (Figure 3). Three surface soil locations (19E-03, 19E-SS06, and 19E-SS07) were concluded to contain levels of contamination above EPA Region III screening levels (Tables 1, 2, and 3) and warranted further investigation (LANTDIV, 2005).

2.4 References.

Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto Rico, Ceiba, Puerto Rico. January 2008.

Naval Facilities Engineering Command, Atlantic (LANTDIV), 2005. Final Phase I/II Environmental Condition of Property Report, Former U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico. Norfolk, Virginia. 15 July 2005.

3.0 PHYSICAL CHARACTERISTICS OF STUDY AREA.

3.1 Climatology.

Climate conditions at NAPR are typical of a tropical-marine climate. A tropical-marine climate is mainly characterized by one wet and one dry season during the year. The wet season generally occurs during May through November. Temperatures remain stable, humidity moderate, and rain showers occur with frequency throughout the year. NAPR is located on the windward side of the island where the prevailing winds are the Easterly Trade Winds. The annual mean temperature at NAPR is 85.6 degrees Fahrenheit (°F). August is the warmest months (82.4°F) and February is the coldest month (76.8°F). Easterly trade winds, which persist throughout the year, have a substantial moderating effect on the tropical heat. The relative humidity averages 65-78% with an average annual rainfall at approximately 58 inches. Hurricane season occurs from June 1 through November 30 (LANTDIV, 2005).

3.2 Topography.

The region encompassing NAPR consists of an interrupted, narrow coastal plain with small valleys extending from the Sierra de Luquillo range, which has been severely eroded by streams into valleys several hundreds of feet deep. Slopes of up to 60 percent are common (LANTDIV, 2005). In the immediate area of SWMU 73, topography is relatively flat with elevations ranging from just above sea level to approximately 15 feet above sea level (U.S. Geological Survey (USGS), 1982).

3.3 Geology, Hydrology, and Hydrogeology.

The following descriptions of soils, regional geology, hydrology, and hydrogeology are provided verbatim from Baker, 2008.

3.3.1 Soils.

The soil associations found at NAPR are predominantly of two types typical of humid areas, namely the Swamps-Marshes Association and the Mabi-Rio-Arriba-Cayagua Association, as well as the Descalabrado-Guayama Association, which is typical of dry areas. In addition, isolated areas of the Caguabo-Mucara-Naranjito Association, the Coloso-Toa-Bajura Association, and the Jacana Amelia-Fraternidad Association are found at NAPR.

The Swamps-Marshes and Mabi-Rio-Arriba-Cayagua associations cover over one-half of NAPR's surface area and are equally distributed. Primarily the Descalabrado-Guayama and Caguabo-Mucara-Naranjito associations cover the remaining area.

The Swamps-Marshes Association consists of deep, very poorly drained soils. This association is found in level or nearly level areas that are slightly above sea level but are wet, and when the tide is high, are covered or affected by saltwater or brackish water. The soils are sandy or clayey, and contain organic materials from decaying mangrove trees. Coral, shells, and marl at varying depths underlie them. The high concentration of salt inhibits the growth of all vegetation except mangrove trees, and in small-scattered patches, other salt-tolerant plants.

The Mabi-Rio-Arriba-Cayagua Association consists generally of deep, somewhat poorly drained and moderately well drained, nearly level to moderately steep soils found on foot and side slopes, terraces, and alluvial fans. Soils of this association at NAPR are basically clayey.

The Descalabrado-Guayama Association generally consists of shallow, well drained, strongly sloping to very steep soils on volcanic uplands. Soils of this association are found primarily in the hilly areas located directly inland and adjacent to the soils of the Swamps-Marshes Association.

The Caguabo-Mucara-Naranjito Association consists generally of shallow and moderately deep, well drained, sloping to very steep soils on volcanic uplands. This association consists of soils that formed in residual material weathered from volcanic rocks. This association is represented at NAPR by soils of the Sabana series, which are found on the side slopes and the hilly terrain west of Langley Drive in the Fort Bundy area. These soils are suited for pasture and woodland. Steep slopes, susceptibility to erosion, and depth to bedrock are the main limitations for farming and for recreation and urban areas.

The Coloso-Toa-Bajura Association consists of deep, moderately well drained to poorly drained, nearly level soils found on flood plains. This soil association extends along the western boundary of NAPR and around the airfield. The soils of this association formed in fine-textured and moderately fine-textured sediment of mixed origin on flood plains. The Coloso soils are deep and somewhat poorly drained, the Toa soils are deep and moderately well drained, and the Bajura soils and Maunabo soils are deep and poorly drained. The Reilly soils, also part of this association, are shallow sand and gravel and are excessively drained; they lie adjacent to streams. The minor soils are Talante, Vivi, Fortuna, Vega Alta, and Vega Baja. The Talante, Vivi, Fortuna, and Vega Baja soils are found on flood plains, while the Vega Alta soils occupy slightly higher positions on terraces.

The Jacana-Amelia-Fraternidad Association consists generally of moderately deep and deep, well drained and moderately well drained, nearly level to strongly sloping soils on terraces, alluvial fans, and foot slopes. This association is represented at NAPR by soils of the Jacana series, which consist of moderately deep, well-drained soils found on the foot slopes and low rolling hills along Langley Drive and just east of the airfield. These soils formed in fine-textured sediment and residuum derived from basic volcanic rocks.

Soils in the immediate vicinity of SWMU 73 consist of Descalabrado clay loam (DeE2) and Made Land (Md). The Descalabro Series soils are typically shallow, well-drained, brown-green-

grey soils. Soils identified as Made Land can consist of numerous soil types (U.S. Department of Agriculture (USDA), 1977).

3.3.2 Regional Geology.

The underlying geology of NAPR area is predominantly volcanic (composed of lava and tuff), as well as sedimentary (rocks derived from discontinuous beds of limestone). These rocks all range in age from early Cretaceous to middle Eocene. The volcanic rocks and interbedded limestone have been complexly faulted, folded, metamorphosed, and variously intruded by dioritic rocks. This complex geological structuring occurred sometime after the deposition of the limestone during the middle Tertiary, when Puerto Rico was separated from the other major Antillean Islands by block faulting, and was arched, uplifted, and tilted to the northeast. Culebra, Vieques, and the Virgin Islands are part of the Puerto Rican block; they are separated from the main island simply because of the drowning that resulted from the tilting. In addition to the predominant volcanic and sedimentary rock, unconsolidated alluvial and older deposits from the Quaternary period underlie the northwestern and western sectors of the base. The primary geologic formations on and near NAPR are various beach deposits, alluvium, quartz diorite and granodiorite, quartz keratophyre, the Daguao Formation, and the Figuera Lava. The Peña Pobre fault zone traverses NAPR.

3.3.3 Regional Hydrology.

The surface waters that flow across the northeastern plain of Puerto Rico, where NAPR is located, originate on the eastern slopes of the Sierra De Luquillo Mountains. Surface runoff is channeled into various rivers and streams that eventually flow into the Caribbean Sea. The Daguao River and Quebrada Seca Stream (a tributary to Rio Daguao) collect surface waters from the hills immediately north of NAPR and, in periods of heavy rain, flooding on NAPR occurs. The Daguao-Quebrada Seca watershed comprises an area of approximately 7.6 square miles (4,900 acres), and the river falls some 700 feet from its source to sea level. Increased development in the town of Ceiba, especially in areas adjacent to NAPR's northern boundary, has significantly increased the surface runoff reaching NAPR, causing ponding and erosion in the Boxer Drive area. Boxer Drive, for a major portion of its length, is subject to surface water flooding, as are Hangar 200 and Aircraft Intermediate Maintenance Department Hangar 379 and adjacent apron areas. This condition has been alleviated by the construction of a new highway (Route 3) immediately outside the fence and the realignment of Boxer Drive both with attendant storm water management features.

In the low-lying shore areas, seawater flooding results from storms, wind, and abnormally high tides. The tidal ranges in the NAPR area are rather small, with a maximum spring range of less than 3 feet. The tides are semidiurnal and have a usual range of about 1 foot in the main harbor of NAPR.

The quality of surface waters is variable, reflecting the drainage area through which the water flows. Generally, surface waters have high turbidities and bio-organics (naturally occurring organics, such as decay products of vegetable and animal matter) due to the periodic heavy rains

that can easily erode soils from steep slopes, exposed areas, and disturbed streambeds. Water from alluvial aquifers along the coast of NAPR is of a calcium bicarbonate type, and has high concentrations of iron and manganese. The source of these minerals is unknown, but they may be derived from buried swamp or lagoon deposits.

A seawater-freshwater interface is present in the aquifers throughout the coastal areas of Puerto Rico, usually within a short distance inland of the coastline.

The NAPR potable water treatment plant receives raw water from the Rio Blanco through a 27-inch reinforced concrete pipe that replaced the old, open channel. The intake is located at the foot of the El Yunque rain forest. This buried raw water line traverses a distance of 14 miles from the intake to the NAPR boundary. A raw water reservoir is located at the water treatment plant and has a 45 million gallon capacity. Additionally, there are two fire protection storage reservoirs with a total capacity of 520,000 gallons.

NAPR has been served for over 30 years by the present treatment facility. The plant (Building 88) has a capacity of 4.0 million gallons per day (MGD). Water flows by gravity into a 45-million gallon raw water storage basin from which the plant draws its supply at a rate of 1.3 MGD on average. Treatment consists of pre-chlorination, coagulation sedimentation, filtration, and post-chlorination.

3.3.4 Regional Hydrogeology.

Little information exists concerning the hydrogeology of NAPR. The only known potential sources of groundwater lie in lenticular beds of clay, sand and gravel, and rock fragments, which occur at a depth of less than 30 meters. No wells have been developed on site from these layers. Some wells had been developed upgradient of NAPR in Ceiba, some 3 kilometers from base headquarters, but were abandoned due to high levels of salinity.

In 2004, Baker conducted a Phase II ECP investigation involving 20 sites throughout NAPR (LANTDIV, 2005). Some consistent stratigraphic trends were observed during the ECP. The site hydrogeology can be better understood in the context of NAPR regional geology. For the sake of simplicity, the NAPR regional geology can be divided into three regions:

- Upland areas
- Near-shore flat lands
- Inland flat lands

The upland areas of NAPR include the hills encompassing the Tow Way Fuel Farm and hospital areas, and the hills encompassing the area behind the Exchange, the former Atlantic Fleet Weapons Training Facility Command, and Fort Bundy area. These upland areas are underlain by bedrock (predominately Gabbro) and exhibit varying degrees of weathering. Typically, the bedrock is overlain be a relatively thin residual soil (i.e., residuum). Residuum is unconsolidated soil, originating from weathered-in-place bedrock. This residuum generally consists of sand, silt,

and clay. The near-shore areas include the mangrove swamp areas as well as the shores of Ensenada Honda and Puerca Bay.

The near-shore flat lands are typically underlain by marine sand layers (with coral and shell fragments), silt and clay layers, and occasional peat layers. In some near-shore areas, particularly by the harbor and Camp Moscrip in the southeastern portion of the base, fill material overlays the marine layers. The fill consists of rock fragments, debris (e.g., brick), sand, silt, and clay. The inland flat land area generally encompasses the airfield and golf course areas.

The inland flat land area is typically underlain by relatively thick residuum. The residuum generally consists predominately of clay. Fill material overlays the residuum in some areas, particularly the airfield, and generally consists of sand and gravel with lesser amounts of silt and clay. SWMU 69 (ECP Site 15) is located in the inland flat lands, in the airfield area. During the ECP investigation, approximately 1.3 to 3.0 feet of fill material (mainly sand and gravel) was observed. Residual clay was observed immediately below the fill material. The borings were not advanced beyond 5 feet below ground surface, and no bedrock or groundwater was encountered.

3.4 References.

Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto Rico, Ceiba, Puerto Rico. January 2008.

LANTDIV, 2005. Final Phase I/II Environmental Condition of Property Report, Former U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico. Norfolk, Virginia. 15 July 2005.

USGS, 1982. U.S. Department of the Interior, U.S. Geological Survey, Punta Puerca Quadrangle, Puerto Rico, 7.5 Minute Series Topographic Quadrangle, 1957, photorevised 1982.

USDA, 1977. Soil Survey of Humacao Area of Eastern Puerto Rico. U.S. Department of Agriculture, Soils Conservation Service in cooperation with University of Puerto Rico, College of Agricultural Sciences. January 1977.

4.0 CMS INVESTIGATION ACTIVITIES.

4.1 Utility Clearance.

An excavation permit was issued by the NAPR Public Works Directorate, Maintenance Control Division for both sampling events. The permit included an as-built drawing with a utility plan.

542 **4.2 Surface Soil Sampling.**

543 Surface soil samples were collected from three locations that were identified as locations for
544 further investigation in the Phase II ECP. Surface soil samples were collected during two
545 phases, April 2008 and January 2009 (see Figure 4). The CMS Work Plan is provided as
546 Appendix A. Photographs of sampling activities are presented in Appendix B.

547 Thirty-six samples were collected during the April 2008 sampling event. The sampling protocol
548 and analyses followed the methods prescribed in the CMS Work Plan. Twelve samples were
549 collected around each of three previous sample locations (19E-03, 19E-SS06, and 19E-SS07)
550 along two perpendicular lines radiating outward from the original ECP sample location at 20-
551 foot intervals. Surface soil samples were defined as soils from the surface (removing vegetation
552 and roots) to a depth of 1 foot. Samples were collected using a stainless steel sampler equipped
553 with a polyvinyl chloride (PVC) liner using a weighted hammer. Sample collection logs are
554 presented in Appendix E. Samples were transferred into precleaned sample containers starting
555 with volatile organic compounds (VOCs) by means of the Encore® sampler. The remaining
556 sample was composited in decontaminated stainless steel mixing bowls with precleaned
557 polystyrene scoops. The samples for low level polycyclic aromatic hydrocarbons (LLPAHs),
558 pesticides, and metals were then collected, as applicable. Following the collection of each
559 analyte, samples were placed in a sample cooler containing bagged ice. Tables 4-6 provide a
560 summary of surface soils collected during the April 2008 sampling event. (Encore® is a
561 registered trademark of En Novative Technologies, Inc., Green Bay, Wisconsin.)

562 Twenty-four samples were collected during a follow-up sampling event during January 2009.
563 These samples were collected in the same fashion as the April 2008 samples, as applicable.
564 Sample collection logs are presented in Appendix E. Tables 7-9 provide a summary of surface
565 soils collected during the January 2009 sampling event.

566 **4.3 Subsurface Soil Sampling.**

567 Subsurface soil samples were collected from three locations that were identified as possible
568 locations for further investigation in the Phase II ECP. Subsurface soil samples were collected
569 during two phases: April 2008 and January 2009 (see Figure 4). The CMS Work Plan is
570 provided as Appendix A. Photographs of sampling activities are presented in Appendix B.

571 Six samples were collected during the April 2008 sampling event. The sampling protocol and
572 analyses followed the methods prescribed in the CMS Work Plan. Two samples within the same
573 borehole were collected at one of the surface soil locations near each of three previous sample
574 locations (19E-03, 19E-SS06, and 19E-SS07): one at 1-3 feet in depth, and a second based on
575 the result of field screening techniques as described in the CMS Work Plan. Soil borings were
576 advanced using direct push technology. Soil boring logs are presented in Appendix E. Samples
577 were collected continuously using a stainless steel Macro-Core® sampler equipped with a PVC
578 liner. Sample collection logs are presented in Appendix E. Samples were transferred into pre-
579 cleaned sample containers starting with VOCs by means of the Encore sampler. The remaining
580 sample was composited in decontaminated stainless steel mixing bowls with precleaned

polystyrene scoops. The samples for LLPAHs, pesticides, and metals were then collected, as applicable. Following the collection of each analyte, samples were placed in a sample cooler containing bagged ice. Following the completion of the boring, field screening measurements were used to determine which samples would be selected for laboratory analysis. Table 10 provides a summary of subsurface soils collected during the April 2008 sampling event. (Macro-Core® is a registered trademark of Kejr, Inc., Salina, Kansas.)

Four samples were collected during the January 2009 sampling event. The samples were collected based on the analytical data results from April 2008. Two samples were collected at the boring site 73SB02 at depths of 3 to 5 feet and 5 to 7 feet due to high pesticide levels present in the sample taken from 1 to 3 feet. Two samples were collected from the 73SB24 location due to high levels of LLPAHs and metals present in the surface soil. These samples were collected in the same fashion as the April 2008 samples, as applicable. Sample collection logs are presented in Appendix E. Table 11 provides a summary of surface soils collected during the January 2009 sampling event.

4.4 Monitoring Well Installation.

Three monitoring wells were installed, one in the DRMO storage yard and two in the wooded area to the north. Wells were installed to determine environmental impact, if any, to groundwater from site operations. Monitoring well locations are shown on Figure 4. Geologic logs and well construction logs from April 2008 are present in Appendix E. Logs from the January 2009 sampling event were completed but were not delivered from Puerto Rico. The CMS Work Plan is provided as Appendix A. Photographs of sampling activities are presented in Appendix B.

One monitoring well was installed at each of the three original ECP sample location areas expanded as part of the CMS. Monitoring well placement was based on field screening results during the April 2008 sampling event. One monitoring well each was installed at original sample location area 19E-03 and 19E-SS07. A third borehole at 19E-SS06 was drilled to 30 feet and abandoned due to lack of water present in the boring. A third monitoring well (fourth subsurface boring) was installed at the 19E-SS06 location during the January 2009 sampling event based on the analytical results from the April 2008 event.

Borings for monitoring wells were advanced using 3 ¼-inch inside diameter hollow stem augers to overdrill the direct push technology subsurface soil sample borings. Wells were constructed using a 10-foot, 2-inch PVC well screen capped with a PVC plug at the bottom of the well and flush threaded to 2-inch PVC riser pipe to the surface. The annulus surrounding the well screen and riser was filled with fine to medium sand from the bottom of the well to approximately 2 feet above the well screen. As the augers were withdrawn, sand was slowly added and constantly measured to prevent bridging. A 2-foot bentonite seal was added and hydrated with potable water above the sand pack. The remainder of the annulus was backfilled with a bentonite-cement grout to the surface. When not in use, each well was sealed with an expandable, locking, water-tight cap.

Monitoring wells were completed 2 feet above grade. Steel protective casing and bollards painted bright yellow for visibility were installed with a 2-foot by 2-foot concrete well pad around each well.

4.5 Monitoring Well Development.

Monitoring wells were developed approximately 24 hours after grouting to allow for curing. Wells were surged and bailed using a stainless steel bailer throughout the entire saturated screened interval. Development water was monitored for visual clarity and field parameters (specific conductivity, pH, and temperature). Approximately 3-5 borehole volumes were removed along with stabilization of field parameters and noted visual improvement of water clarity prior to the completion of development activities. Well development logs from April 2008 are presented in Appendix E. Logs from the January 2009 sampling event were completed but were not delivered from Puerto Rico.

4.6 Groundwater Measurements and Sampling.

Potentiometric surface measurements were measured on 16 January 2009 from the three monitoring wells (73MW01 through 73MW03). Measurements were obtained to the nearest 0.01 foot from the marked portion of the top of the riser pipe as the point of reference utilizing an electoring sounding water level meter.

Groundwater samples were collected during the April 2008 and January 2009 sampling events. Groundwater samples were collected following the EPA Region II low-flow sampling technique as prescribed in the CMS Work Plan. Purge water was monitored with in-line instrumentation for specific conductivity, pH, temperature, dissolved oxygen, oxidation/reduction potential, and turbidity. Dissolved metals samples were field filtered utilizing an in-line 0.45µ particulate filter. Samples were collected in laboratory-supplied, precleaned sample bottles and appropriately preserved prior to packaging and shipping samples to the analytical laboratory. Groundwater sampling logs from April 2008 are present in Appendix E. Logs from the January 2009 sampling event were completed but were not delivered from Puerto Rico.

4.7 Investigative Derived Waste (IDW).

Disposable sampling tools were used to the highest extent practicable to reduce liquid IDW as a result of the decontamination procedure. All wastewater (inclusive of development, decontamination, and well purge water) and drilling spools were containerized and characterized for disposal.

4.8 Surveying.

Original sample location coordinates 19E-03, 19E-SS06, and 19E-SS07 were provided by Baker. Proposed sample locations were field measured and located accounting for the presence of abandoned equipment and materials.

Well and soil sample locations were surveyed using a handheld global positioning device. The World Geodedic System 84 served as the datum for horizontal coordinates. Well point of reference elevations were surveyed to an accuracy of 0.02 feet using a theatolite/survey stick from a known reference elevation. Surveying occurred on 4 April 2008 and 16 January 2009.

4.9 QA/QC Sampling.

QA/QC samples collected in association with the SWMU 73 CMS investigation included:

- Field duplicates
- Trip Blanks
- Matrix Spikes/Matrix Spike Duplicates
- Field Blanks
- Equipment Rinsates

4.9.1 Field Duplicates.

In accordance with the CMS Work Plan, one field duplicate sample was collected for every 10 environmental samples in each media (surface soil, subsurface soil, and groundwater) per sampling event. During April 2008, four field duplicate samples were collected for 36 surface soil samples, one for six subsurface soil samples, one for two groundwater samples, and one for three field blank samples. During January 2009, three field duplicate samples were collected for 24 surface soil samples, two for four subsurface soil samples, one for two groundwater samples, and one for three field blank samples. The field duplicates were analyzed for the same chemical parameters as the associated environmental sample.

4.9.2 Trip Blanks.

Trip blanks were included with shipments containing VOC samples. Trip blanks were analyzed for Appendix IX VOCs to evaluate whether samples were contaminated during the transport of the samples to the analytical laboratory. No VOC samples were taken during the January 2009 sampling event.

4.9.3 Matrix Spikes/Matrix Spike Duplicates.

One matrix spike/matrix spike duplicate sample was run for every 20 environmental samples each of soil and groundwater and analyzed for the same Appendix IX parameters as the environmental samples.

4.9.4 Field Blanks.

Three field blanks and one duplicate were collected during both sampling events to characterize water used during the decontamination process. One sample was collected for each deionized water, distilled water, and NAPR tap water. The duplicate was collected on the tap water

690 sample. These samples were analyzed for each of the analytes requested during the appropriate
691 sampling event.

692 **4.9.5 Equipment Rinsates.**

693 Equipment rinsate samples were collected for reusable equipment and materials that contacted
694 samples. Equipment and materials sampled included Macro-Core sample liners, Macro-Core
695 shoes, stainless steel mixing bowls, groundwater sampling tubing, and polystyrene scoops. One
696 rinsate sample was collected as part of the daily sampling event.

697 **4.10 Laboratory Analysis.**

698 Laboratory analyses were contracted through the U.S. Army Center for Health Promotion and
699 Preventive Medicine (USACHPPM) Directorate of Laboratory Services (DLS) at Aberdeen
700 Proving Ground, Maryland. Samples for Appendix IX VOCs, Appendix IX semivolatile organic
701 constituents (SVOCs), LLPAHs, and Appendix IX organochlorine pesticides were analyzed by
702 Lancaster Laboratories, Lancaster, Pennsylvania. Samples for metals were analyzed by
703 Microbac Laboratories, Baltimore, Maryland and USACHPPM DLS. The data from both
704 sampling events were certified by a Puerto Rico certified chemist.

705 **4.11 Data Validation.**

706 AE Environmental, LLC from Frederick, Maryland, an independent third party, performed data
707 validation. The EPA Region II Data Validation Standard Operating Procedures, in conjunction
708 with the EPA National Functional Guidelines for Data Review were used. Validation reports are
709 contained in Appendix D.

710 **4.12 Reference.**

711 Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto
712 Rico, Ceiba, Puerto Rico. January 2008.

713

5.0 PHYSICAL RESULTS.

5.1 Current Conditions.

SWMU 73 comprises the former DRMO scrap metal recycling yard and the wooded area to the north, east, and south. The former DRMO scrap metal recycling yard consists of a hard gravel-packed surface with concrete storage bins and pads and is surrounded by chain link fencing. This area represents approximately 20% of SWMU 73 and is vacant due to base closure. The wooded area represents the remaining 80% of SWMU 73. Within the wooded area are a number of dump sites consisting of dilapidated equipment, such as an abandoned barge, tire rims, and construction material. Evidence of the former roadway that approximately bisected the wooded area is not apparent.

The topographic high is located at the northeast portion of the SWMU adjacent to the former pesticide storage building. The topographic low would appear to be located at the far northwestern portion of the property where a small mangrove wetland exists based on visual observation. Surface water presence in the low lying area of the SWMU would seem to be intermittent.

Stormwater runoff appears to flow from the northwestern edge of the SWMU along Breton Street to the northeast where the terrain rapidly flattens within the confines of the SWMU borders. Most precipitation events would likely result in percolation of water into the shallow subsurface to be utilized by vegetation present at the site.

5.2 Site Geology/Hydrogeology.

5.2.1 Geology.

SWMU 73 is located within the near shore flatland associated with Ensenada Honda and Puerca Bay as described in Section 3.3.4. Four subsurface borings were advanced during the CMS field investigation. Three of the four brings encountered subsurface water and were converted to monitoring wells. The remaining boring was abandoned and sealed with bentonite grout. Boring and well construction logs are provided as Appendix E. At the former DRMO scrap metal yard, hardpacked gravel was encountered within the first few inches. Deeper soils consisted of fill material to the total depth of 15 feet below surface grade. Groundwater was encountered at approximately 9 feet. Within the wooded area, the first few inches of soil consisted of a mostly organic topsoil that contained plant rootlets. Deeper soils consisted mostly of silty clay of varying colors. It was difficult to determine if shallow subsurface silty clay soils consisted of natural materials within the wooded area. Groundwater, when encountered, occurred at approximately 20-24 feet below the surface grade within a sandy layer.

5.2.2 Hydrogeology.

Groundwater flow is estimated to the southeast based on water level data collected on 16 January 2009 from 73MW01, 73MW02, and 73MW03 within a 20-minute timeframe (Figure 5). Groundwater inside of the fenced area at the former DRMO scrap metal yard was

encountered at approximately 9 feet below surface grade, and the water level in the well (73MW01) was measured at approximately 7.5 feet below surface grade. Within the wooded area to the west, groundwater was encountered ranging from approximately 20-24 feet below surface grade within a fine to medium sand below silty clay. Monitoring well water levels at 73MW02 and 73MW03 were measured at approximately 8-10 feet below surface grade. No significant drawdown was observed during well development and well purging activities at any well location.

5.3 References.

LANTDIV, 2005. Final Phase I/II Environmental Condition of Property Report, Former U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico. Norfolk, Virginia. 15 July 2005.

Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto Rico, Ceiba, Puerto Rico. January 2008.

6.0 ANALYTICAL RESULTS.

6.1 Surface Soil.

6.1.1 April 2008 Sampling Event.

Thirty-six surface soil samples and four field duplicates were collected during the April 2008 sampling event. Surface soil samples 73SB01-00 through 73SB24-00 were analyzed for Appendix IX VOCs, SVOCs, LLPAHs, organochlorine pesticides, and metals. Surface soil samples 73SB25-00 through 73SB36-00 were analyzed for Appendix IX metals. Results are presented in Tables 4-6. The laboratory data packages are provided as Appendix E.

Five VOCs were detected in surface soils samples 73SB01 through 73SB24. The VOC analytes detected were 2-butanone (in 13 original samples ranging from 5J micrograms per kilogram (µg/kg) to 41J µg/kg), acetone (in 23 original samples from 19J µg/kg to 160J µg/kg), carbon disulfide (in 7 original samples from 3J µg/kg to 6J µg/kg), methyl iodide (in 2 original samples from 11J µg/kg to 22J µg/kg), and methylene chloride (in 1 original sample at 6J µg/kg). All data were J-qualified with a negative bias during data validation resulting from failure to meet temperature preservation requirements. All data results were significantly below screening levels for each analyte.

Two SVOCs not categorized as polycyclic aromatic hydrocarbons (PAHs) were detected in surface soil samples 73SB01 through 73SB24. The SVOCs were di(2-ethylhexyl)phthalate (DEHP), which was detected in every sample ranging from 120 to 2,900 µg/kg and butylbenzylphthalate, which was detected in only 73SB15 at 890 µg/kg. PAH detections are discussed below.

Eighteen LLPAHs were identified in surface soil samples 73SB01 through 73SB24. Most LLPAH analytes were detected in all of the samples. Original sample 73SB18 contained benzo(a)pyrene and benzo(k)fluoranthene at 400 µg/kg each, above the EPA industrial scenario screening level but below the ecological screening level. At 73SB24, four LLPAHs were detected above the EPA industrial scenario screening level (benzo(a)pyrene: 1,800 µg/kg, benzo(b)fluoranthene: 3,100J µg/kg, benzo(k)fluoranthene: 1,200 µg/kg, and dibenz[a,h]anthracene: 350 µg/kg) and seven above the ecological screening level (benzo[a]anthracene: 1,800 µg/kg, benzo(a)pyrene: 1,800 µg/kg, benzo(b)fluoranthene: 3,100J µg/kg, benzo(k)fluoranthene: 1,200 µg/kg, chrysene: 1,800J µg/kg, fluoranthene: 1,500 µg/kg, and pyrene: 1,400J µg/kg). Detections at the remaining sample locations were below screening level values. As a result of some matrix spike recoveries being outside of the specified target range, some LLPAH data was J-qualified during data validation.

Organochlorine pesticides were determined present in surface soil samples 73SB01 through 73SB24. Dichlorodiphenyldichloroethylene (DDE) and Dichlorodiphenyltrichloroethane (DDT) were present in 73SB02 at 9,600 µg/kg and 77,000 µg/kg, respectively, above the EPA industrial scenario screening level. Chlordane was detected in 73SB18 and 73SB24 at 100 µg/kg and 130 µg/kg, respectively, above the ecological screening level.

Metals were detected in 36 surface soil samples (73SB01 through 73 SB36). Arsenic was detected above the NAPR background concentration and EPA industrial scenario screening level at 31 of 36 original surface soil sample points. All concentrations of arsenic were below ecological screening levels. Nine metals exceeded the NAPR background concentration and ecological screening value: barium (3 of 36 samples), chromium (6 of 36 samples), cobalt (4 of 36 samples), copper (19 of 36 samples), lead (2 of 36 samples), mercury (15 of 36 samples), nickel (5 of 36 samples), vanadium (2 of 36 samples), and zinc (13 of 36 samples).

6.1.2 January 2009 Sampling Event.

Twenty-four surface soil samples and three field duplicate samples were collected during the January 2009 sampling event. Select Appendix IX metals were analyzed at sample locations in association with 73SB09, 73SB10, 73SB12, 73SB21, 73SB23, 73SB33, 73SB34, 73SB35, and 73SB36 from the April 2008 field event. No surface soil samples were collected during January 2009 for Appendix IX VOCs, SVOCs, or organochlorine pesticides. Results are presented in Tables 7-9. The laboratory data packages are provided as Appendix E.

Metals were analyzed from 24 surface soil samples. Six metals exceeded the NAPR background concentration and ecological screening value: cobalt (1 of 6 samples), copper (3 of 10 samples), mercury (10 of 10 samples), nickel (2 of 2 samples), vanadium (1 of 4 samples), and zinc (7 of 16 samples). Some results for copper, cobalt, and nickel were J qualified (positive bias) during data validation due to matrix spike sample recoveries being greater than the upper control limit. Some vanadium results were also J-qualified due to matrix spike and laboratory control sample failures.

6.2 Subsurface Soil.

6.2.1 April 2008 Sampling Event.

Six subsurface soil and one duplicate soil samples were collected during the April 2008 sampling event. Appendix IX VOCs, SVOCs, LLPAHs, organochlorine pesticides, and metals were collected at surface soil sample locations 73SB02 and 73SB14 at 1-3 feet and 7-9 feet in depth. Appendix IX metals were collected at surface soil sample location 73SB27 at 1-3 feet and 17-19 feet in depth. Results are presented in Table 6. The laboratory data packages are provided as Appendix E.

One VOC (acetone) was detected in subsurface soil samples 73SB02-01 (36J µg/kg), 73SB14-01 (37J µg/kg), and 73SB14-04 (120J µg/kg).

One SVOC (DEHP) not categorized as a PAH was detected in subsurface soil samples at 73SB02 and 73SB14 from 36J µg/kg at 73SB02-01 to 20J µg/kg at 73SB14-04.

Fourteen LLPAHs were detected in subsurface soil samples at 73SB02. All detections were below screening level values. No LLPAHs were detected in subsurface soils at 73SB14. Results for a variety of PAHs were J-qualified during data validation due to matrix spike anomalies.

Organochlorine pesticides were analyzed in subsurface soil samples 73SB02 and 73SB14. Endrin (1,100J µg/kg), chlordane (900J µg/kg), dichlorodiphenyldichloroethane (DDD) (1,100J µg/kg), DDE (3,100J µg/kg), and DDT (14,000 µg/kg) were present at 73SB02-01 above the ecological screening level. DDT was present in the sample above the EPA industrial scenario screening level. All detections for organochlorine pesticides at 73SB14 were below screening level values. As a result of various QC anomalies, at least some results for all samples were qualified.

Metals were present in all six original subsurface soil samples. At 73SB14-01, cobalt and vanadium were detected above NAPR background concentrations in subsurface soils consisting of clay but below NAPR background concentrations in subsurface soils consisting of silt at 55J µg/kg and 250 µg/kg, respectively. At 73SB27-01, copper, vanadium, and zinc were detected above NAPR background concentrations in subsurface soil at 460 µg/kg, 300 µg/kg, and 110 µg/kg, respectively. Antimony results were either rejected or qualified as biased extremely low, due to matrix spike recoveries. Some beryllium and selenium results were also rejected for this reason.

6.2.2 January 2009 Sampling Event.

Four subsurface soil samples and one duplicate soil sample were collected during the January 2009 sampling event. Appendix IX organochlorine pesticides and select metals were collected at subsurface soil sample location 73SB02B at 3-5 feet and 5-7 feet in depth. Appendix IX LLPAHs and select metals were collected at 73SB24 at 1-3 feet and 17-19 feet in depth. No subsurface soil samples were sampled during January 2009 for Appendix IX VOCs or

SVOCs. Results are presented in Table 10. The laboratory data packages are provided as Appendix E.

Seventeen LLPAHs were detected in subsurface soil sample 73SB24-01. One LLPAH was detected in 73SB24-09. All detections were below screening level values.

Five organochlorine pesticides were detected in 73SB02B-02. Four organochlorine pesticides were detected in 73SB02B-03. All detections were below screening level values. DDT was J-qualified during data validation in one sample, 73SB02B-02, due to calibration recoveries above the upper QC limit.

All four metals analyzed (arsenic, copper, mercury, and zinc) were detected in subsurface soil sample 73SB24-01. Copper (170J µg/kg) was identified above the ecological screening level and above the NAPR background concentration for subsurface soil composed of silt. Only copper (420J µg/kg) and zinc (90 µg/kg) were detected in subsurface soil sample 73SB24-09. Copper was J-qualified (positive bias) during data validation as the result of matrix spike recoveries greater than the upper control limits.

6.3 Groundwater.

6.3.1 April 2008 Sampling Event.

Two monitoring wells (73MW01 and 73MW02) were sampled during the April 2008 sampling event. A duplicate sample was collected from 73MW01. The groundwater samples were analyzed for Appendix IX VOCs, SVOCs and dissolved metals from 73MW01 and Appendix IX metals from 73MW02. Results are presented in Table 12.

There were no detections of VOCs at 73MW01.

Di(2-ethylhexyl)phthalate (55 micrograms per liter (µg/L)) was detected above the EPA tap water screening level and maximum contaminant level (MCL) but below the ecological screening level at 73MW01.

Two dissolved metals were detected at 73MW01 (barium: 147J µg/L and zinc: 7.65J µg/L) below screening levels and MCLs. The duplicate groundwater sample for 73MW01 also identified chromium (7.02 µg/L) and selenium (18.8J µg/L) below screening levels and MCLs. At 73MW02, 10 dissolved metals were detected in groundwater. Arsenic (35.1J µg/L) was identified above the EPA tap water, MCL, and NAPR background level but below the ecological groundwater screening level. Cadmium was detected at 12.8 µg/L which is above the EPA MCL and ecological screening level but below the EPA tap water screening level and NAPR background concentration. Copper (57.6 µg/L), nickel (140 µg/L), and silver (5.98 µg/L) were detected above the ecological screening level but below the NAPR background concentrations, EPA tap water screening levels, and MCLs. Selenium was detected above the NAPR background concentration and EPA MCL but below the EPA tap water and ecological screening levels. All remaining detections were below screening level values. Some dissolved metals

results were J-qualified during data validation due to spike and or laboratory control sample anomalies.

6.3.2 January 2009 Sampling Event.

Two monitoring wells (73MW02 and 73MW03) were sampled during the January 2009 sampling event. A duplicate sample was collected from 73MW03. The groundwater samples were analyzed for select Appendix IX dissolved metals from 73MW02 and LLPAHs and select metals from 73MW03. Results are presented in Table 13.

There were no significant detections of LLPAHs at 73MW03. Fluoranthene was detected in the duplicate sample at levels below the method reporting limit. Most LLPAH data was rejected during data validation due to very low recoveries of matrix spike samples.

Select metals were detected in 73MW02 and 73MW03. Dissolved copper (61 µg/L), nickel (130 µg/L), and silver (5.2 µg/L) were detected above the groundwater ecological screening level and the NAPR background concentration at 73MW02. Arsenic (31 µg/L) was also detected above the groundwater ecological screening level but below NAPR background concentrations. At 73MW03, dissolved copper (120 µg/L) was detected above the groundwater ecological screening level and NAPR background concentration. Dissolved arsenic (28 µg/kg), nickel (73 µg/kg), and silver (3.6 µg/kg) were also detected above the groundwater ecological screening level but below NAPR background concentrations.

6.4 <u>Laboratory Data Validation Summary.</u>

Laboratory data validation reports are located in Appendix D. Qualified data as the result of data validation is highlighted with yellow background in Tables 4-9. Field duplicate, equipment rinsate, field blank, and trip blank samples were collected as part of QA/QC sampling. The samples were analyzed for chemical constituents associated with the field samples they represented and are shown as Tables 14-17.

Field blanks were collected during each sampling event for deionized water, distilled water, and NAPR tap water.

6.4.1 Field Duplicate Samples.

Field duplicate samples were at surface soil sample locations 73SB01, 73SB13, 73SB18, and 73SB27 during April 2008 and 73SB232, 73SB246, and 73SB362 during January 2009. The samples were collected for the same analytes as the original environmental samples and were identified with the letter 'A' following the location. The samples were collected to best represent the overall sampling program at a collection rate of 10%. Field duplicate results generally indicated acceptable precision and representativeness.

6.4.2 Equipment Rinsate Samples.

Equipment rinsate samples were collected daily from equipment used as part of the sampling process. A 'hold' was placed on some equipment rinsate samples (73ER-02, 73ER-05, and 73ER-08). If the environmental samples associated with the samples on 'hold' detected levels of chemical analytes outside what was suspected, then the 'hold' samples were to be analyzed. None of the equipment rinsate samples requested to be held were analyzed. Results from the equipment rinsate samples (73ER01-07 from April 2008 and 73ER-08-10 from January 2009) do not indicate significant contamination as a result of sampling equipment or the decontamination process used for the project. Equipment rinsate sample data are included in Tables 14 and 15.

6.4.3 Field Blank Samples.

Field blank samples were collected for the NAPR tap water, locally procured distilled water and laboratory-provided deionized water. Results from the equipment rinsate samples (73ER01-03 from April 2008 and 73ER04-06 from January 2009) do not indicate significant contamination as a result of water sources used during the project. Field blank sample data are included in Tables 16 and 17.

Field blanks from the April 2008 sampling event detected minor concentrations of VOCs and LLPAHs from the deionized and distilled water samples. Concentrations of VOCs and metals were observed in the NAPR tap water sample. Data qualifications were made for environmental samples detecting toluene and 2-methylnaphthalene due to its presence in the blank samples.

Many of the field blank LLPAH results from the January 2009 sampling event were rejected as the result of matrix spike failures. NAPR tap water organochlorine pesticides data were rejected due to calibration verification failures. There were no issues identified for metals.

6.4.4 VOC Trip Blank Samples.

Trip blank samples accompanied all VOC samples in transit from the field to the laboratory. VOC sampling only occurred during the April 2008 sampling event. There were no soil sample results affected by the analysis of the VOC trip blanks. Carbon disulfide was the only analyte detection that resulted in a nondetect value assigned to the carbon disulfide results for the groundwater sample 73MW01 and duplicate sample 73MW01A.

6.4.5 Metals.

Most metals data were considered acceptable during the April 2008 sampling event. Metals data in soils that were identified as unusable included all antimony data and some results for beryllium and selenium, due to very low matrix spike recoveries. Rejected data were not target analytes of major concern.

6.4.6 Organochlorine Pesticides.

Organochlorine pesticides results for four subsurface soils were rejected due to very low matrix spike recoveries during the April 2008 sampling event. Surface soil and aqueous sample results were identified as acceptable. During the January 2009 sampling event, all soil results were acceptable. Failures with closing calibration verifications resulted in aqueous data for two field blank samples being rejected.

6.4.7 LLPAHs.

Data for a number of individual PAH compounds in aqueous samples 73FB-03 and 73FB-03A were rejected due to matrix spike failures during April 2008. Results for most PAH compounds in all of the aqueous samples from January 2009 were rejected due to critically low matrix spike recoveries. Generally, soil sample results were considered acceptable. Some analytes were tagged with a J qualifier as a result of matrix spike recoveries and duplicate relative percent differences outside of established criteria.

6.4.8 VOCs.

One analyte (trans-1,4-dichloro-2-butene) was rejected in aqueous samples 73ER-07, 73MW01, and 73MW01A. All other data was identified as usable. Dichlorofluoromethane was qualified in samples 73FB-03 and 73FB-03A as a result of low recovery in the initial calibration verification. Most samples failed to meet temperature preservation and/or holding time requirements and required qualification. Other identified anomalies did not require data qualification.

6.4.9 SVOCs.

Results for 1,4-phenylenediamine, 2,4-dinitrophenol, 2-naphylamine, 4-nitroqunone-1-oxide, isosafrole, methapyrilene, and diallate were rejected for most or all soil samples. A lesser number of hexachlorocyclopentadiene results were rejected. The data was rejected due to extremely low laboratory control sample (LCS), matrix spike, or initial calibration verification (ICV) failures. For the groundwater samples, 1,4-napthoquinone, 1,4-phenylenediamine, isosafarole, and methapyrilene results were rejected (LCS, matrix spike and ICV failures). Results for several other compounds (including nondetects for phenolic compounds) were rejected in various blank water samples.

6.5 References.

LANTDIV, 2005. Final Phase I/II Environmental Condition of Property Report, Former U.S. Naval Station Roosevelt Roads, Ceiba, Puerto Rico. Norfolk, Virginia. 15 July 2005.

Baker, 2008. Final Corrective Measures Study Work Plan for SWMU 73. Naval Activity Puerto Rico, Ceiba, Puerto Rico. January 2008.

7.0 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT AND STEP 3a OF THE BASELINE ECOLOGICAL RISK ASSESSMENT.

7.1 Background.

The primary focus of the ERA is to evaluate the potential for impacts to ecological receptors from contaminants at SWMU 73, the scrap metal recycling yard on NAPR (Figures 1-3), via a screening level ecological risk assessment (SLERA), and Step 3a of the baseline ecological risk assessment (BERA).

The ERA for SWMU 73 was performed according to the concepts and technical recommendations of the documents below as specified by the Final CMS Work Plan for SWMU 73 (Baker, 2008).

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (EPA, 1997)

- Navy Guidance for Conducting Ecological Risk Assessments (Chief of Naval Operations (CNO), 1999)

This ERA evaluated the likelihood that adverse ecological effects may occur as a result of exposure to contaminants in various media (surface soil, subsurface soil, and groundwater). Adverse responses can range from subtle chronic effects in an individual organism to a loss of an ecosystem function. A risk does not exist unless the particular substance acts on an ecological component long enough and at a sufficient intensity to elicit an adverse effect. Tier 1 (Steps 1 and 2) of the Navy ERA process (Appendix D, Figure 5-1 of the Final CMS Work Plan for SWMU 73) represents the SLERA, which utilizes conservative assumptions and includes:

- Screening-level problem formulation and ecological effects evaluation (Step 1).

- Screening-level exposure estimate and risk calculation (Step 2).

If, in the Tier 1 SLERA, there are chemicals present in the environmental media that may present a risk to receptor species/communities, the ERA process proceeds to a BERA, or Tier 2 (Step 3a). Conservative exposure assumptions used in Tier 1 are refined, and risk estimates are recalculated. The evaluation of risks in Step 3a may also include consideration of background

data, chemical bioavailability, and the frequency of detection. If the re-evaluation of conservative exposure assumptions does not support an acceptable risk determination, corrective measures will be recommended to address potential ecological risks at SWMU 73.

7.2 Environmental Setting.

As described in section 2.2, SWMU 73 is located in the near-shore flatlands on NAPR and is approximately 9 acres in size. This site, the scrap metal recycling yard, consists of a large flat-lying, gravel-covered, scrap metal storage yard and secondary growth vegetative communities around its perimeter. Debris (i.e., wood, metal, etc.) has been observed in the vegetative areas and spills and stains of petroleum oils and lubricant is characteristic of the scrap metal yard (Baker, 2008). The following sections describe the habitats and biota that may exist at SWMU 73. Information from various reports (identified below) was used to describe the habitats and biota at this site.

7.2.1 Site Description and Physical Features.

See Section 3.0 of the CMS Investigation Report for SWMU 73.

7.2.2 Terrestrial Habitats.

The land use at Site 73 is mostly urban (existing development) with sporadic coastal scrub forest vegetative communities. The secondary growth of thick scrub is dominated by leadtree (*Leucaena spp.*), box briar (*Randia aculeate*), sweet acacia (*Acacia farnesiana*), and Australian corkwood tree (*Sesbania grandiflora*) that grew in areas that were cleared for grazing prior to acquisition by the Navy. Tree species include ucar (*Bucida buceras*), sandbox (*Hura crepitans*), figs (*Ficus sp.*) flamboyant tree (*Delonix regia*), Puerto Rican royal palm (*Roystonea borinquena*), ginep (*Melicococus bijugatus*), and Indian almond (*Terminalia catappa*) (U.S. Navy, 1998). Areas within SWMU 73 that contain scrub forest act as buffers for sensitive tidal and marine ecosystems (Department of the Navy, 2007).

7.2.3 Aquatic Habitats.

Mangroves exist to the north of SWMU 73 but are not of concern since the groundwater flow is to the southeast as shown on Figure 5. The marine environment adjacent to the site is typical of tropical, shallow, coastal waters (U.S. Navy, 1998) and an open water marine habitat exists beyond a non-operational dry dock, which is located approximately 300 feet southeast of SWMU 73 (Department of the Navy, 2007). SWMU 73 is upgradient of Puerca Bay, an open water marine habitat, and represents a possible discharge point for groundwater. Puerca Bay is located approximately 1,200 feet from SWMU 73 and contains areas of seagrass beds.

7.2.4 Biota.

Specific biota occurring at SWMU 73 has not been documented to date. However, the biota at NAPR is described using the Environmental Assessment for the Disposal of Naval Activity Puerto Rico (Department of the Navy, 2007) and other available sources. Wildlife at NAPR

consists of native avian, reptile, and amphibian species as well as many introduced mammalian species.

7.2.4.1 Mammals.

The mammal population is predominantly made up of introduced species to include: mongoose, dogs, cats, Norway and grey-bellied rats, and mice (U.S. Navy, 2004). These nonindigenous mammals have been implicated in the decline of native bird and reptile populations (USFWS, 1996 and USGS, 1999). Thirteen bat species are known to inhabit Puerto Rico but are not exclusive to the island (USGS, 1999). The West Indian manatee is also known to occur in the marine environment surrounding NAPR, and historical sitings indicate that manatees are concentrated in areas with dense seagrass beds. Seagrass (i.e., turtle grass) beds occur within the small cove of Puerca Bay, but to a lesser extent near the non-operational dry dock.

7.2.4.2 Birds.

A total of 239 bird species are native to Puerto Rico (Raffaele, 1989). This total includes breeding permanent residents and nonbreeding migrants. In addition, many nonindigenous bird species have been introduced to Puerto Rico, including the shiny cowbird (*Molothrus bonariensis*) and several parrot species, such as the budgerigar (*Melopsittacus undulates*), orangefronted parrot (*Aratinga canicularis*), and monk parrot (*Myiopsitta monaqchus*). Of the 239 species native to Puerto Rico, 12 are endemic to the island (Raffaele, 1989). Numerous native and migratory bird species have been reported at NSRR (Geo-Marine, Inc., 1998). A list of bird species reported at NSRR or having the potential to occur is provided in Table 18. Some of the threatened and endangered avian species are listed below.

Commonwealth Listed Threatened and Endangered Species

- Peregrine falcons (*Falco peregrines*)
- Least tern (*Sterna antillarum*)
- Least grebe (*Tachybaptus dominicus*)
- West Indian whistling duck (*Dendrocygna arborea*)
- Caribbean coot (*Fulica caribea*)
- Snowy plover (*Charadrius alexandris*).

Peregrine falcons are not expected to nest at NAPR and use is expected to be limited to transient individuals. The Least grebe and Caribbean coot feed on aquatic vegetation and small invertebrates primarily in freshwater habitats although they have been documented in brackish water as well. Snowy plover and Least terns nest and feed on sandy beaches and mudflats, whereas the West Indian whistling duck uses mangroves and other forested wetlands.

Federally Listed Species

- Yellow-shouldered blackbirds (*Agelaius xanthomus*)
- Piping Plover (*Charadrius melodus*)
- Roseate tern (*Sterna dougalii dougalii*)

Suitable habitat exists at SWMU 73 for the yellow-shouldered blackbird since they forage in canopy and subcanopy of coastal scrub forests (U.S. Fish and Wildlife Service (USFWS), 1996). Only incidental observations (i.e., less than 20 individuals) of yellow-shouldered blackbirds have been reported at NAPR (Geo-Marine, Inc., 2005). No piping plovers were reported at NAPR during the late 1990s or during surveys conducted in 2002 and 2004 (Geo-Marine Inc., 2005), and historical evidence of the roseate tern inhabiting NAPR does not exist (Department of the Navy, 2007).

7.2.4.3 Reptiles and Amphibians.

Puerto Rico's native reptile species include 31 lizards, 8 snakes, 1 freshwater turtle, 5 sea turtles, and 23 amphibians. Approximately six species of snakes are known to occur at NAPR to include: the Puerto Rican boa (*Epicrates inornatus*), Virgin Island tree boa (*Epicrates monesis granti*), Puerto Rican racer (*Alsophis portoricnesis*), Puerto Rican garden snake (*Arrhyton exiguum*), Virgin Island blindsnake (*Typhlops richardi*), and Puerto Rican wetland blindsnake (*Typhlops rostellatus*) (U.S. Navy, 1998). Two snake species, the Puerto Rican boa and the Virgin Islands tree boa are Federally and commonwealth-listed species that are known to inhabit NAPR. Numerous frog (i.e., 16 species of coquis) and toad species also inhabit NAPR. Mongoose populations have been the culprits for the reduction of much of the reptile population (Department of the Navy, 2007).

7.2.4.4 Fish and Aquatic Invertebrates.

A diverse fish and invertebrate community can be found in the marine environment surrounding NAPR. In general, the fish can be divided into three different associations, based on their preferred habitat. These associations include fish inhabiting the seagrass beds and sandflats, those inhabiting coral reefs, and open water or pelagic fish. There is overlap among the associations, as some fish in one association also use habitats in another.

The fish community is represented by stingrays, herrings, groupers, needlefish, mullets, barracudas, jacks, snappers, grunts, snooks, lizardfishes, parrotfishes, gobies, filefishes, wrasses, damselfishes, and butterflyfish (Geo-Marine, Inc., 1998). The benthic invertebrate community includes sponges, corals, anemones, sea cucumbers, sea stars, urchins, and crabs. Marine invertebrates observed within the small cove of Puerca Bay during the marine reconnaissance survey included sea urchins (*Echinometra lucunter* and *Echinometra viridis*), encrusting fire coral (*Millipora alcicormus*), common sea fan (*Gorgonia venalina*), starlet coral (*Siderastrea ammulatta*), pincushin starfish (*Oreaster reticulates*), and corkscrew anemone (*Bartholomea*

annulatta), as well as two species of sea cucumbers (*Actinopyga agassizii* and *Holothuria mexicana*). In addition to invertebrates, 16 fish species were observed within the Puerca Bay. The specific species encountered included the sergeant major (*Abudefduf saxatillis*), dusky damselfish (*Stegates fuscus*), tomtate (*Haemulon aurolineatum*), gray snapper (*Lutjanus griseus*), squirrelfish (*Holocentrus sp.*), yellow fin mojarra (*Gerres cinereus*), and silver jenny (*Eucinostomus gula*).

7.2.4.5 Threatened and Endangered Species.

Threatened and endangered species are typically found in less disturbed and more unique communities. Federally listed and Commonwealth-listed plant and animal species found at NAPR are included in Table 19. A discussion of threatened and endangered bird species are described in section 7.2.4.2.

7.3 Screening-Level Problem Formulation.

The screening-level problem formulation is a process for establishing the goals, scope, and focus of the SLERA. The problem is defined, the plan for analyzing exposure and effects and other data is outlined, and the methods for characterizing risks are described. The outcome of this phase that forms the structure of this SLERA is the conceptual site model and assessment and measurement endpoints. This stage of the risk assessment provides the foundation on which the entire analysis depends.

7.3.1 Integration of Available Information.

Integrating available information is an iterative process throughout problem formulation. All relevant information on the source of the stress and the environment potentially at risk is presented here.

7.3.2 Conceptual Site Model.

A conceptual site model (CSM) is a written description (risk hypothesis) and visual representation (diagram) of predicted responses of ecological entities to stress (EPA, 1998). The risk hypothesis statement follows:

Chemicals in the media at SWMU 73 may accumulate in the environment to sufficient levels to induce the following effects:

- Increased stress on individual organisms that may reduce population densities (e.g., through reduced reproductive performance, less resistance to disease, or impaired development).

- Stressed populations of organisms.

1161 • Altered structure and function and decreased productivity of ecological communities.

1162 • Altered and potentially decreased biological diversity.

1163 The bulleted points in this hypothesis are arranged as a cascade of events. It is believed that
1164 toxicological effects that decrease reproductive potential and impair development of organisms
1165 can lead to stressed populations of organisms if those effects become sufficiently prevalent.
1166 Such stressed populations are then expected to potentially lead to changes in population
1167 dynamics and community interactions that can alter the actual kinds of species (structure) and
1168 processes (function) within the affected ecological community. In general, the assumption is that
1169 such changes can lead to decreased community productivity and biological diversity. As this is
1170 SLERA, the analysis focused upon the first link in this chain (i.e., the potential for toxicological
1171 effects in organisms).

1172 In addition to the above risk hypothesis, the CSM consists of the three diagrams (Figures 6-8).
1173 Figure 6 presents the preliminary CSM for SWMU 73. The CSM identifies the source, transport
1174 pathways, exposure media, and environmental fate of chemicals in this SLERA. Figure 7
1175 illustrates the hypothesized ecological consequences that such outcomes may have on terrestrial
1176 communities. Figure 8 illustrates the same phenomena for aquatic communities.

1177 **7.3.3 Selection of Receptors.**

1178 Lower and upper trophic level receptors were chosen for evaluation as part of the SLERA.

1179 Lower Trophic Level Receptors

1180 Lower trophic level receptor species (i.e., terrestrial community receptors) were evaluated based
1181 on taxonomic groupings (e.g., terrestrial plants and invertebrates) for which screening values
1182 were developed and evaluated on a community level via a comparison to media-specific
1183 screening values.

1184 Upper Trophic Level Receptors

1185 Upper trophic bird species were selected for dietary exposure modeling. These species are
1186 known to inhabit, have the potential to occur at NAPR, or are selected as surrogate species to
1187 represent birds from NAPR with similar feeding habits and dietary preferences.

1188 Evaluating potential adverse effects in wildlife involves selection of species that represent
1189 protected, highly exposed, and/or sensitive animals within various ecological guilds. In a general
1190 sense, a guild is a group of species with similar functional roles within a community (Simberloff
1191 and Dayan, 1991). For the purposes of the SLERA, a guild refers more specifically to a group of
1192 species that have similar foraging (i.e., feeding) behavior and are within the same taxonomic
1193 class. Guild associates are individual species within a particular guild. The design of this
1194 SLERA assumes that, as defined, guild associates are taxonomically related, and they are more
1195 similar in terms of toxicological sensitivity to chemicals of potential concern (COPCs).

By focusing on guilds, the SLERA can narrow the number of potentially exposed species into manageable and ecologically significant groups. Risk estimates for terrestrial wildlife were focused on bird guilds, since mammals are limited to nonindigenous nuisance species and life history information for native bat species is lacking. Few data exist to assess exposure and effects to amphibians and reptiles (Sample et al., 1997), therefore they were not evaluated in the SLERA. Terrestrial food webs were the primary focus for this SLERA since limited data and information exists for addressing groundwater exposure to ecological receptors. The following terrestrial habitat guilds were evaluated in the SLERA:

- Terrestrial avian herbivore (i.e., Mourning dove)
- Terrestrial avian omnivore (i.e., American robin)
- Terrestrial avian carnivore (i.e., Red-tailed hawk)

The mourning dove and red-tailed hawk are known to occur in Puerto Rico (Raffaele, 1989) and have also been reported at NAPR (Table 18). The American robin was selected as a surrogate species to the yellow-shouldered blackbird although the robin feeds on earthworms on the ground whereas the blackbird forages within the canopy of trees (USFWS, 1996). Because earthworms will bioaccumulate soil contaminants at higher concentrations than arboreal invertebrates consumed by the yellow-shouldered blackbird, modeled dietary intakes for the robin will result in a conservative estimate of food web exposures for the blackbird. In addition, modeled dietary intake of soil by the robin will also result in a conservative estimate of food web exposures for the yellow-shouldered blackbird.

7.3.4 Assessment Endpoints.

Assessment endpoints were selected based on the known habitat types and species present or likely to be present at SWMU 73. Assessment endpoints are explicit expressions of the actual environmental values that are to be protected, operationally defined by an ecological entity and its attributes (EPA 1998). The ecological entities within each assessment endpoint are those that are considered to be susceptible to the stress. Assessment endpoints structure the SLERA to ensure that management concerns are addressed and that the SLERA can support management decisions. Measurement endpoints are measureable ecological characteristics that are related to the value chosen as the assessment endpoint. Measurement endpoints can be used to evaluate the degree of impact that may occur. The specific assessment and measurement endpoints for the SLERA follow:

- <u>Assessment Endpoint</u>: Survival, growth, and reproduction of terrestrial community receptors [soil biota (e.g., soil invertebrates, terrestrial plants)]

  <u>Measurement Endpoint</u>: Comparison of maximum chemical concentrations in surface and subsurface soil with soil screening values.

- Assessment Endpoint: Development and reproductive success of wildlife populations (i.e., avians)

  Measurement Endpoint: Comparison of No Observable Adverse Effect Level (NOAEL) values for survival, growth, and/or reproductive effects with modeled dietary exposure doses based on maximum chemical concentrations in surface and subsurface soil.

- Assessment Endpoint: Development and reproductive success of individuals of threatened or endangered species (i.e., avians).

  Measurement Endpoint: Comparison of NOAEL values for survival, growth, and/or reproductive effects with modeled dietary exposure doses based on maximum chemical concentrations in surface and subsurface soil.

7.4 Screening-Level Effects Evaluation.

Media-specific screening values and ingestion-based screening values were chosen for use in this SLERA. Media-specific screening values were chosen for ecologically relevant media (e.g., surface soil), whereas ingestion-based screening values were developed for upper trophic level food web (dietary) exposures.

7.4.1 Media-Specific Screening Values.

Various criteria and toxicological benchmarks were used to select appropriate screening-level benchmarks for surface soil, (0 to 1 foot in depth), subsurface soil (1 to 3 feet in depth), and groundwater. These media-specific screening values represent conservative exposure thresholds above which adverse ecological effects may occur.

7.4.1.1 Soil Screening Values.

Surface and subsurface soil screening values were chosen based on a hierarchy of preferable sources listed in Appendix D (Section 5.2.1.1 of the Final CMS Work Plan for SWMU 73). Table 5-1 of Appendix D also presents the surface and subsurface soil screening values that were accepted by the EPA for use in ERAs at NAPR (Baker, 2006a and 2006b).

7.4.1.2 Groundwater Screening Values.

Groundwater screening values were chosen based on a hierarchy of preferable sources listed in Appendix D (Section 5.2.1.2 of the Final CMS Work Plan for SWMU 73). Table 5-2 of Appendix D also presents the groundwater screening values that were accepted by the EPA for use in ERAs at NAPR (Baker, 2006a and 2006b).

7.4.2 Ingestion-Based Screening Values.

Ingestion-based screening values were chosen and discussed in Appendix D (Section 5.2.2 of the Final CMS Work Plan for SWMU 73). Table 5-3 of Appendix D also presents ingestion-based

1264 screening values that were accepted by the EPA for use in ERAs at NAPR (Baker, 2006a and
1265 2006b).

1266 Ingestion-based screening values for upper trophic level dietary exposures were derived for each
1267 receptor species and chemical evaluated for food web exposures. As mentioned previously, only
1268 avian species were evaluated for upper trophic level food web exposures. Additionally, the only
1269 chemicals that are evaluated for food web exposures are those with the potential to
1270 bioaccumulate (e.g., VOCs and SVOCs). Bioaccumulative chemicals are those with a maximum
1271 reported octanol-water partition coefficient (log K_{ow}) greater than or equal to 3.0. This approach
1272 has been accepted by the EPA for the selection of organic chemicals evaluated for upper trophic
1273 level food web exposures (Baker, 2006a and 2006b). For conservatism, all metals were also
1274 evaluated for food web exposures.

1275 **7.5 <u>Analysis Methodology – Exposure Assessment.</u>**

1276 This section presents the details of the planned analysis. Analysis is a process that examines the
1277 interrelationships between the two primary components of risk, exposure and effects, and their
1278 relationships to ecosystem characteristics (EPA, 1998).

1279 Exposure is defined as the contact or co-occurrence between stressor and receptor. Exposure of
1280 ecological receptors to COPCs in media is evaluated through consideration of exposure
1281 pathways. For an exposure pathway to be complete and be considered for evaluation in a risk
1282 assessment four elements must exist (EPA, 1989):

1283 - A source and mechanism of chemical release,
1284 - A retention or transport medium,
1285 - A point of potential contact with the contaminated medium, and
1286 - An exposure route (e.g., ingestion) at the contact point.

1287 Exposure assessment consists of quantifying exposure of an ecological receptor to a COPC.
1288 Exposure to community and class-specific guild measurement receptors is assessed using
1289 different approaches. These community receptors were assessed based on estimates of direct
1290 uptake pathways of a COPC from media. Class-specific receptors (i.e., birds) were assessed
1291 based on estimates of ingestion of organisms or media containing concentrations of the selected
1292 COPCs.

1293 The following exposure pathways were not evaluated due to the limitation of data: wildlife
1294 inhalation and dermal exposure to COPCs, and wildlife ingestion of COPCs via grooming and
1295 preening (EPA, 1999).

1296 Due to the chemical properties and physiological interactions of some substances, the potential
1297 for adverse effects to occur from exposure through the food chain can be the most important
1298 exposure pathway to animals. For example, vascular plant uptake may expose wildlife ingesting

these plants to concentrations of substances that are greater than in soil and water. Some substances may bioaccumulate and be of more concern than other nonbioaccumulating substances. The greater the octanol-water partition coefficient (K_{ow}) of a COPC, the more likely the substance is to partition to octanol (a lipid surrogate) than water (i.e., it accumulates in fatty tissues). As mentioned previously, bioaccumulation was considered during the assessment when the log $K_{ow} \geq 3.0$ for any organic chemicals. See Table 20 for log K_{ow} values for the organic chemicals.

7.6 Screening-Level Exposure Estimation.

This section presents the analytical data, exposure assumptions, and the exposure models and input parameters that were used to estimate the potential exposure of ecological receptors to chemicals in the media (e.g., surface soil).

7.6.1 Selection Criteria for Analytical Data.

Selection criteria exist for the available analytical data (Tables 1-13) for the various media to include:

- Data must be validated and rejected (R) values will not be used in the SLERA. Unqualified data and data qualified as J will be treated as detected. Data qualified as U or UJ will be treated as nondetected.

- Maximum reporting limits will be conservatively used to estimate exposure for nondetected chemicals.

- For duplicate samples, the higher of the two concentrations will be used in the screening (when both values are detects or both values are nondetects). In cases where one result is a detection and the other a nondetect, the detected value will be used in the assessment.

- For surface soil, analytical data for samples collected from the surface to a maximum depth of 1 foot below ground surface and from 1 to 3 feet below ground surface will be used.

- For groundwater, total dissolved (filtered) metals data will be used in the medium-specific screening evaluation.

7.6.2 Exposure Estimation.

Maximum detected concentrations in media (e.g., surface soil) were used to conservatively estimate potential chemical exposures for the ecological receptors selected to represent the assessment endpoints.

7.6.2.1 Terrestrial and Aquatic Receptors – Abiotic Media.

Maximum detected concentrations in abiotic media (e.g., surface soil) were used to estimate potential chemical exposures to the selected ecological receptors. This conservative assessment evaluated the potential for adverse ecological effects to the lower trophic level receptor groups (e.g., terrestrial plants and invertebrates) from COPCs.

7.6.2.2 Upper Trophic Level Receptors – Prey Items.

Exposures for upper trophic level receptor species via the food web were determined by estimating chemical-specific concentrations in each dietary component. Incidental ingestion of surface soil was also included when calculating the total intake for each receptor, however, drinking water exposures were not. Tissue concentrations were modeled for terrestrial plants (food item for American robin and mourning dove), soil invertebrates (food item for American robin), and small mammals (food item for red-tailed hawk). An omnivore was used to represent the small mammals present in Puerto Rico that function as potential food items (e.g., rats) for the hawk.

The uptake of chemicals from the abiotic media into terrestrial and aquatic food items is based (when available) on conservative (e.g., maximum or 90th percentile) bioconcentration factors (BCFs) or bioaccumulation factors (BAFs) from the literature. A BCF indicates the degree to which a chemical may accumulate in organisms coincident with the concentration of the chemical in the surrounding media. BAF values consider both direct exposures to the surrounding media, as well as uptake from dietary exposures and were given preference over BCFs when estimating prey item tissue concentrations. Default factors of 1.0 were used only when data were unavailable for chemicals in the literature. The methods and models used to derive exposure estimates are described below:

7.6.2.2.1 Terrestrial Plants.

Tissue concentrations in the aboveground vegetative portion of terrestrial plants were estimated by multiplying the maximum surface soil concentration for each chemical by chemical-specific soil-to-plant BCFs obtained from the literature. The BCF values used were based on root uptake from soil and were reported as dry-weight soil and dry-weight plant tissue. The soil-to-plant BCFs used in the SLERA are summarized in Table 21.

7.6.2.2.2 Soil Invertebrates.

Tissue concentrations in soil invertebrates (i.e., earthworms) were estimated by multiplying the maximum surface soil concentration for each chemical by chemical-specific BCFs or BAFs obtained from the literature. BAFs based on depurated analyses (soil was purged from the gut of the earthworm prior to analysis) were given preference over undepurated analyses when selecting BAF values since direct ingestion of surface soil is accounted for separately in the food web model. The BCF/BAF values used in the SLERA were reported as dry-weight soil and dry-weight earthworm tissue and are summarized in Table 21.

7.6.2.2.3 Small Mammals.

BCFs/BAFs for plant-to-omnivorous mammals (Table 22) and soil-to-omnivorous mammals (Table 23) were obtained in order to estimate whole-body tissue concentrations in small mammals. Soil-to-omnivorous mammal BAF values obtained from the literature were used when available, and a value of 1 was assumed when a value could not be obtained.

Plant-to-omnivorous mammal tissue concentrations were calculated using a biotransfer factor for mammals (Ba_{mammal}s), which is defined as the ration of a compound concentration in animal tissue to the daily intake of a compound by the animal through ingestion of food items and media (i.e., soil). Biotransfer factors, in conjunction with receptor-specific ingestion rates, can be used to calculate food-item- and media-to-animal BCFs. Appendix F presents the algorithm that identifies the sources that were used to obtain Ba_{mammal} values, and Table 22 presents the actual values. The plant-to-omnivorous mammal BCFs are calculated using the equation below:

$$BCF_{tp-om} = Ba_{mammal} \cdot \left(\frac{IR_f}{1 - w_x} \cdot F_{tp} \right)$$

Where:

BCF_{tp-om} = bioconcentration factor for plants to omnivorous mammals (unitless)
Ba_{mammal} = biotransfer factor for mammals (day/kg/FW tissue)
IR_f = ingestion rate of food (kg/d dw)
F_{tp} = fraction of diet comprised of terrestrial plants (unitless)
w_x = dry-to-wet weight conversion factor (unitless)

Estimates of COPC concentrations in omnivorous mammals, trophic level 3 (TL3) that serve as food items for higher order predators (TL4) were modeled using the BCF-food chain multiplier (FCM) approach (EPA, 1999). A ratio of FCMs was applied to the animal food item ingested (i.e., terrestrial invertebrates) to account for the increase in COPC concentration occurring between the trophic level of prey item and the trophic level of the omnivore (TL3). In general, the COPC concentration in omnivores depends on the COPC concentration in each food item

ingested. The maximum COPC concentrations in omnivorous mammals were calculated using the equation below:

$$C_{om,x} = (C_{ti(x)} \cdot FCM_3 / FCM_2 \cdot P_{ti}) + (C_{tp(x)} \cdot BCF_{tp-om} \cdot P_{tp}) + (Cs_x \cdot BCF_{s-om} \cdot P_s)$$

Where:

$C_{om,x}$ = COPC concentration in omnivorous mammals (milligrams per kilogram (mg/kg) dw)
$C_{ti(x)}$ = maximum COPC concentration in invertebrates (mg/kg dw)
FCM_3 = food chain multiplier for trophic level 3 predators (unitless)
FCM_2 = food chain multiplier for trophic level 2 prey (unitless)
P_{ti} = percentage of invertebrates in diet that is contaminated (unitless)
C_{tp} = maximum COPC concentration in terrestrial plants (mg/kg dw)
BCF_{tp-om} = bioconcentration factor for terrestrial plants to omnivorous mammals (unitless)
P_{tp} = percentage of plants in diet that is contaminated (unitless)
C_{sx} = maximum COPC concentration in soil (mg/kg)
BCF_{s-om} = bioconcentration factor for soil-to-omnivorous mammal (unitless)
P_s = proportion of soil in diet that is contaminated (unitless)

Dietary Intakes

Dietary intakes for each upper trophic level receptor species were calculated using the following equation modified (EPA, 1993).

$$DI_x = \frac{[\sum_i [(FIR)(FC_{xi})(PDF_i)] + [(FIR)(SC_x)(PDS)] + [AUF]}{BW}$$

Where:

DI_x = Dietary intake for chemical x (mg/kg BW/d)
FIR = Food ingestion rate (kg/day dw)
FC_{xi} = Maximum concentration of chemical x in food item i (mg/kg dw)
PDF_i = Proportion of diet composed of food item i (mg/kg dw)
SC_x = Maximum concentration of chemical x in surface soil (mg/kg dw)
PDS = Proportion of diet composed of surface soil (dw basis)
BW = Body weight (kg wet weight)
AUF = Area use factor (unitless)

Conservative, receptor-specific exposure parameters (maximum food ingestion rates and minimum body weights) for the American robin, mourning dove, red-tailed hawk, and small

1440 mammal omnivore (evaluated as the hawk's prey) are provided in Table 24. The food items
1441 selected for each species and the percent contribution to their total diet is provided in Table 25.

1442 For the SLERA, an AUF of 1.0 was assumed (i.e., each receptor is assumed to spend 100 percent
1443 of its time on the site). As such, receptor-specific home ranges were not considered in the
1444 estimation of dietary intakes.

1445 **7.7 Screening-Level Risk Calculation.**

1446 The screening-level risk calculation is the final step in the SLERA. In this step, maximum
1447 chemical concentrations in abiotic media, or maximum exposure doses, for upper trophic level
1448 receptor species are compared with the corresponding screening values to derive screening risk
1449 estimates. The outcome of this step is a list of potential ecological COPCs for each media-
1450 pathway-receptor combination evaluated or a conclusion of negligible risk.
1451

1452 **7.7.1 Selection of Ecological Chemicals of Potential Concern.**

1453 COPCs are those substances in media (i.e., surface soil, subsurface soil, and groundwater) that
1454 are evaluated in the SLERA. The purpose of identifying COPCs is to focus the risk assessment
1455 on those compounds that are likely to pose potential risk to ecological receptors exposed to
1456 SWMU 73 contaminants.

1457 Ecological COPCs were selected using the hazard quotient (HQ) method. For a given chemical,
1458 an HQ was calculated by dividing the maximum chemical concentration in the medium being
1459 evaluated by the corresponding media-specific screening value or, in the case of upper trophic
1460 level receptors, by dividing the maximum exposure dose by the corresponding ingestion-based
1461 screening value. The following conservative methodology was used to identify ecological
1462 COPCs for abiotic media:

1463 • The maximum detected concentration in surface soil, subsurface soil, and groundwater
1464 were used to calculate media-specific HQs. For a given medium, chemicals with HQs
1465 greater than or equal to 1.0 based on maximum detected concentrations were identified as
1466 ecological COPCs.

1467 • For nondetected chemicals, maximum reporting limits were used to calculate media-
1468 specific HQ values. Nondetected chemicals with HQs greater than or equal to 1.0 based
1469 on maximum reporting limits were identified as ecological COPCs.

1470 • Detected and nondetected chemicals without media-specific screening values were
1471 identified as ecological COPCs.

1472 To select ecological COPCs by evaluating food web exposures, maximum chemical
1473 concentrations in surface soil and subsurface soil were used to estimate dietary doses for each
1474 receptor. For the SLERA, chemicals (detected and nondetected) with NOAEL-based HQs
1475 greater than or equal to 1.0 were identified as ecological COPCs. Identical to the media-specific

screening evaluation, detected and nondetected chemicals without ingestion-based screening values were identified as ecological COPCs for upper trophic level receptor exposures.

HQs greater than or equal to 1.0 indicate the potential for risk since the chemical concentration or dose (exposure) exceeds the screening value (effect). The HQ ratio is not an actual risk estimate, since it is not a forecast of the probability (or frequency) of an event. The HQ ratio is commonly used as an indicator of concern in screening-level assessments. Screening values and exposure doses are derived using intentionally conservative assumptions (maximum media concentrations, maximum ingestion rates, and minimum body weights); therefore, HQs greater than or equal to 1.0 do not necessarily indicate that risks are present or impacts are occurring. Rather, they identify chemical-pathway-receptor combinations requiring further evaluation. Following the same reasoning, HQs less than 1 indicate that risks are very unlikely, enabling a conclusion of no unacceptable risk to be reached with high confidence.

It is noted that the SLERA considers independent effects of chemicals. However, the potential does exist for multiple chemicals in environmental media to interact. Much uncertainty is involved with the interpretation of chemical interactions due to the complexity of potential effects (e.g., synergistic, antagonistic, or additive), and due to varying toxicities of compounds in different species. For these reasons, cumulative effects were not addressed as part of the SLERA.

7.7.2 Screening-Level Risk Calculation for Surface Soil, Subsurface Soil, Groundwater, and Terrestrial Food Web Exposures.

Screening-level risk calculations for SWMU 73 surface soil, subsurface soil, and groundwater are presented in Tables 26, 27, and 28 whereas the terrestrial food web exposures are presented in Table 29 (surface soil) and Table 30 (subsurface soil). Various chemicals were retained as ecological COPCs and identified in the tables mentioned above.

7.7.2.1 Screening-Level Risk Calculation for Surface Soil.

Table 26 presents the screening-level risk calculation results for surface soil and indicates which chemicals were retained as ecological COPCs. No VOCs were retained as COPCs at SWMU 73. However, 9 SVOCs (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, and pyrene), 8 pesticides (chlordane, dieldrin, heptachlor, heptachlor epoxide, kepone, p,p'-DDD, p,p'-DDE, and p,p'-DDT), and 10 metals (barium, chromium, cobalt, copper, lead, nickel, selenium, vanadium, zinc, and mercury) had maximum concentrations that exceeded the soil screening value thus target level (HQ≥1). Additionally, three PCBs (Aroclor 1248, Aroclor 1254, and Aroclor 1260) and four VOCs (2-butanone, acetone, carbon disulfide, and methyl iodide) were identified as ecological COPCs based on the lack of soil screening values.

1513 7.7.2.2 Screening-Level Risk Calculation for SubSurface Soil.

1514 Table 27 presents the screening-level risk calculation results for subsurface soil and indicates
1515 which chemicals were retained as ecological COPCs. No SVOCs or PAHs were retained as
1516 COPCs at SWMU 73; however, six pesticides (endrin, chlordane, kepone, p,p'-DDD, p,p'-DDE,
1517 and p,p'-DDT) and seven metals (chromium, cobalt, copper, selenium, vanadium, zinc, and
1518 mercury) had maximum concentrations that exceeded the soil screening value thus target level
1519 (HQ≥1). Additionally, one VOC (acetone) was identified as an ecological COPC based on the
1520 lack of soil screening values.

1521 7.7.2.3 Screening-Level Risk Calculation for Groundwater.

1522 Table 28 presents the screening-level risk calculation results for groundwater and indicates
1523 which chemicals were retained as ecological COPCs. No SVOCs, VOCs, or PAHs were retained
1524 as COPCs at SWMU 73; however, two pesticides (p,p'-DDD and p,p'-DDT) and six metals
1525 (cadmium, cobalt, copper, nickel, silver, and zinc) had maximum concentrations that exceeded
1526 the groundwater screening value thus target level (HQ≥1). Additionally, one metal (tin) was
1527 identified as an ecological COPC based on the lack of groundwater screening values.

1528 7.7.2.4 Terrestrial Food Web Exposures.

1529 Results of the screening-level risk calculation for terrestrial food web exposures are presented in
1530 Tables 29 and 30, respectively.

1531 *7.7.2.4.1 Terrestrial Food Web Exposures: Surface Soil.*

1532 Results of the risk calculation for food web exposures to chemicals in surface soil are presented
1533 in Table 29. Based on the comparison of maximum exposure doses to NOAEL-based screening
1534 values, five pesticides (chlordane, dieldrin, p,p'-DDD, p,p'-DDE, and p,p'-DDT), one PCB
1535 (Aroclor 1254), and seven metals (chromium, copper, lead, selenium, vanadium, zinc, and
1536 mercury) had HQ values greater than or equal to 1.0 for one or more of the terrestrial avian
1537 receptors. These chemicals were retained as ecological COPCs for terrestrial food web
1538 exposures.

1539 *7.7.2.4.2 Terrestrial Food Web Exposures: SubSurface Soil.*

1540 Results of the risk calculation for food web exposures to chemicals in subsurface soil are
1541 presented in Table 30. Based on the comparison of maximum exposure doses to NOAEL-based
1542 screening values, four pesticides (endrin, p,p'-DDD, p,p'-DDE, and p,p'-DDT) and five metals
1543 (chromium, copper, vanadium, zinc, and mercury) had HQ values greater than or equal to 1.0 for
1544 one or more of the terrestrial avian receptors. These chemicals were retained as ecological
1545 COPCs for terrestrial food web exposures.

1546 **7.8 Uncertainties Associated with the Screening-Level Risk Assessment.**

1547 Uncertainty is a description of the imperfect knowledge of the true value of a particular variable

or its real variability in an individual or a group (EPA, 1999). Uncertainty is expected in any process where limitations of the available data and the need to make assumptions and extrapolations based on incomplete information exist. The uncertainties associated with the SLERA for SWMU 73 are identified in Table 31.

7.9 SLERA Decision Point and Recommendations.

The results of the SLERA for SWMU 73 indicate that further evaluation of the chemicals selected as COPCs in the various media (surface soil, subsurface soil, and groundwater) is warranted. Under Navy policy, if the results of Steps 1 and 2 (Tier 1 SLERA) indicate that there are chemicals present in media that have the potential to harm the ecological receptors evaluated, the SLERA proceeds to the BERA (i.e., Step 3a).

7.10 Step 3a of the BERA.

The results of the SLERA indicated that one or more chemicals in each medium evaluated have the potential to harm the ecological receptors evaluated. Therefore, the ERA process at SWMU 73 proceeded to the BERA.

The problem formulation phase of the BERA (Tier 2) or Step 3 of the Superfund guidance (EPA, 1997) is initiated and the conservative assumptions from the SLERA (Tier 1) are refined and HQs are recalculated using the same conceptual site model. Step 3a also considers background data and chemical bioavailability.

The specific assumptions, parameters, and methods that will be modified for the recalculation of media-specific and food web HQ values are identified below, along with justification for each modification. These refinements and methods will be used in Step 3a of the BERA to weigh the evidence of potential risk for each ecological COPC identified for each media and receptor to determine whether the development of CAOs is warranted.

- Refined HQs will be derived using 95% Upper Confidence Limit (UCL) of the mean chemical concentrations. 95% UCL of the mean concentrations were calculated using EPA ProUCL Version 4.0.02 software (EPA, 2007).

- Literature-based BCFs and BAFs based on, or modeled from, central tendency estimates (e.g., mean, median, midpoint) will be used in place of maximum or high-end (e.g., 90th percentile) estimates. An assumed BCF/BAF of 1.0 will still used for those chemicals lacking a literature-based BAF/BCF. The refined BCFs and BAFs for those chemicals carried into Step 3a of the BERA (if available) are presented in Table 32. It should be noted that the soil-omnivore BAF for zinc is 0.51 and was the only chemical that had a refined BAF.

- Central tendency estimates (e.g., mean, median, midpoint) for body weight and food ingestion rate will be used to develop exposure estimates for upper trophic level receptors rather than the minimum body weights and maximum food ingestion rates used in the

SLERA. The use of central tendency estimates is more relevant, because they represent the characteristics of a greater proportion of the individuals in the population. The evaluation of food web exposures will still assume an AUF of 1.0. Less conservative exposure parameters are presented in Table 33.

- In addition to the NOAELs-based HQs used in the SLERA, consideration also will be given to food web exposure HQs based on Low Observable Adverse Effect Levels (LOAELs) and Maximum Acceptable Toxicant Concentrations (MATCs). The MATC was derived by taking the geometric mean of the NOAEL and LOAEL. Calculations with NOAELs provide the most conservative risk estimate, while calculations with LOAELs provide the least conservative risk estimate. Calculations with MATCs provide realistic HQs since the MATC represents an estimation of the threshold concentration (i.e., the concentration above which a toxic effect on the test endpoint is produced).

- Consideration will be given to background data by statistically comparing site concentrations to background concentrations in accordance with Navy guidance (Naval Facilities Engineering Service Center (NFESC), 2002, 2003, and 2004). The process that will be used to statistically evaluate data is depicted on Figure 5-2 as presented in the CMS Work Plan in Appendix D (Baker, 2008). As evidenced by the figure, statistical comparisons will include descriptive summaries of each data set (maximum, minimum, and mean concentrations), statistical tests on the mean/median of the distributions (i.e., student's t-test, Wilcoxin rank sum test, Gehan test, and Satterthwaite's t-test), and statistical tests on the right tail of the distributions (i.e., quantile test and/or slippage test). The significance level for rejecting the null hypotheses that data sets were sampled from the same population) will be set at 0.05 for all statistical tests (NFESC, 2002, 2003, and 2004). For a given medium, the background data to be used in the statistical evaluation will be the background data set presented and discussed within the *Revised Final Summary Report for Environmental Background Concentrations of Inorganic Compounds* (Baker, 2008).

- As exposure does not necessarily equate to risk, consideration will be given to site-specific factors that can affect the bioavailability of chemicals.

- Chemicals not identified as ecological COPCs because maximum detected concentrations (or maximum reporting limits in the case of nondetected chemicals) are less than medium-specific screening values will not be evaluated in Step 3a of the BERA, since a conclusion of no unacceptable risk was made from the conservative SLERA.

7.10.1 Refined Risk Evaluation.

Chemicals identified as COPCs in Step 2 of the SLERA were evaluated further in Step 3a of the BERA. HQs were calculated using the 95% UCL for the chemicals identified in the screening-level evaluation as COPCs.

Chemicals can further be eliminated based on frequency of detection (FOD) and the background statistical analysis comparison to site concentrations. Eliminating chemicals based on FOD is an acceptable approach in ERAs (EPA, 2001) and allows for the elimination of chemicals from further consideration if the FOD is less than 5% when 20 or more samples are collected. No chemicals were eliminated based on FOD since those chemicals containing 20 or more samples had FODs greater than 5%. Further discussions regarding the background analysis is present in the sections that follow.

7.10.1.1 Step 3a Risk Evaluation for Surface Soil.

For surface soil, HQs were calculated using the 95% UCL for all chemicals identified in the screening-level evaluation as COPCs.

Refined Hazard Quotients for Terrestrial Community Receptors at SWMU 73

Terrestrial community receptors include terrestrial plants and terrestrial invertebrates which were evaluated considering the following assessment endpoint.

> Assessment Endpoint: Survival, growth, and reproduction of terrestrial community receptors.

The potential for chemicals to cause adverse health effects to terrestrial communities was estimated by using the HQ method: comparing 95% UCL COPC concentrations in soil to a COPC-specific toxicity benchmark. The 95% UCL HQs that exceeded the target level of 1 are presented in Table 34 and are discussed below. The refined HQs indicate that chlordane, dieldrin, heptachlor, heptachlor epoxide, kepone, p,p'-DDD, p,p'-DDE, p,p'-DDT, chromium, cobalt, copper, selenium, vanadium, zinc, and mercury may have the potential to cause adverse health effects to terrestrial plant and invertebrate populations and are discussed below.

Kepone (detected in 8 of 24 samples), heptachlor (detected in 4 of 12 samples), heptachlor expoxide (detected in 6 of 24 samples), and chlordane (detected in 7 of 24 samples) had maximum concentrations that were based on a nondetected value (4,000 µg/kg, 480 µg/kg, 480 µg/kg, and 9,800, µg/kg respectively) and were considerably higher than the other detected and nondetected surface soil concentrations (kepone range of 2.8-75 µg/kg, heptachlor range of 0.37-16.0 µg/kg, heptachlor epoxide range of 0.79-6.20 µg/kg, and chlordane range of 12.0- 480 µg/kg). In addition, no detected concentrations exceeded the screening-level benchmark for kepone (100 µg/kg), heptachlor (100 µg/kg), and heptachlor epoxide (100 µg/kg). Therefore, kepone (HQ=18.4), heptachlor (HQ=4.39), and heptachlor epoxide (HQ=2.21) were not retained as COPCs and further evaluation is not necessary since the high nondetected values likely over estimate potential harm to the terrestrial community receptors. Additionally, the samples were taken from a gravelly soil at a nonvegetated scrap metal yard (sampling location 73SB02) and represented an area that would likely not be suitable for plants and invertebrates.

Chlordane (HQ=45.1) was detected at concentrations that exceeded the benchmark (100 µg/kg) in two out of seven samples (73SB01; 480 µg/kg and 73SB24; 130 µg/kg). Out of the two

samples that exceeded the benchmark, one (i.e., 73SB01) was sampled from the scrap metal yard that likely contains unsuitable habitat for plants and invertebrates. The second sample (73SB24; 130 µg/kg) only slightly exceeded the benchmark. It should also be noted that chlordane had a high nondetected value (4,000 µg/kg) that was considerably higher than other surface soil concentrations. Based on the information above, further evaluation of chlordane is not recommended.

Although p,p'-DDD (HQ=7.28), p,p'-DDE (HQ=9.06), and p,p'-DDT (HQ=62.3) were retained as COPCs for further evaluation it should be noted that p,p'-DDD, p,p'-DDE, and p,p'-DDT had two considerably high detections (i.e., DDD: 5,500 µg/kg and 810 µg/kg; DDE: 9,600 µg/kg and 4,700 µg/kg; DDT: 77,000 µg/kg and 5,300 µg/kg) in close proximity to each other within the gravelly soil at the nonvegetated scrap metal yard (an area that would likely not be suitable for plants and invertebrates) at sampling locations 73SB02 and 19E-03. The range of concentrations identified in surrounding areas are considerably lower (DDD: 1.40-13.0 µg/kg, DDE: 0.64-360 µg/kg, and DDT: 0.45-160 µg/kg). The concentration ranges specified for the samples surrounding locations 73SB02 and 19E-03 for p,p'-DDD, p,p'-DDE, and p,p'-DDT in surface soil did not exceed the screening-level value of 401 µg/kg; therefore, the HQ is likely overestimated for the terrestrial community receptors. Further evaluation for p,p'-DDD, p,p'-DDE, and p,p'-DDT in surface soil is not recommended.

Cobalt and vanadium had HQs that exceeded the target level of 1. However, the descriptive and distributional statistics presented in Table 37 for SWMU 73 and background surface soil data sets indicate that cobalt and vanadium concentrations in SWMU 73 surface soil are not elevated above background levels. Therefore, further evaluation of cobalt and vanadium in surface soil is not recommended.

HQs exceeded the target level of 1 for chromium (HQ= 155), copper (HQ= 2.9), selenium (HQ= 1.31), zinc (HQ= 3.03), and mercury (HQ= 14.4). Although selenium had an HQ that exceeded the target level of 1, it should be noted that the site is fully vegetated, specifically where the highest selenium detection was recorded (73SB27; 1.80 mg/kg). In the most frequently applied and appropriate benchmark guidance (Efroymson et al., 1997), there is a disclaimer that is fully applicable to the SWMU 73, and it states that "if chemical concentrations reported in field soils that support vigorous and diverse plant communities exceed one or more of the benchmarks presented in this report or if a benchmark is exceeded by background soil concentrations, it is generally safe to assume that the benchmark is a poor measure of risk to the plant community at that site." Selenium was detected above the screening level (1.00 mg/kg) at various sampling locations. However, the HQ was only slightly above the target level (HQ=1.31), and vegetation exists even at the highest detected concentration. Therefore, further evaluation of selenium in surface soil is not recommended.

Although zinc and copper had HQs that exceeded the target level of 1, it should be noted that the site is fully vegetated, specifically where high zinc and copper detections were recorded (73SB15; 250 mg/kg and 73SB23; 220 mg/kg) and in surrounding vegetated areas. Similarly to the discussion above for selenium, it is generally safe to assume that the benchmark is a poor

measure of risk to the plant community at SWMU 73. Therefore, further evaluation of zinc and copper in surface soil is not recommended.

Chromium had MATC-based HQ>1 (HQ=155). HQs>1 do not guarantee that adverse health effects are actually occurring at SWMU 73, since HQs are not a measure of risk (i.e., they are not probabilities of toxicological effects occurring in the population). An HQ of 155 means that a receptor is consuming a chemical with toxic properties at a rate 155 times greater than what can be assumed as safe. If this was truly the case, worms and many other forms of different phyla would not be able to survive at SWMU 73. The HQ measure is highly imprecise, and SWMU 73 is likely supporting/sustaining many species. It should be noted that exceedances of soil invertebrate benchmarks do not demonstrate that soil invertebrates are impacted. The benchmarks were developed from work with species that do not occur at SWMU 73, and in the development of the benchmarks, commercially available worms that had no prior chemical exposures were used. In addition, sites are not typically remediated to protect earthworms. As such, further evaluation of chromium in the form of a CAO is not recommended.

Mercury had MATC-based HQ>1 (HQ=14.4). Mercury concentrations ranged from 0.02-4.4 mg/kg with some of the highest detections existing in vegetated areas. More than half (55%) of the samples collected were below the screening value (0.1 mg/kg) and were located in the vegetated areas with a few samples located at the scrap metal yard. The benchmark was slightly above the screening value in 32% (19 out of 60) of the samples. HQs>1 do not guarantee that adverse health effects are actually occurring at SWMU 73, since HQs are not a measure of risk (i.e., they are not probabilities of toxicological effects occurring in the population). Exceedances of soil invertebrate benchmarks do not demonstrate that soil invertebrates are impacted. The benchmarks were developed from work with species that likely do not occur at SWMU 73, and in the development of the benchmarks, commercially available worms that had no prior chemical exposures were used. In addition, sites are not typically remediated to protect earthworms. As such, further evaluation of mercury in the form of a CAO is not recommended.

Although benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, pyrene, barium, lead, and nickel were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1 based on 95% UCL soil concentrations).

In summary, no chemicals were identified as having the potential to cause adverse health effects to terrestrial community receptors exposed to surface soil at SWMU 73; therefore, additional evaluation is not recommended.

Refined Hazard Quotients for Wildlife Populations at SWMU 73

Wildlife receptors evaluated at SWMU 73 include the following feeding guilds, with their representative species shown in parentheses: terrestrial avian carnivore (i.e., red-tailed hawk), terrestrial avian omnivore (i.e., American robin), and terrestrial avian herbivore (i.e., mourning dove). These receptors were evaluated considering the following assessment endpoint.

Assessment Endpoint: Development and reproduction success of wildlife populations.

The potential for chemicals to cause adverse health effects to herbivorous, omnivorous, and carnivorous birds was estimated by using the HQ method: comparing the wildlife average daily COPC intake from oral ingestion to an oral toxicity reference value (TRV). The 95% UCL, NOAEL-based HQs that exceeded the target level of 1 are presented in Table 36.

Red-tailed hawk

The refined HQs using NOAEL-based HQs (i.e., a more conservative HQ) indicate that p,p'-DDD, p,p'-DDE, p,p'-DDT, and mercury may present unacceptable risk to wildlife populations. However, refined HQs using the MATC-based HQ (i.e., a more realistic HQ) indicates that mercury does not have the potential to cause adverse health effects to wildlife populations (i.e., HQ<1).

HQs for p,p'-DDD (HQ=3.13), p,p'-DDE (HQ=4.95), and p,p'-DDT (HQ=34.03) exceeded 1, and may have the potential to present an unacceptable risk to wildlife populations. Although p,p'-DDT was retained as a COPC due to an HQ>1 it should be noted that p,p'-DDD, p,p'-DDE, and p,p'-DDT had two considerably high detections (i.e., DDD: 5,500 µg/kg and 810 µg/kg; DDE: 9,600 µg/kg and 4,700 µg/kg; DDT: 77,000 µg/kg and 5,300 µg/kg) in close proximity to each other at the nonvegetated scrap metal yard at sampling locations 73SB02 and 19E-SS03. All other concentrations for p,p'-DDD, p,p'-DDE, and p,p'-DDT in surface soil did not exceed the screening-level value of 401 µg/kg. Due to the fact that eco receptors have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their extensive home range (272 acres), the refined risk estimate is likely overestimated for the hawk. Further evaluation of p,p'-DDD, p,p'-DDE, and p,p'-DDT with regard to the hawk is not recommended. See Table 36 for NOAEL, LOAEL, and MATC-based HQs.

Although benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, pyrene, chlordane, dieldrin, heptachlor, heptachlor epoxide, kepone, barium, chromium, cobalt, copper, lead, nickel, selenium, vanadium, and zinc were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1 based on 95% UCL soil concentrations).

In summary, no chemicals were identified as having the potential to cause adverse health effects to red-tailed hawks at SWMU 73; therefore, additional evaluation is not recommended.

American robin

The refined HQs using NOAEL-based HQs (i.e., a more conservative HQ) indicate that p,p'-DDD, p,p'-DDE, p,p'-DDT, copper, lead, zinc, vanadium, and mercury may have the potential to cause adverse health effects to wildlife populations. However, HQ estimates using the MATC-based HQ (i.e., a more realistic HQ) indicate that lead (HQ=0.80) and zinc (HQ=0.65) had HQs<1 and do not have the potential to cause adverse health effects to wildlife populations.

MATC-based HQs exceeded 1 for p,p'-DDD (HQ=1.65), p,p'-DDE (HQ=1.84), and p,p'-DDT (HQ=12.5), although HQs for p,p'-DDD, and p,p'-DDE were only slight exceedances. It should be noted that p,p'-DDD, p,p'-DDE, and p,p'-DDT had two considerably high detections (i.e., DDD: 5,500 µg/kg and 810 µg/kg; DDE: 9,600 µg/kg and 4,700 µg/kg; DDT: 77,000 µg/kg and 5,300 µg/kg) in close proximity to each other at the nonvegetated scrap metal yard at sampling locations 73SB02 and 19E-SS03. All other concentrations for p,p'-DDD, p,p'-DDE, and p,p'-DDT in surface soil did not exceed the screening-level value of 401 µg/kg. Due to the fact that eco receptors have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their home range (i.e., .67 acres), the refined risk estimate is likely overestimated for the robin. Further evaluation of p,p'-DDD, p,p'-DDE, and p,p'-DDT with regard to the robin is not recommended. See Table 36 for NOAEL, LOAEL, and MATC-based HQs.

An MATC-based HQ slightly exceeded 1 for copper (HQ=1.23). Since copper was identified with an HQ only minimally above 1, further evaluation of this chemical in surface soil is not recommended.

An MATC-based HQ slightly exceeded 1 for mercury (HQ=3.05). Mercury concentrations ranged from 0.02-4.4 mg/kg with with some of the highest detections existing in vegetated areas. More than half (55%) of the samples collected were below the screening value (0.1 mg/kg) and were located in the vegetated areas with a few samples located at the scrap metal yard. The benchmark was slightly above the screening value in 32% (19 out of 60) of the samples. Exceedances of soil invertebrate benchmarks do not demonstrate that soil invertebrates are impacted. The benchmarks were developed from work with species that likely do not occur at SWMU 73, and in the development of the benchmarks, commercially available worms that had no prior chemical exposures were used. As such, further evaluation of mercury is not recommended.

Vanadium had an HQ that exceeded the target level of 1. However, the descriptive and distributional statistics presented in Table 35 for SWMU 73 and background surface soil data sets indicate that vanadium concentrations in SWMU 73 surface soil are not elevated above background levels. Therefore, further evaluation of vanadium in surface soil is not recommended.

Although benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, pyrene, chlordane, dieldrin, heptachlor, heptachlor epoxide, kepone, barium, chromium, cobalt, nickel, and selenium were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1 based on 95% UCL soil concentrations).

In summary, no chemicals were identified as having the potential to cause adverse health effects to robins at SWMU 73; therefore, additional evaluation is not recommended.

Mourning Dove

The refined HQs using NOAEL-based HQs (i.e., a more conservative HQ) indicate that p,p'-DDD, p,p'-DDE, p,p'-DDT, copper, vanadium, and mercury may have the potential to cause adverse health effects to wildlife populations. However, HQ estimates using the MATC-based HQ (i.e., a more realistic HQ) indicate that p,p'-DDE and copper had HQs<1 and further evaluation of those chemicals in surface soil is not recommended.

MATC-based HQs exceeded the target level of one for p,p'-DDD (HQ=3.14) and p,p'-DDT (HQ=2.29). It should be noted that p,p'-DDD and p,p'-DDT had two considerably high detections (i.e., DDD: 5,500 µg/kg and 810 µg/kg; DDT: 77,000 µg/kg and 5,300 µg/kg) in close proximity to each other at the nonvegetated scrap metal yard at sampling locations 73SB02 and 19E-SS03. All other concentrations for p,p'-DDD and p,p'-DDT in surface soil did not exceed the screening-level value of 401 µg/kg. Due to the fact that eco receptors have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their home range (i.e., 637 acres), the refined HQ is likely overestimated for the mourning dove. Further evaluation of p,p'-DDD and p,p'-DDT with regard to the mourning dove is not recommended. See Table 36 for NOAEL, LOAEL, and MATC-based HQs.

Mercury had an MATC-based HQ that slightly exceeded the target level of 1 (HQ=2.05). Mercury concentrations ranged from 0.02-4.4 mg/kg with some of the highest detections existing in vegetated areas. More than half (55%) of the samples collected were below the screening value (0.1 mg/kg) and were located in the vegetated areas with a few samples located at the scrap metal yard. The benchmark was slightly above the screening value in 32% (19 out of 60) of the samples. Although various concentrations from the scrap metal yard and areas outside of the scrap metal yard exceeded the screening value (0.1 mg/kg), the mourning dove has a large home range (i.e., 637 acres), and the HQ that slightly exceeded the target level is likely overestimated for this ecological receptor. Therefore, further evaluation of mercury in surface soil is not recommended.

Vanadium had an MATC-based HQ that exceeded the target level of 1 (HQ=3.5). However, the descriptive and distributional statistics presented in Table 35 for SWMU 73 and background surface soil data sets indicate that vanadium concentrations in SWMU 73 surface soil are not elevated above background levels. Therefore, further evaluation of vanadium in surface soil is not recommended.

Although benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, fluoranthene, indeno[1,2,3-cd]pyrene, pyrene, chlordane, dieldrin, heptachlor, heptachlor epoxide, kepone, barium, chromium, cobalt, lead, nickel, selenium, and zinc were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1 based on 95% UCL soil concentrations).

In summary, no chemicals were identified as having the potential to cause adverse health effects to mourning doves at SWMU 73; therefore, additional evaluation is not recommended.

7.10.1.2 Step 3a Risk Evaluation for SubSurface Soil.

For subsurface soil, HQs were recalculated using the 95% UCL for the following chemicals identified in the screening-level evaluation as COPCs: cobalt, copper, vanadium, and zinc. Since 95% UCLs could not be calculated for endrin, chlordane, kepone, p,p'-DDD, p,p'-DDE, p,p'-DDT, chromium, and selenium HQs were based on maximum concentrations.

Refined Hazard Quotients for Terrestrial Community Receptors at SWMU 73

Terrestrial community receptors include terrestrial plants and terrestrial invertebrates which were evaluated considering the following assessment endpoint.

> Assessment Endpoint: Survival, growth, and reproduction of terrestrial community receptors.

The potential for chemicals to cause adverse health effects to terrestrial communities was estimated by using the HQ method: comparing 95% UCL COPC concentrations (when available) in soil to a COPC-specific toxicity benchmark. The HQs that exceeded the target level of 1 are presented in Table 34. HQs based on the 95% UCL indicate that the following chemicals had HQs that exceeded the target level of 1: cobalt (HQ=3.03), copper (HQ=4.20), vanadium (HQ=120), and zinc (HQ=7.46).

Cobalt and vanadium had HQs that exceeded the target level of 1. However, the descriptive and distributional statistics presented in Table 35 for SWMU 73 and background subsurface soil data sets indicate that cobalt and vanadium concentrations in SWMU 73 subsurface soil are not elevated above background levels. Therefore, further evaluation of cobalt and vanadium in surface soil is not recommended.

Although copper had an HQ that exceeded the target level of 1 (HQ=4.2), it should be noted that the site is fully vegetated, specifically where the highest detection was recorded (73SB27: 460 mg/kg). In the most frequently applied and appropriate benchmark guidance (Efroymson et al., 1997), there is a disclaimer that is fully applicable to the SWMU 73, and it states that "if chemical concentrations reported in field soils that support vigorous and diverse plant communities exceed one or more of the benchmarks presented in this report or if a benchmark is exceeded by background soil concentrations, it is generally safe to assume that the benchmark is a poor measure of risk to the plant community at that site." Copper was detected above the screening level (70 mg/kg) at various sampling locations; however, vegetation exists even at the highest detected concentration location (73SB27). Therefore, further evaluation of copper in subsurface soil is not recommended.

HQs based on the maximum concentration (since a 95% UCL was unavailable) indicate that the following chemicals had HQs that exceeded the target level of one: endrin (HQ=2.74), chlordane (HQ=9.0), kepone (HQ=7.7), p,p'-DDD (HQ=2.74), p,p'-DDE (HQ=7.73), p,p'-DDT (HQ= 34.9), chromium (HQ=325), selenium (HQ= 1.10), and mercury (HQ=1.02).

The HQ for kepone was based on nondetected values sampled from the gravelly soil at the scrap metal yard, so this chemical was not retained for further evaluation. In addition, since endrin was not detected in surface soil, had a considerably high detected concentration (1,100 µg/kg) collected from the scrap metal yard, and only slightly exceeded the HQ in subsurface soil (HQ=2.74), it was not recommended for further evaluation.

The following chemicals, p,p'-DDD, p,p'-DDE, and p,p'-DDT had considerably high detected concentrations (1,100 µg/kg, 3,100 µg/kg, and 14,000 µg/kg respectively) collected from the scrap metal yard (73SB02), an area that would likely not be suitable for plants and invertebrates. Other concentrations for p,p'-DDD, p,p'-DDE, and p,p'-DDT in subsurface soil did not exceed the screening-level value of 401 µg/kg; therefore, the refined HQ is likely overestimated for the terrestrial community receptors. Further evaluation of p,p'-DDD, p,p'-DDE, and p,p'-DDT in subsurface soil is not recommended.

The HQ for chlordane was based on the maximum (conservative) concentration since a 95% UCL could not be calculated, and had a considerably high detected concentration (900 µg/kg) collected from the scrap metal yard (73SB02), an area that would likely not be suitable for plants and invertebrates. Based on the above information, further evaluation of chlordane in subsurface soil is not recommended.

Selenium had a single detected concentration (1.1 mg/kg) that slightly exceeded the benchmark of 1.0 mg/kg. Since the HQ for selenium was based on the maximum (conservative) concentration in subsurface soil with an HQ >1 but only minimally above 1 (HQ=1.10), further evaluation of this chemical in subsurface soil is not recommended.

The HQ for mercury (HQ=1.02) was based on a single nondetected (maximum) concentration (0.10 mg/kg) from the sample location (73SB02) at the scrap metal yard. All other concentrations did not exceed the screening value; therefore, the refined HQ is likely overestimated for the terrestrial community receptors. Further evaluation of this chemical in subsurface soil is not recommended.

The HQ for chromium (HQ=325) was based on the maximum (conservative) concentration (130 mg/kg) since a 95% UCL could not be calculated. All other concentrations (31.0 mg/kg-130 mg/kg) from the scrap metal yard and areas outside of the scrap metal yard exceeded the screening value (0.4 mg/kg). However, HQs>1 do not guarantee that adverse health effects are actually occurring at SWMU 73 since HQs are not a measure of risk (i.e., they are not probabilities of toxicological effects occurring in the population). An HQ of 325 means that a receptor is consuming a chemical with toxic properties at a rate 325 times greater than what can be assumed as safe. If this was truly the case, worms and many other forms of different phyla would not be able to survive at SWMU 73. The HQ measure is highly imprecise, and SWMU 73 is likely supporting/sustaining many species. Additionally, exceedances of soil invertebrate benchmarks do not demonstrate that soil invertebrates are impacted. The benchmarks were developed from work with species that do not occur at SWMU 73, and in the development of the benchmarks, commercially available worms that had no prior chemical exposures were used. In

addition, sites are not typically remediated to protect earthworms. As such, further evaluation of chromium in the form of a CAO is not recommended.

In summary, no chemicals were identified as having the potential to cause adverse health effects to terrestrial community receptors exposed to subsurface soil at SWMU 73; therefore, additional evaluation is not recommended.

Refined Hazard Quotients for Wildlife Populations at SWMU 73

Wildlife receptors evaluated at SWMU 73 include the following feeding guilds, with their representative species shown in parentheses: terrestrial avian carnivore (i.e., red-tailed hawk), terrestrial avian omnivore (i.e., American robin), and terrestrial avian herbivore (i.e., mourning dove). These receptors were evaluated considering the following assessment endpoint.

Assessment Endpoint: Development and reproduction success of wildlife populations.

The potential for chemicals to cause adverse health effects to herbivorous, omnivorous, and carnivorous birds was estimated by using the HQ method: comparing the wildlife average daily COPC intake from oral ingestion to an oral TRV. The 95% UCL (or maximum when the 95% UCL was not available), NOAEL-based HQs that exceeded the target level of 1 are presented in Table 34.

Red-tailed hawk

The refined HQs using NOAEL-based HQs (i.e., a more conservative HQ) indicate that endrin, p,p'-DDD, p,p'-DDE, p,p'-DDT, and zinc may have the potential to cause adverse health effects to wildlife populations. However, refined HQs using the MATC-based HQ (i.e., a more realistic HQ) indicate that zinc (HQ=0.33) does not have the potential to cause adverse health effects to wildlife populations since the HQ<1.

The following chemicals, p,p'-DDD, p,p'-DDE, and p,p'-DDT had considerably high detected concentrations (1,100 µg/kg, 3,100 µg/kg, and 14,000 µg/kg respectively) collected from the gravelly soil at the nonvegetated scrap metal yard (73SB02). Other concentrations for p,p'-DDD, p,p'-DDE, and p,p'-DDT in subsurface soil did not exceed the screening-level value of 401 µg/kg. In addition, the risk estimate (HQ=is 1.18, HQ=4.22, and HQ-19.0, respectively) is based on maximum subsurface soil concentrations. Due to the fact that hawks have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their extensive home range (i.e., 272 acres), and that the HQs are based on maximum concentrations, the refined HQ is likely overestimated for the hawk for these chemicals. Further evaluation of p,p'-DDD, p,p'-DDE, and p,p'-DDT in subsurface soil is not recommended.

The HQ for endrin (HQ=3.8) was based on the maximum concentration since a 95% UCL could not be calculated. Endrin was not detected in surface soil, had a considerably high detected concentration (1,100 µg/kg) collected from the scrap metal yard (an area likely unsuitable for plants and earthworms), and only slightly exceeded the HQ in subsurface soil (HQ=3.8); therefore, further evaluation is not recommended.

Although chlordane, kepone, chromium, cobalt, copper, selenium, vanadium, and mercury were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1).

In summary, no chemicals were identified as having the potential to cause adverse health effects to hawks at SWMU 73; therefore, additional evaluation is not recommended.

American robin

The refined HQs using NOAEL-based HQs (i.e., a more conservative HQ) indicate that endrin, p,p'-DDD, p,p'-DDE, p,p'-DDT, copper, vanadium, and zinc may have the potential to cause adverse health effects to wildlife populations. However, refined HQs using the MATC-based HQ (i.e., a more realistic HQ) indicate that endrin (HQ=1.9), p,p'-DDT (HQ=4.3), copper (HQ=1.1), and vanadium (HQ=3.36) may have the potential to cause adverse health effects to wildlife populations. However, it should be noted that p,p'-DDT had a single high detection (14,000 µg/kg) at the nonvegetated scrap metal yard (sampling location 73SB02) which was consistent with the high detections found in surface soil. This chemical was not detected at the second sampling location (i.e., 73SB14) located in the wooded area of the site. Due to the fact that eco receptors have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their home range (i.e., .67 acres) the refined HQ is likely overestimated for the robin for this chemical. Further evaluation of p,p'-DDT in subsurface soil is not recommended. See Table 37 for NOAEL, LOAEL, and MATC-based HQs.

The HQ for endrin (HQ=1.9) was based on the maximum concentration since a 95% UCL could not be calculated. Endrin was not detected in surface soil, had a considerably high detected concentration (1,100 µg/kg) collected from the scrap metal yard (an area likely unsuitable for plants and earthworms), and only slightly exceeded the HQ in subsurface soil; therefore, further evaluation is not recommended.

Vanadium had an MATC-based HQ that exceeded the target level of 1 (HQ=3.4). However, the descriptive and distributional statistics presented in Table 35 for SWMU 73 and background surface soil data sets indicate that vanadium concentrations in SWMU 73 subsurface soil are not elevated above background levels. Therefore, further evaluation of vanadium in subsurface soil is not recommended.

Since copper had an MATC-based HQ>1 (HQ=1.1) but only minimally above 1, further evaluation of this chemical in subsurface soil is not recommended.

Although chlordane, kepone, chromium, cobalt, selenium, and mercury were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1). Additionally, chemicals identified as COPCs in the SLERA that lacked soil screening values were not further evaluated.

In summary, no chemicals were identified as having the potential to cause adverse health effects to robins at SWMU 73; therefore additional evaluation is not recommended.

Mourning Dove

The refined HQs using NOAEL-based HQs (i.e., a more HQ) indicate that endrin and vanadium may have the potential to cause adverse health effects to wildlife populations. Refined HQs using the MATC-based HQ (i.e., a more realistic HQ) also indicate that endrin (HQ=4.2) and vanadium (HQ=3.2) may have the potential to cause adverse health effects to wildlife populations. However, the HQ for endrin was based on the maximum concentration since a 95% UCL could not be calculated. Endrin was not detected in surface soil and had a considerably high detected concentration (1,100 µg/kg) collected from the scrap metal yard. Due to the fact that eco receptors have a tendency to inhabit areas with preferable habitat and to feed in preferable areas throughout their home range (i.e., 637 acres), the refined HQ is likely overestimated for the mourning dove. See Table 37 for NOAEL, LOAEL, and MATC-based HQs.

Vanadium had an MATC-based HQ that exceeded the target level of 1 (HQ=3.2). However, the descriptive and distributional statistics presented in Table 35 for SWMU 73 and background surface soil data sets indicate that vanadium concentrations in SWMU 73 surface soil are not elevated above background levels. Therefore, further evaluation of vanadium in subsurface soil is not recommended.

Although p,p'-DDD, p,p'-DDE, p,p'-DDT, copper, and zinc were identified as ecological COPCs in Step 2 of the SLERA, no additional evaluation is recommended (i.e., HQs<1). Additionally, chemicals identified as COPCs in the SLERA that lacked soil screening values were not further evaluated.

In summary, no chemicals were identified as having the potential to cause adverse health effects to mourning doves at SWMU 73; therefore, additional evaluation is not recommended.

7.10.1.3 Step 3a Risk Evaluation for Groundwater.

Since 95% UCLs could not be calculated for p,p'-DDD, p,p'-DDT, cadmium, cobalt, copper, nickel, silver, and zinc HQs were based on maximum concentrations. These chemicals were further evaluated in the BERA by comparing maximum chemical concentrations to chronic saltwater screening values since SWMU 73 is located upgradient of open marine habitat and represents a possible discharge point for groundwater to Puerca Bay.

The maximum HQs that exceeded the target level of 1 are as follows: p,p'-DDD (HQ=4.0), p,p'-DDT (HQ=100), cadmium (HQ=1.45), cobalt (HQ=6.2), copper (HQ=34.9), nickel (HQ=16.9), silver (HQ=26.0), and zinc (HQ=1.8). Although the HQs exceeded 1 for the chemicals indicated above using maximum groundwater concentrations, the chemical concentrations entering Puerca Bay are unknown. Many factors may affect the fate and transport of contaminated groundwater as it travels through the subsurface prior to discharging to a surface water body (EPA, 2008) and chemical concentrations would be further diluted once entering the surface water. Additionally, descriptive and distributional statistics presented in Table 35 for SWMU 73 and background groundwater data sets indicate that cadmium, cobalt, copper, nickel,

silver, and zinc concentrations in SWMU 73 groundwater are not elevated above background levels. Therefore, further evaluation of these chemicals in groundwater is not recommended. Due to the above information, no chemicals were retained for further evaluation.

7.10.2 Uncertainties Associated with Step 3a of the Baseline Ecological Risk Assessment.

Uncertainties associated with Step 3a of the BERA are presented below and many of the uncertainties summarized in the SLERA (Table 31) are also applicable.

Identification of Ecological COPCs

Nondetected chemicals lacking screening values were not retained for further evaluation.

Exposure Parameters

An AUF of 1 was still assumed for the ecological receptors.

7.10.3 Step 3a Decision Points.

Possible decision points based on the results of Step 3a include:

- **No further action is warranted.** This decision is appropriate if Step 3a of the BERA indicates that there is no reasonable potential for unacceptable ecological risk within acceptable uncertainty.

- **Evaluate the need for corrective measures.** According to the Final CMS Work Plan (Baker, 2008) this decision is appropriate if Step 3a of the BERA indicates that there is a reasonable likelihood for unacceptable ecological risks within acceptable uncertainty. Whether or not corrective measures are taken will depend upon a number of risk management factors such as the results of any human health risk assessments and the potential impact of the remedial action itself on the habitats and biota present on the site.

Recommendations for each media and food web exposure pathway are presented in the following sections.

7.10.3.1 Surface Soil.

Based on the refined media-specific risk evaluation presented in Section 7.10.1.1, no chemicals were recommended for further evaluation.

7.10.3.2 Subsurface Soil.

Based on the refined media-specific risk evaluation presented in Section 7.10.1.2, no chemicals were recommended for further evaluation.

7.10.3.3 Groundwater.

Based on the refined media-specific risk evaluation and discussion presented in Section 7.10.1.3, no chemicals were recommended for further evaluation.

7.10.3.4 Terrestrial Food Web Exposures: Surface Soil.

Based on the refined media-specific risk evaluation presented in Section 7.10.1.1, no chemicals were recommended for further evaluation.

7.10.3.5 Terrestrial Food Web Exposures: Subsurface Soil.

Based on the refined media-specific risk evaluation presented in Section 7.10.1.2, no chemicals were recommended for further evaluation.

7.11 References.

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8.0 HUMAN HEALTH RISK ASSESSMENT AND DEVELOPMENT OF CAOS.

8.1 Background.

This section details the human health risk assessment (HHRA) conducted for SWMU 73. This baseline HHRA was conducted in accordance with the Risk Assessment Guidance for Superfund (RAGS), Part A, Human Health Evaluation Manual (EPA, 1989), and the available updates including RAGS Part E (EPA, 2004). In accordance with this guidance and general EPA policy, the HHRA evaluates the most likely routes of exposure for current and future site receptors. It should be noted that the future residential receptors were included as a baseline only as the future use of the site is known to be industrial. It should also be pointed out that this approach represents a significant deviation from the previously approved work plan for this site.

8.2 Exposure Setting.

A complete description of the site is provided in Section 2.2. Chapter 3 details the physical characteristics of the study area. SWMU 73 is currently an industrial area and has been used as a scrap metal storage yard in the past. Future use is not expected to change given the history and current use of the site. In addition, a detailed development plan exists that will be initiated at the completion of this study. Therefore, the human receptors that could potentially come into contact with any substances on the site are industrial workers, construction workers, and possibly trespassers. As previously mentioned, future residential receptors were included in this evaluation as well, but only for informational purposes.

8.3 Selection of Chemicals of Potential Concern.

The consolidated dataset used in this HHRA is presented in Tables 1 through 13. COPCs selected from this dataset were identified in accordance with EPA guidance (EPA, 1989 and 2002). The specific steps in this process are described in the following sections.

8.3.1 Data Reduction.

The raw data were first reduced by removing all substances that did not have any positive detection in a given medium. For the inorganics data, a statistical background analysis was then conducted in accordance with the Navy Guidance for Environmental Background Analysis. ProUCL version 4.00.04 (EPA, 2009a) was used for all distribution tests, outlier tests, and comparison of background to site data except for tests of proportions. For this, StatXact® version 4.0.1 was used. Statistical significance was defined as $p<.05$ for all tests. Outliers, while tested for in the background data and possibly excluded, were looked for in the site data but not excluded due to the necessity of including all values. Usually, a metal with an outlier had a lognormal distribution and could be retained regardless. Nondetects were included at one-half the value of the detection limit. If less than 50% of the samples were detected in either or both the background and site data, then a test of proportions was used to compare the percent of detected values between locations. Determination of the data distribution for both normality and log-normality was made using a Shapiro-Wilk test. Some data could have both a normal and lognormal distribution and this was matched to the background data distribution to determine which comparison test to use. The number of samples for some of the site data was very small, and this lead to an inability to determine the distribution. In these cases, the distribution for the background data was assumed and used to determine the comparison test. If both locations had normal distributions, then a t-test was used for comparison. If both had a lognormal distribution, then a t-test on the log transformed data was used. If one location had a normal and the other a lognormal, then the lognormal distribution was used. For the lognormal distributed data, the geometric mean and standard deviation were reported as the values representing the data. (StatXact® is a registered trademark of Cytel, Inc., Cambridge, Massachusetts.)

Inorganics that were found to be statistically within background levels were excluded from the analysis. The inorganic substances screened out in this step include barium, cobalt, and vanadium in surface soil.

8.3.2 Screening of Sampling Data.

The next step in the data evaluation process was to compare the maximum detections of each substance to the Residential EPA Regional Screening Levels (RSLs) (EPA, 2009b). Groundwater was also compared to MCLs where available. Any substance whose maximum detection was equal to or less than the RSL or MCL was eliminated from further consideration in the risk evaluation. The remaining substances were retained for evaluation in the risk assessment and included the following:

- Surface Soil: acenaphthylene, Aroclor 1248, Aroclor 1254, Aroclor 1260, arsenic, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, bis(2-ethylhexyl)phthalate, chlordane, dibenz[a,h]anthracene, dieldrin, heptachlor, heptachlor epoxide, indeno[1,2,3-cd]pyrene, kepone, methyl iodide, p,p'-DDD, p,p'-DDE, p,p'-DDT, and phenanthrene.

- Subsurface Soil: acenaphthylene, benzo[a]pyrene, benzo[g,h,i]perylene, phenanthrene, bis(2-ethylhexyl)phthalate, endrin, heptachlor epoxide, kepone, p,p'-DDE, and p,p'-DDT.

- Groundwater: bis(2-ethylhexyl)phthalate, arsenic, selenium, and thallium.

8.4 Derivation of Exposure Point Concentrations.

For the substances that remained after the screening level comparison, exposure point concentrations (EPCs) were developed in accordance with EPA guidance (EPA, 2002a). This guidance recommends using the ProUCL software (EPA, 2009a). ProUCL has been developed specifically to calculate statistically defensible estimates of the 95% UCL of the mean concentration of a given population. The EPCs recommended by the software were used in each case unless there were insufficient data to perform a statistical analysis. In this case, the maximum detection was used as the EPC. If two values were suggested by the software, the higher was chosen for conservatism. This approach is not suitable for groundwater, so the maximum detection of each chemical was used as the EPC for conservatism. It should be noted that non-detect results were included in the data set at the detection limit in accordance with the original approved workplan for this site. This assumption adds a degree of conservatism to the evaluation. This statistical approach is not suitable for evaluating groundwater, so the maximum detection of each chemical was used as the EPC. The list of EPCs as well as the statistical test used to derive each is detailed in Tables 38 and 39. The full ProUCL output sheets are located in Appendix G.

8.5 Exposure Assessment.

An exposure pathway describes the theoretical process by which a chemical is transmitted from a source, through an environmental medium, and ultimately comes into contact with an exposed receptor. In general, an exposure pathway must have four elements to be considered complete: a source and mechanism for release, a transport medium, a point for receptors to potentially come in contact with the contaminated medium (exposure point), and an exposure route (e.g., inhalation, ingestion, and dermal absorption) at the point of contact. An exposure pathway must be potentially complete to warrant evaluation in the risk evaluation. For evaluating SWMU 73, the exposure pathways that are potentially complete are shown in Table 40.

Groundwater was only evaluated for dermal contact by construction workers as there is no current potable use of groundwater and none planned in the future. In addition, the shallow groundwater that was sampled would not be suitable for supplying a potable source. The dust

2241 inhalation pathway was also not included in this evaluation. As discussed in the EPA Soil
2242 Screening Guidance (EPA, 2001), this pathway does not need to be routinely considered as the
2243 resulting risk levels are often several orders of magnitude lower than those produced by the
2244 ingestion and dermal pathways.

2245 **8.6 Quantification of Exposure.**

2246 To quantitatively assess the potential exposures associated with the evaluated pathway, estimates
2247 of chemical concentrations at the exposure point are combined with values describing the extent,
2248 frequency, and duration of the exposure to provide an estimate of the daily intake of chemicals.
2249 Table 41 presents the values used for the various intake parameters. These values are based on
2250 EPA recommended values, and the general factors are discussed below. Other chemical-specific
2251 parameters are used as well but will not be discussed here.

2252 **8.6.1 Body Weight.**

2253 The EPA recommends a conservative body weight of 70 kilograms (kg) for adult receptors
2254 (EPA, 1989). This represents the mean value for men and women between 19 and 65 years old.
2255 For children, a body weight of 15 kg was used for the future resident and 45 kg was used to
2256 represent the youth trespasser (EPA, 1997).

2257 **8.6.2 Event Frequency.**

2258 Event frequency is a measure of the number of exposure events in a given day. For this
2259 assessment, the event frequency was set at 1 for all receptors.

2260 **8.6.3 Exposure Frequency.**

2261 Exposure frequency is a measure of the number of days in a year a receptor will be potentially
2262 exposed to the study site. Different values are appropriate for each receptor group. EPA
2263 recommends an exposure frequency of 350 days per year for residents and 250 days per year for
2264 industrial and construction workers (EPA, 1989). For trespassers, 52 days per year (once per
2265 week) was assumed.

2266 **8.6.4 Exposure Duration.**

2267 Exposure duration refers to the number of years a given receptor will likely be exposed to the
2268 study site. Again, different values are appropriate for each receptor. For the future residents, a
2269 value of 30 years was used for adults and 6 years for children. For the trespassers, 24 and 11
2270 years were used for adults and youths, respectively. A value of 1 year was used for construction
2271 workers, and 25 years was selected for industrial workers. These values all represent
2272 conservative upper bound estimates of the time each group would potentially be exposed (EPA,
2273 1989 and 1997).

2274

8.6.5 Averaging Time.

The averaging time for noncarcinogenic effects is the exposure duration expressed in days. For carcinogenic effects, an average lifetime of 70 years is used (25550 days) (EPA, 1989).

8.6.6 Soil Ingestion Rate.

This value represents the amount of soil a given receptor is likely to incidentally ingest each day. It is receptor specific with 100 mg/day and 200 mg/day being the recommended values for adult and child residents, respectively. For construction workers, a value of 330 mg/day is recommended and 100 mg/day was used for industrial workers and trespassers (EPA, 2001).

8.6.7 Skin Surface Area.

The skin surface area refers to the typical amount of skin that will be exposed and available for direct soil contact and subsequent dermal absorption. The values used for residents and trespassers are the same at 5700 cm^2 for adults and 2800 cm^2 for children (EPA, 2001). For construction workers and industrial workers, 3300 cm^2 is the recommended value (EPA, 2001).

8.7 <u>Intake Equations.</u>

These exposure parameters are then used in the following equations to develop estimates of average daily intake for each receptor through the various exposure pathways. Equations (1) and (2) calculate ingestion of chemicals in soil and dermal absorption of chemicals in soil, respectively.

$$Intake\ (mg/kg-day) = \frac{CS * IR * \ CF * FI \ * \ EF * ED}{BW * \ AT} \quad \textbf{(1)}$$

Where:

CS = Contaminant concentration in soil (mg/kg)
IR = Ingestion rate (mg/day)
CF = Conversion factor (10^{-6} kg/mg)
FI = Fraction ingested from contaminated source (unitless)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

(2)

$$DAD = (DA_{event} * EF * ED * EV * SA)/(BW * AT)$$

Where:

DAD = Dermal absorbed dose (mg/kg-day)
DA_{event} = Absorbed dose per event (mg/cm^2-event)
SA = Skin surface area available for contact (cm^2)
EV = Event frequency (events/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

Equation (3) is used to calculate the DA_{event} term for soil contact:

(3)

$$DA_{event} = C_{soil} * CF * AF * ABS_d$$

Where:

DA_{event} = Absorbed dose per event (mg/cm^2-event)
C_{soil} = Chemical concentration in soil (mg/kg)
CF = Conversion factor (10^{-6} kg/mg)
AF = Adherence factor of soil to skin (mg/cm^2-event)
ABS_d = Dermal absorption fraction – chemical specific (unitless)

Finally, the following series of equations (i.e., Equation (4), (5), and (6)) is used to estimate the dermal absorbed dose from direct contact with groundwater:

(4)

$$DAD = (DA_{event} * EV * ED * EF * SA)/(BW * AT)$$

Where:

DAD = Dermally absorbed dose (mg/kg-day)
DA_{event} = Absorbed dose per event (mg/cm^2-event)
SA = Skin surface area available for contact (cm^2)
EV = Event frequency (events/day)
ED = Exposure duration (years)
EF = Exposure frequency (days/year)
BW = Body weight (kg)
AT = Averaging time (days)

In this case, Equations (5) and (6) are used to calculate the DA_{event} term for organic compounds in water:

(5)

$$\text{If } t_{event} \leq t^*, \text{ then } DA_{event} = 2FA * K_p * C_w \sqrt{\frac{6\tau_{event} * t_{event}}{\pi}}$$

(6)

$$\text{If } t_{event} > t^*, \text{ then } DA_{event} = FA * K_p * C_w \left[\frac{t_{event}}{1+B} + 2\tau_{event}\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Where:

- C_w = Concentration in water (mg/cm^3)
- DA_{event} = Absorbed dose per event (mg/cm^2-event)
- FA = Fraction absorbed (dimensionless)
- K_p = Dermal permeability coefficient (cm/hr)
- t_{event} = Event duration (hr/event)
- τ_{event} = Lag time per event (hr/event)
- t* = Time to reach steady state (hr)
- B = Ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)

The following equations provide the derivations of the variables listed above that have not yet been defined, beginning with the K_p value. For many compounds, K_p values are provided in the dermal risk assessment guidance (EPA, 2004). For those that are not listed, the value can be approximated using Equation (7).

(7)

$$\log K_p = -2.80 + 0.66\, logK_{ow} - 0.0056\, MW$$

Where:

- K_p = Dermal permeability coefficient of compound in water (cm/hr)
- K_{ow} = Octanol/water partition coefficient (dimensionless)
- MW = Molecular weight (g/mole)

The B parameter can then be derived using these parameters as shown in Equation (8).

(8)

$$B \cong K_p \frac{\sqrt{MW}}{2.6}$$

Where:

B = Ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)

K_p = Dermal permeability coefficient of compound in water (cm/hr)

MW = Molecular weight (g/mole)

Next the D_{sc} parameter can be derived as shown in Equation (9).

(9)

$$\frac{D_{sc}}{l_{sc}} = 10^{(-2.80-0.0056\,MW)}$$

Where:

D_{sc} = Effective diffusion coefficient for chemical transfer through the stratum corneum (cm^2/hr)

l_{sc} = Apparent thickness of stratum corneum (cm) = 10^{-3} cm

MW = Molecular weight (g/mole)

The l_{sc} and D_{sc} terms are then used in deriving the τ_{event} parameter using equation (10).

(10)

$$\tau_{event} = \frac{l_{sc}^2}{6\,D_{sc}} = 0.105\ x\ 10^{(0.0056\,MW)}$$

Where:

τ_{event} = Lag time per event (hr/event)

D_{sc} = Effective diffusion coefficient for chemical transfer through the stratum corneum (cm^2/hr)

l_{sc} = Apparent thickness of stratum corneum (cm) = 10^{-3} cm

MW = Molecular weight (g/mole)

Finally, the t* parameter is calculated using the B value derived in equation (8) above. Two different equations are provided dependent upon the value of B (11) and (12).

(11)

$$\text{If } B \leq 0.6, \text{ then } t^* = 2.4\ \tau_{event}$$

(12)

$$\text{If } B > 0.6, \text{ then } t^* = 6\tau_{event}(b - \sqrt{b^2 - c^2})$$

(13)

$$\text{For, } \quad b = \frac{2(1+B)^2}{\pi} - c$$

(14)

$$\text{and, } c = \frac{1+3B+3B^2}{3(1+B)}$$

Where:

B = Ratio of the permeability coefficient of a compound through the stratum corneum relative to its permeability coefficient across the viable epidermis (ve) (dimensionless)

τ_{event} = Lag time per event (hr/event)

b,c = correlation coefficients

t* = Time to reach steady-state (hr)

8.8 Toxicity Assessment.

The foundation of the HHRA process is the relationship between the amount of a substance a receptor is exposed to (the dose) and the potential for adverse health effects resulting from this exposure. This established dose-response relationship provides the ability to quantitatively evaluate the potential health impacts that may result from a given exposure scenario. The evaluation is based on toxicity data published primarily by the EPA for use in risk assessment. For the assessment of human health risks from exposure to chemicals, there are two basic toxicity values that are of principal importance. They are:

Reference doses (RfDs) for oral exposure – These represent the acceptable chronic daily intake for exposure to a specific chemical. RfDs are intended to be protective of sensitive subpopulations. Reference doses are expressed in terms of mg/kg-day.

Cancer Slope Factors (CSFs) for oral exposure – The slope factor is the cancer risk (proportion affected) per unit of dose. The slope factor is expressed on the basis of chemical weight [$(mg/kg\text{-}day)^{-1}$].

The EPA has developed the following hierarchy of sources for toxicity values:

- Tier 1 – Integrated Risk Information System (IRIS) (EPA, 2009c)
- Tier 2 – EPA Provisional Peer Reviewed Toxicity Values (PPRTVs) (EPA, 2009d)
- Tier 3 – Other toxicity values (including non-EPA sources)

EPA recommends two different approaches for evaluating noncarcinogenic and carcinogenic health effects. The two approaches reflect the fundamental difference in the proposed mechanism of toxic action. In assessing the potential for noncarcinogenic health effects, EPA assumes that there is a toxicologic threshold below which no adverse health effects occur. These toxicological thresholds are represented by RfDs for oral exposures and reference concentrations (RfCs) for inhalation exposures. No values have been developed for dermal exposures so the oral RfD is used to evaluate this route of exposure. The RfD represents an average daily intake expressed in units of milligrams per kilogram-day (mg/kg-day).

For carcinogens, the threshold response level is believed to be inappropriate. CSFs are developed with the idea that cancer risk is linearly related to dose. Therefore, even though most of the cancer data obtained from laboratory animal studies are for relatively high doses, it is assumed that these doses can be extrapolated down to the extremely small doses that would be expected from environmental exposures. This nonthreshold theory assumes that even a single molecule of a carcinogen may cause changes in a single cell that could result in the cell dividing in an uncontrolled manner and eventually lead to cancer. It should be pointed out that this method leads to a plausible upper limit of cancer risk but does not necessarily give a realistic prediction of the true risk.

The carcinogenic potency of a substance depends, in part, on its route of entry into the body. Therefore CSFs are classified, like RfDs, according to the route of administration (i.e., inhalation, ingestion). Ideally, route-specific CSFs should be used to evaluate the carcinogenic risk posed by each carcinogen through each exposure route of concern. However, only a limited number of CSFs have been developed and may exist for only one route of exposure. The oral slope factor is presented as the risk per mg/kg-day. For inhalation, a unit risk factor is provided that is a quantitative estimate in terms of risk per micrograms per meter cubed ($\mu g/m^3$) of air breathed for adults. Dermal CSFs have not been derived for any chemicals so the oral value was used instead. The EPA has developed a classification system which indicates the likelihood that a particular chemical is a human carcinogen based on a weight-of-evidence (WOE) judgment using human and animal evidence. This classification system is described below:

A – Human carcinogen.
B1 – Probable human carcinogen – limited evidence of human carcinogenicity.
B2 – Probable human carcinogen – sufficient animal evidence and inadequate human data.
C - Possible human carcinogen – limited evidence in animals and no human data.
D - Not classified as to carcinogenicity.

E - No evidence for carcinogenicity.

Table 42 lists the toxicological reference values used in this risk assessment.

8.9 Risk Characterization Process.

The risk characterization presents a separate evaluation of noncarcinogenic and carcinogenic effects. The EPA methodology distinguishes between the two because organisms typically respond differently following exposure to carcinogens as opposed to noncarcinogens.

8.9.1 Noncarcinogenic Effects.

Risk characterization for noncarcinogenic effects involves calculating an HQ, which represents the ratio of the chronic daily intake for a specific chemical to the toxicological reference value (i.e., RfD) for that chemical. The individual HQs are summed over all chemicals to obtain an overall hazard index (HI) for the site. An HI of less than or equal to 1.0 indicates that the occurrence of adverse noncarcinogenic health effects as a result of the evaluated chemical exposure is unlikely.

8.9.2 Carcinogenic Effects.

Cancer risk is expressed as a probability (e.g., 1E-6 or 1 in 1,000,000), which indicates the risk of additional incidences of cancer above the normal background cancer rate in an exposed population. Risk estimates represent the additional probability that individuals in a population will develop cancer over a lifetime as a result of exposure to a particular carcinogen. The probabilities are derived by multiplying the estimated daily intake by the chemical-specific CSFs. As with the HI, cancer risk levels are calculated for each substance and then an overall site risk is derived by adding all of these together. Based on EPA guidance (EPA, 1989), carcinogenic risk below 1E-6 is generally considered de minimus risk, risk between 1E-6 and 1E-4 (1 in 10,000) is within the range considered safe, and risk exceeding 1E-4 is considered unacceptable.

8.9.3 Risk Characterization.

For each receptor, risk was quantified for all compounds detected at the site for intake through the various exposure pathways. The individual compound values were then combined over all pathways to calculate the cumulative risk. This represents the total risk for the site. Noncancer hazard and cancer risk were calculated using the equations below:

Noncancer Hazard: **(15)**

$$Hazard\ Quotient = \frac{Intake}{RfD}$$

Where:
Intake = Average daily intake (mg/kg-day)
RfD = Chemical-specific reference dose (mg/kg-day)

Cancer Risk: **(16)**

$$\text{Risk} = \text{Intake} * \text{CSF}$$

Where:
Intake = Average daily intake (mg/kg-day)
CSF = Cancer slope factor $(\text{mg/kg-day})^{-1}$

8.9.3.1 Noncancer Results.

As an estimate of the noncancer hazard associated with SWMU 73 for each receptor, the individual chemical HQs are summed to provide an overall HI. Again, an HI of 1.0 or greater indicates that the levels of substances detected may be of potential concern. The calculated HIs are shown in Table 43. The complete results of the risk assessment can be found in Appendix H. As the tables indicate, the noncancer HI for most receptors falls below the 1.0 level that would indicate a level of concern for that exposure. However, the HIs for the future child resident (4.5) and the construction worker (1.4) do exceed 1.0. Though the HI represents the cumulative value for all of the substances included in the risk assessment, the elevated value for both of these receptors is primarily due to Aroclor 1254 in surface soil.

8.9.3.2 Carcinogenic Risk Results.

As an initial estimate of the carcinogenic risk associated with SWMU 73, the individual chemical cancer risks were added together to derive the overall site cancer risk for each receptor. While all of the calculated cancer risk levels were above the 1E-6 level, none exceeded 1E-4 indicating that an unacceptable cancer risk does not exist at the site under the conditions evaluated. Table 44 lists the calculated cancer risk levels for each receptor. The complete results of the risk assessment can be found in Appendix H.

8.10 Vapor Intrusion Modeling.

The final exposure pathway that was considered in this evaluation is vapor intrusion into buildings as a result of volatile or semivolatile substances in groundwater. This pathway was evaluated separately as it relies on the groundwater data and is entirely based on modeling. Given the physical conditions of the site, it was deemed necessary to evaluate the potential for vapor intrusion quantitatively. Groundwater can be rather shallow under portions of the site and the soil tends to be silty, both of which can contribute to migration of vapors to indoor air in buildings. To evaluate this pathway, the screening level Johnson and Ettinger model was used

(EPA, 2002b). This model has been in use since 1991 and has been updated to spreadsheet format and endorsed by the EPA. The screening-level model takes into account basic information regarding the construction of the buildings on site, as well as the soil type, depth to groundwater, and groundwater temperature. In addition, it uses the same exposure parameters as the other risk equations to back-calculate safe levels in groundwater based on modeled indoor air concentrations. The model contains chemical properties for substances that are considered a potential concern from a vapor intrusion standpoint, so any substance detected in groundwater or subsurface soil that was available in the model was included in this evaluation. All of the maximum detected groundwater and subsurface soil concentrations that could be of concern are well below the screening levels calculated by the model. Therefore, vapor intrusion to indoor air of buildings on site should not be a concern at this site. Tables 45 and 46 present a summary of the vapor intrusion model results. The full model output can be found in Appendix I.

8.11 Uncertainty.

The process of evaluating risk uses principles drawn from many scientific disciplines, including chemistry, toxicology, physics, mathematics, and statistics. Since the data sets used in the calculations are incomplete, many assumptions are required. Therefore, calculated numerical risk values contain inherent uncertainties. As a result of the uncertainties described below, this risk evaluation should not be construed as presenting an absolute frequency of expected health affects in the populations modeled. Rather, it is an estimate intended to indicate the potential for occurrence of adverse health impacts under the exposure conditions evaluated.

8.11.1 Exposure Assessment.

There is a level of uncertainty in the assumptions made regarding the specific intake parameters. Values are chosen for variables such as body weight and inhalation rate that are meant to be conservative. For most receptors, this will result in an overestimation of risk. However, an individual could exceed the values used and would therefore represent a higher potential risk than was estimated in the assessment.

8.11.2 Study Design.

There is also uncertainty due to the design of the sampling strategy. Sample locations were chosen to provide a picture of the aerial distribution of substances on site. However, it is possible that smaller areas of higher concentrations were missed during sampling. This could produce an estimate of the site mean concentration that is higher or lower than the true mean. In addition, since the sampling was initially intended to delineate the extent of any contamination on the site, it was somewhat focused and biased. As a result, it is not necessarily ideal as a basis for the risk assessment.

8.11.3 Toxicity Assessment.

The derivation of toxicity values is a source of uncertainty. Most of the data on health effects comes from animal studies. EPA collects and evaluates all known studies for each chemical and uses the most sensitive animal study available and the adverse effect that occurs at the lowest

2627 dose to derive, by the application of uncertainty and modifying factors, the RfD for
2628 noncarcinogens. Humans are assumed to be even more sensitive than the most sensitive animal.
2629 The health effect in humans may not be the same so human data are sought to corroborate the
2630 animal data. The same data evaluation process takes place for carcinogens, except the data are
2631 extrapolated to humans by using the 95% UCL of the mean slope from the primary study used to
2632 derive the CSF.

2633 **8.11.4 Risk Characterization.**

2634 A final source of uncertainty in the risk estimates is the assumption that chemical risks are
2635 additive. In actuality, multiple chemicals may act antagonistically or synergistically with regard
2636 to the adverse health effects produced.

2637 **8.12 Summary of Risk Assessment.**

2638 Field sampling of surface soil, subsurface soil, and groundwater was conducted over several
2639 sampling events for SWMU 73. The data collected during these events was used as the basis for
2640 a risk assessment evaluating the potential risk and hazard to several potential current and future
2641 receptors. The risk assessment indicated that surface soil poses a potential noncarcinogenic
2642 health risk to both construction workers and hypothetical future resident children. Though this
2643 finding is just a preliminary estimate of risk, the course of action for this site calls for a
2644 streamlined approach; therefore, CAOs will be derived for each substance that is contributing
2645 significantly to the HI for these two receptors. The CAO derivation process is described in detail
2646 in Section 8.13.

2647 **8.13 Corrective Action Objectives.**

2648 Risk-based CAOs were developed for each substance identified as having a significant
2649 contribution to the elevated HI. The CAOs were developed using the same exposure parameters
2650 as the risk assessment in order to represent the potentially exposed populations as closely as
2651 possible while still providing a degree of conservatism.

2652 **8.13.1 CAO Derivation.**

2653 To develop risk-based CAOs, values describing the extent, frequency, and duration of the
2654 exposure are combined with target risk, hazard values, and toxicity information in order to back-
2655 calculate an environmental concentration that represents a safe level. The equations used in
2656 calculating screening levels were derived from standard EPA intake equations. Table 41
2657 presents the values used for the various intake parameters. As discussed previously, these values
2658 are based on a combination of EPA default values and site-specific information where
2659 appropriate.

2660

8.13.2 CAO Equations.

Equations (17) and (18) calculate screening levels for both pathways associated with soil exposure (ingestion and dermal absorption). Screening levels were derived based on an HI of 1.0 and an excess cancer risk level of 1.0E-6.

Noncarcinogenic Level

(17)

$$ScreeningLevel(mg/kg) = \frac{THQ * BW * AT}{EF * ED[(\frac{1}{RfD_o} * \frac{IRS}{10^6}) + (\frac{1}{RfD_o} * \frac{SA * AF * ABS}{10^6})]}$$

Carcinogenic Level

(18)

$$ScreeningLevel(mg/kg) = \frac{TR * BW * AT}{EF * ED[(CSF_o * \frac{IRS}{10^6}) + (CSF_o * \frac{SA * AF * ABS}{10^6})]}$$

Where:

THQ = Target Hazard Quotient
TR = Target Cancer Risk Level
BW = Body Weight (kg)
AT = Averaging Time (days)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
RfD_o = Oral Reference Dose (mg/kg*day)
IRS = Soil Ingestion Rate (mg/day)
SA = Skin Surface Area (cm^2/event)
AF = Soil Adherence Factor (mg/cm^2)
ABS = Absorption Factor (unitless)
CSF_o = Oral Cancer Slope Factor $(mg/kd*day)^{-1}$

8.13.3 Results.

Since the elevated HI for both receptors was primarily due to Aroclor 1254, a CAO was only calculated for this substance. The resulting CAOs are 328 µg/kg for the hypothetical child resident and 4360 µg/kg for the construction worker. These levels were compared with the reported site concentrations to give an indication of the rate at which the CAOs are exceeded.

This comparison indicated that only two samples returned concentrations above the future residential child CAO of 328 µg/kg. Both samples were actually nondetect results that were subsequently included at the reporting limit and remained in the dataset. However, their inclusion significantly impacts the EPC for Aroclor 1254. Without these two results included in the dataset the calculated EPC would be significantly reduced subsequently eliminating this compound as a significant contributor to the site hazard. A similar comparison was done for the construction worker CAO. Only one of the elevated concentrations is above the construction worker CAO. As discussed previously, this CAO is much more suitable for evaluating the site since the designated future use of the area is clearly industrial and not residential. However, the only sample exceeding this CAO is again a nondetected value.

8.13.4 Summary of CAOs.

Several rounds of environmental field sampling have been conducted at SWMU 73. Samples were collected from surface soil, subsurface soil, and groundwater. The reported concentrations were used as the basis for a risk assessment evaluating several receptor groups including construction workers, industrial workers, trespassers, and hypothetical residents. A potential elevated noncarcinogenic hazard was identified for two receptors: the hypothetical future child resident and the construction worker. In both cases, Aroclor 1254 accounted for the majority of the hazard. Though there is a significant degree of uncertainty associated with this initial finding, the site was originally meant to undergo a streamlined evaluation process, and thus CAOs were developed for this substance for both receptors.

8.13.5 Conclusions and Recommendations.

Though the comparison of the site data to the derived CAO for Aroclor 1254 indicates limited exceedences of the CAO, this is due entirely to two nondetect results that are included in the dataset at the reporting limit. Without these results reported, neither the child resident nor the construction worker CAO would be exceeded. In light of this, any type of remedial action at SWMU 73 would not be necessary based on the findings of this human health evaluation.

8.14 References.

EPA 1989. Risk Assessment Guidance for Superfund, Volume I Human Health Evaluation Manual, Office of Emergency and Remedial Response, EPA/540/1-89/002.

EPA 1997. Exposure Factors Handbook, Office of Research and Development, EPA/600/P-95/002Fa.

EPA 2001. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites, Office of Solid Waste and Emergency Response, OSWER 9355.4-24.

EPA 2002a. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. Office of Emergency and Remedial Response, OSWER 9285.6-10

EPA 2002b. Johnson and Ettinger Model for Subsurface Vapor Intrusion into Buildings. Office of Solid Waste and Emergency Response.

EPA 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Office of Superfund Remediation and Technology Innovation, EPA/540/R/99/005.

EPA 2009a. ProUCL 4.0 for Environmental Applications for Data Sets with and without Nondetect Observations. Technical Support Center for Monitoring and Site Characterization.

EPA 2009b. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

EPA, 2009c. Integrated Risk Information System. http://www.epa.gov/iriswebp/iris/index.html

EPA, 2009d. Provisional Peer Reviewed Toxicity Values. http://hhpprtv.ornl.gov/

9.0 SUMMARY OF ECOLOGICAL AND HUMAN HEALTH RISK ASSESSMENT.

Sections 7.0 and 8.0 discuss the ecological and human health risk assessment process for SWMU 73. Media areas evaluated during the risk assessment included surface soil (defined as soils from 0-1 foot in depth), subsurface soils (defined as soils from 1-3 feet in depth), and groundwater. Risk-based CAOs were developed using the same exposure parameters as the risk assessment in order to represent the potentially exposed populations as closely as possible while still providing a degree of conservatism.

9.1 Ecological.

A screening-level ERA was conducted using sampling data for surface soil, subsurface soil, and groundwater at SWMU 73. Various chemicals were retained as COPCs and further evaluated in a more refined Step 3a of the ERA. Although some chemicals exceeded the target level of 1, they were not recommended for further evaluation based on discussions presented in Section 7.10.1.1. Chemicals in groundwater were not recommended for further evaluation based on discussions presented in Section 7.10.1.3.

9.2 Human Health.

Several rounds of environmental field sampling have been conducted at SWMU 73. Samples were collected from surface soil, subsurface soil, and groundwater. The reported concentrations were used as the basis for a risk assessment evaluating several receptor groups including construction workers, industrial workers, trespassers, and hypothetical residents. A potential elevated noncarcinogenic hazard was identified for two receptors: the hypothetical future child resident and the construction worker. In both cases, Aroclor 1254 accounted for the majority of the hazard. Though there is a significant degree of uncertainty associated with this initial

finding, the site was originally meant to undergo a streamlined evaluation process; therefore, CAOs were developed for this substance for both receptors.

Since the elevated HI for both receptors was primarily due to Aroclor 1254, a CAO was only calculated for this substance. The resulting CAOs are 328 µg/kg for the hypothetical child resident and 4360 µg/kg for the construction worker. These levels were compared with the reported site concentrations to give an indication of the rate at which the CAOs are exceeded. This comparison indicated that only two samples returned concentrations above the future residential child CAO of 328 µg/kg. Both samples were actually nondetect results that were subsequently included at the reporting limit and remained in the dataset. However, their inclusion significantly impacts the EPC for Aroclor 1254. Without these two results included in the dataset the calculated EPC would be significantly reduced subsequently eliminating this compound as a significant contributor to the site hazard. A similar comparison was done for the construction worker CAO. Only one of the elevated concentrations is above the construction worker CAO. As discussed previously, this CAO is much more suitable for evaluating the site since the designated future use of the area is clearly industrial and not residential. However, the only sample exceeding this CAO is a nondetected value.

10.0 RECOMMENDED ACTION.

No further action is recommended at SWMU 73 based on the findings of the ecological and human health evaluation.

TABLES

Table 1. 2004 ECP Surface Soil Chemical Data at SWMU 73.

Site ID	EPA Region III	EPA Region III	2x Average Detected	**19E-01**	**19E-02**	**19E-03**	**19E-SS04**	**19E-SS05**	**19E-SS06**	**19E-SS07**	**19E-SS08**	**19E-SS09**
Sample ID				**19E-SS01**	**19E-SS02**	**19E-SS03**	**19E-SS04**	**19E-SS05**	**19E-SS06**	**19E-SS07**	**19E-SS08**	**19E-SS09**
Sample Date	Residential	Industrial	Background	06-May-04	06-May-04	06-May-04	13-May-04	13-May-04	13-May-04	13-May-04	13-May-04	13-May-04
Sample Depth	RBC	RBC	(NAPR)	0-1'	0-1'	0-1'	0-1'	0-1'	0-1'	0-1'	0-1'	0-1'
Volatile Organic Compounds (µg/kg)												
No detections	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Semi-Volatile Organic Compounds (ug/kg)												
Benzo(a)pyrene	87	390	N/A	ND (360)	ND (380)	ND (420)	ND (540)	ND (490)	270J	ND (440)	ND (450)	ND (440)
Pesticides/PCBs (µg/kg)												
Dieldrin	40	180	N/A	**7.7**	1.9J	ND (840)	ND (5.4)	**6.7**	ND (4)	ND (4.4)	ND (4.5)	ND (4.4)
4,4'-DDT	2,700	12,000	N/A	ND (7.2)	**10**	**5,300**	**7.1**	ND (4.9)	**4.9**	ND (4.4)	ND (4.5)	3.7J
4,4'-DDE	1,900	8,400	N/A	**7.6**	**66**	**4,700**	**22**	**8.8**	**4.3**	ND (4.4)	ND (4.5)	1J
4,4'-DDD	1,900	8,400	N/A	ND (7.2)	1.4J	810J	ND (5.4)	ND (4.9)	ND (4)	ND (4.4)	ND (4.5)	ND (4.4)
Aroclor-1248	320	1,400	N/A	140	ND (75)	ND (8,400)	ND (54)	ND (49)	ND (40)	ND (44)	ND (45)	ND (44)
Aroclor-1254	320	1,400	N/A	ND (72)	40J	ND (8,400)	ND (54)	ND (49)	ND (40)	ND (44)	ND (45)	ND (44)
Aroclor-1260	320	1,400	N/A	**120**	15J	ND (8,400)	ND (54)	**73**	ND (40)	ND (44)	ND (45)	ND (44)
Organophospahte Pesticides (µg/kg)												
No detections	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorinated Herbicides (µg/kg)												
No detections	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metals (mg/kg)												
Arsenic	0.43	1.9	2.4	**2.3**	**1.8**	1B	ND (1.5)	ND (1.4)	**3.8**	ND (1.2)	**4.6**	**1.5**
Barium	550	7,200	181	**83**	**82**	**130**	**67**	**89**	**46**	**53**	**120**	**140**
Cadmium	7.8	100	0.27	**4.2**	**0.28B**	**1**	ND (0.77)	**0.87**	**0.35B**	ND (3)	ND (0.65)	ND (0.62)
Cobalt	160	2,000	44	**16**	**16**	**13**	**22**	**26**	**10**	**7.7**	**19**	**27**
Chromium	23	310	59.3	**27**	**19**	**25**	**28**	**24**	**22**	**22**	**24**	**34**
Copper	310	4,100	234	**120**	**110**	**110**	**170**	**250**	**210**	**290**	**170**	**180**
Nickel	160	2,000	16.6	**44J**	**17J**	**21J**	**15**	**16**	**11**	**6.4**	**12**	**14**
Lead	400	400	125	**73**	**9.3**	**56**	**26**	**67**	**58**	**4.6**	**13**	**21**
Vanadium	7.8	100	355	**100**	**110**	**85**	**130**	**130**	**65**	**270**	**160**	**150**
Zinc	2,300	31,000	125	**240**	**72**	**160**	**210J**	**220J**	**120J**	**71J**	**160J**	**120J**
Mercury	2.3	31	0.11	**0.033**	**0.055**	**0.25**	**0.3**	**0.29**	**2.1**	**0.022B**	**0.038**	**0.092**

A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
0.28B-a blank sample associated with environmental sample was identified with contamination.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Region III Residential Risk-Based Concentration (RBC) and 2x background levels.
150 and 0.52J-Red text indicates that constituent values meet or exceeded the EPA Region III Industrial RBC and 2x background levels.
N/A–Not Applicable.

Table 2. 2004 ECP Subsurface Soil Chemical Data at SWMU 73.

Site ID **Sample ID**	EPA Region III RBC Residential	EPA Region III RBC Industrial	2x Average Detected Background	**19E-01** **19E-SB01-02**	**19E-02** **19E-SB02-03**	**19E-03** **19E-SB03-03**
Sample Date				06-May-04	06-May-04	06-May-04
Sample Depth				3'-5'	5'-7'	5'-7'
Volatile Organic Compounds (µg/kg)						
Carbon Tetrachloride	4,900	22,000	N/A	ND (5.1)	1.1J	ND (5.2)
Semi-Volatile Organic Compounds(µg/kg)						
No detections	N/A	N/A	N/A	N/A	N/A	N/A
Pesticides and PCBs (µg/kg)						
4-4'-DDD	2,700	12,000	N/A	ND (7.4)	ND (7.4)	19J
4-4'-DDE	1,900	8,400	N/A	ND (7.4)	**9**	**120**
4-4'-DDT	1,900	8,400	N/A	ND (7.4)	**1.2J**	**230**
Organophosphate Pesticides (µg/kg)						
No detections	N/A	N/A	N/A	N/A	N/A	N/A
Chlorinated Herbicides (µg/kg)						
No detections	N/A	N/A	N/A	N/A	N/A	N/A
Metals (mg/kg)						
Silver	39	510	0.46	**0.13B**	ND (1)	**0.12B**
Barium	550	7,200	222	**73**	**97**	**110**
Beryllium	16	200	0.74	**0.15B**	**0.14B**	**0.18B**
Cadmium	7.8	100	0.74	**0.61**	**0.15B**	ND (0.51)
Cobalt	160	2,000	30	**23**	**23**	**20**
Chromium	23	310	133	**37**	**21**	**28**
Copper	310	4,100	193	**130**	**130**	**120**
Nickel	160	2,000	31.9	**14J**	**18J**	**17J**
Lead	400	400	8.68	**1.1**	**1.6**	**5.7**
Tin	4,700	61,000	2.96	**1.6B**	**3B**	**2.8B**
Vanadium	7.8	100	462	**110**	**140**	**100**
Zinc	2,300	31,000	88.6	**200**	**81**	**85**
Sulfide	N/A	N/A	32.58	**28B**	ND (28)	ND (27)
Mercury	2.3	31	0.093	**0.0048B**	**0.014B**	**0.0055B**

A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
0.28B-a blank sample associated with environmental sample was identified with contamination.
N/A–Not Applicable.

Table 3. 2004 ECP Ground-Water Chemical Data at SWMU 73.

Site ID **Sample ID**	EPA Region III Tap Water[1]	Federal Drinking Water[2]	PR Water Quality	**19E-01** **19E-GW01**	**19E-02** **19E-GW02**	**19E-03** **19E-GW03**
Sample Date	RBC	MCL	Standards	10-May-04	10-May-04	10-May-04
Volatile Organic Constituents (µg/l)						
Ethyl Benzene	130	700	700	ND (1)	0.61J	ND (1)
Toluene	75	1,000	1,000	**1**	**1.2**	ND (1)
Carbon Disulfide	100	N/A	N/A	**1.3**	**1.6**	ND (1)
Semi-Volatile Organic Constituents (µg/l)						
Cresol, m&p	N/A	N/A	N/A	ND (10)	1.8J	ND (10)
Pesticides/PCBs (µg/l)						
4,4'-DDD	0.28	N/A	N/A	ND (0.1)	0.088J	0.04J
4,4'-DDE	0.20	N/A	N/A	ND (0.1)	0.015J	0.11
4,4'-DDT	0.20	N/A	N/A	ND (0.1)	ND (0.1)	0.088J
Organophosphate Pesticides (µg/l)						
No detections	N/A	N/A	N/A	N/A	N/A	N/A
Chlorinated Herbicides (µg/l)						
No detections	N/A	N/A	N/A	N/A	N/A	N/A
Metals (mg/l)						
Barium	0.26	2	N/A	**0.015**	**0.01B**	**0.021**
Cobalt	0.073	N/A	N/A	ND (0.01)	**0.002B**	**0.002B**
Nickel	0.073	N/A	N/A	**0.003B**	ND (0.04)	ND (0.04)
Vanadium	0.0037	N/A	N/A	**0.026**	**0.014**	**0.003B**

11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
0.28B-a blank sample associated with environmental sample was identified with contamination.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the Tap Water Risk-Based Concentration.
N/A–Not Applicable.

Table 4. Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-03 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Table 5-1 Screen[2]	Up Limit of Means[3]	**73SB01-00**	**73SB01A-00**	**73SB02-00**	**73SB03-00**	**73SB04-00**	**73SB05-00**	**73SB06-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08
Volatile Organic Compounds (µg/kg)											
2-Butanone {MEK}	28,000,000	190,00,000	N/A	N/A	**11J**	5J	ND (11)	5J	5J	6J	6J
Acetone	61,000,000	610,000,000	N/A	N/A	**62J**	**66J**	**31J**	**72J**	**45J**	**37J**	**50J**
Carbon disulfide	670,000	3,000,000	N/A	N/A	**5J**	ND (5)	5J	4J	5J	**6J**	3J
Methyl iodide	N/A	N/A	N/A	N/A	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Methylene chloride	11,000	54,000	1,004	N/A	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)	ND (5)
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene	22,000	99,000	1,200	N/A	0.92J	1.2J	ND (1.8)	1.4J	1.4J	ND (1.8)	ND (1.7)
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	ND (1.7)	**2**	ND (1.8)	**2**	ND (1.9)	ND (1.8)	ND (1.7)
Acenaphthene	34,000	330,000	20,000	N/A	1.6J	ND (1.8)	ND (1.8)	**8**	ND (1.9)	ND (1.8)	ND (1.7)
Acenaphthylene	N/A	N/A	1,200	N/A	0.63J	0.59J	**16**	0.69J	1.5J	ND (1.8)	ND (1.7)
Anthracene	17,000,000	170,000,000	1,200	N/A	1.6J	1.3J	**41**	**21**	1.7J	0.64J	0.6J
Benzo[a]anthracene	150	2,100	1,200	N/A	**15**	**10**	**150**	**77**	**8.3**	**9.3**	**5**
Benzo[a]pyrene	15	210	1,200	N/A	**18J**	**12J**	**160J**	**64J**	**16J**	**15J**	**9J**
Benzo[b]fluoranthene	150	2,100	1,200	N/A	**30**	**26**	**360**	**96**	**24**	**30**	**21**
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	**15**	**8.2**	**66**	**23**	**7.7**	**8.1**	**12**
Benzo[k]fluoranthene	15	210	1,200	N/A	**14**	**9**	**200**	**45**	**11**	**13**	**6.9**
Chrysene	150	2,100	1,200	N/A	**16J**	**12J**	**220J**	**74J**	**12J**	**14J**	**7.7J**
Dibenz[a,h]anthracene	15	210	1,200	N/A	**3.7**	**19**	**2.2**	**8.7**	**2.1**	**2.4**	**2.4**
Fluoranthene	2,300,000	22,000,000	1,200	N/A	**20J**	**14J**	**250J** / 39J	**170J**	**21J**	**7.6J**	**7J**
Fluorene	2,300,000	22,000,000	30,000	N/A	ND (1.7)	ND (1.8)	1.3J	**6.7**	0.83J	ND (1.8)	ND (1.7)
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	**12J**	**7.3J**	**69J**	**25**	**7.4**	**8.1**	**8.9**
Naphthalene	150,000	670,000	1,200	N/A	**3.2**	**5.3**	**2.4**	**5.9**	**2**	**3.9**	**2**
Phenanthrene	N/A	N/A	1,200	N/A	**8**	**7.1**	**10**	**100**	**17**	**4.7**	**4**
Pyrene	1,700,000	17,000,000	1,200	N/A	**15**	**10**	**270** / 48J	**97**	**16**	**6.9**	**7.1**
Semi-Volatile Organics Compounds (µg/kg)											
Di(2-ethylhexyl)phthalate (DEHP)	35,000	120,000	6,010	N/A	**280**	**400**	**1,200**	**890**	**260**	**330**	**830**

Table 4 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-03 Location (April 2008).

Sample ID	EPA Screen Level Residential	EPA Screen Level Industrial	Tbl 5-1 Screen[2] Soil	Up Limit of Means[3] (x+2s)	**73SB01-00**	**73SB01A-00**	**73SB02-00**	**73SB03-00**	**73SB04-00**	**73SB05-00**	**73SB06-00**
Sample Date					31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08
Pesticides and PCBs (µg/kg)											
Aroclor 1254	220	740	N/A	N/A	ND (18.3)	ND (17.9)	*ND (3930)*	ND (176)	ND (18.4)	ND (89.3)	**103**
Aroclor 1260	220	740	N/A	N/A	**22.5**	**33.1J**	*ND (3930)*	**312**	**20.7**	**345**	**59.4**
Chlordane	1,600	6,500	100	N/A	**390J**	**480**	*ND (9800)*	ND (18)	ND (92)	ND (180)	ND (180)
Dieldrin	30	110	401	N/A	ND (1.8)	0.52J	*ND (980)*	0.73J	ND (9.2)	13J	9.1J
Heptachlor	110	380	100	N/A	0.36J	ND (0.88)	*ND (480)*	ND (0.86)	ND (4.5)	ND (8.7)	ND (8.9)
Heptachlor epoxide	53	190	100	N/A	**2.3J**	**3J**	*ND (480)*	ND (0.86)	ND (4.5)	ND (8.7)	2.8J
Kepone	30	110	100	N/A	**25**	ND (7.4)	*ND (4000)*	**14**	*ND (38)*	66J	ND (75)
p,p'-DDD	2,000	7,200	401	N/A	ND (1.8)	ND (6.3)	**5,500**	**2.2J**	**13**	ND (18)	ND (18)
p,p'-DDE	1,400	5,100	401	N/A	**75**	**150**	**9,600**	**7.2**	**360**	**36**	**29**
p,p'-DDT	1,700	7,000	401	N/A	**71J**	**160J**	**77,000**	**34J**	120J	ND (18)	**27J**
Metals (mg/kg)											
Arsenic	0.39	1.6	18	2.65	**2.3J**	**3.3J**	**2.8J**	**4.9J**	ND (2)	**3.5J**	**3.5J**
Barium	15,000	19,000	330	199	**77J**	**90J**	**120J**	**58J**	**59J**	**65J**	**86J**
Cadmium	70	810	32	1.02	**0.68J**	**1.8J**	**19J**	**3.1J**	ND (0.5)	**0.63J**	**5.3J**
Chromium	230	1,400	0.4	49.8	**24**	**34**	**27**	**27**	**19**	**22**	**27**
Cobalt	N/A	N/A	13	46.2	**13**	**16**	**12**	**13**	**13**	**15**	**15**
Copper	3,100	41,000	70	168	**82**	**120**	**110**	**160**	**83**	**76**	**280**
Lead	400	N/A	120	22	**64J**	**73J**	**110J**	**110J**	**30J**	**60J**	**200J**
Nickel	1,600	20,000	30	20.7	**38**	**63**	**21**	**39**	**28**	**37**	**48**
Vanadium	390	5,200	2	259	**77**	**92**	**82**	**69**	**83**	**100**	**90**
Zinc	23,000	310,000	50	115	**300**	**90**	**65**	**270**	**88**	**140**	**500**
Mercury	6.7	28	0.1	0.109	**0.0203**	**0.0685**	**0.103**	**0.0593**	**0.123**	**0.0294**	**0.399**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 4 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-03 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	**73SB07-00**	**73SB08-00**	**73SB09-00**	**73SB10-00**	**73SB11-00**	**73SB12-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08
Volatile Organic Compounds (µg/kg)										
2-Butanone {MEK}	28,000,000	190,00,000	N/A	N/A	5J	**12J**	**41J**	ND (9)	7J	5J
Acetone	61,000,000	610,000,000	N/A	N/A	**67J**	**160J**	**140J**	ND (19)	**76J**	**75J**
Carbon disulfide	670,000	3,000,000	N/A	N/A	ND (6)	5J	ND (6)	ND (5)	ND (6)	2J
Methyl iodide	N/A	N/A	N/A	N/A	ND (6)	ND (6)	**22J**	ND (5)	ND (6)	ND (5)
Methylene chloride	11,000	54,000	1,004	N/A	ND (6)	ND (6)	ND (6)	ND (5)	ND (6)	**6J**
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene	22,000	99,000	1,200	N/A	ND (1.7)	ND (1.7)	**14**	ND (1.7)	ND (1.8)	ND (1.7)
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	ND (1.7)	ND (1.7)	**24**	ND (1.7)	ND (1.8)	0.84J
Acenaphthene	34,000	330,000	20,000	N/A	ND (1.7)	1.3J	1.2J	ND (1.7)	ND (1.8)	ND (1.7)
Acenaphthylene	N/A	N/A	1,200	N/A	**2.1**	**20**	ND (1.8)	1.6J	**12**	0.65J
Anthracene	17,000,000	170,000,000	1,200	N/A	**3.9**	**27**	**5.3**	**2.1**	**8.3**	0.99J
Benzo[a]anthracene	150	2,100	1,200	N/A	**8.4**	**56**	**24**	**5.1**	**17**	**8.2**
Benzo[a]pyrene	15	210	1,200	N/A	**7.8J**	**71J**	**20J**	**5.5J**	**25J**	**9.7J**
Benzo[b]fluoranthene	150	2,100	1,200	N/A	**24**	**180**	**32**	**15**	**52**	**21**
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	**7.8**	**54**	**13**	**4.6**	**22**	**8.7**
Benzo[k]fluoranthene	15	210	1,200	N/A	**11**	**79**	**15**	**7.1**	**17**	**8.8**
Chrysene	150	2,100	1,200	N/A	**19J**	**100J**	**24J**	**9.2J**	**28J**	**13J**
Dibenz[a,h]anthracene	15	210	1,200	N/A	**2.0**	**15**	**4.0**	1.2J	**5.3**	**2.0**
Fluoranthene	2,300,000	22,000,000	1,200	N/A	**41J**	**140J**	**47J**	**11J**	**31J**	**11J**
Fluorene	2,300,000	22,000,000	30,000	N/A	ND (1.7)	1.4J	ND (1.8)	ND (1.7)	0.79J	ND (1.7)
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	**6.8J**	**51J**	**12J**	**4.4J**	**19J**	**7.4J**
Naphthalene	150,000	670,000	1,200	N/A	ND (1.7)	1.3J	**6.8**	ND (1.7)	1.1J	1.6J
Phenanthrene	N/A	N/A	1,200	N/A	**8.1**	**20**	**42**	1.5J	**4.7**	**4.3**
Pyrene	1,700,000	17,000,000	1,200	N/A	**26**	**100**	**31**	**8.1**	**25**	**7.4**
Semi-Volatile Organics Compounds (µg/kg)										
Di(2-ethylhexyl)phthalate (DEHP)	35,000	120,000	6,010	N/A	**400**	**120**	**540**	**480**	**190**	**570**

Table 4 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-03 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	**73SB07-00**	**73SB08-00**	**73SB09-00**	**73SB10-00**	**73SB11-00**	**73SB12-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08
Pesticides and PCBs (µg/kg)										
Aroclor 1254	220	740	N/A	N/A	ND (17.5)	**48**	**96.2**	**146**	ND (17.9)	ND (17.5)
Aroclor 1260	220	740	N/A	N/A	ND (17.5)	**27.3**	**71.4**	**53.8J**	ND (17.9)	10.6J
Chlordane	1,600	6,500	100	N/A	ND (17)	ND (18)	ND (18)	94J	ND (18)	ND (18)
Dieldrin	30	110	401	N/A	ND (1.7)	**3.3**	**4.5**	**6.7**	ND (1.8)	ND (1.8)
Heptachlor	110	380	100	N/A	ND (0.85)	0.37J	ND (0.89)	**16J**	ND (0.88)	ND (0.85)
Heptachlor epoxide	53	190	100	N/A	ND (0.85)	0.79J	**1.7**	**6.2**	ND (0.88)	ND (0.85)
Kepone	30	110	100	N/A	ND (7.2)	**11J**	**11J**	**18J**	ND (7.4)	ND (7.2)
p,p'-DDD	2,000	7,200	401	N/A	ND (1.7)	ND (1.8)	ND (2.9)	ND (7.6)	**3.9**	ND (1.8)
p,p'-DDE	1,400	5,100	401	N/A	**6**	**5.7**	**10**	**25**	**8**	1.3J
p,p'-DDT	1,700	7,000	401	N/A	**2.8J**	ND (1.8)	**37J**	**38J**	**53J**	**2J**
Metals (mg/kg)										
Arsenic	0.39	1.6	18	2.65	**4.2J**	**4J**	ND (2)	**2J**	ND (2)	**3.6J**
Barium	15,000	19,000	330	199	**44J**	**66J**	**83J**	**99J**	**28J**	**29J**
Cadmium	70	810	32	1.02	ND (0.5)	**0.7J**	ND (0.5)	**1.2J**	ND (0.5)	ND (0.5)
Chromium	230	1,400	0.4	49.8	**75**	**18**	**16**	**18**	**26**	**17**
Cobalt	N/A	N/A	13	46.2	**15**	**14**	**15**	**10**	**22**	**6.4**
Copper	3,100	41,000	70	168	**65**	**89**	**76**	**74**	**84**	**46**
Lead	400	N/A	120	22	**7.3J**	**43J**	**29J**	**94J**	**3.1J**	**21J**
Nickel	1,600	20,000	30	20.7	**12**	**11**	**36**	**20**	**15**	**5.1**
Vanadium	390	5,200	2	259	**110**	**86**	**93**	**71**	**170**	**40**
Zinc	23,000	310,000	50	115	**77**	**200**	**82**	**280**	**87**	**120**
Mercury	6.7	28	0.1	0.109	**0.015**	**0.184**	**0.0202**	**0.0797**	ND (0.0124)	**0.145**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 5. Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	73SB13-00	73SB13A-00	73SB14-00	73SB15-00	73SB16-00	73SB17-00	73SB18-00
Sample Date	Residential	Industrial	Soil	(x+2s)	2-Apr-08	2-Apr-08	3-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08	3-Apr-08
Volatile Organic Compounds (µg/kg)											
2-Butanone {MEK}	28,000,000	190,00,000	N/A	N/A	**21J**	7J	ND (11)	ND (12)	ND (12)	ND (12)	ND (11)
Acetone	61,000,000	610,000,000	N/A	N/A	**110J**	**48J**	**45J**	**59J**	**30J**	**67J**	**24J**
Methyl iodide	N/A	N/A	N/A	N/A	ND (6)	ND (5)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene	22,000	99,000	1,200	N/A	ND (1.7)	ND (1.8)	ND (1.8)	1.4J	ND (1.8)	ND (1.7)	**11J**
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	ND (1.7)	ND (1.8)	ND (1.8)	1.5J	ND (1.8)	ND (1.7)	**19J**
Acenaphthene	34,000	330,000	20,000	N/A	ND (1.7)	0.81J	ND (1.8)	**4.3**	1.2J	ND (1.7)	1.5J
Acenaphthylene	N/A	N/A	1,200	N/A	**1.9**	**3.4**	**13**	**61** / 83J	**14**	1.6J	**110** / 160J
Anthracene	17,000,000	170,000,000	1,200	N/A	**1.7**	**4.4**	**7.5**	**62** / 89J	**12**	1.1J	**100** / 130J
Benzo[a]anthracene	150	2,100	1,200	N/A	**4.1**	**12**	**16** / 37J	**130 / 220**	**34** / 47J	**2.8**	**330 / 600**
Benzo[a]pyrene	15	210	1,200	N/A	**6.6**	**16**	**28** / 41J	**190 / 250**	**53** / 59J	**4.1**	**400 / 600**
Benzo[b]fluoranthene	150	2,100	1,200	N/A	**14J**	**33J**	**51** / 60J	**230J / 450**	**110J** / 99J	**7.3J**	**750 / 930J**
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	**4.8**	**9.6**	**13**	**81 / 190**	**41** / 46J	**2.8**	**210 / 370**
Benzo[k]fluoranthene	15	210	1,200	N/A	**4.8**	**10**	**20**	**200** / 160J	**37** / 41J	**3.8**	**400 / 370**
Chrysene	150	2,100	1,200	N/A	**6.1**	**10**	**24** / 43J	**190 / 310**	**49** / 59J	**3.7**	**490 / 800**
Dibenz[a,h]anthracene	15	210	1,200	N/A	1.2J	**2.6J**	**3.9J**	**25J** / 47J	**11J**	0.78J	**73** / 99J
Fluoranthene	2,300,000	22,000,000	1,200	N/A	**4.5J**	**20J**	**17J**	**190J / 230**	**39J** / 45J	**2.5J**	**180 / 270**
Fluorene	2,300,000	22,000,000	30,000	N/A	ND (1.7)	ND (1.8)	0.78J	**5.7**	1.1J	ND (1.7)	**4.6**
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	**4.1**	**9**	**12**	**83** / 160J	**35** / 38J	**2.6**	**200 / 330**
Naphthalene	150,000	670,000	1,200	N/A	ND (1.7)	ND (1.8)	0.83J	**2.1**	ND (1.8)	ND (1.7)	**73**
Phenanthrene	N/A	N/A	1,200	N/A	0.78J	**6.3J**	**2.9**	**46J** / 60J	**9.7J**	ND (1.7)	**13** / 54J
Pyrene	1,700,000	17,000,000	1,200	N/A	**4.3**	**15**	**22** / 46J	**160 / 340**	**34** / 65J	**2.9J**	**170 / 480**
Semi-Volatile Organics Compounds (µg/kg)											
Di(2-ethylhexyl)phthalate (DEHP)	35,000	120,000	6,010	N/A	**1,000**	**850**	**1,900**	**1,600**	**2,800**	**1,900**	**1,900**
Butylbenzylphthalate	12,000,000	120,000,000	6,010	N/A	ND (170)	ND (180)	ND (180)	**890**	ND (180)	ND (170)	130J

Table 5 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	**73SB13-00**	**73SB13A-00**	**73SB14-00**	**73SB15-00**	**73SB16-00**	**73SB17-00**	**73SB18-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	2-Apr-08	2-Apr-08	3-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08	3-Apr-08
Pesticides and PCBs (µg/kg)											
Aroclor 1254	220	740	N/A	N/A	12.1J	ND (18)	NAn	ND (18)	ND (18.1)	ND (17.9)	ND (19.5)
Aroclor 1260	220	740	N/A	N/A	ND (18)	ND (18)	NAn	11.5J	ND (18.1)	ND (17.9)	10.1J
Chlordane	1,600	6,500	100	N/A	ND (18)	ND (18)	**21**	ND (41)	ND (18)	ND (18)	**100J**
Heptachlor epoxide	53	190	100	N/A	ND (0.88)	ND (0.88)	ND (0.93)	ND (1.8)	ND (0.88)	ND (0.87)	ND (0.95)
Kepone	30	110	100	N/A	ND (7.4)	ND (7.4)	2.8J	ND (15)	ND (7.5)	ND (7.4)	**17J**
p,p'-DDE	1,400	5,100	401	N/A	ND (1.8)	0.45J	0.71J	**3.9J**	0.61J	ND (1.8)	**6.6J**
p,p'-DDT	1,700	7,000	401	N/A	1.1J	0.64J	0.69J	**3.6**	0.72J	ND (1.8)	**6.4J**
Metals (mg/kg)											
Antimony	31	410	78	3.17	ND (1.2)	ND (0.99)	ND (1)	ND (1.3)	ND (1.1)	ND (0.99)	ND (1.6)
Arsenic	0.39	1.6	18	2.65	**7.3**	**7.7**	**9**	**11**	**11**	**9**	**11**
Barium	15,000	19,000	330	199	**87**	**75**	**180**	**80**	**69**	**82**	**62**
Cadmium	70	810	32	1.02	**0.17**	**0.22**	**0.68**	**0.92**	**0.49**	**0.19**	**1.1**
Chromium	230	1,400	0.4	49.8	**26J**	**24J**	**140J**	**29J**	**28J**	**30J**	**110J**
Cobalt	N/A	N/A	13	46.2	**38J**	**33J**	**42J**	**17J**	**17J**	**27J**	**15J**
Copper	3,100	41,000	70	168	**190**	**200**	**190**	**250**	**170**	**130**	**140**
Lead	400	N/A	120	22	**9.2J**	**8.5J**	**46J**	**110J**	**90J**	**11J**	**170J**
Nickel	1,600	20,000	30	20.7	**16**	**16**	**17**	**14**	**18**	**16**	**14**
Silver	390	5,100	560	N/A	**0.38**	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	**0.64**
Thallium	5.1	66	1	N/A	**0.51**	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.39)
Vanadium	390	5,200	2	259	**170J**	**160J**	**170J**	**110J**	**100J**	**150J**	**97J**
Zinc	23,000	310,000	50	115	**72**	**72**	**87**	**180**	**88**	**72**	**140**
Mercury	6.7	28	0.1	0.109	**0.153**	**0.0921**	**0.368**	**3.62**	**0.539**	**0.14**	**1.65**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 5 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	73SB18A-00	73SB19-00	73SB20-00	73SB21-00	73SB22-00	73SB23-00	73SB24-00
Sample Date	Residential	Industrial	Soil	(x+2s)	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Volatile Organic Compounds (µg/kg)											
2-Butanone {MEK}	28,000,000	190,00,000	N/A	N/A	ND (12)	ND (10)	ND (12)	ND (13)	ND (12)	**12J**	ND (12)
Acetone	61,000,000	610,000,000	N/A	N/A	**26J**	**75J**	**19J**	**41J**	**44J**	**140J**	**67J**
Methyl iodide	N/A	N/A	N/A	N/A	ND (6)	ND (5)	ND (6)	ND (6)	ND (6)	**11J**	ND (6)
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene	22,000	99,000	1,200	N/A	1.1J	ND (1.8)	**6.5**	ND (1.8)	ND (1.7)	ND (1.9)	7.9J
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	1.2J	ND (1.8)	**10** / 86J	0.78J	ND (1.7)	ND (1.9)	7.6J
Acenaphthene	34,000	330,000	20,000	N/A	1.8J	ND (1.8)	ND (1.8)	0.99J	ND (1.7)	1.6J	**63**
Acenaphthylene	N/A	N/A	1,200	N/A	**130** / 180J	**8.2**	**13**	**29**	0.97J	**12**	**320 / 720**
Anthracene	17,000,000	170,000,000	1,200	N/A	**120** / 160J	**7.8**	**11**	**21**	0.46J	**15**	**320 / 820**
Benzo[a]anthracene	150	2,100	1,200	N/A	**440 / 590**	**17**	**22**	**48**	0.81J	**30** / 65J	**1,800/4,000**
Benzo[a]pyrene	15	210	1,200	N/A	**510 / 610**	**28**	**36**	**74**	1.2J	**48** / 60J	**1,800/3,400**
Benzo[b]fluoranthene	150	2,100	1,200	N/A	**960 / 1,000**	**64J** / 46J	**79J**	**130J** / 45J	**2.2J**	**97J** / 93J	**3,100J/4,800**
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	**230 / 400**	**15**	**20**	**40**	0.84J	**46** / 52J	**1,000/1,800**
Benzo[k]fluoranthene	15	210	1,200	N/A	**500 / 370**	**22**	**29**	**51**	0.77J	**40**	**1,200/1,900**
Chrysene	150	2,100	1,200	N/A	**650 / 810**	**27J**	**37J**	**66J**	1.1J	**43J** / 71J	**1,800J/4,200**
Dibenz[a,h]anthracene	15	210	1,200	N/A	**73** / 110J	**4.2**	**5.5**	**12**	ND (1.7)	**9.6**	**350 / 560**
Fluoranthene	2,300,000	22,000,000	1,200	N/A	**210J / 240**	**24J**	**28J**	**49J**	0.94J	**48J** / 98J	**1,500J/1,900**
Fluorene	2,300,000	22,000,000	30,000	N/A	**6.3**	ND (1.8)	0.77J	**2**	ND (1.7)	1.2J	**41 / 37J**
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	**230 / 370**	**16**	**20**	**38**	0.73J	**27** / 41J	**950 / 1,700**
Naphthalene	150,000	670,000	1,200	N/A	**2.8**	ND (1.8)	**42 / 320**	1.2J	ND (1.7)	ND (1.9)	14J
Phenanthrene	N/A	N/A	1,200	N/A	11	4.4J	5.4J	12J	ND (1.7)	**13J** / 44J	**450J** / 85J
Pyrene	1,700,000	17,000,000	1,200	N/A	**220 / 440**	**20J**	**25J**	**44J**	0.91J	**38J** / 120J	**1,400J/3,100**
SemiVolatile Organic Compounds (µg/kg)											
Di(2-ethylhexyl)phthalate (DEHP)	35,000	120,000	6,010	N/A	**2,800**	**2,900**	**2,400**	**720**	**1,200**	**2,900**	**2,800**
Butylbenzylphthalate	12,000,000	120,000,000	6,010	N/A	ND (190)	ND (180)	ND (180)	ND (180)	ND (170)	ND (190)	ND (180)

Table 5 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	**73SB18A-00**	**73SB19-00**	**73SB20-00**	**73SB21-00**	**73SB22-00**	**73SB23-00**	**73SB24-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Pesticides and PCBs (µg/kg)											
Aroclor 1254	220	740	N/A	N/A	ND (20.4)	ND (18.8)	ND (18.1)	ND (18)	ND (17.9)	ND (18.9)	ND (18)
Aroclor 1260	220	740	N/A	N/A	12.7J	ND (18.8)	ND (18.1)	ND (18)	ND (17.9)	16J	13.2J
Chlordane	1,600	6,500	100	N/A	93J	ND (19)	12J	18J	ND (18)	ND (19)	**130**
Heptachlor epoxide	53	190	100	N/A	**1.3J**	ND (0.92)	ND (0.88)	ND (0.88)	ND (0.87)	ND (0.92)	ND (4.4)
Kepone	30	110	100	N/A	**14J**	ND (7.7)	ND (7.4)	ND (7.4)	ND (7.4)	ND (7.8)	ND (37)
p,p'-DDE	1,400	5,100	401	N/A	**6.3J**	ND (1.9)	0.49J	0.47J	ND (1.8)	1.4J	6.7J
p,p'-DDT	1,700	7,000	401	N/A	**6J**	0.98J	1J	0.92J	0.61J	1.4J	6.6J
Metals (mg/kg)											
Antimony	31	410	78	3.17	ND (2.7)	ND (1.4)	ND (0.98)	ND (1)	ND (1)	ND (2)	ND (1.5)
Arsenic	0.39	1.6	18	2.65	**11**	**6.6**	**10**	**11**	**12**	**8.4**	**10**
Barium	15,000	19,000	330	199	**60**	**91**	**70**	**66**	**23**	**120**	**73**
Cadmium	70	810	32	1.02	**0.78**	**0.17**	**0.36**	**0.47**	**0.3**	**0.8**	**0.96**
Chromium	230	1,400	0.4	49.8	**110J**	**170J**	**22J**	**21J**	**0.8J**	**170J**	**27J**
Cobalt	N/A	N/A	13	46.2	**15J**	**25J**	**20J**	**20J**	**4.9J**	**93J**	**18J**
Copper	3,100	41,000	70	168	**130**	**110**	**250**	**110**	**31**	**200**	**240**
Lead	400	N/A	120	22	**370J**	**12J**	**20J**	**23J**	**1.5J**	**88J**	**110J**
Nickel	1,600	20,000	30	20.7	**14**	**18**	**15**	**14**	**7.9**	**17**	**15**
Silver	390	5,100	560	N/A	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Thallium	5.1	66	1	N/A	ND (0.39)	ND (0.4)	ND (0.39)	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.39)
Vanadium	390	5,200	2	259	**100J**	**150J**	**140J**	**110J**	**34J**	**170J**	**110J**
Zinc	23,000	310,000	50	115	**120**	**85**	**80**	**86**	**25**	**220**	**180**
Mercury	6.7	28	0.1	0.109	**1.41**	**0.215**	**2.69**	**0.899**	**0.0207**	**2.45**	**4.31**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 6. Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS07 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl5-1 Screen[2]	Up Limit of Means[3]	**73SB25-00**	**73SB26-00**	**73SB27-00**	**73SB27A-00**	**73SB28-00**	**73SB29-00**	**73SB30-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Metals (mg/kg)											
Arsenic	0.39	1.6	18	2.65	**5.7**	**5.9**	**6.3**	**6.1**	**7.3**	**6.5**	**6**
Barium	15,000	19,000	330	199	**67**	**230**	**72**	**78**	**350**	**87**	**430**
Cadmium	70	810	32	1.02	ND (0.1)	ND (0.098)	ND (0.099)	ND (0.097)	**0.2**	ND (0.097)	ND (0.098)
Chromium	230	1,400	0.4	49.8	**41J**	**33J**	**35J**	**37J**	**26J**	**29J**	**23J**
Cobalt	N/A	N/A	13	46.2	**8.3J**	**15J**	**15J**	**13J**	**69J**	**18J**	**9.4J**
Copper	3,100	41,000	70	168	**250**	**240**	**200**	**210**	**270**	**200**	**200**
Lead	400	N/A	120	22	**3.5J**	**2.8J**	**6.9J**	**7.6J**	**7.6J**	**7.3J**	**3.5J**
Nickel	1,600	20,000	30	20.7	**7.9**	**18**	**10**	**12**	**18**	**11**	**7.3**
Selenium	390	5,100	1	1.48	ND (1)	ND (0.98)	**1.8**	**1.6**	**1.2**	**1.2**	**1.4**
Silver	390	5,100	560	N/A	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.19)	0.25	ND (0.19)	ND (0.2)
Thallium	5.1	66	1	N/A	ND (0.4)	ND (0.39)	ND (0.4)	ND (0.39)	0.48	ND (0.39)	ND (0.39)
Vanadium	390	5,200	2	259	**280J**	**220J**	**300J**	**300J**	**240J**	**230J**	**220J**
Zinc	23,000	310,000	50	115	**65**	**130**	**65**	**71**	**160**	**75**	**63**
Mercury	6.7	28	0.1	0.109	**0.02**	**0.0182**	**0.0618**	**0.0351**	**0.0424**	**0.0402**	**0.0182**

Table 6 (cont'd). Chemical Results of Surface Soil Samples from 0-1' Depth at the 19E-SS07 Location (April 2008).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	**73SB31-00**	**73SB32-00**	**73SB33-00**	**73SB34-00**	**73SB35-00**	**73SB36-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Metals (mg/kg)										
Arsenic	0.39	1.6	18	2.65	**7**	**6.2**	**6.8**	**5.9**	**8**	**5.6**
Barium	15,000	19,000	330	199	**56**	**410**	**130**	**250**	**170**	**140**
Cadmium	70	810	32	1.02	**0.29**	**0.12**	ND (0.099)	ND (0.096)	**0.37**	ND (0.099)
Chromium	230	1,400	0.4	49.8	**44J**	**30J**	**34J**	**40J**	**180J**	**24J**
Cobalt	N/A	N/A	13	46.2	**18J**	**63J**	**17J**	**8.6J**	**65J**	**290J**
Copper	3,100	41,000	70	168	**170**	**210**	**230**	**240**	**160**	**200**
Lead	400	N/A	120	22	**15J**	**5.6J**	**4.2J**	**5.4J**	**23J**	**1.5J**
Nickel	1,600	20,000	30	20.7	**13**	**16**	**9.1**	**14**	**20**	**25**
Selenium	390	5,100	1	1.48	ND (1)	ND (0.99)	**1.1**	**1**	ND (0.98)	ND (0.99)
Silver	390	5,100	560	N/A	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.19)	ND (0.2)	ND (0.2)
Thallium	5.1	66	1	N/A	ND (0.4)	ND (0.4)	ND (0.4)	ND (0.39)	ND (0.39)	ND (0.4)
Vanadium	390	5,200	2	259	**220J**	**250J**	**300J**	**330J**	**270J**	**130J**
Zinc	23,000	310,000	50	115	**110**	**140**	**75**	**70**	**130**	**310**
Mercury	6.7	28	0.1	0.109	**0.0436**	**0.0294**	**0.0196**	**0.0382**	**0.0838**	ND (0.0149)

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 7. Chemical Results of Follow-Up Surface Soil Samples from 0-1' Depth at the 19E-03 Location (January 2009).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Table 5-1 Screen[2]	Up Limit of Means[3]	73SB091-00	73SB092-00	73SB101-00	73SB102-00	73SB121-00	73SB122-00
Sample Date	Residential	Industrial	Soil	(x+2s)	14.Jan09	14.Jan09	14.Jan09	14.Jan09	14.Jan09	14.Jan09
Metals (mg/kg)										
Nickel	1,600	20,000	30	20.7	**39J**	**40J**	NAn	NAn	NAn	NAn
Zinc	23,000	310,000	50	115	NAn	NAn	**230**	**120**	**47**	**37**
Mercury	6.7	28	0.1	0.109	NAn	NAn	NAn	NAn	ND (0.026)	ND (0.027)

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
NAn-Not Analyzed.

Table 8. Chemical Results of Follow-Up Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (January 2009).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Up Limit of Means[3]	73SB211-00	73SB212-00	73SB231-00	73SB232-00	73SB232A-00
Sample Date	Residential	Industrial	Soil	(x+2s)	15.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09
Metals (µg/kg)									
Chromium	230	1,400	0.4	49.8	NAn	NAn	**28**	**23**	**22**
Cobalt	N/A	N/A	13	46.2	NAn	NAn	**19J**	**22J**	**23J**
Zinc	23,000	310,000	50	115	NAn	NAn	**72**	**96**	**100**
Mercury	6.7	28	0.1	0.109	**0.20**	**0.21**	**0.16**	**0.15**	**0.16**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
NAn-Not Analyzed.

Table 8 (cont'd). Chemical Results of Follow-Up Surface Soil Samples from 0-1' Depth at the 19E-SS06 Location (January 2009).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Table 5-1 Screen[2]	Up Limit of Means[3]	73SB241-00	73SB242-00	73SB243-00	73SB244-00	73SB245-00	73SB246-00	73SB246A-00
Sample Date	Residential	Industrial	Soil	(x+2s)	15.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene	22,000	99,000	1,200	N/A	ND (1.8)	1.5J	**3.7**	1.4J	**4.2**	**3.7**	**6.6**
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	ND (1.8)	**2.4**	**4.9**	1.8J	**5.3**	**4.2**	**8.4**
Acenaphthene	34,000	330,000	20,000	N/A	ND (1.8)	1.6J	**18**	**7.8**	**27**	**20**	**16**
Acenaphthylene	N/A	N/A	1,200	N/A	**14**	**140**	**47**	**95**	**190**	**150**	**110**
Anthracene	17,000,000	170,000,000	1,200	N/A	**10**	**140**	**66**	**110**	**210**	**160**	**99**
Benzo[a]anthracene	150	2,100	1,200	N/A	**37**	**220**	**270**	**280**	**910**	**350**	**340**
Benzo[a]pyrene	15	210	1,200	N/A	**50**	**320**	**190**	**340**	**930**	**380**	**370**
Benzo[b]fluoranthene	150	2,100	1,200	N/A	**100**	**220**	**340**	**600**	**1,900**	**660**	**440**
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	**25**	**150**	**78**	**190**	**650**	**190**	**210**
Benzo[k]fluoranthene	15	210	1,200	N/A	**35**	**160**	**240**	**310**	**950**	**290**	**370**
Chrysene	150	2,100	1,200	N/A	**50**	**180**	**380**	**340**	**1,300**	**400**	**400**
Dibenz[a,h]anthracene	15	210	1,200	N/A	**8.8**	**45**	**29**	**59**	**170**	**61**	**73**
Fluoranthene	2,300,000	22,000,000	1,200	N/A	**47J**	**65J**	**780J**	**340J**	**1,300J**	**450J**	**360J**
Fluorene	2,300,000	22,000,000	30,000	N/A	**5.8**	**8.8**	**10**	**6**	**26**	**15**	**12**
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	**25**	**120**	**83**	**180**	**570**	**180**	**210**
Naphthalene	150,000	670,000	1,200	N/A	0.93J	**3.6**	**6.2**	**3.3**	**8.7**	**4.6**	**5.4**
Phenanthrene	N/A	N/A	1,200	N/A	**5.8**	**7.6**	**210**	**67**	**190**	**160**	**130**
Pyrene	1,700,000	17,000,000	1,200	N/A	**51J**	**110J**	**630J**	**320J**	**1,300J**	**460J**	**470J**
Metals (µg/kg)											
Copper	3,100	41,000	70	168	**16J**	**32J**	**34J**	**31J**	**220J**	**160J**	**150J**
Zinc	23,000	310,000	50	115	**14**	**21**	**43**	**39**	**360**	**170**	**150**
Mercury	6.7	28	0.1	0.109	**0.36**	**0.29**	**1.9**	**3.1**	**4.4**	**1.2**	**1.1**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 9. Chemical Results of Follow-Up Surface Soil Samples from 0-1' Depth at the 19E-SS07 Location (January 2009).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Table 5-1 Screen[2]	Up Limit of Means[3]	**73SB 331-00**	**73SB 332-00**	**73SB 341-00**	**73SB 342-00**	**73SB 351-00**	**73SB 352-00**	**73SB 361-00**	**73SB 362-00**	**73SB 362A-00**
Sample Date	Residential	Industrial	Soil	(x+2s)	14.Jan09	14.Jan09	14.Jan09	14.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09	15.Jan09
Metals (µg/kg)													
Chromium	230	1,400	0.4	49.8	NAn	NAn	NAn	NAn	**28**	**27**	**25**	**12**	**12**
Cobolt	N/A	N/A	13	46.2	NAn	NAn	NAn	NAn	**24J**	**30J**	**30J**	**53J**	**49J**
Copper	3,100	41,000	70	168	**250J**	**160J**	**200J**	**210J**	NAn	NAn	NAn	NAn	NAn
Vanadium	390	5,200	2	259	**240**	**300**	**240**	**230**	NAn	NAn	NAn	NAn	NAn
Zinc	23,000	310,000	50	115	NAn	NAn	NAn	NAn	**200**	**210**	**150**	**110**	**100**

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan.
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 10. Chemical Results for Surface and Subsurface Soil Samples (April 2008).

Sample ID	EPA Screen Level[1] Residential	EPA Screen Level[1] Industrial	Tbl 5-1 Screen[2] Soil	**73SB02-00**	**73SB02-01**	**73SB02-04**	**73SB14-00**	**73SB14-01**	**73SB14-04**
Sample Date				31-Mar-08	7-Apr-08	7-Apr-08	3-Apr-08	7-Apr-08	7-Apr-08
Sample Depth				0-1'	1'-3'	7'-9'	0-1'	1'-3'	7'-9'
Volatile Organic Compounds (µg/kg)									
Acetone	610,00,000	610,000,000	N/A	**31J**	**36J**	ND (19)	**45J**	**37J**	**120J**
Low Level Polycyclic Aromatic Hydrocarbons (µg/kg)									
Acenaphthylene	N/A	N/A	1,200	**16**	1.5J	ND (1.9)	**13**	ND (1.8)	ND (2)
Anthracene	17,000,000	170,000,000	1,200	**41**	1.1J	ND (1.9)	**7.5**	ND (1.8)	ND (2)
Benzo[a]anthracene	150	2,100	1,200	**150**	**5.1** / 82J	ND (1.9)	**16** / 37J	ND (1.8)	ND (2)
Benzo[a]pyrene	15	210	1,200	**160J**	**6.4** / 69J	ND (1.9)	**28** / 41J	ND (180)	ND (2)
Benzo[b]fluoranthene	150	2,100	1,200	**360**	**12** / 110J	ND (1.9)	**51** / 60J	ND (1.8)	ND (2)
Benzo[g,h,i]perylene	N/A	N/A	1,200	**66**	**4.0** / 43J	ND (1.9)	**13**	ND (1.8)	ND (2)
Benzo[k]fluoranthene	1,500	21,000	1,200	**200**	**4.8** / 50J	ND (1.9)	**20**	ND (1.8)	ND (2)
Chrysene	15,000	210,000	1,200	**220J**	**6.5** / 120J	ND (1.9)	**24** / 43J	ND (1.8)	ND (2)
Dibenz[a,h]anthracene	15	210	1,200	**19**	0.97J	ND (1.9)	**3.9J**	ND (1.8)	ND (2)
Fluoranthene	2,300,000	22,000,000	1,200	**250J** / 39J	**10** / 170J	ND (1.9)	**17J**	ND (1.8)	ND (2)
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	**69J**	**3.4** / 40J	ND (1.9)	**12**	ND (1.8)	ND (2)
Naphthalene	150,000	670,000	1,200	**2.4**	ND (1.8)	ND (1.9)	0.83J	ND (180)	ND (200)
Phenanthrene	N/A	N/A	1,200	**10**	**3.1** / 56J	ND (1.9)	**2.9**	ND (180)	ND (2)
Pyrene	1,700,000	17,000,000	1,200	**270** / 48J	**9.3** / 180J	ND (1.9)	**22** / 46J	ND (1.8)	ND (2)
SemiVolatile Organic Compounds (µg/kg)									
Di(2-ethylhexyl)phthalate (DEHP)	35,000	120,000	6,010	**1,200**	**1,500**	**390**	**1,900**	330J	**1,400**

Table 10 (cont'd). Chemical Results for Surface and Subsurface Soil Samples (April 2008).

Sample ID	EPA Screen Level[1] Residential	EPA Screen Level[1] Industrial	Tbl 5-1 Screen[2] Soil	Upper Limit of Means[3] Subsurface	Upper Limit of Means[3] Subsurface	**73SB02-00**	**73SB02-01** (silt)	**73SB02-04** (silt)	**73SB14-00**	**73SB14-01** (silt/clay)	**73SB14-04** (silt/clay)
Sample Date						31-Mar-08	7-Apr-08	7-Apr-08	3-Apr-08	7-Apr-08	7-Apr-08
Sample Depth				Soil (silt)	Soil (clay)	0-1'	1'-3'	7'-9'	0-1'	1'-3'	7'-9'
Pesticides and PCBs (µg/kg)											
Endrin	18,000	180,000	401	N/A	N/A	ND (980)	**1,100J**	ND (2)	ND (1.9)	ND (1.9)	ND (2)
Chlordane	1,600	6,500	100	N/A	N/A	*ND (9800)*	900J	12J	**21**	ND (19)	ND (20)
Heptachlor epoxide	53	190	100	N/A	N/A	*ND (480)*	*ND (91)*	0.23J	ND (0.93)	ND (0.91)	ND (1)
Kepone	30	110	100	N/A	N/A	*ND (4000)*	*ND (770)*	ND (8.1)	2.8J	ND (7.7)	ND (8.4)
p,p'-DDD	2,000	7,200	401	N/A	N/A	**5,500**	**1,100J**	0.58J	ND (1.9)	ND (1.9)	ND (2)
p,p'-DDE	1,400	5,100	401	N/A	N/A	**9,600**	**3,100J**	**4.9J**	0.71J	ND (1.9)	ND (2.1)
p,p'-DDT	1,700	7,000	401	N/A	N/A	**77,000**	**14,000J**	**4.6J**	0.69J	ND (1.9)	**2.7J**
Metals (mg/kg)											
Antimony	31	410	78	7.44	N/A	ND (5)	ND (1)	ND (0.98)	ND (1)	ND (0.99)	NAn
Arsenic	0.39	1.6	18	6.66	1.59	**2.8J**	**0.96J**	ND (0.39)	**9**	**0.74J**	NAn
Barium	15,000	19,000	330	207	220	**120J**	**210**	**100**	**180**	**180**	NAn
Cadmium	70	810	32	0.57	0.54	**19J**	**0.75**	ND (0.098)	**0.68**	**0.15**	NAn
Chromium	230	1,400	0.4	47.9	114.5	**27**	**46J**	**18J**	**140J**	**31J**	NAn
Cobalt	N/A	N/A	13	63.1	26.9	**12**	**20J**	**24J**	**42J**	**55J (silt)**	NAn
Copper	3,100	41,000	70	120	246	**110**	**100**	**130**	**190**	**190**	NAn
Lead	400	N/A	120	6.2	6.3	**110J**	**56**	**1.7**	**46J**	**3.1**	NAn
Nickel	1,600	20,000	30	26.5	24.7	**21**	**13J**	ND (4.9)	**17**	**7.7J**	NAn
Selenium	390	5,100	1	1.19	5.94	ND (5)	ND (1)	ND (0.98)	ND (1)	ND (0.99)	NAn
Silver	390	5,100	560	N/A	N/A	ND (0.99)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	NAn
Thallium	5.1	66	1	N/A	0.92	ND (2)	ND (0.4)	ND (0.39)	ND (0.4)	ND (0.39)	NAn
Vanadium	390	5,200	2	256	4	**82**	**140**	**180**	**170J**	**250 (silt)**	NAn
Zinc	23,000	310,000	50	92	88	**65**	**600**	**57**	**87**	**64**	NAn
Mercury	6.7	28	0.1	0.067	0.108	**0.103**	ND (0.102)	ND (0.0128)	**0.368**	ND (0.0311)	NAn

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan (applicable from 0 to 3 feet below ground surface).
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
* - Data indicated above background concentration in clay but less than background concentration in silt.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 10 (cont'd). Chemical Results for Surface and Subsurface Soil Samples (April 2008).

Sample ID	EPA Screen Level[1] Residential	EPA Screen Level[1] Industrial	Tbl 5-1 Screen[2] Soil	Upper Limit of Means[3] Subsurface	Upper Limit of Means[4] Subsurface	**73SB27-00**	**73SB27A-00**	**73SB27-01** (silt/clay)	**73SB27A-01** (silt/clay)	**73SB27-09** (silt/clay)
Sample Date						3-Apr-08	3-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Sample Depth				Soil (silt)	Soil (clay)	0-1'	0-1'	1'-3'	1'-3'	17'-19'
Metals (mg/kg)										
Antimony	31	410	78	7.44	N/A	ND (0.99)	ND (0.97)	ND (1.1)	ND (0.97)	ND (0.99)
Arsenic	0.39	1.6	18	6.66	1.59	**6.3**	**6.1**	ND (0.4)	ND (0.39)	ND (0.4)
Barium	15,000	19,000	330	207	220	**72**	**78**	**210**	**86**	**110**
Cadmium	70	810	32	0.57	0.54	ND (0.099)	ND (0.097)	**0.16**	**0.19**	ND (0.099)
Chromium	230	1,400	0.4	47.9	114.5	**35J**	**37J**	**41J**	**41J**	**24J**
Cobalt	N/A	N/A	13	63.1	26.9	**15J**	**13J**	**21J**	**23J**	**20J**
Copper	3,100	41,000	70	120	246	**200**	**210**	**460**	**420**	**200**
Lead	400	N/A	120	6.2	6.3	**6.9J**	**7.6J**	**2.4**	**1.4**	**0.74**
Nickel	1,600	20,000	30	26.5	24.7	**10**	**12**	**12J**	**11J**	ND (5)
Selenium	390	5,100	1	1.19	5.94	**1.8**	**1.6**	**1.1**	ND (0.97)	ND (0.99)
Silver	390	5,100	560	N/A	N/A	ND (0.2)	ND (0.19)	ND (0.2)	ND (0.19)	ND (0.2)
Thallium	5.1	66	1	N/A	0.92	ND (0.4)	ND (0.39)	ND (0.4)	ND (0.39)	ND (0.4)
Vanadium	390	5,200	2	256	4	**300J**	**300J**	**300**	**300**	**160**
Zinc	23,000	310,000	50	92	88	**65**	**71**	**110**	**100**	**59**
Mercury	6.7	28	0.1	0.067	0.108	**0.0618**	**0.0351**	ND (0.012)	ND (0.0137)	ND (0.0133)

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan (applicable from 0 to 3 feet below ground surface).
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 11. Chemical Results for Surface and Subsurface Soil Samples (January 2009).

Sample ID	EPA Screen Level[1]	EPA Screen Level[1]	Tbl 5-1 Screen[2]	Upper Limit of Means[3]	Upper Limit of Means[3]	**73SB02-00**	**73SB02B-02** (silt)	**73SB02B-03** (silt)	**73SB24-00**	**73SB24-01** (silt/clay)	**73SB24-09** (silt/clay)
Sample Date	Residential	Industrial	Soil	Subsurface	Subsurface	31-Mar-08	14-Jan-09	14-Jan-09	3-Apr-08	13-Jan-09	13-Jan-09
Sample Depth				Soil (silt)	Soil (clay)	0-1'	3'-5'	5'-7'	0-1'	1'-3'	17'-19'
Low Level PAHs (µg/kg)											
1-Methylnaphthalene	22,000	99,000	1,200	N/A	N/A	NAn	NAn	NAn	7.9J	ND (2.0)	ND (2.2)
2-Methylnaphthalene	310,000	4,100,000	1,200	N/A	N/A	NAn	NAn	NAn	7.6J	1.3J	ND (2.2)
Acenaphthene	34,000	330,000	20,000	N/A	N/A	NAn	NAn	NAn	**63**	1.6J	ND (2.2)
Acenaphthylene	N/A	N/A	1,200	N/A	N/A	NAn	NAn	NAn	**320 / 720**	0.87J	ND (2.2)
Anthracene	17,000,000	170,000,000	1,200	N/A	N/A	NAn	NAn	NAn	**320 / 820**	**4.5**	ND (2.2)
Benzo[a]anthracene	150	2,100	1,200	N/A	N/A	NAn	NAn	NAn	**1,800/4,000**	**25**	ND (2.2)
Benzo[a]pyrene	15	210	1,200	N/A	N/A	NAn	NAn	NAn	**1,800/3,400**	**19**	ND (2.2)
Benzo[b]fluoranthene	150	2,100	1,200	N/A	N/A	NAn	NAn	NAn	**3,100/4,800**	**32**	ND (2.2)
Benzo[g,h,i]perylene	N/A	N/A	1,200	N/A	N/A	NAn	NAn	NAn	**1,000/1,800**	**8.3**	ND (2.2)
Benzo[k]fluoranthene	15	210	1,200	N/A	N/A	NAn	NAn	NAn	**1,200/1,900**	**12**	ND (2.2)
Chrysene	150	2,100	1,200	N/A	N/A	NAn	NAn	NAn	**1,800J/4,200**	**25**	0.60J
Dibenz[a,h]anthracene	15	210	1,200	N/A	N/A	NAn	NAn	NAn	**350 / 560**	**3.6**	ND (2.2)
Fluoranthene	2,300,000	22,000,000	1,200	N/A	N/A	NAn	NAn	NAn	**1,500J/1,900**	**43J**	ND (2.2)
Fluorene	2,300,000	22,000,000	30,000	N/A	N/A	NAn	NAn	NAn	**41 / 37J**	1.1J	ND (2.2)
Indeno[1,2,3-cd]pyrene	150	2,100	1,200	N/A	N/A	NAn	NAn	NAn	**950 / 1,700**	**8.8**	ND (2.2)
Naphthalene	150,000	670,000	1,200	N/A	N/A	NAn	NAn	NAn	14J	1.4J	ND (2.2)
Phenanthrene	N/A	N/A	1,200	N/A	N/A	NAn	NAn	NAn	**450J** / 85J	**24**	ND (2.2)
Pyrene	1,700,000	17,000,000	1,200	N/A	N/A	NAn	NAn	NAn	**1,400J/3,100**	**36J**	ND (2.2)
Pesticides and PCBs (µg/kg)											
Endrin	18,000	180,000	401	N/A	N/A	*ND (980)*	ND (19)	ND (1.9)	ND (9)	NAn	NAn
Chlordane	1,600	6,500	100	N/A	N/A	*ND (9800)*	**220**	9.8J	**130**	NAn	NAn
Heptachlor epoxide	53	190	100	N/A	N/A	*ND (480)*	2.7J	0.33J	ND (4.4)	NAn	NAn
Kepone	30	110	100	N/A	N/A	*ND (4000)*	ND (79)	ND (7.9)	ND (37)	NAn	NAn
p,p'-DDD	2,000	7,200	401	N/A	N/A	**5,500**	4.0J	ND (1.9)	ND (9)	NAn	NAn
p,p'-DDE	1,400	5,100	401	N/A	N/A	**9,600**	**81**	0.96J	6.7J	NAn	NAn
p,p'-DDT	1,700	7,000	401	N/A	N/A	**77,000**	**270J**	1.9J	6.6J	NAn	NAn
Metals (mg/kg)											
Arsenic	0.39	1.6	18	6.66	1.59	2.8J	NAn	NAn	**10**	**1.4**	ND (0.99)
Copper	3,100	41,000	70	120	246	**110**	NAn	NAn	**240**	**170J**	**420J**
Zinc	23,000	310,000	50	92	88	**65**	NAn	NAn	**220**	**53**	**90**
Mercury	6.7	28	0.1	0.067	0.108	**0.103**	NAn	NAn	**2.45**	**0.090**	ND (0.030)

[1]-EPA Screening Levels were converted from mg/kg to µg/kg where the data was given in µg/kg.
[2]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-1 of the Corrective Measures Study Work Plan (applicable from 0 to 3 feet below ground surface).
[3]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA Screening Level for Residential soils (not applicable to metals).
150 and 0.52J-Red text indicates that constituent values meet or exceed the EPA Screening Level for Industrial soils (not applicable to metals).
3.3 - Green text indicates that constituent values meet or exceed the Upper Limit of Means for Background Soils, the EPA Screening Level for soils, and is below the Table 5-1 Ecological Screening Values for Surface Soils.
38 - Orange text indicates that constituent values meet or exceed the Table 5-1 Ecological Screening Values for Surface Soils and the Upper Limit of Means for Background Soils.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A – Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels; Nan-Not Analyzed.

Table 12. Chemical Results for Ground-Water Samples (April 2008).

Sample ID	EPA Risk Tap Water[1]	Federal Drinking Water[2]	Table 5-2 Ground Water[3]	Up Limit of Means[4]	**73MW01**	**73MW01A**	**73MW02**
Sample Date	Screening Level	MCL	Screening Level	(x+2s)	10-Apr-08	10-Apr-08	10-Apr-08
Volatile Organic Compounds (µg/l)							
Carbon disulfide	1,000	N/A	650	N/A	ND (1.4)	ND (1.5)	NAn
Toluene	2,300	1,000	37	N/A	ND (1.3)	ND (1.3)	NAn
SemiVolatile Organic Compounds (µg/l)							
Di(2-ethylhexyl)phthalate (DEHP)	4.8	6	360	N/A	**55**	**110**	NAn
Dissolved Metals (µg/l)							
Antimony	15	6	500	11.19	ND (5)	ND (5)	ND (5)
Arsenic	0.045	10	36	14.03	*ND (4)*	*ND (4)*	**35.1J**
Barium	7,300	2,000	50,000	260	**147J**	**154J**	**132J**
Beryllium	73	4	310	5,400	ND (2)	ND (2)	ND (2)
Cadmium	18	5	8.85	36.42	ND (2)	ND (2)	**12.8**
Chromium	55,000	100	50.4	6.5	ND (4)	**7.02**	**6.69**
Cobalt	N/A	N/A	45	580.5	ND (4)	ND (4)	**277**
Copper	1,500	1,300/*1,000*	3.73	29	ND (5)	ND (5)	**57.6**
Lead	N/A	15	8.52	1.3	ND (4)	ND (4)	ND (4)
Mercury	0.63	2	1.11	0.157	ND (0.2)	ND (0.2)	ND (0.2)
Nickel	730	N/A	8.28	84.1	ND (10)	ND (10)	**140**
Selenium	180	50	71.1	23.92	ND (4)	**18.8J**	**61.6J**
Silver	180	*100*	0.23	3.67	ND (2)	ND (2)	**5.98**
Thallium	2.4	2	21.3	N/A	*ND (4)*	*ND (4)*	*ND (4)*
Tin	22,000	N/A	N/A	N/A	ND (0.2)	ND (0.2)	ND (0.2)
Vanadium	180	N/A	120	20.96	ND (5)	ND (5)	ND (5)
Zinc	11,000	*5,000*	85.6	360.64	**7.65J**	ND (5)	**154J**

[1]-EPA Tap Water Regional Screening Levels for Chemical Contaminants at Superfund Sites.
[2]-US EPA Primary Maximum Allowable Concentration Level (MCL) in drinking water (Secondary Standards are shown in purple italics).
[3]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-2 of the Corrective Measures Study Work Plan.
[4]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA MCL but less than the Tap Water screening level.
150 and 0.52J-Red text indicates that constituent values meet or exceeded the EPA MCL and Tap Water screening level.
3.3-Green text indicates that constituent values meet or exceed the Upper Limit of Means for Dissolved Metals, the Screening Level and MCL for drinking water, and is below the Table 5-2 Screening Values for Ground Water.
38-Orange text indicates that constituent values meet or exceed the Table 5-2 Ecological Screening Values for Ground Water and the Upper Limit of Means for Background Dissolved Metals.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A–Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 13. Chemical Results for Ground Water Samples (January 2009).

Sample ID	EPA Risk Tap Water[1]	Federal Drinking Water[2]	Table 5-2 Ground Water[3]	Up Limit of Means[4]	**73MW02**	**73MW03**	**73MW03A**
Sample Date	Screening Level	MCL	Screening Level	(x+2s)	16-Jan-09	16-Jan-09	16-Jan-09
Low Level PAHs (µg/l)							
1-Methylnaphthalene	2.3	N/A	19	N/A	NAn	ND (0.050R)	ND (0.049R)
Fluoranthene	1,500	N/A	11	N/A	NAn	ND (0.050)	0.010J
Naphthalene	6.2	N/A	23.5	N/A	NAn	ND (0.050)	ND (0.050)
Phenanthrene	N/A	N/A	8.3	N/A	NAn	ND (0.050R)	ND (0.049R)
Dissolved Metals (µg/l)							
Arsenic	0.045	10	36	14.03	**31**	**28**	**26**
Copper	1,500	1,300/*1,000*	3.73	29	**61**	**120**	**130**
Mercury	0.63	2	1.11	0.157	NAn	ND (0.20)	ND (0.20)
Nickel	730	N/A	8.28	84.1	**130**	**73**	**73**
Silver	180	*100*	0.23	3.67	**5.2**	**3.6**	**3.7**

[1]-EPA Tap Water Regional Screening Levels for Chemical Contaminants at Superfund Sites.
[2]-US EPA Primary Maximum Allowable Concentration Level (MCL) in drinking water (Secondary Standards are shown in purple italics).
[3]-Screening Levels developed for Naval Activity Puerto Rico as shown in Table 5-2 of the Corrective Measures Study Work Plan.
[4]-Upper Limit of Means as determined by the Naval Activity Puerto Rico Background Report (Baker, 2006).
A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
R–Data rejected during the data validation process.
ND (11)-Constituent not detected at the identified analytical method detection limit.
15 and 0.79J-Blue text indicates that constituent values meet or exceed the EPA MCL but less than the Tap Water screening level.
150 and 0.52J-Red text indicates that constituent values meet or exceeded the EPA MCL and Tap Water screening level.
3.3-Green text indicates that constituent values meet or exceed the Upper Limit of Means for Dissolved Metals, the Screening Level and MCL for drinking water, and is below the Table 5-2 Screening Values for Ground Water.
38-Orange text indicates that constituent values meet or exceed the Table 5-2 Ecological Screening Values for Ground Water and the Upper Limit of Means for Background Dissolved Metals.
250 / 39J-multi-value blocks represent detections of the low level PAH result followed by the SVOC result for constituents where the analytes are evaluated by both analyses.
N/A–Not Applicable.
ND (18.3)-Constituent detection limit exceeds one or more screening levels.
NAn-Not Analyzed.

Table 14. Chemical Results for Equipment Rinsate Samples (April 2008).

Sample ID	**73ER-01**	**73ER-02 (Hold)**	**73-ER-03**	**73ER-04**	**73ER-05 (Hold)**	**73ER-06**	**73ER-07**
Date	31-Mar-08	1-Apr-08	1-Apr-08	2-Apr-08	3-Apr-08	7-Apr-08	10-Apr-08
Equipment Sampled	Shoe/sleeve/Al foil	Shoe/sleeve/Al foil	Vinyl gloves	Shoe/sleeve/Al foil	Shoe/sleeve/Al foil	Scoop/sleeve/shoe	GW sampling tubing
Volatile Organic Compounds (µg/l)							
1,1-Dichloroethene	0.3J	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	0.4J
2-Butanone (MEK)	ND (5)	NAn	ND (5)	ND (5)	NAn	Lost Sample	ND (5)
Acetone	ND (5)	NAn	ND (5)	ND (5)	NAn	Lost Sample	ND (5)
Bromodichloromethane	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	ND (0.5)
Carbon disulfide	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	ND (0.5)
Chloroform	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	ND (0.5)
Dibromochloromethane	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	ND (0.5)
Ethylbenzene	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	ND (0.5)
Styrene	ND (0.5)	NAn	0.1J	ND (0.5)	NAn	Lost Sample	ND (0.5)
Toluene	0.1J	NAn	**1.9J**	ND (0.5)	NAn	Lost Sample	**2.8J**
Vinyl chloride	ND (0.5)	NAn	ND (0.5)	ND (0.5)	NAn	Lost Sample	0.3J
SemiVolatile Organic Compounds and Low Level Polycyclic Aromatic Hydrocarbons (µg/l)							
1-Methylnaphthalene	0.014J	NAn	ND (0.053)	0.013J	NAn	Lost Sample	0.011J
2-Methylnaphthalene	0.03J	NAn	0.015J	0.022J	NAn	Lost Sample	0.022J
Acenaphthene	0.012J	NAn	ND (0.053)	ND (0.051)	NAn	Lost Sample	ND (0.048)
Di(2-ethylhexyl)phthalate (DEHP)	3J	NAn	3J	ND (5)	NAn	Lost Sample	ND (5)
Naphthalene	**0.075**	NAn	**0.062**	0.045J	NAn	Lost Sample	**0.057**
Phenanthrene	0.01J	NAn	ND (0.053)	ND (0.051)	NAn	Lost Sample	ND (0.048)
Metals (µg/L)							
Silver	ND (2)	NAn	ND (2)	ND (2)	ND (2.66)	ND (2)	ND (2)
Zinc	ND (24.8)	NAn	ND (15.3)	ND (29.5)	ND (18.1)	ND (12.7)	**18.9**

A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.
NAn-Not Analyzed.

Table 15. Chemical Results for Equipment Rinsate Samples (January 2009).

Sample ID	**73ER-08 (Hold)**	**73ER-09**	**73ER-10**
Date	13-Jan-09	14-Jan-09	15-Jan-09
Equipment Sampled			
Low Level Polycyclic Aromatic Hydrocarbons (µg/l)			
1-Methylnaphthalene	NAn	NAn	0.013J
2-Methylnaphthalene	NAn	NAn	ND (0.054R)
Acenaphthene	NAn	NAn	ND (0.054R)
Acenaphthylene	NAn	NAn	ND (0.054R)
Anthracene	NAn	NAn	ND (0.054R)
Benzo[a]anthracene	NAn	NAn	ND (0.054R)
Benzo[a]pyrene	NAn	NAn	ND (0.054R)
Benzo[b]fluoranthene	NAn	NAn	ND (0.054)
Benzo[g,h,i]perylene	NAn	NAn	ND (0.054R)
Benzo[k]fluoranthene	NAn	NAn	ND (0.054)
Chrysene	NAn	NAn	ND (0.054)
Dibenz[a,h]anthracene	NAn	NAn	ND (0.054R)
Fluoranthene	NAn	NAn	ND (0.054)
Fluorene	NAn	NAn	ND (0.054)
Indeno[1,2,3-cd]pyrene	NAn	NAn	ND (0.054R)
Naphthalene	NAn	NAn	0.048J
Phenanthrene	NAn	NAn	ND (0.054R)
Pyrene	NAn	NAn	ND (0.054R)
Pesticides			
Endrin	NAn	ND (0.021)	ND (0.021)
Chlordane	NAn	ND (0.53)	ND (0.53)
Heptachlor epoxide	NAn	ND (0.011)	ND (0.011)
Kepone	NAn	ND (0.21)	ND (0.21)
p,p'-DDD	NAn	ND (0.021)	ND (0.021)
p,p'-DDE	NAn	ND (0.021)	ND (0.021)
p,p'-DDT	NAn	ND (0.021)	ND (0.021)
Metals (µg/L)			
Arsenic	NAn	NAn	NAn
Chromium	NAn	NAn	**2.7**
Cobalt	NAn	NAn	ND (5)
Copper	NAn	**2**	ND (2)
Nickel	NAn	ND (5)	NAn
Vanadium	NAn	ND (5)	NAn
Zinc	NAn	ND (20)	ND (20)
Mercury	NAn	ND (0.2)	ND (0.2)

A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
R–Data rejected during the data validation process.
ND (11)-Constituent not detected at the identified analytical method detection limit.
NAn-Not Analyzed.

Table 16. Chemical Results for Field Blanks (April 2008).

Sample ID	**73FB-01**	**73FB-02**	**73FB-03**	**73FB-03A**
Date	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08
Water Type	Lab Grade Deionized	Distilled	NAPR Tap	NAPR Tap
Volatile Organic Compounds (µg/l)				
1,1-Dichloroethene	0.2J	ND (0.5)	ND (0.5)	ND (0.5)
2-Butanone (MEK)	ND (5)	ND (5)	ND (5)	ND (5)
Acetone	ND (5)	3.7J	3.1J	3.1J
Bromodichloromethane	ND (0.5)	ND (0.5)	**12**	**12**
Carbon disulfide	ND (0.5)	ND (0.5)	0.3J	0.2J
Chloroform	ND (0.5)	ND (0.5)	**38**	**34**
Dibromochloromethane	ND (0.5)	ND (0.5)	**1.8**	**2.1**
Ethylbenzene	ND (0.5)	0.1J	ND (0.5)	ND (0.5)
Styrene	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	0.2J	**1.2J**	ND (0.5)	ND (0.5)
Vinyl chloride	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
SemiVolatile Organic Compounds and Low Level Polycyclic Aromatic Hydrocarbons (µg/l)				
1-Methylnaphthalene	0.012J	ND (0.05)	ND (0.051)	ND (0.051)
2-Methylnaphthalene	0.021J	ND (0.05)	ND (0.051)	ND (0.051)
Acenaphthene	ND (0.051)	ND (0.05)	ND (0.051)	ND (0.051)
Di(2-ethylhexyl)phthalate (DEHP)	ND (5)	ND (5)	ND (5)	ND (5)
Naphthalene	**0.056**	**0.42**	ND (0.051)	ND (0.051)
Phenanthrene	0.012J	ND (0.05)	ND (0.051)	ND (0.051)
Metals (µg/L)				
Barium	ND (5)	ND (5)	ND (5)	**5.28**
Copper	ND (5)	ND (5)	**51.1**	**52.4**
Zinc	ND (23.5)	ND (13.4)	40.5J	32.8J

A yellow background indicates that the result was modified to the current result (some J qualified) during the data validation process based on quality control factors.
11-Bold text indicates the constituent was detected at the identified value above the original analytical method detection limit.
5J-Constituent estimated value below the analytical method detection limit.
ND (11)-Constituent not detected at the identified analytical method detection limit.

Table 17. Chemical Results for Field Blanks (January 2009).

Sample ID	**73FB-04**	**73FB-05**	**73FB-06**	**73FB-06A**
Date	16-Jan-09	16-Jan-09	16-Jan-09	16-Jan-09
Water Type	Lab Grade Deionized	Distilled	NAPR Tap	NAPR Tap
Low Level Polycyclic Aromatic Hydrocarbons (µg/l)				
1-Methylnaphthalene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
2-Methylnaphthalene	0.018J	ND (0.058R)	ND (0.050R)	ND (0.051R)
Acenaphthene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Acenaphthylene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Anthracene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Benzo[a]anthracene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Benzo[a]pyrene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Benzo[b]fluoranthene	ND (0.062)	ND (0.058)	ND (0.050)	ND (0.051)
Benzo[g,h,i]perylene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Benzo[k]fluoranthene	ND (0.062)	ND (0.058)	ND (0.050)	ND (0.051)
Chrysene	ND (0.062)	ND (0.058)	ND (0.050)	ND (0.051)
Dibenz[a,h]anthracene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Fluoranthene	ND (0.062)	ND (0.058)	ND (0.050)	ND (0.051)
Fluorene	ND (0.062)	ND (0.058)	ND (0.050)	ND (0.051)
Indeno[1,2,3-cd]pyrene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Naphthalene	0.041J	ND (0.058)	ND (0.050)	ND (0.051)
Phenanthrene	0.020J	ND (0.058)	ND (0.050)	ND (0.051)
Pyrene	ND (0.062R)	ND (0.058R)	ND (0.050R)	ND (0.051R)
Pesticides				
Endrin	ND (0.022)	ND (0.021)	ND (0.021R)	ND (0.020R)
Chlordane	ND (0.56)	ND (0.53)	ND (0.52R)	ND (0.50R)
Heptachlor epoxide	ND (0.011)	ND (0.011)	ND (0.010R)	ND (0.010R)
Kepone	ND (0.22)	ND (0.21)	ND (0.21R)	ND (0.20R)
p,p'-DDD	ND (0.022)	ND (0.021)	ND (0.021R)	ND (0.020R)
p,p'-DDE	ND (0.022)	ND (0.021)	ND (0.021R)	ND (0.020R)
p,p'-DDT	ND (0.022)	ND (0.021)	ND (0.021R)	ND (0.020R)
Metals (µg/l)				
Arsenic	ND (5)	ND (5)	ND (5)	ND (5)
Chromium	**31**	**2.9**	**3.1**	**2.6**
Cobalt	ND (5)	ND (5)	ND (5)	ND (5)
Copper	ND (2)	ND (2)	**6.7**	**11**
Nickel	ND (5)	ND (5)	ND (5)	ND (5)
Silver	ND (2)	ND (2)	ND (2)	ND (2)
Vanadium	ND (5)	ND (5)	ND (5)	ND (5)
Zinc	ND (20)	ND (20)	ND (20)	ND (20)
Mercury	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)

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5J-Constituent estimated value below the analytical method detection limit.
R–Data rejected during the data validation process.
ND (11)-Constituent not detected at the identified analytical method detection limit.

Table 18. Bird Species Reported at NAPR.

Common Name		
Pied-billed grobe	Red-billed tropic bird	Brown pelican
Brown booby	Magnificent frigatebird	Great blue heron
Louisiana heron	Snowy egret	Great egret
Striated heron	Little blue heron	Cattle egret
Least bittern	Yellow–crowned night heron	Black-crowned night heron
White-cheeked pintail	Blue-winged teal	American widgeon
Red-tailed hawk	Osprey	Merlin
Clapper rail	American coot	Caribbean coot
Common gallinule	Piping plover	Semipalmated plover
Black-bellied plover	Wilson's plover	Killdeer
Ruddy turnstone	Black-necked stilt	Whimbrel
Spotted sandpiper	Pectoral sandpiper	Short-billed dowithcher
Greater yellowlegs	Lesser yellowlegs	Willet
Stilt sandpiper	Pectoral sandpiper	Laughing gull
Royal tern	Sandwich tern	Bridled tern
Least tern	Brown noddy	White-winged dove
Zenaida dove	White-crowned pigeon	Mourning dove
Red-necked pigeon	Common ground dove	Bridled quail dove
Ruddy quail dove	Caribbean parakeet	Smooth-billed ani
Yellow-billed cuckoo	Mangrove cockoo	Short-eared owl
Chuck-will's widow	Common nighthawk	Antillean crested hummingbird
Green-throated carib	Antillean mango	Belted kingfisher

Table 18 (cont'd). Bird Species Reported at NAPR.

Common Name		
Gray kingbird	Loggerhead king	Stolid flycathcer
Carribbean elania	Purple martin	Cave swallow
Barn Swallow	Northern mockingbird	Pearly-eyed thrasher
Red-legged thrush	Black-whickered vireo	American redstart
Parula warbler	Prairie warbler	Yellow warbler
Magnolia warbler	Cape May warbler	Black-throated blue warbler
Adelaide's warbler	Palm warbler	Black and white warbler
Ovenbird	Northern water thrush	Bananaquit
Striped-headed tanager	Shiny cowbird	Black-cowled oriole
Great Antillean grackle	Yellow-shouldered blackbird	Hooded Mannikin
Yellow faced grassquit	Black-faced grassquit	Least sandpiper
Western sandpiper	Puerto Rican woodpecker	Rock dove
Puerto Rican emerald	Puerto Rican flycatcher	Pin-tailed whydah
Spice finch	Ruddy duck	Peregrine falcon
Marbled godwit	Puerto Rican lizard cuckoo	Prothonotary warbler
Green – winged teal	Orange-cheeked waxbill	Roseate tern
Least grebe	West Indian whistling duck	Puerto Rican screech owl
Puerto Rican tody		

Table 19. Threatened and Endangered Plants and Animals at NAPR.

Common Name	Federal Status	Commonwealth Status
Mammals		
West Indian Manatee	E	E
Reptiles		
Puerto Rican boa	E	E
Hawksbill turtle	E	E
Leatherback turtle	E	E
Loggerhead turtle	T	T
Green turtle	T	T
Virgin Islands tree boa	E	E
Birds		
Yellow-shouldered blackbird	E	E
Brown pelican	---	E
Peregrin Falcon	---	E
Least tern	---	V
Piping Plover	T	T
Least grebe	---	T
West Indian whistling duck	---	T
Caribbean coot	---	T
Roseate tern	T	T
Snowy plover	---	V
Plants		
Cobra negra	T	T

Key:

E = Endangered

T = Threatened

V = Vulnerable

Table 20. Log Kow Values for Organic Chemicals at SWMU 73.

Chemical	Log K_{ow}	Reference	Bioaccumulative Chemical
Benzo[a]anthracene	5.70	USEPA 1995	Yes
Benzo[a]pyrene	6.11	USEPA 1995	Yes
Benzo[b]fluoranthene	6.20	USEPA 1995	Yes
Benzo[g,h,i]perylene	6.70	USEPA 1995	Yes
Benzo[k]fluoranthene	6.20	USEPA 1995	Yes
Chrysene	5.70	USEPA 1995	Yes
Endrin	5.06	USEPA 1995	Yes
Fluoranthene	5.12	USEPA 1995	Yes
Indeno[1,2,3-cd]pyrene	6.65	USEPA 1995	Yes
Pyrene	5.11	USEPA 1995	Yes
Chlordane	6.32	USEPA 1995	Yes
Dieldrin	5.40	SRC 1998	Yes
Heptachlor	6.26	USEPA 1995	Yes
Heptachlor epoxide	5.00	USEPA 1995	Yes
Kepone	5.30	USEPA 1995	Yes
p,p'-DDD	6.10	USEPA 1995	Yes
p,p'-DDE	6.76	USEPA 1995	Yes
p,p'-DDT	6.53	USEPA 1995	Yes
Aroclor 1254	6.79	SRC 1998	Yes
Aroclor 1248	6.34	SRC 1998	Yes
Aroclor 1260	8.27	SRC 1998	Yes
2-butanone	0.28	USEPA 1995	No
acetone	-0.24	USEPA 1995	No
carbon disulfide	2.00	USEPA 1995	No
methyliodide	1.51	SRC 1998	No

Notes:

K_{ow} = Ocatnol-Water Partitian Coefficient
SRC = Syracuse Research Corporation
USEPA = United States Environmental Protection Agency

* An organic chemical is considered a bioaccumulative chemical if its Log K_{ow} value is greater than or equal to 3.0.

USEPA. 1995. Internal Report on Summary of Measured, Calculated and Recommended Log K_{ow} Values. Environmental Research Laboratory, Athens, GA. April 10, 1995.

Syracuse Research Corporation (SRC). 1998. Experimental Octanol/Water Partition Coefficient (Log P) Database.

http://www.syrres.com/esc/default.htm

Table 21. Soil Bioconcentration Factors Used for Terrestrial Plants and Soil Bioaccumulation Factors Used For Terrestrial Invertebrates.

Chemical	Soil-Plant BCF (dry weight)		Soil-Invertebrate BAF (dry weight)	
	Value	Reference	Value	Reference
PAHs:				
Benzo[a]anthracene	0.540	USEPA 2007	1.42	USEPA 2007
Benzo[a]pyrene	0.820	USEPA 2007	1.27	USEPA 2007
Benzo[b]fluoranthene	0.480	USEPA 2007	1.25	USEPA 2007
Benzo[g,h,i]perylene	1.600	USEPA 2007	1.09	USEPA 2007
Benzo[k]fluoranthene	0.820	USEPA 2007	1.25	USEPA 2007
Chrysene	1.050	USEPA 2007	1.42	USEPA 2007
Endrin	1.00	Assumed	1.00	Assumed
Fluoranthene	6.000	USEPA 2007	1.68	USEPA 2007
Indeno[1,2,3-cd]pyrene	0.150	USEPA 2007	1.11	USEPA 2007
Pyrene	3.700	USEPA 2007	1.65	USEPA 2007
Pesticides and PCBs:				
Chlordane	1.000	Assumed	1.00	Assumed
Dieldrin	2.222	USEPA 2007	1.00	Assumed
Heptachlor	1.000	Assumed	1.00	Assumed
Heptachlor epoxide	1.000	Assumed	1.00	Assumed
Kepone	1.000	Assumed	1.00	Assumed
p,p'-DDD	1.000	Assumed	1.00	Assumed
p,p'-DDE	0.620	USEPA 2007	1.00	Assumed
p,p'-DDT	0.079	USEPA 2007	1.00	Assumed
Aroclor 1254	0.01	USEPA 2007	1.13	Assumed
Metals:				
Barium	0.447	Bechtel Jacobs 1998	0.16	Sample et al. 1998
Chromium	0.084	Bechtel Jacobs 1998	3.16	Sample et al. 1998
Cobalt	0.025	Bechtel Jacobs 1998	0.29	Sample et al. 1998
Copper	0.625	Bechtel Jacobs 1998	1.53	Sample et al. 1998
Lead	0.468	Bechtel Jacobs 1998	1.52	Sample et al. 1998
Nickel	1.411	Bechtel Jacobs 1998	4.73	Sample et al. 1998
Selenium	3.012	Bechtel Jacobs 1998	1.34	Sample et al. 1998
Vanadium	0.010	Bechtel Jacobs 1998	0.09	Sample et al. 1998
Zinc	1.820	Bechtel Jacobs 1998	12.89	Sample et al. 1998

Table 21 (cont'd). Soil Bioconcentration Factors Used for Terrestrial Plants and Soil Bioaccumulation Factors Used For Terrestrial Invertebrates.

Chemical	Soil-Plant BCF (dry weight)		Soil-Invertebrate BAF (dry weight)	
	Value	Reference	Value	Reference
Metals:				
Mercury	5.00	Bechtel Jacobs 1998	20.63	Sample et al. 1998

Notes:
BCF = Bioconcentration Factor
BAF = Bioaccumulation Factor
PAH = Polynuclear Aromatic Hydrocarbon

Table References:

Bechtel Jacobs. 1998. Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants. Prepared for U.S. Department of Energy. BJC/OR-133.

Sample, B.E., J.J. Beauchamp, R.A. Efroymson, G.W. Suter II, and T.L. Ashwood. 1998. Development and Validation of Bioaccumulation Models for Earthworms. Oak Ridge National Laboratory, Environmental Restoration Division, ORNL
Environmental Restoration Program. ES/ER/TM-220

United States Environmental Protection Agency (USEPA). 2007. Attachement 4-1 of Guidance for Developing Ecological Screening Levels Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs.
(Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-55.

Table 22. Plant-to-Omnivorous Mammal BCFs Used to Estimate Chemical Concentrations in Small Mammal Tissue.

Chemical	FCM3	FCM2	Reference	Bamammal	Reference	Plant-Omnivore BCF
PAHs: Benzo[a]anthracene	8.00	1.00	USEPA 1999	0.0399	CHPPM 2007	0.0003
Benzo[a]pyrene	11.00	1.00	USEPA 1999	0.0376	CHPPM 2007	0.0003
Benzo[b]fluoranthene	12.00	1.00	USEPA 1999	0.0362	CHPPM 2007	0.0003
Benzo[g,h,i]perylene	14.00	1.00	USEPA 1999	0.0294	CHPPM 2007	0.0003
Benzo[k]fluoranthene	12.00	1.00	USEPA 1999	0.0365	CHPPM 2007	0.0003
Chrysene	8.00	1.00	USEPA 1999	0.0399	CHPPM 2007	0.0003
Endrin	7.10	1.00	USEPA 1999	0.0351	CHPPM 2007	0.0003
Fluoranthene	3.60	1.00	USEPA 1999	0.0392	CHPPM 2007	0.0003
Indeno[1,2,3-cd]pyrene	14.00	1.00	USEPA 1999	0.0294	CHPPM 2007	0.0003
Pyrene	3.60	1.00	USEPA 1999	0.0384	CHPPM 2007	0.0003
Pesticides and PCBs:						
Chlordane	13.00	1.00	USEPA 1999	0.0406	CHPPM 2007	0.0004
Dieldrin	5.50	1.00	USEPA 1999	0.0338	CHPPM 2007	0.0003
Heptachlor	12.00	1.00	USEPA 1999	0.0308	CHPPM 2007	0.0003
Heptachlor epoxide	3.20	1.00	USEPA 1999	0.0407	CHPPM 2007	0.0004
Kepone	4.80	1.00	USEPA 1999	1.0000	CHPPM 2007	0.0086
p,p'-DDD	11.00	1.00	USEPA 1999	0.0376	CHPPM 2007	0.0003
p,p'-DDE	14.00	1.00	USEPA 1999	0.0399	CHPPM 2007	0.0003
p,p'-DDT	14.00	1.00	USEPA 1999	0.0325	CHPPM 2007	0.0003
Aroclor 1254	1.00	1.00	USEPA 1999	0.03	CHPPM 2007	0.0003
Metals:						
Barium	1.00	1.00	USEPA 1999	0.0002	CHPPM 2007	0.000001
Chromium	1.00	1.00	USEPA 1999	0.0055	CHPPM 2007	0.000047
Cobalt	1.00	1.00	USEPA 1999	0.0200	CHPPM 2007	0.0002
Copper	1.00	1.00	USEPA 1999	0.0100	Baes et al. 1984	0.0001
Lead	1.00	1.00	USEPA 1999	0.0003	CHPPM 2007	0.000003
Nickel	1.00	1.00	USEPA 1999	0.0060	CHPPM 2007	0.00005
Selenium	1.00	1.00	USEPA 1999	0.0023	CHPPM 2007	0.00002
Vanadium	1.00	1.00	USEPA 1999	0.0025	CHPPM 2007	0.000001
Zinc	1.00	1.00	USEPA 1999	0.0001	CHPPM 2007	0.0022
Mercury	1.00	1.00	USEPA 1999	0.2500	Baes et al. 1984	0.0003

Notes:
BCF = Bioconcentration Factor
PAH = Polynuclear Aromatic Hydrocarbon

Table References

CHPPM. 2007. Development of Fate and Transport Parameter Datasets for Use in Environmental Health Risk Assessments Version 4. Aberdeen Proving Ground (MD): U.S. Army Center for Health Promotion and Preventive Medicine, Environmental Health Risk Assessment Program.

Baes CF, Sharp RD, Sjoreen AL, Shor RW. 1984. Review and Analysis of Parameters and Assessing Transport of Environmentally Released Radionuclides Through Agriculture. Oak Ridge (TN): Oak Ridge National Laboratory.

Table 23. Soil-to-Omnivorous Mammal BCFs Used to Estimate Chemical Concentrations in Small Mammal Tissue.

Chemical	Soil-Omnivore BAF (dry weight)	
	Value	Reference
PAHs:		
Benzo[a]anthracene	1.00	Assumed
Benzo[a]pyrene	1.00	Assumed
Benzo[b]fluoranthene	1.00	Assumed
Benzo[g,h,i]perylene	1.00	Assumed
Benzo[k]fluoranthene	1.00	Assumed
Chrysene	1.00	Assumed
Endrin	1.00	Assumed
Fluoranthene	1.00	Assumed
Indeno[1,2,3-cd]pyrene	1.00	Assumed
Pyrene	1.00	Assumed
Pesticides and PCBs:		
Chlordane	1.00	Assumed
Dieldrin	1.00	Assumed
Heptachlor	1.00	Assumed
Heptachlor epoxide	1.00	Assumed
Kepone	1.00	Assumed
p,p'-DDD	1.00	Assumed
p,p'-DDE	1.00	Assumed
p,p'-DDT	1.00	Assumed
Aroclor 1254	1.00	Assumed
Metals:		
Barium	0.360	Sample et al. 1998
Chromium	0.349	Sample et al. 1998
Cobalt	0.025	Sample et al. 1998
Copper	0.554	Sample et al. 1998
Lead	0.286	Sample et al. 1998
Nickel	0.589	Sample et al. 1998
Selenium	1.340	Sample et al. 1998
Vanadium	0.018	Sample et al. 1998
Zinc	2.782	Sample et al. 1998
Mercury	0.192	Sample et al. 1998

Notes:
BCF = Bioconcentration Factor
BAF = Bioaccumulation Factor
PAH = Polynuclear Aromatic Hydrocarbon

Table 24. Conservative Exposure Parameters For Upper Trophic Level Receptors.

Receptor	Body Weight (kg)		Food Ingestion Rate (kg/day-dw)		Area Use
	Value	Reference	Value	Reference	Factor
Birds:					1.00
American robin	0.064	USEPA 1993	0.0057	Levey and Karasov 1989	1.00
Mourning dove	0.105	Tomlinson et al. 1994	0.0179	Nagy 1987 [1]	1.00
Red-tailed hawl	0.957	USEPA 1993	0.0395	Sample and Suter II 1994	1.00
Mammals:					1.00
Small mammal omnivore (prey)	0.175	Jackson 1992	0.0176	Nagy 1987 [2]	1.00

Notes:
[1] = an allometric equation for birds was used
[2] = an allometric equation for rodents was used
kg = kilograms
kg/day-dry = kilograms (dry weight) of food ingestion per day
USEPA = United States Environmental Protection Agency

Table References

Jackson, W.B. 1992. Norway Rat and Allies. Chapter 54 in Chapman, J.A. and G.A. Feldhamer (eds.), Wild Mammals of North America: Biology, Management, and Economics. The Johns Hopkins University Press, Baltimore, MD.

Levey, D.J. and W.H. Karasov. 1989. Digestive Responses of Temperate Birds Switched to Fruit or Insect Diets. Auk. 106: 675-686.

Nagy, K.A. 1987. Field Metabolic Rate and Food Requirement Scaling in Mammals and Birds. Ecol. Monogr. 57:111-128

Sample, B. E. and G.W. Suter II. 1994. Estimating Exposure of Terrestrial Wildlife to Contaminants. Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-125.

Tomlinson, R.E., D.D. Dolton, R.R. Mirarchi. 1994. Mourning Dove. In T.C. Tacha and C.E. Braun (eds), Migratory Shore and Upland Game Bird Management in North America. Int. Assoc. Fish and Wildlife Agencies, Washington, D.C.

USEPA. 1993. Wildlife Exposure Factors Handbook. Office of Research and Development, Washington, D.C. EPA/600/R-93/187a.

Table 25. Dietary Composition for Upper Trophic Level Receptors.

Receptor	Dietary Composition (percent)				Soil Ingestion (percent)	
	Terr. Plants	**Soil Invert.**	**Small Mammals**	**Reference**	**Value**	**Reference**
Birds:						
American robin	12.0	78.9 [1]	0	Martin et al. 1951	9.1	Sample and Suter II 1994
Mourning dove	95.0	0	0	Tomlinson et al. 1994	5.0	Assumed
Red-tailed hawl	0	0	97.5	USEPA 1993; *SS	2.5	Assumed
Mammals:						
Small mammal omnivore	49.0	49.0	0	Assumed	2.0	Assumed
(prey)						

Notes:

[1] = For dietary compositions the highest percentage of terrestrial insects was reported for spring

*SS = Sample and Suter II 1994 reference

USEPA = United States Environmental Protection Agency

Table References

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Sample, B. E. and G.W. Suter II. 1994. Estimating Exposure of Terrestrial Wildlife to Contaminants. Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-125

Tomlinson, R.E., D.D. Dolton, R.R. Mirarchi. 1994. Mourning Dove. In T.C. Tacha and C.E. Braun (eds), Migratory Shore and Upland Game Bird Management in North America. Int. Assoc. Fish and Wildlife Agencies, Washington, D.C.

USEPA. 1993. Wildlife Exposure Factors Handbook. Office of Research and Development, Washington, D.C. EPA/600/R-93/187a.

Table 26. Results of the SLERA: Frequency and Surface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
Volatile Organic Compounds (µg/kg)						
2-Butanone {MEK}	13/25	41.0	N/A	--	Yes	Data Gap
Acetone	24/25	160.0	N/A	--	Yes	Data Gap
Carbon disulfide	8/12	6.0	N/A	--	Yes	Data Gap
Methyl iodide	21/23	22.0	N/A	--	Yes	Data Gap
Methylene chloride	1/12	6.0	1,004	0.00598	No	HQ<1
PAHs (µg/kg)						
1-Methylnaphthalene	13/30	14.0	1,200	0.0117	No	HQ<1
2-Methylnaphthalene	14/30	86.0	1,200	0.0717	No	HQ<1
Acenaphthene	16/31	63.0	20,000	0.00315	No	HQ<1
Acenaphthylene	27/31	720.0	1,200	0.06	No	HQ<1
Anthracene	31/31	820.0	1,200	0.0683	No	HQ<1
Benzo[a]anthracene	31/31	4000.0	1,200	**3.33**	Yes	HQ≥1
Benzo[a]pyrene	32/40	3400.0	1,200	**2.83**	Yes	HQ≥1
Benzo[b]fluoranthene	31/31	4800.00	1,200	**4.00**	Yes	HQ≥1
Benzo[g,h,i]perylene	31/31	1800.0	1,200	**1.50**	Yes	HQ≥1
Benzo[k]fluoranthene	31/31	1900.0	1,200	**1.58**	Yes	HQ≥1
Chrysene	31/31	4200.0	1,200	**3.50**	Yes	HQ≥1
Dibenz[a,h]anthracene	31/31	560.0	1,200	0.0467	No	HQ<1
Fluoranthene	31/31	1900.0	1,200	**1.58**	Yes	HQ≥1
Fluorene	20/31	41.0	30,000	0.00375	No	HQ<1

Table 26 (cont'd). Results of the SLERA: Frequency and Surface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
PAHs (µg/kg)						
Indeno[1,2,3-cd]pyrene	31/31	1700.0	1,200	**1.42**	Yes	HQ≥1
Napthalene	22/30	320.0	1,200	0.267	No	HQ<1
Phenanthrene	29/31	450.0	1,200	0.375	No	HQ<1
Pyrene	31/31	3100.0	1,200	**2.58**	Yes	HQ≥1
SemiVolatile Organic Compounds (µg/kg)						
Bis(2-ethylhexyl)phthalate (DEHP)	25/25	2900.0	6,010	0.483	No	HQ<1
Butylbenzylphthalate	1/12	890.0	6,010	0.148	No	HQ<1
Pesticides and PCBs (µg/kg)						
Aroclor 1248	1/9	8400.0	N/A	--	Yes	Data Gap
Aroclor 1254	6/32	8400.0	N/A	--	Yes	Data Gap
Aroclor 1260	17/32	8400.0	N/A	--	Yes	Data Gap
Chlordane	7/24	9800.0	100	**98.0**	Yes	HQ≥1
Dieldrin	8/21	980.0	401	**2.44**	Yes	HQ≥1
Heptachlor	4/12	480.0	100	**4.80**	Yes	HQ≥1
Heptachlor epoxide	6/24	480.0	100	**4.80**	Yes	HQ≥1
Kepone	8/24	4000.0	100	**40.0**	Yes	HQ≥1
p,p'-DDD	6/21	5500.0	401	**13.7**	Yes	HQ≥1
p,p'-DDE	27/33	9600.0	401	**23.9**	Yes	HQ≥1
p,p'-DDT	27/34	77000.0	401	**192.0**	Yes	HQ≥1

Table 26 (cont'd). Results of the SLERA: Frequency and Surface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
Metals (mg/kg)						
Antimony	12/12	2.7	78.0	0.0346	No	HQ<1
Arsenic	41/47	12.0	18.0	0.667	No	HQ<1
Barium	47/47	430.0	330.0	**1.30**	Yes	HQ≥1
Cadmium	33/51	28.0	32.0	0.875	No	HQ<1
Chromium	54/54	180.0	.40	**450.0**	Yes	HQ≥1
Cobalt	54/54	290.0	13.0	**22.3**	Yes	HQ≥1
Copper	53/53	290.0	70.0	**4.14**	Yes	HQ≥1
Lead	47/47	370.0	120.0	**3.08**	Yes	HQ≥1
Nickel	40/40	63.0	30.0	**2.10**	Yes	HQ≥1
Selenium	7/13	1.8	1.0	**1.80**	Yes	HQ≥1
Silver	2/25	0.38	560.0	0.000679	No	HQ<1
Thallium	2/25	0.51	1.0	0.510	No	HQ<1
Vanadium	51/51	330.0	2.0	**165.0**	Yes	HQ≥1
Zinc	60/60	500.0	50.0	**10.0**	Yes	HQ≥1
Mercury	56/60	4.4	.10	**44.0**	Yes	HQ≥1

Notes:

HQ = hazard quotient
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram

Table 27. Results of the SLERA: Frequency and SubSurface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
Volatile Organic Compounds (µg/kg)						
Acetone	2/2	37.0	N/A	Data Gap	Yes	HQ≥1
PAHs (µg/kg)						
1-Methylnaphthalene	0/1	2.0	1,200	0.001	No	HQ<1
2-Methylnaphthalene	1/1	1.3	1,200	0.001	No	HQ<1
Acenaphthene	1/1	1.6	20,000	0.00008	No	HQ<1
Acenaphthylene	2/3	1.8	1,200	0.002	No	HQ<1
Anthracene	2/3	4.5	1,200	0.004	No	HQ<1
Benzo[a]anthracene	2/3	82.0	1,200	0.068	No	HQ<1
Benzo[a]pyrene	2/3	180.0	1,200	0.150	No	HQ<1
Benzo[b]fluoranthene	2/3	110.0	1,200	0.091	No	HQ<1
Benzo[g,h,i]perylene	2/3	43.0	1,200	0.035	No	HQ<1
Benzo[k]fluoranthene	2/3	50.0	1,200	0.417	No	HQ<1
Chrysene	2/3	120.0	1,200	0.100	No	HQ<1
Dibenz[a,h]anthracene	2/3	3.6	1,200	0.003	No	HQ<1
Fluoranthene	2/3	170.0	1,200	0.142	No	HQ<1
Fluorene	1/1	1.1	30,000	0.00003	No	HQ<1
Indeno[1,2,3-cd]pyrene	2/3	40.0	1,200	0.033	No	HQ<1
Naphthalene	1/3	180.0	1,200	0.150	No	HQ<1
Phenanthrene	2/3	180.0	1,200	0.150	No	HQ<1
Pyrene	2/3	180.0	1,200	0.150	No	HQ<1

Table 27 (cont'd). Results of the SLERA: Frequency and SubSurface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
SemiVolatile Organic Compounds (µg/kg)						
Bis(2-ethylhexyl)phthalate (DEHP)	2/2	1500.0	6,010	0.249	No	HQ<1
Pesticides and PCBs (µg/kg)						
Endrin	1/2	1100.0	401	2.743	Yes	HQ≥1
Chlordane	1/2	900.0	100	9.00	Yes	HQ≥1
Heptachlor epoxide	0/2	91.0	100	0.910	No	HQ<1
Kepone	0/2	770.0	100	7.70	Yes	HQ≥1
p,p'-DDD	1/2	1100.0	401	2.743	Yes	HQ≥1
p,p'-DDE	1/2	3100.0	401	7.730	Yes	HQ≥1
p,p'-DDT	1/2	14000.0	401	34.9	Yes	HQ≥1
Metals (mg/kg)						
Antimony	1/3	1.1	78.0	0.014	No	HQ<1
Arsenic	3/4	1.4	18.0	0.078	No	HQ<1
Barium	3/3	210.0	330.0	0.636	No	HQ<1
Cadmium	3/3	0.75	32.0	0.002	No	HQ<1
Chromium	3/3	46.0	.40	115.0	Yes	HQ≥1
Cobalt	3/3	55.0	13.0	4.23	Yes	HQ≥1
Copper	4/4	460.0	70.0	6.57	Yes	HQ≥1
Lead	3/3	56.0	120.0	0.467	No	HQ<1
Nickel	3/3	13.0	30.0	0.433	No	HQ<1

Table 27 (cont'd). Results of the SLERA: Frequency and SubSurface Soil Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
Metals (mg/kg)						
Selenium	1/3	1.1	1.0	1.100	Yes	HQ≥1
Silver	0/3	0.2	560.00	0.0004	No	HQ<1
Thallium	0/3	0.4	1.0	0.400	No	HQ<1
Vanadium	3/3	300.0	2.0	150.0	Yes	HQ≥1
Zinc	4/4	600.0	50	12.0	Yes	HQ≥1
Mercury	1/4	0.10	.10	1.02	Yes	HQ≥1

Notes:

HQ = hazard quotient
mg/kg = milligram per kilogram
µg/kg = microgram per kilogram

Table 28. Results of the SLERA: Frequency and Ground water Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Ground Water Screening Value	Max HQ	Ecological COPC?	Comments
Volatile Organic Compounds (µg/kg)						
Ethyl Benzene	1/3	1.0	4.3	0.23	No	HQ<1
Carbon disulfide	2/4	1.6	650.0	0.002	No	HQ<1
Toluene	2/4	1.3	37.0	0.0351	No	HQ<1
SemiVolatile Organic Compounds (µg/kg)						
Bis(2-ethylhexyl)phthalate	1/1	110.0	360.0	0.31	No	HQ<1
Cresol, m&p	1/3	10.0	50.0	0.20	No	HQ<1
PAHs (µg/kg)						
Fluoranthene	2/2	0.05	11.0	0.004	No	HQ<1
Napthalene	0/1	0.05	23.5	0.002	No	HQ<1
Pesticides and PCBs (µg/kg)						
p,p'-DDD	2/3	0.1	0.03	4.0	Yes	HQ≥1
p,p'-DDE	2/3	0.11	0.14	0.79	No	HQ<1
p,p'-DDT	1/3	0.1	0.001	100	Yes	HQ≥1

Table 28 (cont'd). Frequency, Ground Water Concentrations, and Chemicals Retained as Chemicals of Potential Concern.

Analyte	No. of Positive Detections/ No. of Samples	Maximum Value	Surface Soil Screening Value	Max HQ	Ecological COPC?	Comments
Metals (mg/kg)						
Antimony	0/2	5.0	500.0	0.01	No	HQ<1
Arsenic	3/4	35.10	36.0	0.98	No	HQ<1
Barium	4/4	154.0	50000.0	0.003	No	HQ<1
Beryllium	0/2	2.0	310.0	0.006	No	HQ<1
Cadmium	1/2	12.8	8.85	1.45	Yes	HQ<1
Chromium	2/2	7.02	50.40	0.13	No	HQ<1
Cobalt	1/4	277.0	45.0	6.16	Yes	HQ≥1
Copper	1/4	130.0	3.73	34.9	Yes	HQ≥1
Lead	0/2	4.0	8.52	0.46	No	HQ<1
Mercury	0/3	0.20	1.11	0.18	No	HQ<1
Nickel	3/6	140.0	8.28	16.9	Yes	HQ≥1
Selenium	2/2	61.6	71.10	0.86	No	HQ<1
Silver	3/4	5.98	0.23	26.0	No	HQ<1
Thallium	0/2	4.0	21.3	0.18	No	HQ<1
Tin	0/2	0.2	N/A	---	Yes	Datagap
Vanadium	2/4	30.0	120.0	0.25	No	HQ<1
Zinc	2/2	154.0	85.6	1.8	Yes	HQ≥1

Notes:

HQ = hazard quotient
mg/kg = milligram per kilogram, µg/kg = microgram per kilogram

Table 29. Hazard Quotients for Terrestrial Food Web Exposures: Surface Soil.

Chemical	Red-tailed hawk			American robin			Mourning Dove		
	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT
Chlordane	1.13	0.23	0.51	---	---	---	---	---	---
Dieldrin	1.34	0.13	0.43	---	---	---	---	---	---
p,p'-DDD	23.04	2.30	7.29	1.39	0.14	0.44	2.80	0.28	0.89
p,p'-DDE	51.10	5.11	16.16	2.42	0.24	0.77	3.66	0.36	1.16
p,p'-DDT	409.84	40.98	129.60	19.40	0.02	0.67	15.17	1.52	4.80
Aroclor	1.00	0.10	0.32	---	---	---	---	---	---
Chromium	6.61	0.66	2.09	1.51	0.15	0.48	---	---	---
Copper	2.75	0.92	1.59	1.07	0.36	0.62	1.37	0.46	0.79
Lead	1.40	0.69	0.99	3.39	1.70	2.40	3.74	1.87	2.64
Selenium	20.88	10.44	14.76	---	---	---	---	---	---
Vanadium	2.60	1.30	1.84	8.17	4.09	5.78	8.32	4.16	5.88
Zinc	8.50	0.94	2.83	2.27	0.25	0.76	1.36	0.15	0.45
Mercury	66.15	22.05	38.19	16.99	5.67	9.81	15.81	5.27	9.13

Notes:

Shaded cells indicate a hazard quotient greater than 1.0

NOAEL = No Observed Adverse Effect Level
LOAEL = Lowest Observed Adverse Effect Level
MATC = Maximum Acceptable Toxicant Concentration

Table 30. Hazard Quotients for Terrestrial Food Web Exposures: SubSurface Soil.

Chemical	Red-tailed hawk			American robin			Mourning Dove		
	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT
Endrin	14.94	1.49	4.73	9.82	0.98	3.11	18.72	1.87	5.92
p,p'-DDD	4.61	0.46	1.46	1.96	0.19	0.62	3.74	0.37	1.18
p,p'-DDE	16.46	1.65	5.21	5.28	0.53	1.67	6.74	0.67	2.13
p,p'-DDT	74.32	7.43	23.50	22.24	2.22	7.03	5.95	0.59	1.88
Chromium	1.05	0.11	0.33	4.00	0.40	1.27	---	---	---
Copper	3.41	1.14	1.97	13.93	4.67	8.06	12.44	4.17	7.19
Vanadium	2.37	1.18	1.67	12.58	6.29	8.89	8.79	4.39	6.22
Zinc	10.12	1.12	3.37	38.72	4.29	12.88	12.52	1.39	4.17
Mercury	3.21	1.07	1.85	5.94	1.98	3.43	3.21	1.07	1.85

Notes:

Shaded cells indicate a hazard quotient greater than 1.0

NOAEL = No Observed Adverse Effect Level
LOAEL = Lowest Observed Adverse Effect Level
MATC = Maximum Acceptable Toxicant Concentration

Table 31. Uncertainties Associated with the Screening-Level Ecological Risk Assessment.

Key Methodology	**Discussion of Uncertainty**
Problem Formulation/Site Characterization	
Selected wildlife receptors are assumed to be present at the NAPR year round.	All species selected may not be present at the NAPR year round. However, based on professional judgment, they were chosen to be the most representative for the habitats at NAPR.
Identification of COPCs	
Chemicals without screening values and non-detects	Chemicals without screening values and non-detected chemicals were retained as COPCs
NOAEL screening values for assessing upper trophic levels	For upper trophic level receptors the use of NOAEL-based screening values is very conservative since it is not evident how much higher a dose must be before adverse effects are observed.
Exposure Point Concentrations	
Using maximum concentrations for upper trophic level receptors	Using maximum chemical concentrations to evaluate upper trophic level receptor exposure is conservative since these receptors are mobile and can have large home ranges.
Media-Specific Screening Values	
Using the minimum value from plant and earthworm screening values or the only available screening value	For some chemicals only a plant or earthworm soil screening value was available in the literature so assumptions were made in the SLERA that the selected screening value was protective of both receptor communities. Also, when a plant and earthworm value was present, the minimum value was selected for use in the SLERA.
Ingestion-based Screening Values	
Use of NOAELs and LOAELs derived from laboratory studies	NOAELs and LOAELs derived from laboratory studies with non-wildlife species may overestimate or underestimate potential risks if the sensitivities of the receptor and test species differ greatly
Using worse form of metals in the SLERA (i.e., methyl mercury)	The SLERA assumed that the metals (e.g., mercury) detected in soil was methyl mercury and NOAELs were selected based on that assumption. This likely resulted in an overestimation of potential risks.
Uncertainty factors are used to estimate chronic NOAELs.	Uncertainty factors are only used when such NOAELs did not exist.
Ecological Receptors	
Reptiles and amphibians were not selected as ecological receptors	Although exposure pathways to terrestrial reptiles and amphibians may exist, they were not evaluated due to the lack of life history and screening-level values for use in the SLERA.

Table 31(cont'd). Uncertainties Associated with the Screening-Level Ecological Risk Assessment.

Key Methodology	**Discussion of Uncertainty**
Exposure Routes	
Dermal and inhalation pathways are not evaluated.	These pathways are difficult to evaluate, because guidance and toxicological data is unavailable.
Food Web Exposure Modeling	
Chemical concentrations in terrestrial food items were modeled	Chemical concentrations in food items (plants, earthworms, and small mammals) were modeled using BAFs and BCFs instead of directly measured thus introducing uncertainty into risk estimates
Using a default factor of 1.0 when a BAF or BCF was unavailable	Using a default factor of 1.0 to estimate the concentration of chemicals in receptor prey may underestimate potential risks to upper trophic level receptors for chemicals that bioaccumulate
The BCF-FCM approach used to estimate COPC concentrations in terrestrial birds	The BCF-FCM approach was originally developed for aquatic food webs and not terrestrial webs. However, there is no other method available to estimate COPC concentrations in wildlife food items for upper trophic level receptors.
Use of Conservative exposure parameters	The use of maximum ingestion rates, minimum body weights, and an AUF of 1 tends to overestimate potential risks to upper trophic level receptors.

Table 32. Less Conservative Soil Biocencentration Factors Used for Terrestrial Plants and Soil Bioaccumulation Factors Used For Terrestrial Invertebrates.

Chemical	Soil-Plant BCF (dry weight)		Soil-Invertebrate BAF (dry weight)	
	Value	**Reference**	**Value**	**Reference**
Metals:				
Copper	0.123	Bechtel Jacobs 1998	0.47	Sample et al. 1998
Zinc	0.358	Bechtel Jacobs 1998	2.48	Sample et al. 1998
Mercury	0.344	Bechtel Jacobs 1998	1.19	Sample et al. 1998

Notes:

BCF = Bioconcentration Factor
BAF = Bioaccumulation Factor

Table References

Bechtel Jacobs. 1998. Empirical Models for the Uptake of Inorganic Chemicals from Soil by Plants. Prepared for U.S. Department of Energy. BJC/OR-133. September 1998.

Sample, B.E., J.J. Beauchamp, R.A. Efroymson, G.W. Suter II, and T.L. Ashwood. 1998. Development and Validation of Bioaccumulation Models for Earthworms. Oak Ridge National Laboratory, Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-220

United States Environmental Protection Agency (USEPA). 2007. Attachement 4-1 of Guidance for Developing Ecological Screening Levels (Eco-SSLs): Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. Ofice of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-55

Table 33. Less Conservative Exposure Parameters For Upper Trophic Level Receptors.

Receptor	Body Weight (kg)		Food Ingestion Rate (kg/day-dw)		Area Use Factor
	Value	Reference	Value	Reference	
Birds:					1.00
American robin	0.077	USEPA 1993	0.0043	Levey and Karasov 1989	1.00
Mourning dove	0.127	Tomlinson et al. 1994	0.0152	Nagy 1987 [1]	1.00
Red-tailed hawl	1.126	USEPA 1993	0.0360	Sample and Suter II 1994	1.00
Mammals:					1.00
Small mammal omnivore	0.275	Jackson 1992	0.0148	Nagy 1987 [2]	1.00
(prey)					

Notes:

[1] = an allometric equation for birds was used

[2] = an allometric equation for rodents was used

kg = kilograms

kg/day-dry = kilograms (dry weight) of food ingestion per day

USEPA = United States Environmental Protection Agency

Table References:

Jackson, W.B. 1992. Norway Rat and Allies. Chapter 54 in Chapman, J.A. and G.A. Feldhamer (eds.), Wild Mammals of North America: Biology, Management, and Economics. The Johns Hopkins University Press, Baltimore, MD.

Levey, D.J. and W.H. Karasov. 1989. Digestive Responses of Temperate Birds Switched to Fruit or Insect Diets. Auk. 106: 675-686.

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Sample, B. E. and G.W. Suter II. 1994. Estimating Exposure of Terrestrial Wildlife to Contaminants. Environmental Restoration Division, ORNL Environmental Restoration Program. ES/ER/TM-125

Tomlinson, R.E., D.D. Dolton, R.R. Mirarchi. 1994. Mourning Dove. In T.C. Tacha and C.E. Braun (eds), Migratory Shore and Upland Game Bird Management in North America. Int. Assoc. Fish and Wildlife Agencies, Washington, D.C.

USEPA. 1993. Wildlife Exposure Factors Handbook. Office of Research and Development, Washington, D.C. EPA/600/R-93/187a.

Table 34. Summary of Refined Hazard Quotients for Lower Trophic Level Receptors.

Chemical	Lower Trophic Level Receptors		
	Surface Soil	**Subsurface Soil**	**Ground Water**
Endrin	--	HQ= 1.37	--
Chlordane	HQ= 4.72	--	--
Kepone	HQ= 1.83	HQ= 3.88	--
p,p'-DDD	--	HQ= 1.37	HQ = 2.53
p,p'-DDE	HQ= 1.15	HQ= 3.47	--
p,p'-DDT	HQ= 6.08	HQ= 17.5	HQ = 96.0
Arsenic	--	--	--
Cadmium	--	--	--
Chromium	--	--	--
Cobalt	--	--	--
Copper	--	HQ= 3.29	HQ =17.0
Zinc	HQ= 2.64	HQ= 4.14	--
Mercury	HQ= 5.79	--	--
Silver	--	--	HQ =18.3

HQ = Hazard Quotients

Table 35. Summary of Descriptive and Distributional Statistics for Ecological COPCs.

Surface Soil (mg/kg)					
Substance	**Location**	**Frequency of detection**	**Mean**	**SD**	**Test/ p-value**
Barium	Background	20/20	81.8	1.83	t-test on logs p=.296
	SWMU 73	47/47	89.29	1.86	
Chromium	Background	21/21	24.9	12.4	t-test on logs p=.040
	SWMU 73	54/54	38.7	39.23	
Cobalt	Background	19/19	20.39	1.62	t-test on logs p=.573
	SWMU 73	54/54	19.85	2.01	
Copper	Background	19/19	77.2	45.4	t-test p=<.001
	SWMU 73	57/57	161.0	73.06	
Lead	Background	19/19	6.05	2.23	t-test on logs p=<.001
	SWMU 73	47/47	19.67	3.89	
Mercury	Background	18/21	0.04	2.05	t-test on logs p=.001
	SWMU 73	4/60	0.14	5.32	
Nickel	Background	20/20	9.03	1.65	t-test on logs p=<.001
	SWMU 73	40/40	17.03	1.72	
Selenium	Background	5/24	0.54	0.319	t-test on proportions p=.041
	SWMU 73	6/13	1.17	0.27	
Vanadium	Background	18/18	134.29	1.65	t-test on logs p=.225
	SWMU 73	51/51	142.21	1.71	
Zinc	Background	19/19	41.82	2.08	t-test on logs p=<.001
	SWMU 73	64/64	106.85	1.97	
Subsurface Soil (mg/kg)					
Beryllium	Background	9/14	0.32	0.31	t-test p=.964
	SWMU 73	3/3	0.16	0.02	
Chromium	Background	15/15	17.3	2.17	t-test on logs p=.001
	SWMU 73	6/6	70.09	1.94	
Cobalt	Background	14/14	19.10	2.15	t-test on logs p=.148
	SWMU 73	6/6	25.39	1.47	
Copper	Background	13/13	52.32	1.69	t-test on logs p=<.001
	SWMU 73	7/7	162.66	1.66	
Mercury	Background	2/15	0.021		t-test of proportions p=.0536
	SWMU 73	4/7	0.0268		
Selenium	Background	2/13	0.49	0.35	t-test of proportions p=.4893
	SWMU 73	1/3	0.70	0.35	
Vanadium	Background	14/14	125.63	65.17	t-test p=.121
	SWMU 73	6/6	173.33	81.89	
Zinc	Background	12/14	38.65	1.68	t-test on logs p=.006
	SWMU 73	7/7	117.45	2.31	

Table 35 (cont'd). Summary of Descriptive and Distributional Statistics for Ecological COPCs.

Groundwater (µg/l)					
Cadmium	Background	5/15	8.61	13.91	t-test of proportions p>.99
	SWMU 73	1/2	6.90	8.34	
Cobalt	Background	9/14	10.89	16.64	t-test of proportions p=.6027
	SWMU 73	2/5	2.95	20.73	
Copper	Background	6/14	4.49	12.8	t-test of proportions p=.5765
	SWMU 73	1/4	32.69	5.77	
Nickel	Background	8/14	6.51	8.12	t-test of proportions p=.6594
	SWMU 73	3/7	18.69	8.84	
Silver	Background	3/15	1.48	1.11	t-test of proportions p=.3341
	SWMU 73	3/4	3.97	2.19	
Tin	Background	1/14	4.66	5.53	t-test of proportions p>.99
	SWMU 73	0/2	0.10	0.00	
Zinc	Background	12/13	11.96	7.43	t-test of proportions p=.304
	SWMU 73	2/2	34.32	8.36	

Table 36. Refined Hazard Quotients for Terrestrial Food Web Exposures: Surface Soil.

Chemical	Red-tailed hawk			American robin			Mourning Dove		
	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT
p,p'-DDD	9.9	0.99	3.13	5.21	0.52	1.65	9.93	0.99	3.14
p,p'-DDE	15.65	1.56	4.94	5.81	0.58	1.84	2.22	0.22	0.70
p,p'-DDT	107.6	10.76	34.03	39.4	3.94	12.5	7.24	0.72	2.29
Chromium	0.13	0.01	0.04	0.72	0.07	0.22	0.35	0.03	0.11
Copper	0.41	0.14	0.04	2.13	0.71	1.23	1.42	0.47	0.82
Lead	0.21	0.10	0.15	1.13	0.56	0.80	0.54	0.27	0.38
Vanadium	0.75	0.37	0.53	5.82	2.91	4.11	4.95	2.47	3.50
Zinc	0.41	0.05	0.14	1.95	0.21	0.65	0.69	0.07	0.23
Mercury	1.05	0.35	0.61	5.28	1.76	3.05	3.55	1.18	2.05

Notes:

Shaded cells indicate a hazard quotient greater than 1.0

NOAEL = No Observed Adverse Effect Level
LOAEL = Lowest Observed Adverse Effect Level
MATC = Maximum Acceptable Toxicant Concentration

Table 37. Refined Hazard Quotients for Terrestrial Food Web Exposures: SubSurface Soil.

Chemical	Red-tailed hawk			American robin			Mourning Dove		
	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT	NOAEL	LOAEL	MACT
Endrin	12.10	1.21	3.82	6.06	0.60	1.91	13.17	1.31	4.16
p,p'-DDD	3.73	0.37	1.18	1.21	0.12	0.38	2.63	0.26	0.42
p,p'-DDE	13.36	1.33	4.22	3.06	0.30	0.96	1.33	0.13	0.42
p,p'-DDT	60.32	6.03	19.07	13.64	1.36	4.31	2.85	0.28	0.90
Copper	0.59	0.19	0.33	1.90	0.63	1.10	1.45	0.48	0.84
Vanadium	0.98	0.02	0.69	4.71	2.35	3.33	4.57	2.28	3.23
Zinc	1.00	0.11	0.33	2.96	0.32	0.98	1.20	0.13	0.40

Notes:

Shaded cells indicate a hazard quotient greater than 1.0

NOAEL = No Observed Adverse Effect Level
LOAEL = Lowest Observed Adverse Effect Level
MATC = Maximum Acceptable Toxicant Concentration

Table 36. Exposure Point Concentrations – Surface Soil

Substance	Units Corrected EPC	EPC	Statistic	Max	Mean	Sd
Acenaphthylene	0.16	163.10	95% Chebyshev UCL	720.00	57.31	135.10
Arolclor 1248	10.21	10207.00	99% Chebyshev UCL	8400.00	987.90	2780.00
Arolclor 1254	3.26	3257.00	99% Chebyshev UCL	8400.00	426.90	1609.00
Arolclor 1260	3.26	3264.00	99% Chebyshev UCL	8400.00	434.50	1609.00
Arsenic	6.57	6.57	95% Aproximate Gamma UCL	12.00	5.62	3.14
Benzo[a]anthracene	0.81	810.50	95% Chebyshev UCL	4000.00	242.80	725.20
Benzo[a]pyrene	0.66	656.40	95% Chebyshev UCL	3400.00	275.20	553.10
Benzo[b]fluoranthene	1.08	1084.00	95% Chebyshev UCL	4800.00	372.60	908.30
Benzo[g,h,i]perylene	0.40	398.30	95% Chebyshev UCL	1800.00	133.50	338.20
Benzo[k]fluoranthene	0.47	466.70	95% Chebyshev UCL	1900.00	171.50	377.10
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	1727.00	95% Student's-t UCL	2900.00	1279.00	978.20
Chlordane	4.51	4513.00	99% Chebyshev UCL	9800.00	472.90	1989.00
Cobalt	51.64	51.64	95% Aproximate Gamma UCL	290.00	27.84	40.13
Dibenz[a,h]anthracene	0.12	120.40	95% Chebyshev UCL	560.00	39.37	103.50
Dieldrin	0.68	684.40	99% Chebyshev UCL	980.00	91.80	272.90
Heptachlor	0.44	438.50	99% Chebyshev UCL	480.00	43.27	137.60
Heptachlor epoxide	0.22	220.60	99% Chebyshev UCL	480.00	22.62	97.50
Indeno[1,2,3-cd]pyrene	0.37	371.80	95% Chebyshev UCL	1700.00	123.60	317.10
Kepone	1.84	1835.00	99% Chebyshev UCL	4000.00	183.80	813.10
Methyl iodide	0.01	7.83	95% Modified-t UCL	22.00	6.50	3.15
p,p’-DDD	2.92	2918.00	99% Chebyshev UCL	5500.00	305.90	1203.00
p,p’-DDE	3.63	3632.00	99% Chebyshev UCL	9600.00	457.10	1833.00
p,p’-DDT	24.97	24972.00	99% Chebyshev UCL	77000.00	2437.00	13206.00
Phenanthrene	0.12	121.90	95% Chebyshev UCL	450.00	48.95	93.12

Table 37. Exposure Point Concentrations – Subsurface Soil

Substance	EPC	Statistic	Max
Acenaphthylene	0.00	I/O	1.80
Benzo[a]pyrene	0.18	I/O	180.00
Benzo[g,h,i]perylene	0.04	I/O	43.00
Phenanthrene	0.18	I/O	180.00
Bis(2-ethylhexyl)phthalate (DEHP)	0.15	I/O	150.00
Endrin	1.10	I/O	1100.00
Heptachlor epoxide	0.09	I/O	91.00
Kepone	0.77	I/O	770.00
p,p'-DDE	3.10	I/O	3100.00
p,p'-DDT	14.00	I/O	14000.00

I/O indicates insufficient observations for statistical analysis. Maximum value used for EPC.

Table 40. Potentially Complete Exposure Pathways

	Surface Soil		Subsurface Soil		Groundwater
Receptor	Ingestion	Dermal Absorption	Ingestion	Dermal Absorption	Dermal Absorption
Industrial Worker	X	X			
Construction Worker	X	X	X	X	X
Adult Trespasser	X	X			
Youth Trespasser	X	X			
Future Adult Resident	X	X			
Future Child Resident	X	X			

Table 41. Exposure Assessment Values.

Pathway	Parameter	Industrial Workers	Construction Workers	Adult Trespassers	Youth Trespassers	Adult Residents	Child Residents
Common Values	Exposure Duration (years)	25	1	24	11	25	6
	Exposure Frequency (days/year)	250	250	52	52	350	350
	Averaging Time (noncarcinogenic) (years)	Same as Exposure Duration					
	Averaging Time (carcinogenic) (years)	70	70	70	70	70	70
	Body Weight (kg)	70	70	70	45	70	15
Soil Ingestion	Ingestion Rate (mg/day)	100	330	100	100	100	200
	Fraction Ingested	1	1	1	1	1	1
Dermal Absorption (soil)	Surface Area (cm^2)	3300	3300	5700	3200	5700	2800
	Adherence Factor	0.2	0.3	0.07	0.2	0.07	0.2
	Absorption Factor	Chemical Specific					
Dermal Contact w/Ground Water	Dermal Permeability Constant	Chemical Specific					
	Surface Area	N/A	3300 cm^2	N/A	N/A	N/A	N/A
	Events per day	N/A	1	N/A	N/A	N/A	N/A

Table 42. Toxicity Reference Values.

Substance	RfD (mg/kg-day)	Source	CSF_o $(mg/kg\text{-}day)^{-1}$	Source	WOE
Acenaphthylene	**NA**	**NA**	**NA**	IRIS	D
Aroclor 1248	**NA**	**NA**	**NA**	**NA**	**NA**
Aroclor 1254	2.00E-05	IRIS	2.00E+00	IRIS	**NA**
Aroclor 1260	**NA**	**NA**	2.00E+00	IRIS	B2
Arsenic	3.00E-04	IRIS	1.50E+00	IRIS	A
Benzo[a]anthracene	**NA**	IRIS	7.30E-01	*	B2
Benzo[a]pyrene	**NA**	IRIS	7.30E+00	IRIS	B2
Benzo[b]fluoranthene	**NA**	**NA**	7.30E-01	*	**NA**
Benzo[g,h,i]perylene	**NA**	**NA**	**NA**	IRIS	B2
Benzo[k]fluoranthene	**NA**	**NA**	7.30E-02	*	**NA**
Bis(2-ethylhexyl)phthalate	2.00E-02	IRIS	1.40E-02	IRIS	**NA**
Cadmium	1.00E-03	IRIS	N/A	IRIS	B1
Chlordane	5.00E-04	IRIS	3.50E-01	IRIS	B2
Chromium	3.00E-03	IRIS	**NA**	IRIS	A
Cobalt	3.00E-04	PPRTV	**NA**	**NA**	N/A
di(2-ethylhexyl)phthalate (DEHP)	2.00E-02	IRIS	1.40E-02	IRIS	B2
Dibenz[a,h]anthracene	**NA**	**NA**	7.30E+00	N/A	B2
Dieldrin	5.00E-05	IRIS	1.60E+01	IRIS	B2
Endrin	3.00E-04	IRIS	**NA**	IRIS	D
Heptachlor	5.00E-04	IRIS	4.50E+00	IRIS	B2
Heptachlor epoxide	1.30E-05	IRIS	9.10E+00	IRIS	B2
Indeno[1,2,3-cd]pyrene	**NA**	**NA**	7.30E-01	*	B2
Kepone	**NA**	**NA**	**NA**	**NA**	B2
Methyl iodide	**NA**	**NA**	**NA**	**NA**	**NA**
p,p'-DDD	**NA**	IRIS	2.40E-01	IRIS	B2
p,p'-DDE	**NA**	IRIS	3.40E-01	IRIS	B2
p,p'-DDT	5.00E-04	IRIS	3.40E-01	IRIS	B2
Phenanthrene	**NA**	**NA**	**NA**	IRIS	D
Selenium	5.00E-03	IRIS	**NA**	IRIS	D
Silver	5.00E-03	IRIS	**NA**	IRIS	D
Thallium	6.50E-05	**NA**	**NA**	N/A	N/A

Sources: IRIS –EPA Integrated Risk Information System; PPRTV – Provisional Peer Reviewed Toxicity Values; Cal EPA – California Environmental Protection Agency; WHO – World Health Organization; Conv. – units converted from available value

Table 43. Noncancer Hazard Indices

Exposure Scenario	Noncancer Hazard Index		
	Adult	Youth	Child
Industrial Worker	0.6	N/A	N/A
Construction Worker	1.4	N/A	N/A
Trespasser	0.1	0.2	N/A
Future Resident	0.8	N/A	4.5

Table 44. Cancer Risk Levels

Exposure Scenario	Excess Cancer Risk		
	Adult	Youth	Child
Industrial Worker	3E-5	N/A	N/A
Construction Worker	4E-6	N/A	N/A
Trespasser	5E-6	5E-6	N/A
Future Resident	4E-5	N/A	8E-5

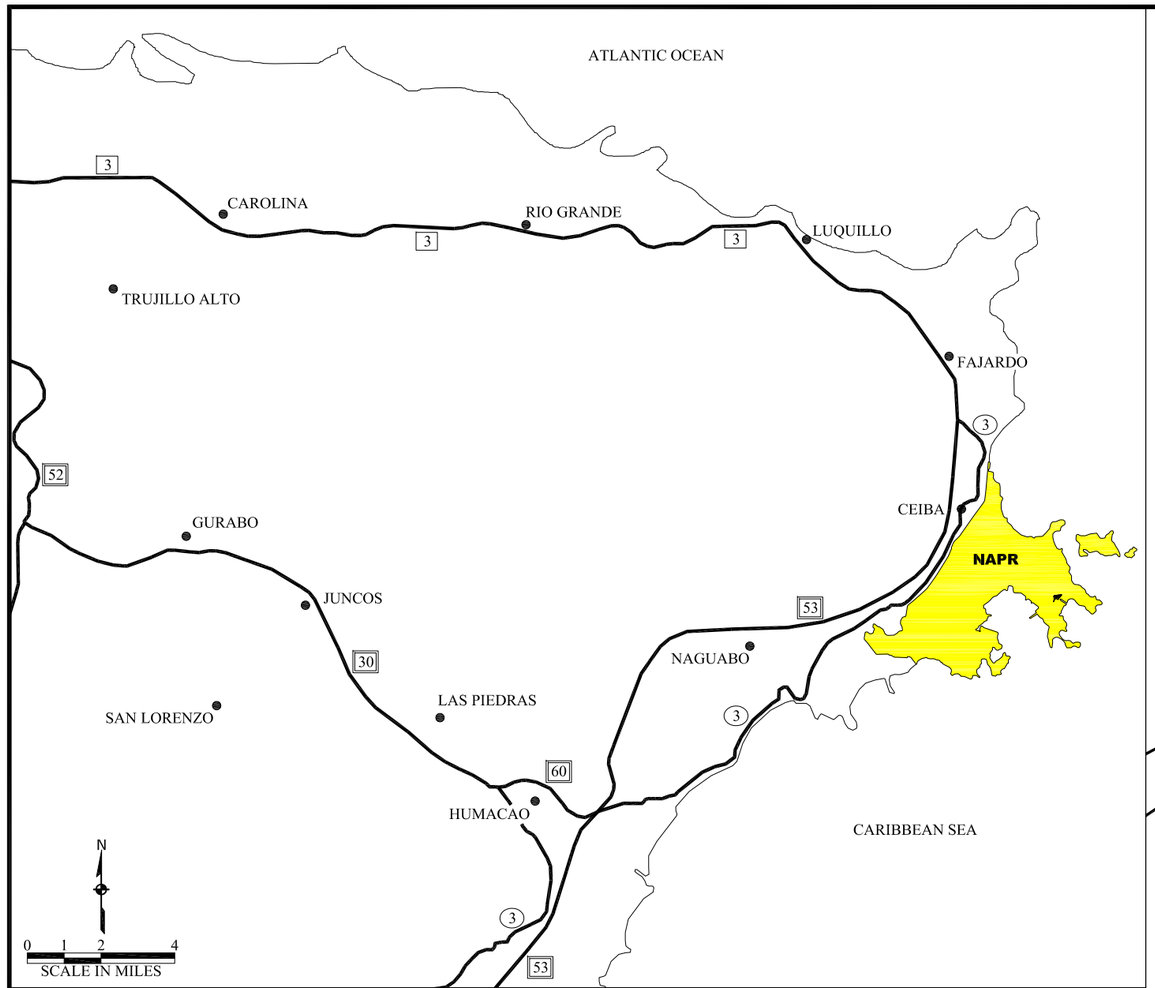
Table 45. Vapor Intrusion Model Results – Groundwater

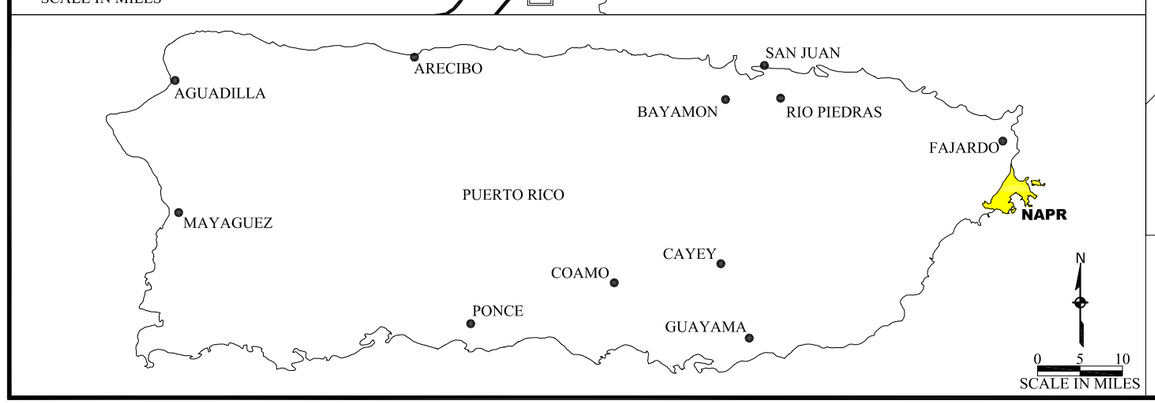
Compound	Calculated Safe Groundwater Concentration (ug/L)	Maximum Detection (ug/L)	Exceeded?
Carbon Disulfide	6.67E+04	1.50E+00	No
Toluene	1.61E+05	1.30E+00	No
Naphthalene	7.30E+03	5.00E-02	No
Mercury (elemental)	1.44E+02	2.00E-01	No

Table 46. Vapor Intrusion Model Results – Subsurface Soil

Compound	Calculated Safe Subsurface Soil Concentration (ug/L)	Maximum Detection (ug/L)	Exceeded?
Acetone	4.95E+05	3.70E+01	No
2-methylnaphthalene	1.81E+05	1.30E+00	No
Acentaphthene	4.52E+06	1.80E+00	No
Benzo(b)fluoranthene	4.54E+04	1.10E+02	No
Chrysene	1.78E+06	1.20E+02	No
Fluorene	1.42E+07	1.10E+00	No
Naphthalene	7.00E+03	1.80E+02	No
Pyrene	3.77E+08	1.80E+02	No
Chlordane	2.88E+04	9.00E+02	No
DDE	2.23E+06	3.10E+03	No

FIGURES





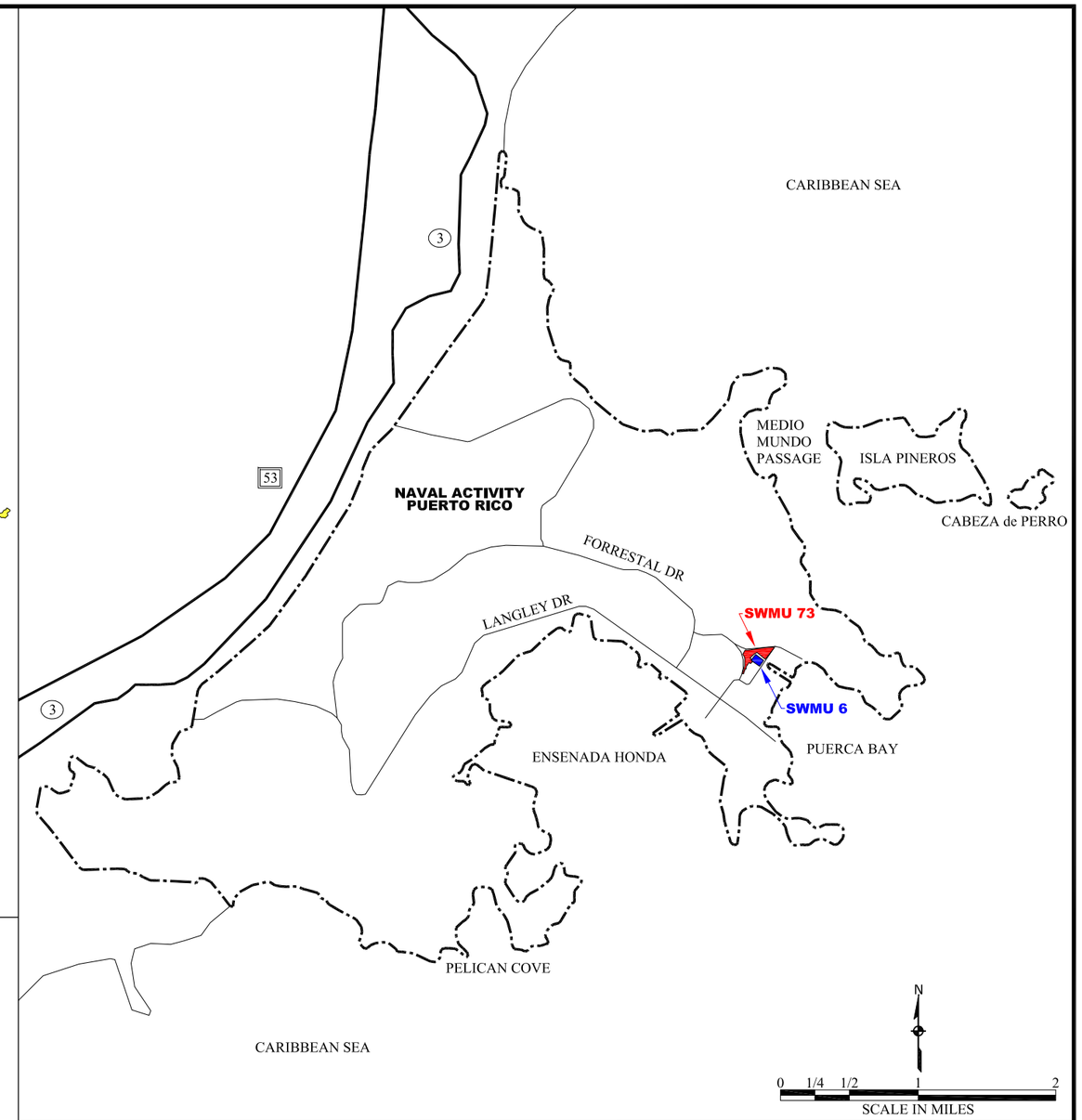


FIGURE 1
NAPR INSTALLATION LOCATION MAP
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

CREATED BY:	CREATION DATE:	PROJECT NO:
G. LOGAN	16 MAR 2009	38-EH-0995-08

FILE PATH: AM/PR/MOSCRIP/MAR2009/NAPRLOCMAP

USACHPPM

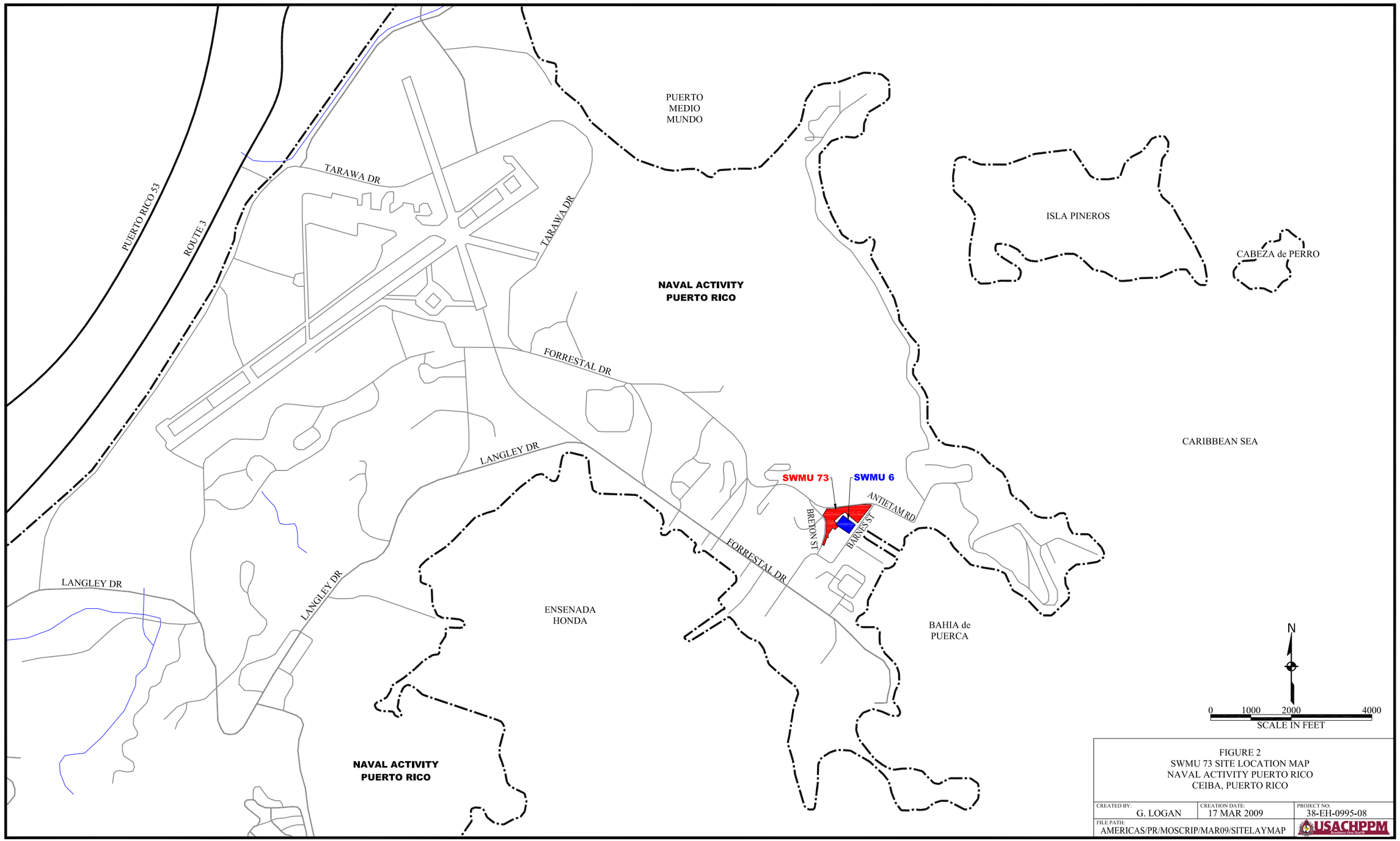


FIGURE 2
SWMU 73 SITE LOCATION MAP
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

CREATED BY:	CREATION DATE:	PROJECT NO:
G. LOGAN	17 MAR 2009	38-EH-0995-08
FILE PATH: AMERICAS/PR/MOSCRIP/MAR09/SITELAYMAP		USACHPPM

LEGEND

PRIOR INVESTIGATION SAMPLE

SWMU 73

SWMU 6

N

0 50 100 200

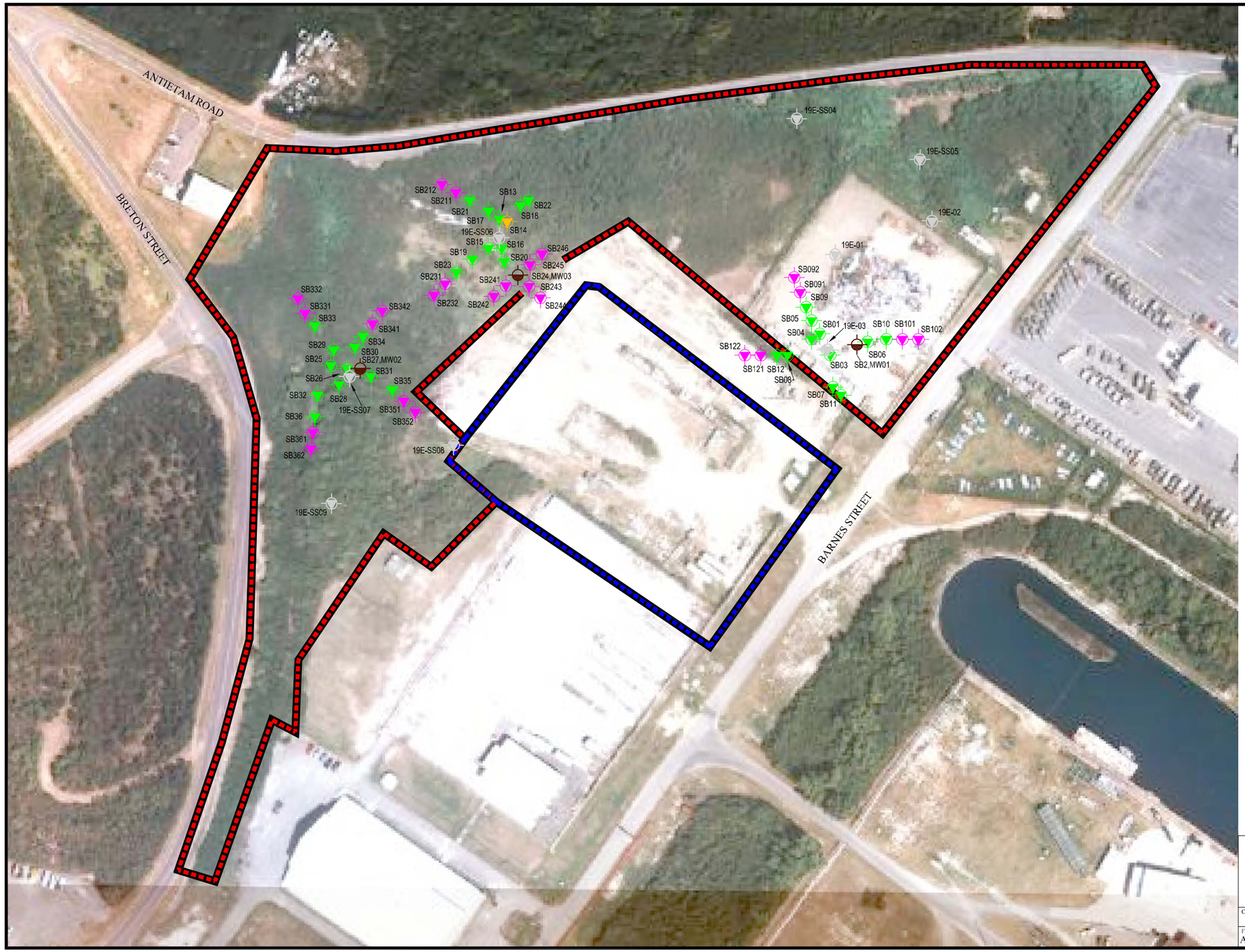
SCALE IN FEET

FIGURE 3
SWMU 73 PHASE II ECP SITE LAYOUT MAP
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

CREATED BY:	CREATION DATE:	PROJECT NO:
G. LOGAN	17 MAR 2009	38-EH-0995-08

FILE PATH: AMERICAS/PR/MOSCRIP/MAR09/ECPSAMPLOCM

USACHPPM



LEGEND

- PRIOR INVESTIGATION SAMPLE
- SB2,MW01 — SUBSURFACE SOIL, SURFACE SOIL SAMPLE, AND MONITORING WELL
- SB14 — SUBSURFACE SOIL AND SURFACE SOIL SAMPLE
- SURFACE SOIL SAMPLE (APRIL-2008)
- SURFACE SOIL SAMPLE (JANUARY-2009)
- SWMU 73
- SWMU 6

N

0 50 100 200

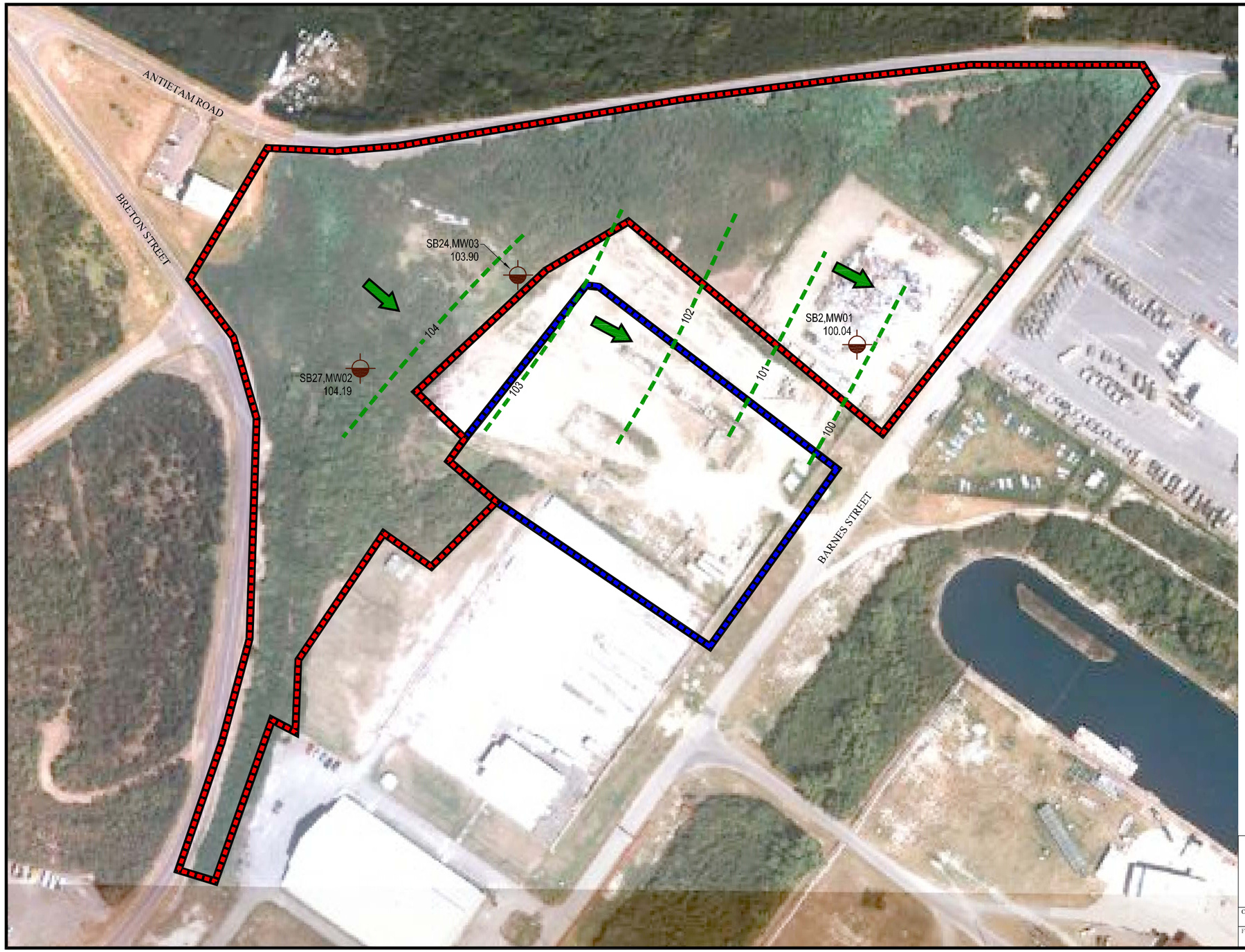
SCALE IN FEET

FIGURE 4
SWMU 73 CMS SAMPLE LOCATIONS MAP
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

CREATED BY:	CREATION DATE:	PROJECT NO:
G. LOGAN	17 MAR 2009	38-EH-0995-08

FILE PATH: AMERICAS/PR/MOSCRIP/MAR09/CMSSAMPLOCM

USACHPPM



LEGEND

SB2,MW01 — SUBSURFACE SOIL, SURFACE SOIL SAMPLE, AND MONITORING WELL

SWMU 73

SWMU 6

RELATIVE GROUND-WATER CONTOUR LINE

RELATIVE GROUND-WATER FLOW DIRECTION

Date: 16 JAN 09

Well No.	73MW01	73MW02	73MW03
Casing Elevation	109.04	115.27	114.67
Water Level	9.00	11.08	10.77
Groundwater Elevation	100.04	104.19	103.90

All Elevations are relative elevations.

N

0 50 100 200

SCALE IN FEET

FIGURE 5
SWMU 73 GROUND WATER ELEVATION MAP
NAVAL ACTIVITY PUERTO RICO
CEIBA, PUERTO RICO

CREATED BY:	CREATION DATE:	PROJECT NO:
G. LOGAN	17 MAR 2009	38-EH-0995-08

FILE PATH: AMERICAS/PR/MOSCRIP/MAR09/GWELEVMAP

USACHPPM

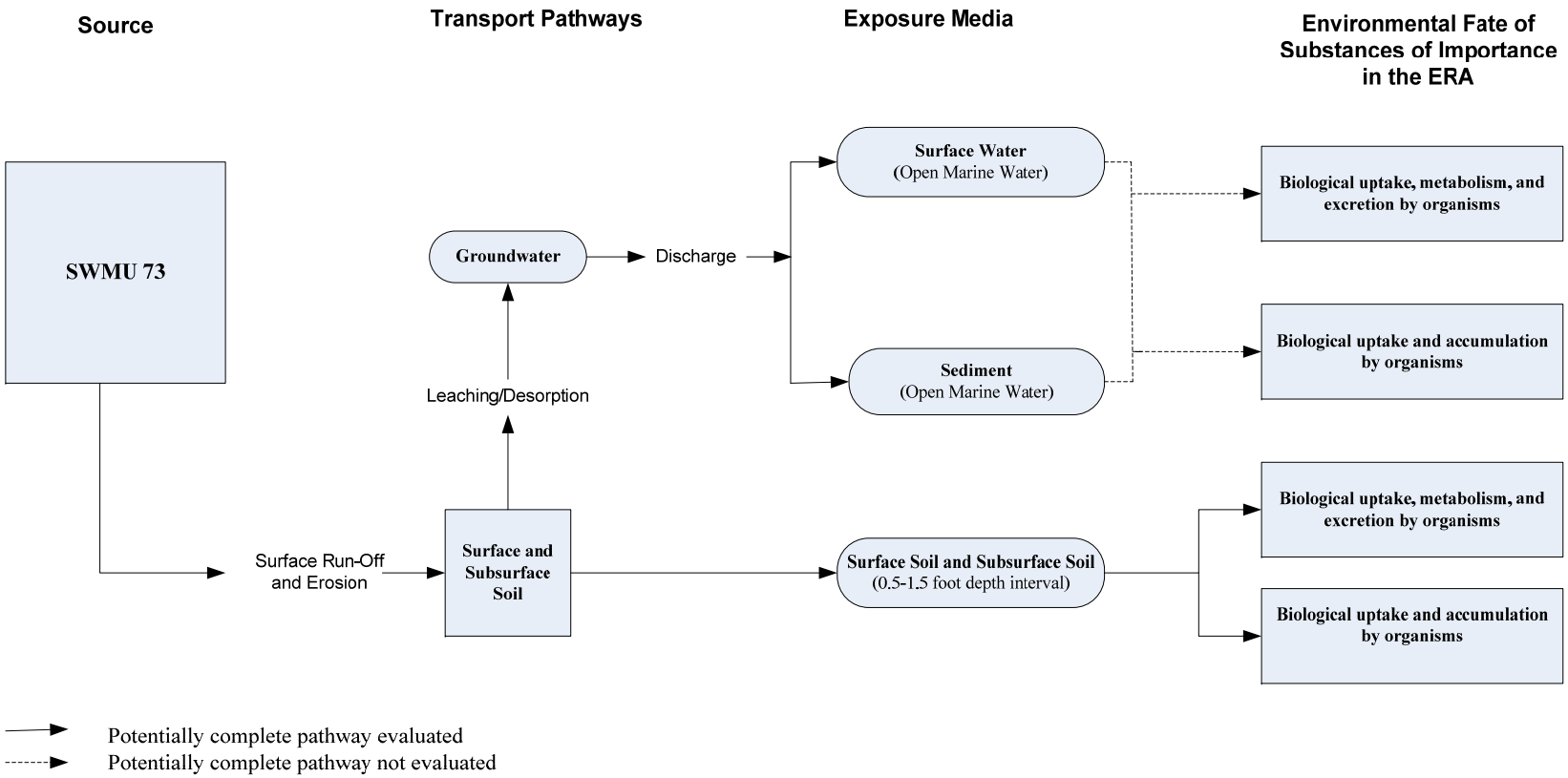


Figure 6. General Environmental Fate of Chemicals in SWMU 73 Media. This diagram is number 1 of 3 conceptual model diagrams for the Ecological Risk Assessment.

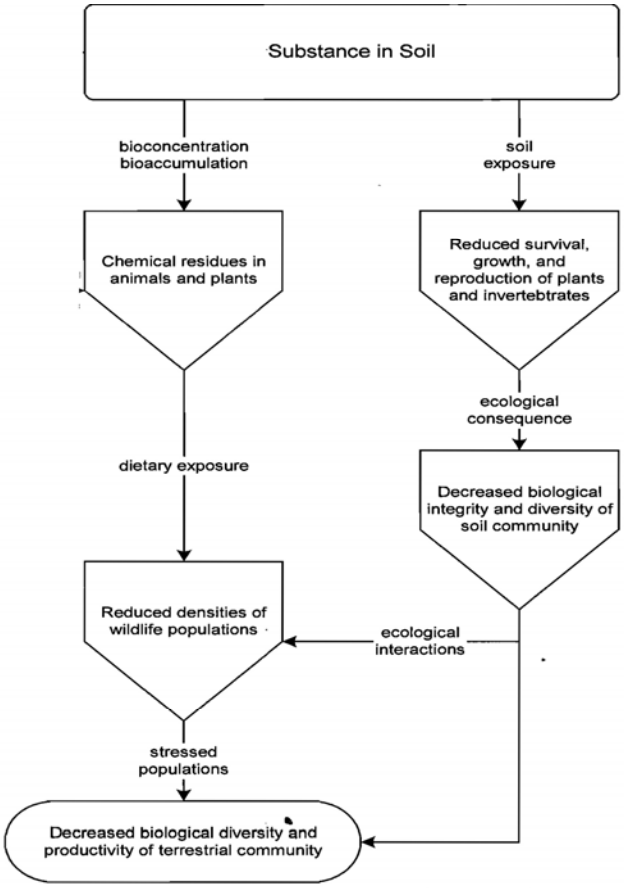


Figure 7. Hypothesized Ecological Consequences in Terrestrial Environments if Chemicals in SWMU 73 Media are Determined to be Ecologically Adverse. This diagram is number 2 of 3 conceptual model diagrams for the Ecological Risk Assessment.

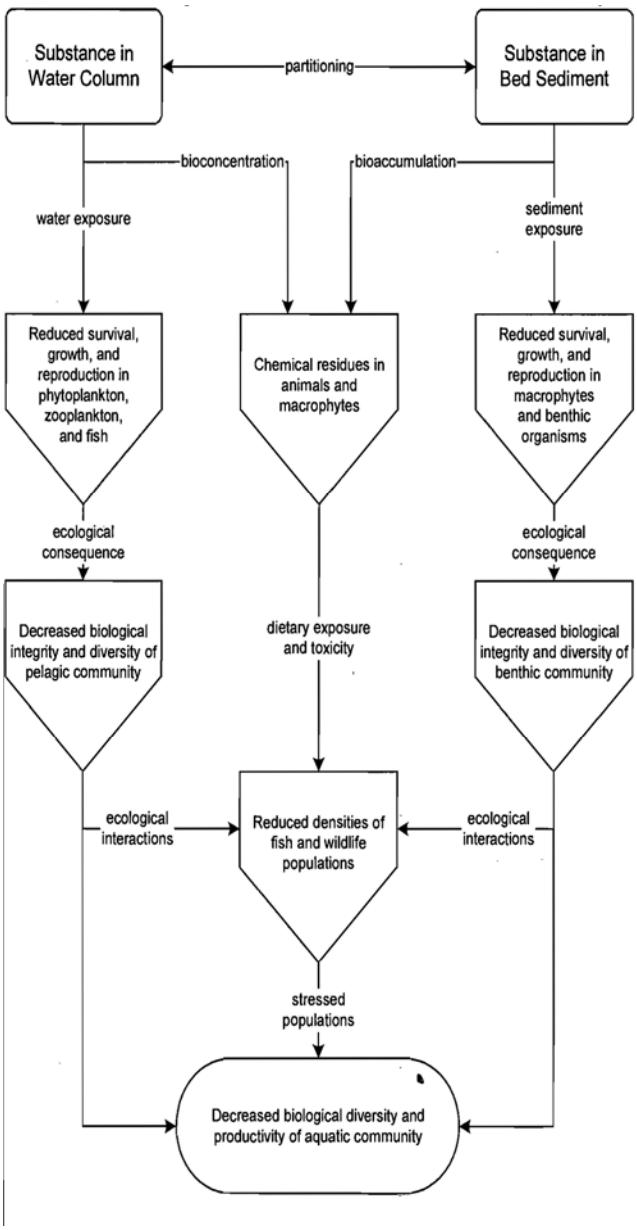


Figure 8. Hypothesized Ecological Consequences in Aquatic Environments if Ground water Concentrations are Determined to be Ecologically Adverse. This diagram in number 3 of 3 conceptual model diagrams for the Ecological Risk Assessment.

APPENDIX A
FINAL CORRECTIVE MEASURES WORK PLAN SWMU 73

Michael Baker Jr., Inc.
A Unit of Michael Baker Corporation

Airside Business Park
100 Airside Drive
Moon Township, PA 15108
Office: 412-269-6300
Fax: 412-375-3995

January 25, 2008

U.S. Environmental Protection Agency - Region II
290 Broadway – 22nd Floor
New York, New York 10007-1866

Attn: Mr. Adolph Everett, P.E.
Chief, RCRA Programs Branch

Re: Contract N62470-07-D-0502
IQC for A/E Services for Multi-Media
Environmental Compliance Engineering Support
Delivery Order (DO) 0002
U.S. Naval Activity Puerto Rico (NAPR)
EPA I.D. No. PR2170027203
Final Corrective Measures Study Work Plan for SWMU 73

Dear Mr. Everett:

Michael Baker Jr., Inc. (Baker), on behalf of the Navy, is pleased to provide you with one hard copy of the replacement pages for the Draft Corrective Measures Study Work Plan for SWMU 73, Naval Activity Puerto Rico. These replacement pages make up the Final Corrective Measures Study Work Plan for SWMU 73. Directions for inserting the replacement pages into the Draft Corrective Measures Study Work Plan for SWMU 73 are provided for your use. Also included with the copy of the replacement pages is one electronic copy provided on CD of the Final Corrective Measures Study Work Plan for SWMU 73, Naval Activity Puerto Rico.

This document is being submitted in accordance with Navy letter dated December 4, 2007 requesting schedule extension for this work plan, and the additional extension granted by the EPA during the January 22, 2008 conference call between the EPA, Navy, Baker, and TechLaw. The planned property transfer to the Army Reserve will occur under the Navy RCRA § 7003 Administrative Order on Consent, therefore, the Army Reserve will be implementing the work for SWMU 73 following the planning documents previously approved by the EPA under this Order on Consent. This approach has been agreed to by the EPA. The work plan has been revised to address EPA comments dated October 2, 2007. The Navy responses to these comments are attached for your review. Additional distribution has been made as indicated below.

If you have questions regarding this submittal, please contact Mr. Mark E. Davidson at (843) 743-2135.

Sincerely,
MICHAEL BAKER JR., INC.

Mark E. Kimes, P.E.
Activity Coordinator

MEK/lp
Attachments

cc: Ms. Debra Evans-Ripley, BRAC PMO SE (letter only)
Mr. David Criswell, BRAC PMO SE (letter only)
Mr. Jeffrey G. Meyers, BRAC PMO SE (letter only)
Mr. Mark E. Davidson, BRAC PMO SE (1 hard copy and 1 CD)
Mr. Pedro Ruiz, NAPR (1 hard copy and 1 CD)
Ms. Bonnie Capito, NAVFAC Atlantic – Code EV42 (1 hard copy for Admin Record)
Mr. Tim Gordon, US EPA Region II (1 hard copy and 1 CD)
Mr. Carl Soderberg, US EPA Caribbean Office (1 hard copy and 1 CD)
Ms. Josefina Gonzalez, PREQB (1CD)
Mr. Manny Vargas, PR EQB (1 hard copy and 1 CD)
Mr. Felix Lopez, US F&WS (1CD)
Mr. Andrew Dorn, TechLaw, Inc. (1 CD)

NAVY RESPONSES TO EPA COMMENTS LETTER DATED OCTOBER 2, 2007

TECHLAW COMMENTS ON DRAFT CMS WORK PLAN FOR SWMU 73

(Tech Law comments are provided in italics while the Navy responses are in regular print)

GENERAL COMMENTS

TechLaw General Comment 1

1. *It should be noted that when comparing background concentrations to the chemical constituents, EPA's Risk Assessment Guidance for Superfund notes it is important that ". . . background concentrations may present a significant risk, and while cleanup may or may not eliminate this risk, the background risk may be an important site characteristic to those exposed." Accordingly, this guidance should be kept in mind when conducting the risk assessment. Revise the Work Plan to include an acknowledgment of this guidance. [Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-19, USEPA Office of Emergency and Remedial Response, December 1989.] Revise Section 5.7.1, General Methodology for Step 3a (page 5-10), in accordance with this approach, as the Work Plan indicates that consideration will be given to background data in developing the conceptual site model (CSM) and identifying the contaminants addressed by the CSM.*

Navy Response to TechLaw General Comment 1: Section 5.7.1 does not state that comparison to background concentrations will be used to eliminate constituents as ecological chemicals of potential concern (COPCs) nor does Section 5.7.1 state that background data will be used in developing the conceptual site model for SWMU 73 (Step 3a uses the same conceptual site model developed in Step 1 of the Navy ecological risk assessment [ERA] process).

Screening-level risk estimates will be provided in Step 2 of the Navy ERA process for all chemicals with literature-based screening values. Refined screening-level risk estimates will be provided in Step 3a of the Navy ERA process for all chemicals identified as ecological COPCs in Step 2 (i.e., chemicals with maximum concentrations greater than screening values). Statistical evaluations will be performed as a line of evidence in Step 3a to determine if inorganic chemicals identified as ecological COPCs in Step 2 of the Navy ERA process warrant identification as chemicals of concern (COCs) for evaluation in the Corrective Measures Study (CMS). This approach is consistent with the Navy Policy on the Use of Background Chemical Levels (Chief of Naval Operations [CNO], 2004; available at http://web.ead.anl.gov/ecorisk/policy/), which states that "*The action level for the remediation of sites should be risk based, should not be below background levels, and should target the risk associated with the COC or contaminant concentration exceeding background chemical levels.*" In summary, given that the proposed use of background chemical levels is consistent with Navy policy for the elimination of background chemicals, the Navy does not believe that revisions to Section 5.7.1 are necessary.

TechLaw General Comment 2

2. *EPA's Risk Assessment Guidance for Superfund also notes that "...chemicals with qualifiers attached that indicate known identities but unknown concentrations (e.g., J-qualified data)...." should be included in the list of chemicals of potential concern (COPCs) for a quantitative risk assessment. Bearing this in mind, revise the Work Plan such that the screening conducted for COPCs reflects this procedure. [Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A), Interim Final, Page 5-19, USEPA Office of Emergency and Remedial Response, December 1989.]*

Navy Response to TechLaw General Comment 2: The following text will be incorporated into the second paragraph of Section 6.3 of the Work Plan:

As noted in USEPA's Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1989), estimated concentrations, such as "J" qualified (estimated) data, will be included in the COPC screening process and subsequent quantitative risk assessment (if a contaminant is retained as a COPC).

TechLaw General Comment 3

3. *Most of the figures are lacking in important details. For example, Section 1.2, Site Background, indicates that small spills and stains, miscellaneous debris including vehicle frames, tires, wood, etc., a secondary growth vegetation area, two unidentified metal structures, and Building 31 are located within the solid waste management unit (SWMU) boundary. Revise the Work Plan to show the locations of the aforementioned areas in relation to the proposed sampling locations and indicate whether the May 2004 soil sampling program focused on these areas. If these areas were not sampled, consider conducting sampling in these areas or provide justification for not sampling the areas.*

   In addition, the aerial photographs are either from 1958 (Figure 1-4) or unknown (Figures 1-3 and 3-1). It is not clear from the information presented whether structures currently exist, or if the buildings were identified only in historic photographs. If there are any recent images available, these should also be reviewed and used if appropriate. Include historical groundwater data for the existing one monitoring well, location 19E-03, located next to an unknown structure.

Navy Response to TechLaw General Comment 3: The site features mentioned in the text were not surveyed, and therefore they are not shown on the figures. However, the ECP samples were collected in the vicinity of these features and based on the findings of the ECP; two "Proposed Excavation Areas" were identified to be the focus of the proposed investigation.

The two unidentified metal structures were removed to the adjacent PWD yard (associated with Building 31) for examination. These were presumably not returned to the SWMU 73 area.

Building 31 is not within the SWMU 73 boundary. The sentence has been revised to clarify this fact. The small building structure noted in Section 1.2 appears to be a concrete footer for an above-ground structure that is not apparent in the historical aerial photographs. This sentence has also been revised for clarification.

No buildings were apparent within the SWMU boundary in the past (based on the historical aerial photographs) and none currently exist.

Historical (one round) of groundwater data for 19E-03 is already presented in Appendix B.

The text in Section 1.2 has been modified to provide a better understanding of the site including the scrap metal recycling yard and the vegetated (secondary growth vegetation) area outside of the scrap yard. Figures 1-3 and 3-1 have also been modified to clean up any confusion on this site as well identifying the years of the aerial imagery.

TechLaw General Comment 4

4. *During the May 2004 sampling event, arsenic and/or vanadium were detected in the surface soil above EPA Region 3 Industrial Risk-based Concentrations (RBCs) at locations 19E-01, 19E-02, and 19E-SS04 through 19E-SS09 and above Region 3 Industrial RBCs in the subsurface soil at locations 19E-01 and 19E-02. Vanadium was also detected in the groundwater above EPA Region 3 Tap Water RBCs at locations 19E-01 and 19E-02. The vanadium concentrations were found in samples for dissolved metals, which would be expected to be much lower than what would be found in total metals results. However, the soil and groundwater sampling locations proposed as part of the corrective measures study (CMS) investigation are intended to delineate the extent of contamination at locations 19E-SS06 and 19E-03. It is assumed that the horizontal and vertical extent of vanadium in soil and groundwater will not be evaluated in the areas of the above-referenced locations due to the high background concentrations in the soils (as explained in Section 1.3.1). If this is the case, then the Work Plan should be revised to summarize how the background concentration of vanadium was determined, or to provide a reference to where this information can be found. Otherwise, additional delineation of soil and groundwater contamination appears warranted. In addition, the Work Plan does not explain why the nature and extent of arsenic in soils will not be determined as part of the CMS investigation. Either provide justification for not determining the extent of arsenic in soils, or revise the Work Plan to include additional contaminant delineation at the above-referenced sample locations.*

Navy Response to TechLaw General Comment 4: The comment raises issues with two constituents (i.e., vanadium and arsenic). The issue regarding vanadium is addressed first.

<u>Vanadium:</u>

The document entitled *Revised Final Summary Report for Environmental Background Concentrations of Inorganic Compounds* (Baker, 2006) contains basewide background data sets for a variety of abiotic media, including surface soil and groundwater. The background data sets were used to establish medium-specific background screening values (upper limit of the mean concentrations), including screening values for dissolved vanadium in groundwater and vanadium in surface soil.

Dissolved vanadium was detected in each SWMU 73 groundwater sample collected during the Phase II ECP (0.026 mg/L in 19E-01, 0.014 mgL in 19E-02, and 0.003B mg/L in 19E-03). The dissolved vanadium concentration detected in 19E-01 (0.026 mg/L) exceeds the NAPR background screening value (0.021 ug/L; Baker, 2006). However, a review of the background data set shows that dissolved vanadium was detected in five background groundwater samples samples at concentrations greater than 0.026 mg/L (0.0293 mg/L, 0.0326J mg/L, 0.0422 mg/L, 0.0711 mg/L, and 0.265 mg/L). Based on the presence of dissolved vanadium detections within the background data set greater than the maximum concentration detected at SWMU 73, it can be concluded that dissolved vanadium concentrations detected in SWMU 73 groundwater are background levels.

In addition to groundwater, vanadium was detected in each SWMU 73 surface soil sample collected during the Phase II ECP at concentrations ranging from 85 mg/kg to 270 mg/kg. All detected concentrations exceed the EPA Region III residential risk-based concentration (RBC) of 7.8 mg/kg, while seven detected concentrations also exceed the ERA Region III industrial RBC of 100 mg/kg. As indicated above, a basewide background screening value has been established for vanadium in surface soil (287 mg/kg; Baker, 2006). During recent discussions between the Navy and EPA (conference calls held on Jauary 11, 2008 and January 22, 2008), both parties agreed to revise the background surface soil screening value for vanadium by omitting analytical data for background surface soil sample 9BGSS01 and its field duplicate (9BGSS01D). The vanadium concentration in Phase II ECP sample 19E-SS07

(270 mg/kg) exceeds the revised background screening value (259 mg/kg). Based on a detected vanadium concentration greater than the EPA Region III residential RBC, EPA Region III industrial RBC, and revised background screening value, additional characterization of vanadium concentrations in surface soil at Phase III ECP sample location 19E-SS07 is warranted. Therefore, the final Corrective Measures Study (CMS) work plan has been revised to show additional characterization of surface soil at this location. In order to evaluate whether potential contamination has migrated in a vertical direction, subsurface soil and groundwater also will be sampled as part of the proposed characterization. Surface soil samples, as well as the subsurface soil and groundwater sample, will be analyzed for Appendix IX metals. The groundwater sample will be analyzed for dissolved metals.

It is noted that background surface soil data reported by the United States Geological Survey (USGS) indicates that high vanadium concentrations occur naturally island-wide. As vanadium is a trace metal found in igneous rocks, the presence of vanadium in SWMU 73 surface soil and groundwater at concentrations greater than EPA Region III residential and industrial risk-based concentrations (RBCs) can be attributed to the volcanic rocks prevalent throughout the island (see the Navy responses dated November 9, 2007 to EPA comments dated September 24, 2007 on the SWMUs 14 and 68 RFI reports for supporting documentation). However, the detected surface soil concentration greater than background screening value may be from petroleum oils and lubricant (POL) spills. The physical site inspection observed a small spill and stains of presumed POL from construction equipment stored at the SWMU during its operation as a scrap-metal recycling yard.

<u>Arsenic:</u>

Arsenic was detected in three Phase II ECP surface soil samples at concentrations exceeding EPA Region III residential and/or industrial RBCs (2.3 mg/kg in 19E-01, 1.8 mg/kg in 19E-02, 1B mg/kg in 19E-03, 3.8 mg/kg in 19E-SS06, 4.6 mg/kg in 19E-SS08, and 1.5 mg/kg in 19E-SS09. As outlined in the response regarding vanadium, basewide background screening values have been established for use at NAPR (Baker, 2006). The detected arsenic concentration at 19E-SS06 (3.8 mg/kg) and 19E-SS08 (4.6 mg/kg) exceed the background screening value for arsenic in surface soil (2.65 mg/kg).

In order to evaluate potential human health risks from arsenic in surface soil, preliminary risk calculations were performed under current/future on-site worker and current/future trespasser exposure scenarios. As future land use will remain industrial following transfer to the Army Reserve, risk calculations were not performed under a future residential exposure scenario. Given the small data set for surface soil, the maximum detected concentration of arsenic was used as the exposure point concentration. Exposure parameters used in the preliminary risk calculations are presented in Table 1. The results of the preliminary risk calculations are presented in Table 2 (future industrial worker), Table 3 (future adult trespasser), and Table 4 (future adolescent trespasser). As evidenced by Tables 2 through 4, there are no unacceptable carcinogenic or noncarcinogenic risks calculated from potential exposure to arsenic in surface soil at SWMU 73.

TechLaw General Comment 5

5. *The Navy has proposed using low-flow purging and sampling procedures to sample the temporary wells at SWMU 73. These wells are reported to have 1-inch diameter well casings. While this is an acceptable procedure for extracting the sample, the usability of the data may be limited. It should be noted that the Region 2 Standard Operating Procedure (SOP) included in the Work Plan states that the low flow procedure is applicable to monitoring wells that have an inner casing with a diameter of 2.0 inches or greater. In addition, although not included in the Region 2 SOP, in order to generate data of acceptable quality to make "final" risk-based decisions, the low-flow groundwater samples need to be collected from a properly constructed well that has been adequately developed.*

Navy Response to TechLaw General Comment 5: See Navy Response to Comment 6 below.

TechLaw General Comment 6

6. *The data collected from the proposed temporary wells at SWMU 73 will be "screening" type data. The results will indicate whether there "is" or "is not" contamination in the shallow aquifer. If the resulting data exceeds screening levels, it may be necessary to install properly constructed wells in order to make risk-based decisions on potential impacts to human health and the environment. Revise the Work Plan to allow for the installation of permanent wells if the "screening" level data shows releases to groundwater.*

Navy Response to TechLaw General Comment 6: The Work Plan will be modified to include installation of two (2)-inch inner diameter (I.D.) permanent monitoring wells in lieu of the 1.0-inch temporary wells in order to comply with the Region 2 SOP for low flow sampling. The Work Plan will be modified to address drilling techniques and well development procedures for the two inch permanent wells. Low flow sampling techniques will then be utilized to obtain valid "defendable" data to make "final" risk-based decisions.

TechLaw General Comment 7

7. *The Appendix D, NAPR Draft Quality Assurance Project Plan (QAPP), dated July 31, 2007, has been developed in accordance with EPA guidelines (USEPA, 2001, Environmental Protection Agency [EPA] Requirements for Quality Assurance Project Plans, QA/R-5). However, the information presented in the QAPP in Appendix D does not meet the majority of the specific requirements provided in QA/R-5. Some examples include the following:*

    - *Per Element B5 in QA/R-5, the QAPP did not provide laboratory and field QC methods and procedures, acceptance criteria, and corrective action.*
    - *Per QA/R-5, examples of all forms, labels and checklists should be included as part of the QAPP. These are not all provided.*
    - *The QAPP does not provide sufficient discussion of data management procedures per Element A9 of QA/R-5.*
    - *The QAPP lists the minimum information to be placed on the bottle labels. This list does not include the analysis or preservatives.*
    - *The QAPP discusses the data validation process, but does not discuss how data to be validated will be selected, the percentage of data to be validated, if all data will be fully validated, or if differing levels of validation will be performed.*

    EPA Region 2's current policy is that QAPPs should be developed in accordance with the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), dated March 2005. The UFP-QAPP was developed using the same standard as that used for development of QA/R-5. QAPPs developed in accordance with UFP-QAPP will meet the requirements of QA/R-5. However, the information presented in this QAPP is lacking in sufficient detail to meet the requirements of the UFP-QAPP or QA/R-5. The QAPP in Appendix D should be completely revised to include sufficient detail in order to meet the requirements of UFP-QAPP guidance.

Navy Response to TechLaw General Comment 7: The Work Plans were originally prepared with the understanding that an as yet undetermined third party would be responsible for implementation of the activities; consequently, the work plans were written in an open-ended fashion to allow the third party

entity the flexibility of identifying DQOs, SOPs, and QAPP requirements for USEPA approval. Based on current information, the Army Reserve plans to implement the CMS work plans under the Navy RCRA 7003 Order in lieu of the new property owners. The Navy has implemented previous investigations at NAPR in accordance with the EPA approved Master Project Management Plan (PMP), Master Data Collection Quality Assurance Plan (DCQAP), Data Management Plan (DMP), and Master Health and Safety Plan (HASP) for NAPR. These Master Plans define acceptable data requirements and error levels associated with the field and analytical portions of this investigation. Therefore, to maintain consistency with past Navy work under the Consent Agreement, this work plan has been revised using the Navy's EPA approved Master Plans for this facility.

TechLaw General Comment 8

8. *The Data Quality Objectives (DQOs) have not been adequately defined for the Appendix D QAPP. Until a complete set of DQOs is provided, the adequacy of the QAPP and Work Plan cannot be fully evaluated. Further, when revised DQOs are provided, the DQOs need to reflect the proposed activities of the revised Work Plan. Both the Work Plan DQOs and QAPP will need to be reviewed to ensure the proposed activities of the Work Plan correlate with the revised DQOs. In revising the QAPP, provide the completed seven step DQOs and ensure they are consistent with the Guidance on Systematic Planning Using the Data Quality Objectives Process, dated February 2006 (QA/G-4).*

Navy Response to TechLaw General Comment 8: As discussed in response to TechLaw General Comment 7 above, the QAPP provided in Appendix D will be removed. Although the seven-step DQO process was not applied rigorously, elements essential to the process (with the exception of statistically determining the number of samples) have been considered in the development of the sampling design. Because the investigation is designed to determine the extent of contamination in soil and groundwater, the sample locations have been selected to reflect not only the potentially impacted areas, but also the outer-most fringes and/or predicted down gradient locations near the site boundary. Therefore, inherent in the assumptions of the sampling design is the assumption that if the extent of contamination cannot be determined based on the data to be collected, the Army Reserve should consider further investigation.

TechLaw General Comment 9

9. *The Appendix D QAPP indicates that a laboratory has not been selected. This, combined with the incomplete DQOs, severely limits the usefulness of the QAPP. For example, laboratory specific acceptance limits will change the precision, accuracy and completeness values on Table 3-2 of the Work Plan. In revising the QAPP, include laboratory specific information for QC samples, calibration, preventative maintenance, audits, corrective action, sample analysis and preparation, etc. In addition, each laboratory's standard reporting list (e.g., for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals) may vary. Ensure that the analyte lists in the QAPP are provided to the laboratory so that the proper contaminants of concern (COCs) are reported.*

Navy Response to TechLaw General Comment 9: The laboratory selected by the Army Reserve (who will be implementing the work for SWMU 73) has been provided with Table 3-2 to ensure that the appropriate list of compounds will be reported. The quantitation limits were also compared to ecological screening levels presented in Tables 5-1, 5-2, and 5-3. With a few exceptions, the quantitation limits are below these screening levels. In all cases, the laboratory's lowest achievable quantitation limits for the specified analytical methods have been provided in Table 3-2.

SPECIFIC COMMENTS

TechLaw Specific Comment 1

1. ***Section 5.1, Screening-Level Problem Formulation, Third Bullet, page 5-1:*** *The Work Plan states on the top of page 5-2 that contaminants of impact will be addressed under fate and transport for "source-related chemicals." Revise the Work Plan by changing this term to "site-specific chemicals" to reflect the fact that all of the potential contaminant sources at a SWMU may not yet be fully defined at the screening level problem formulation phase of the assessment.*

Navy Response to TechLaw Specific Comment 1: The text in Section 5-1 will be revised by changing the term "source-related chemicals" to "site-specific chemicals".

TechLaw Specific Comment 2

2. ***Section 5.1.2, Existing Analytical Data, page 5-2:*** *The Work Plan indicates that the existing data evaluation will consider such factors as sample size. It is unclear how sample size will impact an existing data evaluation. Revise the Work Plan to clearly indicate how sample size might impact the use of existing data.*

Navy Response to TechLaw Specific Comment 2: The term "sample size" refers to the number of samples of a given medium that have been collected for analytical testing. Low sample size could result in inadequate spatial coverage within habitats and areas of potential interest to the ERA. In this case, insufficient data would be available on which to base a risk estimate. Section 5.1.2 will be revised to include a discussion of how sample size would impact the use of existing data and the ability to conduct the screening-level ERA.

TechLaw Specific Comment 3

3. ***Section 5.2 Screening-Level Ecological Effects Evaluation, Page 5-6:*** *This section states that media-specific screening values and ingestion-based screening values will be developed. However, it does not state which screening values will be used in the risk assessment calculations. It is suggested to revise the Work Plan by including literature references for the media-specific screening values considered for use in the screening level ecological risk assessments (SLERAs), together with a preference hierarchy. The text also needs to reference the toxicity databases that will be used for deriving the ingestion-based screening values for wildlife receptors.*

Navy Response to TechLaw Specific Comment 3: Media-specific screening-values for surface soil and groundwater will be the surface soil and surface water screening values previously established for ecological risk assessments at NAPR (Baker, 2006a and 2006b). These values will be updated, as necessary, to reflect current information from the literature (e.g., ecological soil screening levels [Eco-SSLs] available at http://www.epa.gov/ecotox/ecossl/ and current National recommended water quality criteria available at http://www.epa.gov/waterscience/criteria/wqcriteria.html). Section 5.2 will be revised to include a discussion of how the media-specific screening values were selected from the literature (i.e., preference hierarchy). The draft Work Plan also will be revised to include a table listing media-specific screening values.

References:

Baker Environmental, Inc. 2006a. Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment. Coraopolis, Pennsylvania. January 11, 2006.

Baker Environmental, Inc. 2006b. Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment at SWMUs 1 and 2. Coraopolis, Pennsylvania. May 18, 2006.

TechLaw Specific Comment 4

4. ***Section 5.2 Screening-Level Ecological Effects Evaluation, Page 5-7:*** *This paragraph indicates that not all chemicals analyzed in ecologically relevant media will be evaluated for food web exposures in the SLERA. The conservative Tier 1 COPC selection process needs to include all of the measured contaminants, not just those with a propensity to bioaccumulate. Step 3.a in the Navy ecological risk assessment process allows for a re-evaluation of the Tier 1 COPCs using less conservative assumptions. This refinement step cannot take place in the SLERA phase. Revise the text of the Work Plan to indicate that all of the chemicals will be included in the food web screening calculations.*

Navy Response to TechLaw Specific Comment 4: The Navy partially agrees with this comment. Previous ERAs conducted at NAPR (e.g., Baker, 2006a and 2006b) have calculated screening-level risk estimates for all measured inorganic chemicals (i.e., metals), as well as all measured organic chemicals with octanol-water partition coefficient (log K_{ow}) values greater than or equal to 3.0. Justification for using a log K_{ow} value of 3.0 to define a bioaccumulative chemical has previously been accepted by the EPA. Therefore, the Navy proposes to revise Section 5.2 to indicate that screening-level risk estimates will be calculated for all measured inorganic chemicals and all measured organic chemicals with a log K_{ow} value greater than or equal to three. The Work Plan also will be revised to include justification for using a log K_{ow} value of 3.0 to define a bioaccumulative organic chemical.

Ingestion-based screening values for the evaluation of upper trophic level food web exposures at SWMU 73 ERA will be the screening values previously established for ecological risk assessments at NAPR (Baker, 2006a and 2006b), updated to reflect current information from the literature (e.g., ingestion-based toxicity reference values [TRVs] used by the USEPA in the derivation of Eco-SSLs). The Work Plan will be revised to include a listing of ingestion-based screening values and their sources. It is noted that only terrestrial bird species will be selected as ecological receptors for evaluation in the ERA since the terrestrial mammals represented by potentially complete exposure pathways are limited to nonindigenous, nuisance species (i.e., Norway rat, black rat, and mongoose) that have been implicated in the decline of native bird populations. Therefore, the ingestion-based screening values presented in the revised Work Plan will be based on toxicity studies that used bird species as test organisms.

References:

Baker Environmental, Inc. 2006a. Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment. Coraopolis, Pennsylvania. January 11, 2006.

Baker Environmental, Inc. 2006b. Final Additional Data Collection Report and Screening-Level Ecological Risk Assessment and Step 3a of the Baseline Ecological Risk Assessment at SWMUs 1 and 2. Coraopolis, Pennsylvania. May 18, 2006.

TechLaw Specific Comment 5

5. ***Section 5.4.1 Selection of Ecological Chemicals of Potential Concern, Page 5-9:*** *This section states that Hazard Quotients (HQs) will be calculated using No Observed Adverse Effect Levels (NOAELs), Lowest Observed Adverse Effect Levels (LOAELs), and Maximum Allowable Toxicant Concentrations (MATCs). Both EPA guidance [USEPA. 1997a. Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (Interim Final). EPA/540/R-97-006] and Navy guidance [Navy Guidance for Conducting Ecological Risk Assessment, available at http://web.ead.anl.gov/ecorisk) recommend using only the more conservative NOAELs in the screening-level risk calculations. Revise the Work Plan to state that only NOAELs will be used in the SLERA risk calculations.*

Navy Response to TechLaw Specific Comment 5: While risk estimates based on NOAELs, LOAELs, and MATCs will be presented in Step 2 of the ERA process, Section 5.4.1 states that, "*For the screening-level ERA, chemicals (detected and non-detected) with NOAEL-based HQs greater than or equal to 1.0 will be identified as preliminary ecological COPCs.*" Therefore, the Navy does not believe revisions to the Work Plan are necessary.

TechLaw Specific Comment 6

6. ***Section 5.7.1, General Methodology for Step 3a, Page 5-10:*** *This section states that background data may be considered to refine the conservative assumptions used in the Tier 1 SLERA. EPA has developed guidance to make valid comparisons between background concentrations and concentrations measured in soil samples at Superfund sites [EPA. 2002. Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites. EPA 540-R-01-003. September 2002]. The Work Plan should cite this reference for the background comparisons to be performed.*

Navy Response to TechLaw Specific Comment 6: As indicated in Section 5.7.1, site concentrations will be statistically compared to background concentrations in accordance with Navy guidance (Navy guidance documents for environmental background analysis are available at http://web.ead.anl.gov/ecorisk/related/). As these guidance documents support and implement the Navy's background policy by providing detailed instructions for evaluating background chemicals in soil, sediment, and groundwater, the Navy does not believe that revisions to Section 5.7.1 are necessary.

TechLaw Specific Comment 7

7. ***Section 5.7.1, General Methodology for Step 3a, Page 5-10****: This section states that the frequency at which chemicals are detected may be considered in refining the exposure assumptions in Step 3a. Eliminating constituents based on frequency of detection (FOD) is an appropriate approach to remove COPCs, which are only detected on a limited basis, for ecological risk assessments. The EPA-approved approach is to eliminate a COPC based on FOD considerations only if it is detected in less than 5% of samples when 20 or more samples have been analyzed. The Navy guidance is less explicit, stating that COPCs with "low" detection frequencies (and "sufficient data" for acceptable site characterization) should be identified in Step 3.a for potential elimination. Revise the Work Plan to fully clarify how FOD will be applied to eliminate COPCs.*

Navy Response to TechLaw Specific Comment 7: Section 5.7.1 will be revised to eliminate language indicating that frequency of detection will be considered in Step 3a of the ERA process as the number of samples for most media will not be large enough to take frequency of detection into consideration.

TechLaw Specific Comment 8

8. ***Section 5.8 Ecological Corrective Action Objectives, Page 5-12:*** *This section describes how to calculate Corrective Action Objectives (CAOs) by multiplying the medium-specific and ingestion-based screening values by a factor of 0.99. The rationale behind using this value in the two equations presented in this section is not known. Revise this section by including a full justification for using 0.99 as part of the process for calculating CAOs.*

Navy Response to TechLaw Specific Comment 8: 0.99 represents a default hazard quotient value that will be used for the derivation of ecological CAOs. CAOs calculated using a default hazard quotient of 0.99 corresponds to medium-specific chemical concentrations that would result in risk estimate (hazard quotient value) equal to 0.99. As discussed in Section 5.4.1, a hazard quotient value less than 1.0 indicates that risks are unlikely. Section 5.8 will be revised to include justification for using a default hazard quotient of 0.99 for calculating CAOs.

TechLaw Specific Comment 9

9. ***Section 6.2, Land Use and Potentially Exposed Receptors, Page 6-1:*** *It is understood that future property use of the site is expected to remain industrial and that the exposure is likely limited to industrial or commercial property use. However, additional information should be provided to clarify why trespassers are not considered a receptor at NAPR. Revise Section 6.2 to include trespassers as potential receptors or include a rationale as to why trespassers have been omitted as a likely receptor.*

Navy Response to TechLaw Specific Comment 9: Section 6.2 will be revised to include trespassers as potential receptors. Furthermore, any other applicable text will be revised accordingly.

TechLaw Specific Comment 10

10. ***Section 6.3, Selection of Contaminants of Potential Concern, page 6-1:*** *This section of the Work Plan indicates that the CAO development process in the CMS will identify the potential for human health risk to onsite workers and future residents exposed to surface water and sediment. It is unclear why soils have not been included, or groundwater via vapor intrusion. Revise the Work Plan to indicate that all media will be included in the CAO development process.*

    In addition, the text states in the following paragraph that the screening criteria selected is the EPA Region 3 RBCs. The use of EPA Region 9 Preliminary Remediation Goals (PRGs) is referenced in Section 4.3 and Appendix D, Section 1.1, Problem Definition and Performance Standards, page 1-1. The QAPP identifies Puerto Rico Environmental Quality Board (PREQB) target levels and Region 9 PRGs. The PREQB target levels are not identified as performance standards in the Work Plan. The performance standards identified in the Work Plan and QAPP need to be consistent, and should be EPA approved. Revise the Work Plan and QAPP so that the screening criteria/performance standards are the same for both. Ensure that the values selected are also included in Section 2.2 of the Work Plan, Corrective Measures Standards.

Navy Response to TechLaw Specific Comment 10: The first sentence of Section 6.3 will be revised as follows:

"The CAO development process in the CMS for SWMU 73 will identify the potential for human health risk to receptors exposed to surface soil (trespassers, industrial workers, and construction workers), subsurface soil (construction workers), groundwater (industrial workers via inhalation of volatiles in

indoor air and construction workers via dermal contact), surface water (trespassers, industrial workers, and construction workers), and sediment (trespassers, industrial workers, and construction workers) at SWMU 73, which are affected by site-related activities."

Additionally, USEPA Region 9 PRGs will be used as the human health screening criteria for the SWMU 73 CMS. As such, all applicable text and tables in the Work Plan will be revised to reflect this. Furthermore, all references to the use of Region 3 RBCs in the CMS will be removed from the Work Plan.

TechLaw Specific Comment 11

11. ***Section 7.0, Identification of COCS, Page 7-1:*** *Elimination of constituents for human health risk assessment based on FOD is a pragmatic methodology designed to allow risk assessors to focus available time and resources on the most likely drivers of site-related risk and hazard. However, this method is generally perceived as dated and was in use prior to the widespread and ready availability of regulatory agency-promulgated health-based screening criteria (e.g., EPA Region 9 PRGs). In addition, use of FOD is inappropriate for chemicals that are considered to be site-related. In developing a site-specific COPC list for the human health risk assessment (HHRA) and as a matter of the public record, any contaminant detected at a concentration in excess of the most relevant health-based screening criterion should be retained as a site COPC and evaluated quantitatively and/or qualitatively within the Risk Characterization section of the HHRA. This screening should be conducted irrespective of FOD results for individual constituents.*

Navy Response to TechLaw Specific Comment 11: The HHRA portion of this work plan does not state that frequency of detection will be used in the COPC selection process. Therefore, no revisions to the HHRA portion of the Work Plan are necessary. However, to eliminate any confusion, it should be noted that frequency of detection will not be used to eliminate a constituent as a COPC in the HHRA. Please refer to the response to Specific Comment No. 7 for the application of frequency of detection in the ERA.

TechLaw Specific Comment 12

12. ***Figures:*** *According to the aerial photographs, one structure is/was located at the SWMU. Provide details regarding the type of work performed in this building, what was stored in the building, and whether environmental releases may have occurred from the building (e.g., through direct discharge, cracks in building floor, etc).*

Navy Response to TechLaw Specific Comment 12: The aerial photographs do not show a building at this SWMU. Therefore, no additional information can be provided. See the response above to TechLaw General Comment 3.

TABLE 1
SUMMARY OF EXPOSURE PARAMETERS
SWMU 73
CMS WORK PLAN
NAVAL AIR STATION, PUERTO RICO, CEIBA, PUERTO RICO

Parameter	Units	Current and Future Adult On-Site Workers RME	Current and Future Adult Trespassers RME	Current and Future Adolescent Trespassers RME
Soil				
Ingestion Rate of Soil (IR-S)	mg/day	100 USEPA, 2001	100 USEPA, 1993	100 USEPA, 1993
Fraction Ingested from Source (Fi)	NA	1 Prof Judge	1 Prof Judge	1 Prof Judge
Exposure Frequency (EF)	days/year	250 USEPA, 2004	52 Prof Judge	52 Prof Judge
Exposure Duration (ED)	years	25 USEPA, 2004	24 USEPA, 1993	10 USEPA, 2000
Exposure Time (ET)	hours/day	8 USEPA, 1991	1.5 USEPA, 1997	4.04 USEPA, 1997
Surface Area Available for Contact (SA)	cm2/day	3,300 USEPA, 2004	5,700 USEPA, 2004	2,800 USEPA, 2004
Respiration Rate (RR)	m3/hour	2.5 USEPA, 2001	0.55 USEPA, 1997	0.576 USEPA, 1997
Conversion Factor (CF)	kg/mg	1.00E-06 USEPA, 1989	1.00E-06 USEPA, 1989	1.00E-06 USEPA, 1989
Averaging Time (Non-Cancer) (AT-N)	days	9,125 USEPA, 1989	8,760 USEPA, 1989	3,650 USEPA, 1989
Other Parameters				
Body Weight (BW)	kg	70 USEPA, 1997	70 USEPA, 1997	45 USEPA, 2000
Soil to Skin Adherence Factor (AF)	mg/cm2	0.2 USEPA, 2004	0.07 USEPA, 2004	0.2 USEPA, 2004
Particulate Emission Factor (PEF)	m3/kg	1.32E+09 Cowherd, et al., 1995	1.32E+09 Cowherd, et al., 1995	1.32E+09 Cowherd, et al., 1995
Averaging Time (Cancer) (AT-C)	days	25,550 USEPA, 1989	25,550 USEPA, 1989	25,550 USEPA, 1989

Notes:

RME - Reasonalble Maximum Exposure
CT - Central Tendency
ABS - Absorption Factors
Prof Judge - Professional Judgment

The following USEPA Region IV default absorbance factors will be applied in the absence of reference values from USEPA, 2001 to estimate dermal intake of COPCs in soil and sediment (USEPA RAGS Part E, 2001)

1.0% - Organics
0.1% - Inorganics

Cowherd, et al., 1995: Rapid Assessment of Exposure to Particulate Emissions from Surface Contamination. OHEA. EPA/600/8-85/002
USEPA, 1989. Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part A) Interim Fina
USEPA, 1991. Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual Supplemental Gudiance "Standard Default Exposure Factors."
USEPA, 1993. Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure - Draft
USEPA, 1997. Exposure Factors Handbook. Vol. 1: General Factors. ORD. EPA/600/P-95/002Fa.
USEPA, 2000. Supplemental Guidance to RAGS: Region 4 Bulletins: Human Health Risk Assessment
USEPA, 2001. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites OSWER 9355.4-24.
USEPA, 2004. Risk Assessment Guidance for Superfund Vol 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). EPA/540/R-99/005.

TABLE 2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 73
CMS WORK PLAN
NAVAL AIR STATION, PUERTO RICO, CEIBA, PUERTO RICO

Scenario Timeframe: Current, Future
Receptor Population: On-Site Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Arsenic	2.4E-06	--	4.8E-07	--	2.9E-06	Skin / CVS	0.02	--	<0.01	0.02
			Chemical Total	2.4E-06	--	4.8E-07	--	2.9E-06		0.02	--	<0.01	0.02
		Exposure Point Total						2.9E-06					0.02
	Exposure Medium Total							2.9E-06					0.02
	Air	Fugative Dust	Arsenic	--	3.7E-09	--	--	3.7E-09	NA	--	--	--	--
			Chemical Total	--	3.7E-09	--	--	3.7E-09		--	--	--	--
		Exposure Point Total						3.7E-09					--
	Exposure Medium Total							3.7E-09					--
Surface Soil Total								**2.89E-06**					**0.02**
On-Site Workers Total								**2.89E-06**					**0.02**

Total Risk Across Surface Soil	2.9E-06	Total Hazard Index Across Surface Soil	0.02
Total Risk Across All Media and All Exposure Routes	2.9E-06	Total Hazard Index Across All Media and All Exposure Routes	0.02

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	0.02
Oral / Dermal Skin HI =	0.02

Notes:
Target Organ Abbreviations:
CVS = Cardiovascular System

Ingestion Pathway Intake:
CDI (mg/kg-day) = C x IR x CF x Fi x EF x ED x 1/BW x 1/AT

Dermal Pathway Intake:
CDI (mg/kg-day) = C x CF x SA x AF x ABS x EF x ED x 1/BW x1/AT

Inhalation Pathway Intake:
CDI (mg/kg-day) = Ca x RR x ET x EF x ED x 1/PEF x 1/BW x1/AT

Carcinogenic Risk =
ILCR = ∑CDI*CSF

Noncarcinogenic Risk =
HQ = ∑CDI/RfD

TABLE 3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 73
CMS WORK PLAN
NAVAL AIR STATION, PUERTO RICO, CEIBA, PUERTO RICO

Scenario Timeframe: Current, Future
Receptor Population: Trespassers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Arsenic	4.8E-07	--	5.8E-08	--	5.4E-07	Skin / CVS	<0.01	--	<0.01	<0.01
			Chemical Total	4.8E-07	--	5.8E-08	--	5.4E-07		<0.01	--	<0.01	<0.01
		Exposure Point Total						5.4E-07					<0.01
	Exposure Medium Total							5.4E-07					<0.01
	Air	Fugative Dust	Arsenic	--	3.0E-11	--	--	3.0E-11	NA	--	--	--	--
			Chemical Total	--	3.0E-11	--	--	3.0E-11		--	--	--	--
		Exposure Point Total						3.0E-11					--
	Exposure Medium Total							3.0E-11					--
Surface Soil Total								**5.39E-07**					**<0.01**
Adult Trespassers Total								**5.39E-07**					**<0.01**

Total Risk Across Surface Soil	5.4E-07	Total Hazard Index Across Surface Soil	<0.01
Total Risk Across All Media and All Exposure Routes	5.4E-07	Total Hazard Index Across All Media and All Exposure Routes	<0.01

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	<0.01
Oral / Dermal Skin HI =	<0.01

Notes:
Target Organ Abbreviations:
CVS = Cardiovascular System

Ingestion Pathway Intake:
CDI (mg/kg-day) = C x IR x CF x Fi x EF x ED x 1/BW x 1/AT

Dermal Pathway Intake:
CDI (mg/kg-day) = C x CF x SA x AF x ABS x EF x ED x 1/BW x1/AT

Inhalation Pathway Intake:
CDI (mg/kg-day) = Ca x RR x ET x EF x ED x 1/PEF x 1/BW x1/AT

Carcinogenic Risk =
ILCR = ∑CDI*CSF

Noncarcinogenic Risk =
HQ = ∑CDI/RfD

TABLE 4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
SWMU 73
CMS WORK PLAN
NAVAL AIR STATION, PUERTO RICO, CEIBA, PUERTO RICO

Scenario Timeframe: Current, Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Surface Soil	Arsenic	3.1E-07	--	5.2E-08	--	3.6E-07	Skin / CVS	<0.01	--	<0.01	<0.01
			Chemical Total	3.1E-07	--	5.2E-08	--	3.6E-07		<0.01	--	<0.01	<0.01
		Exposure Point Total						3.6E-07					<0.01
	Exposure Medium Total							3.6E-07					<0.01
	Air	Fugative Dust	Arsenic	--	5.5E-11	--	--	5.5E-11	NA	--	--	--	--
			Chemical Total	--	5.5E-11	--	--	5.5E-11		--	--	--	--
		Exposure Point Total						5.5E-11					--
	Exposure Medium Total							5.5E-11					--
Surface Soil Total								**3.65E-07**					**<0.01**
Adolescent Trespassers Total								**3.65E-07**					**<0.01**

Total Risk Across Surface Soil	3.6E-07	Total Hazard Index Across Surface Soil	<0.01
Total Risk Across All Media and All Exposure Routes	3.6E-07	Total Hazard Index Across All Media and All Exposure Routes	<0.01

Notes:
Target Organ Abbreviations:
CVS = Cardiovascular System

Oral and Dermal Exposure Routes:

Oral / Dermal Cardiovascular System HI =	<0.01
Oral / Dermal Skin HI =	<0.01

Ingestion Pathway Intake:
CDI (mg/kg-day) = C x IR x CF x Fi x EF x ED x 1/BW x 1/AT

Dermal Pathway Intake:
CDI (mg/kg-day) = C x CF x SA x AF x ABS x EF x ED x 1/BW x1/AT

Inhalation Pathway Intake:
CDI (mg/kg-day) = Ca x RR x ET x EF x ED x 1/PEF x 1/BW x1/AT

Carcinogenic Risk =
ILCR = ∑CDI*CSF

Noncarcinogenic Risk =
HQ = ∑CDI/RfD

FINAL CORRECTIVE MEASURES STUDY WORK PLAN SWMU 73

For NAVAL ACTIVITY PUERTO RICO
EPA I.D. No. PR2170027203
CEIBA, PUERTO RICO

Prepared for:

Department of the Navy
NAVFAC SOUTHEAST
North Charleston, South Carolina

Prepared by:

Baker

Michael Baker Jr., Inc.
Moon Township, PA

Contract No. N62470-07-D-0502
DO 0002

January 25, 2008

IQC for A/E Services for Multi-Media Environmental Compliance Engineering Support

FINAL

CORRECTIVE MEASURES STUDY WORK PLAN
SWMU 73

NAVAL ACTIVITY PUERTO RICO
EPA I.D. NO. PR2170027203
CEIBA, PUERTO RICO

JANUARY 25, 2008

Prepared for:

DEPARTMENT OF THE NAVY
NAVFAC SOUTHEAST
North Charleston, SC

Under:

Contract No. N62470-07-D-0502
DELIVERY ORDER 0002

Prepared by:

MICHAEL BAKER JR., INC.
Moon Township, Pennsylvania

I certify under penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that this document and its attachments were prepared either by me personally or under my direction or supervision in a manner designed to ensure that qualified and knowledgeable personnel properly gather and present the information contained therein. I further certify, based on my personal knowledge or on my inquiry of those individuals immediately responsible for obtaining the information, that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowingly and willfully submitting a materially false statement.

Signature Jeffrey G Meyers

Name: **Jeffrey G Meyers**

Title: **BRAC Env. Coordinator**

Date: **January 25, 2008**

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LIST OF ACRONYMS AND ABBREVIATIONS

APA	Aerial Photography Analysis
AQUIRE	Aquatic Toxicity Information Retrieval
AUF	Area Use Factor
ATSDR	Agency for Toxic Substance and Disease Registry
AUF	Area Use Factor
BAF	Bioaccumulation Factor
Baker	Michael Baker Jr., Inc.
BCF	Bioconcentration Factor
bgs	below ground surface
BRAC	Base Realignment and Closure
BW	Body Weight
CAOs	Corrective Action Objectives
CCME	Canadian Council of Ministers of the Environment
CERCLA	Comprehensive Environmental Recovery, Compensation, and Liabilities Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CMS	Corrective Measures Study
CNO	Chief of Naval Operations
COC	Contaminant of Concern
COPC	Chemical of Potential Concern
D.I.	deionized water
DI	Dietary Intake
DO	Delivery Order
DPT	Direct-Push Technology
DRMO	Defense Reutilization and Marketing Office
Eco-SSL	Ecological Soil Screening Level
EC_{50}	Median effective Concentration
ECP	Environmental Condition of Property
EODMU	Explosive Ordnance Disposal Mobile Unit
ERA	Ecological Risk Assessment
FC_{xi}	Maximum Concentration of Chemical x in Food Item i
FCV	Final Chronic Value
FID	Flame Ionization Detector
FIR	Food Ingestion Rate
GPS	Global Positioning System
HASP	Health and Safety Plan
HEAST	Health Effects Assessment Summary Table
HM	Hazardous Materials
HQ	Hazard Quotient
HSA	Hollow-Stem Auger
ID	Internal Diameter
IRIS	Integrated Risk Information System

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

K_d	Adsorption Coefficient
K_{oc}	Organic Carbon Partition Coefficient
K_{ow}	Octanol-Water Partition Coefficient
LANTDIV	United States Navy, Atlantic Division
LD_{50}	Median Lethal Dose
LC_{50}	Median Lethal Concentration
LOAEL	Lowest Observed Adverse Effect Level
LOEC	Lowest Observed Effect Concentration
LOEL	Lowest Observed Effect Level
MATC	Maximum Acceptable Toxicant Concentration
MCLs	Maximum Contaminant Levels
MHSPE	Ministers of Housing, Spatial Planning and Environment
mg/kg	milligrams per kilogram
mg/kg-bw-day	milligram per kilogram-body weight per day
µg/kg	micrograms per kilogram
mg/L	milligrams per liter
µg/L	micrograms per liter
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAPR	Naval Activity Puerto Rico
NAVFAC	Naval Facilities Engineering Command
NAWQC	National Ambient Water Quality Criteria
NOAA	National Oceanic and Atmospheric Administration
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
NTR	Navy Technical Representative
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PDF_i	Proportion of Diet Composed of Food Item i
PDS	Proportion of Diet Composed of Soil/sediment
PID	Photoionization Detector
PMO	Program Management Office
POL	Petroleum, Oils and Lubricants
PPRTV	Provisional Peer Reviewed Toxicity Values
PREQB	Puerto Rico Environmental Quality Board
PRG	Preliminary Remedial Goal
PR LRA	Puerto Rico Locale Reuse Authority
PWD	Public Works Division
QA/QC	Quality Assurance/Quality Control

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

R	data qualifier: the sample result is rejected; the presence of absence of the analyte cannot be verified
RAGS	Risk Assessment Guidance for Superfund
RBC	Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RfC	Reference Concentrations
RfD	Reference Dose
RFI	RCRA Facility Investigation
RR	Records Review
SC_x	Concentration of Chemical x in Soil/Sediment
SCV	Secondary Chronic Value
SDWA	Safe Drinking Water Act
SE	Southeast
SF	Slope Factor
SQUIRT	Screening Quick Reference Tables
SVOC	Semi-volatile organic compound
SWMU	Solid Waste Management Unit
U	data qualifier: the analyte was analyzed for, but not detected above the reported sample quantitation limit
UJ	data qualifier: the analyte was analyzed for, but not detected; the reported sample quantitation limit is qualified as estimated
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WCx	Concentration of Chemical x in Water
WIR	Water Ingestion Rate

1.0 INTRODUCTION

This work plan presents the technical approach for conducting a Corrective Measures Study (CMS) for Solid Waste Management Units (SWMU) 73 – former Defense Reutilization and Marketing Office (DRMO) Scrap Metal Recycling Yard, located at Naval Activity Puerto Rico (NAPR), Ceiba, Puerto Rico. This CMS work plan has been prepared by Michael Baker Jr., Inc. (Baker), for the Navy Base Realignment and Closure (BRAC) Program Management Office (PMO) Southeast (SE) office under contract with the Naval Facilities Engineering Command (NAVFAC), SE (Contract Number N62470-07-D-0502, Delivery Order (DO) 0002). This work plan was developed in accordance with the Resource Conservation and Recovery Act (RCRA) 7003 Administrative Order on Consent (United States Environmental Protection Agency [USEPA] Docket No. 02-2007-7301).

This work plan has been developed to direct the work that needs to be conducted to meet the objectives stated in Section 2.0. The EPA approved Final RFI Management Plans Naval Station Roosevelt Roads, Puerto Rico (Baker, 1995) containing the Project Management Plan, Data Collection Quality Assurance Plan, and Health and Safety Plan are to be used in conjunction with this work plan to meet these objectives.

1.1 NAPR Description and History

NAPR, formerly known as the Naval Station Roosevelt Roads (NSRR), occupies over 8,800 acres on the northern side of the east coast of Puerto Rico (see Figure 1-1), along Vieques Passage with Vieques Island lying to the east about 10 miles off the harbor entrance. NAPR also occupies the immediately adjacent islands of Piñeros and Cabeza de Perro, as presented on Figure 1-2. The northern entrance to NAPR is about 35 miles east along the coast road (Route 3) from San Juan. The property consists of 3,938 acres of upland (developable) property and 4,955 acres of environmentally sensitive areas including wetlands, mangrove, and wildlife habitat. The closest large town is Fajardo (population approximately 37,000), which is about 5 miles north of NAPR off Route 3. Ceiba (population approximately 17,000) adjoins the west boundary of NAPR (see Figure 1-1).

The facility was commissioned in 1943 as a Naval Operations Base, and finally re-designated a Naval Station in 1957. Naval Station Roosevelt Roads (NSRR) operated as a Naval Station from 1957 until March 31, 2004. NSRR has undergone operational closure as of March 31, 2004 and has been designated as Naval Activity Puerto Rico. NAPR will continue until the real estate disposal/transfer is completed. The mission of the NAPR is to protect the physical assets remaining, comply with environmental regulations, and sustain the value of the property until final disposal of the property.

In anticipation of operational closure of NSRR the Naval Facilities Engineering Command (NAVFAC), Atlantic Division (LANTDIV) prepared Phase I/Phase II Environmental Condition of Property (ECP) Reports to document the environmental condition of NSRR. Section 8132 of fiscal year 2004 Defense Appropriations Act, signed into law on September 30, 2003, directs that NSRR be disestablished within 6 months, and that the real estate disposal/transfer be carried out in accordance with procedures contained in the Base Realignment and Closure (BRAC) Act of 1990. This legislation requires that the base closure be conducted in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), as amended by the Community Environmental Response Facilitation Act (CERFA).

The Draft Phase I Environmental Condition of Property Report dated March 31, 2004 (LANTDIV, 2004a) identified new sites at NAPR based on the results of a review of records, an

analysis of historic aerial photographs, physical site inspections, and interviews with persons familiar with past and current operations and activities. The new ECP sites had not been previously identified or investigated under existing environmental program areas. A Phase II ECP field investigation was conducted in 2004 to conduct environmental sampling to determine if a release/disposal actually occurred at any of the Phase I ECP sites recommended for further evaluation in the Phase I ECP and, if so, whether any potential risk to human health was present. The Draft Phase II Environmental Condition of Property Report recommended additional sampling (to be undertaken as part of the RCRA Program) at several sites to permit a more detailed assessment (NAVFAC Atlantic, 2005).

The USEPA issued a RCRA 7003 Administrative Order (Environmental Protection Agency Docket No. RCRA-02-2007-7301), which identifies SWMU 73 (formerly referred to as ECP 19) having documented releases of solid and/or hazardous waste and hazardous constituents and requires an acceptable work plan to complete site characterization and a CMS to determine the final remedy. Following a public comment period the Consent Order became effective on January 29, 2007.

1.2 Site Background

The following subsections present a brief description and background on the SWMU that is addressed in this CMS work plan.

SWMU 73 (also known as ECP Site 19) the scrap metal recycling yard is located at NAPR as shown on Figure 1-2. This site is located near the Camp Moscrip area and the Dry Dock, at the eastern end of the base. The site originally consisted of a large, flat-lying, gravel-covered, scrap metal storage yard as described in the Phase II ECP Report, and as shown in Figure 1-3. However, the site boundary was expanded to the area outside of the scrap metal yard to include the secondary growth vegetation area around the perimeter of the storage yard (see Figure 1-3) during the field investigation, per LANTDIV's request, because of the amount of debris (i.e., wood, metal, etc.) observed in this vegetated area (see photographs A-44 through A-47 in Appendix A). The physical site inspection observed numerous small spills and stains of presumed petroleum oils and lubricant (POL) within the scrap metal yard, primarily from large pieces of construction equipment that were stored in the yard. The records review (RR), aerial photography analysis (APA), and interviews confirmed that this scrap metal yard has been operated as the DRMO Scrap Metal Recycling Yard since the 1970s, and that numerous pieces of equipment and vehicles have been stored at this scrap metal yard for extended periods of time, resulting in numerous small releases of POL throughout the usage period. Portions of the scrap metal yard contain miscellaneous debris including vehicle frames and tires, as well as other equipment.

During the Phase II ECP field investigation investigators observed the scrap metal storage bins (see Figure 1-3) within the recycling yard where concrete block walls constructed on a concrete pad make up separate storage areas based on the type of scrap metal that was to be disposed (see photograph A-43 in Appendix A). Also presented within photograph A-43, is a view looking northwest across the site at one of the temporary monitoring wells (19E-03) installed at this site during the Phase II ECP. The central and northeast portions of the recycling yard appeared to be scraped clean, with minor amounts of debris observed. In addition, piles of debris (i.e., wood, metal, etc.) were observed scattered across the wooded area around the perimeter of recycling yard as mentioned above, as shown in photographs A-44 through A-46. Also, a small concrete structure, possibly a foundation from a building that no longer exists is shown in Photograph A-47.

In addition, two unidentified metal structures were uncovered. The Environmental Division of the Public Works Division (PWD) was informed and they arranged for them to be removed from the site to a separate area of the Building 31 - PWD yard for further examination. After PWD personnel examined the structures, they requested that a representative from the field crew examine these structures. Based on the size, as well as their ordnance-like shape, the decision was made by PWD to have an ordnance expert inspect the structures to rule out the chance that they are unexploded ordnances. On May 12, 2004, a representative from the Explosive Ordnance Disposal Mobile Unit (EODMU) SIX Detachment Mayport arrived at the PWD to inspect the structures. The result of the inspection concluded that both ordnance-shaped structures were inert.

1.3 Investigative History & Basis for the Work Plan

The DRMO Scrap Metal Recycling Yard was first listed as a SWMU in the RCRA 7003 Administrative Order on Consent. SWMU 73 was included in the 2004 Phase II ECP investigation performed by Michael Baker Jr., Inc. (Baker). An aerial photograph of the site dating from 1958, which shows some of the areas of the site that were targeted during the ECP investigation, is shown in Figure 1-4.

During the Phase II ECP investigation, sample locations at this site were field located with a hand held global positioning system (GPS) receiver, while the additional five surface soil locations were surveyed.

SWMU 73 is located in the near-shore flatlands. Three soil borings (19E-01 through 19E-03) were advanced in the Former Scrap Metal and Recycling Yard as presented on Figure 1-4. It should be noted that the three soil borings were not located on the concrete pad that falls within this area. The depth of the soil borings at this site ranged from 14 feet bgs to 15 feet bgs (19E-01 and 19E-03). Fill was observed to be present from the ground surface to a depth ranging from 7-feet (at boring 19E-SB02) to 13-feet (at boring 19E-SB03). The fill material consisted of mainly sand and gravel, with lesser amounts of metal debris, silt, and clay. Marine sediments were observed immediately beneath the fill material. Fine to medium sand was observed at boring 19E-SB02, and peat at boring 19E-SB03. Groundwater was apparent beginning in the fill material at a depth ranging from 6- to 8-feet below ground surface (bgs).

Surface soil samples were collected from this site utilizing a stainless steel spoon in conjunction with a Macro Core sampler in conjunction with a Geoprobe® rig with direct-push technology (DPT) methods. One surface soil sample was collected from each soil boring location from a depth of 0 to 1 foot bgs. Subsurface soil samples were then collected from each boring location using the same method as for the surface soil mentioned above. Subsurface soil samples were collected from two-foot intervals (i.e., 1 to 3 feet bgs, 3 to 5 feet bgs, etc.), down to the groundwater interface (approximately 6 to 8 feet bgs). All surface and subsurface soil samples were screened in the field utilizing a flame ionization detector (FID) and photoionization detector (PID) with the results recorded in the field logbook. The screening results were compared against background to indicate if the soil has been impacted by past operations. Based on the observed piles of metal, wood, etc., found inside the wooded perimeter in the area around the recycling yard, the decision was made to collect six additional surface soil samples (19E-SS04 through 19E-SS09) in an attempt to determine if this environment has been negatively impacted by past practices.

Soil samples submitted to a fixed-base laboratory included surface soil samples (19E-SS01 through 19E-SS09) and subsurface soil samples (19E-SB01-02, 19E-SB02-03, and 19E-SB03-03). These samples were submitted to the fixed-base analytical laboratory for full Appendix IX analysis.

Temporary monitoring wells were installed at each of the three soil boring locations (19E-01 through 19E-03) as presented on Figure 1-4. Groundwater samples were submitted to the fixed-base analytical laboratory for full Appendix IX analysis. The inorganic analysis requested was for dissolved metals only.

1.3.1 Findings of the Investigations

The following paragraphs present a summary of the findings for the sampling and analysis investigation performed at SWMU 73 mentioned above. A complete detailed evaluation of the findings from the previous investigations at SWMU 73 can be found in the Final Phase II Environmental Condition of Property Report (NAVFAC Atlantic, 2005).

Nine surface soil, three subsurface soil, and three groundwater samples were obtained from nine locations as shown on Figure 1-3. The groundwater sample locations were not based on FID/PID screening, but they were pre-determined by the work plan (LANTDIV, 2004b). The results of the screening indicated that only one location had an exceedance of background in the soil vapor. No duplicate samples were taken at this site.

The results of the analyses showing the detected results in comparison to risk-screening criteria, are shown in Tables B-1 through B-6 of Appendix B. Organic compounds that exceeded USEPA Region III Residential risk based concentrations (RBCs) included 4,4'-DDT, 4,4'-DDE, and benzo(a)pyrene. These compounds only exceeded the criteria in the surface soil media. Several inorganics exceeded RBCs in soil, including arsenic, chromium, and vanadium. Only arsenic exceeded its established background concentration for NAPR at the site. None of the constituents in surface soil or subsurface soil exceeded their Industrial RBCs. Only vanadium exceeded its RBC in groundwater, which is likely due to leaching of high naturally occurring vanadium in the soils.

The Final Phase II ECP report (NAVFAC Atlantic, 2005) concluded that past operations have impacted the surface soil at the DRMO facility. However, the subsurface soil and the groundwater did not exhibit significant concentrations of compounds detected in the surface soil; therefore it can be concluded that these two media are not impacted. Due to the limited nature of the ECP Phase II investigation, however, it was recommended that additional site characterization be done to confirm the site contamination. The recommendation of the ECP investigation and the need for delineation of the proposed excavation areas forms the basis for the proposed CMS investigation.

1.4 Organization of the CMS Work Plan

This CMS Work Plan is organized into eleven sections. Section 1.0, the Introduction, is designed to introduce the reader to the basis for the work plan and a summary of the site status. Section 2.0 provides the objectives and the corrective measure standards being utilized for this project. The CMS Investigation to be performed at SWMU 73 is discussed in Section 3.0, with the corresponding CMS Investigation reporting discussed in Section 4.0. The ecological risk assessment to be performed is described in Section 5.0. Section 6.0 provides a method for establishing the corrective action objectives, and the method to be used to identify contaminants of concern (COCs) is discussed in Section 7.0. The tasks to be accomplished as part of the Corrective Measure Study are described in Section 8.0. The project schedule is provided in Section 9.0. Section 10.0 provides the project organization. Section 11.0 provides the references cited in this report.

2.0 CMS OBJECTIVES AND CORRECTIVE MEASURE STANDARDS

This section discusses the objectives of this CMS and the standards to assess the performance of the selected corrective measure. There are two distinct types of work associated with this CMS, 1) a CMS Investigation to further delineate the contamination at this SWMU and the associated report on these findings, and 2) the development of the corrective measures for SWMU 73. Development of Corrective Action Objectives (CAOs) for ecological receptors (see Section 5.8) and human health receptors (see Sections 6.4 through 6.6) are to be developed in the CMS.

2.1 Objectives

As noted above, there are two distinct tasks associated with the CMS: a CMS Investigation and the development of Corrective Measures for the CMS. The objectives of this CMS investigation (see Sections 3.0 through 7.0 of this work plan) are as follows:

- To identify those tasks required for the performance of a CMS Investigation to further delineate the contamination which poses a risk at SWMU 73.
- To identify realistic ecological and human health exposure pathways from contamination that may be present at SWMU 73.
- To identify those tasks required for the evaluation and delineation of the contamination in the soil and groundwater that may pose a risk at SWMU 73.

The objectives of the development of the corrective measures to address the contamination present at this SWMU (see Section 8.0) are as follows:

- To develop the human health (see Sections 6.4 through 6.6) and ecological (see Section 5.8) CAOs for SWMU 73.
- To identify those tasks required for assisting in screening applicable remedial technologies for SWMU 73.

This work plan documents the scope and objectives of a full CMS for SWMU 73, as well as the activities required to implement the program. The work plan serves as a tool for assigning responsibilities and establishing the project schedule and costs. The report for this investigation will be in the form of a "Task I" CMS Report with establishment of corrective action objectives (CAOs) for SWMU 73.

If, as a result of the CMS investigation, a streamlined CMS appears appropriate, approval for that approach will be sought in a "CMS Investigation Report." A highly focused or streamlined CMS may be appropriate for SWMU 73 since this site may have "straightforward remedial solutions" where standard engineering solutions can be applied that have proven effective in similar situations (USEPA 1994). Therefore, the screening of clean-up technologies, normally conducted in a CMS, may not occur.

2.2 Corrective Measures Standards

Corrective measure standards that may be applicable to SWMU 73 will be developed as part of the CMS "Task I" reporting effort (see Section 8.1). Once the possible corrective measures are selected for applicability, the appropriate standards will be developed.

The corrective measure standards to be considered will include the applicable Federal Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act (SDWA) and the Puerto Rico Environmental Quality Board (PREQB) standards. The RCRA Corrective Action Program requirements under Code of Federal Regulations (CFR) (40 CFR 264.100) will also be reviewed for applicability to the site. In addition, ecological risks will be considered in the development of corrective measures standards by incorporating standards that are determined to be protective of ecological receptors by the risk assessment process described in Section 5.0.

Background inorganic concentrations will be considered in establishing exceedances of site contamination when appropriate. The *Revised Final Summary Report for Environmental Background Concentrations of Inorganics* (Baker, 2006a) will be used.

All of the above information to be considered for the corrective measure standards will be taken into account when the corrective action objectives for human health and the environment are developed as discussed in Section 6.0.

The corrective measures standards correlate with the development of the corrective action objectives. These standards are utilized during the selection of chemicals of potential concern (COPCs) as described in Sections 5.0 and 6.0.

3.0 CMS INVESTIGATION

This section of the work plan describes the technical elements of the field investigation for SWMU 73.

The objectives of this CMS Investigation are as follows:

- To determine the extent of contamination for excavation of surface soil
- To delineate inorganic and organic contamination, if any, in the subsurface soils
- To determine impact, if any, to the groundwater near SWMU 73
- To evaluate exposure pathways that may be present at SWMU 73

The soils in SWMU 73 had been found to contain contamination from the activities at the DRMO Scrap Metal Recycling Yard (NAVFAC, 2005). Therefore, it will be assumed during this investigation that the soils from this area will need to be remediated as part of a corrective measure. Remediation assumptions for surface soils generated from the findings of the analytical program conducted during the Phase II ECP investigation included excavation and removal of contaminated surface soils at two locations within the area, and restoration of the site. The estimated area of each excavation is approximately 75 feet by 75 feet, and the depth is assumed to be 1 foot bgs, representing a volume of about 210 cubic yards each, or a total of 420 cubic yards. The extent of remediation will be determined based on results of this investigation.

Table 3-1 contains the sampling matrix proposed for this CMS Investigation Work Plan. It is proposed to collect soil, subsurface soil, and groundwater samples within and around the DRMO Scrap Metal Recycling Yard to determine potential impacts. Groundwater samples will be taken at selected locations where soil samples are taken, in order to evaluate if groundwater has been impacted by activities at SWMU 73.

3.1 Surface and Subsurface Soil Sample Locations

Several locations were sampled during the ECP with a bias towards detecting contamination when visual signs or other historical information indicated the potential for a release. A determination was made to excavate two areas of 75-foot square dimensions each, around ECP locations 7E-03 and 19E-SS06. In order to determine the extent of surface soil to be excavated, additional samples will be taken at 20-foot spacing along four perpendicular directions traversing away from the two targeted locations, as shown on Figure 3-1. Surface soil samples (73SB01-00 through 73SB23-00) will be collected from a depth of 0 to 1 foot bgs at twenty three locations for a total of twenty six samples including three field duplicates, as summarized in Table 3-1.

They will be analyzed for Appendix IX VOCs, SVOCs, low level PAHs, organochlorine pesticides, and metals. Based upon data obtained during the ECP, it is expected that PAHs and pesticides would be adequate to determine the extent of excavation necessary to remove the suspected area of surface soil contamination. However, the other analytes have also been included to provide the data necessary to verify that the storage of scrap material at the site has not resulted in impacts from other chemical releases at the site.

An additional four subsurface soil samples will be collected from two locations to verify that vertical migration of contamination has not occurred. A total of four subsurface soil samples will be collected from these two locations. The two locations will consist of one from each of the two areas proposed for excavation and their exact locations will be selected based on field screening for elevated levels of VOCs (using a PID/FID) and visual field observations of color or staining

within the surface soil samples. The subsurface soil samples will also be analyzed for the same constituents as the surface soil samples, in order to provide a comprehensive contamination profile with depth.

An additional ECP sample point has been identified for further evaluation under this investigation due to a revision to the Summary Report for Environmental Background Concentrations of Inorganic Compounds. This consisted of revising the background surface soil for vanadium, the outcome of which identified the need to further evaluate the ECP soil sample location 19E-SS07. Additional samples will be taken at 20-foot spacing along four perpendicular directions traversing away from 19E-SS07, as shown on Figure 3-1. Surface soil samples (73SB24-00 through 73SB35-00) will be collected from a depth of 0 to 1 ft bgs at twelve locations for a total of thirteen samples including one field duplicate as summarized in Table 3-1. Two subsurface soil samples will be collected at one location identified on Figure 3-1 to verify whether the vanadium concentrations continue to be elevated with vertical depth. The soil samples from these locations will be analyzed for Appendix IX metals.

All soil sampling locations will be flagged in the field and will be surveyed for horizontal location utilizing a portable GPS unit or traditional survey equipment.

The surface soil samples from a depth of 0 to 1 foot bgs will be obtained with a stainless steel spoon (see SOP F102 in Baker, 1995). The subsurface soil samples will be obtained during boring advancement for monitoring well installation (see SOP F102 in Baker, 1995).

A boring log will be prepared indicating lithology and water occurrence, and other observations. Soil samples will initially be screened at 6-inch intervals with a photoionization detector (PID) to develop a semi-quantitative profile. Soil samples will be collected continuously from ground surface to the water table with two subsurface soil samples and one surface soil sample per selected boring location being collected for fixed-base laboratory analysis. One subsurface soil sample per location will be collected from a depth of 1.0-3.0 feet below ground surface (bgs). The other subsurface soil sample will be collected from the depth of any suspected contamination, based on PID screening, at a depth shallower than the water table or 10 feet bgs, whichever occurs first.

Soil boring locations chosen for fixed base laboratory analyses will be labeled consecutively (beginning with 73SB01) in a manner consistent with previous sample designations at NAPR. Extensions to the sample identification will reflect the depth at which the sample was obtained. For the purposes of this work plan, two-foot discrete depths will be used. Sample identification extensions will follow the pattern shown below.

73SB01-00	SMWU 73 Sample
73SB01-00	Soil Boring Sample
73SB01-00	Soil boring location identifier
73SB01-00	0 to 1 foot bgs (surface soil) sampling interval

Subsurface soil samples will be designated as follows:

73SB01-01	First subsurface sampling interval, 1-3 feet bgs
73SB01-02	Second subsurface sampling interval, 3-5 feet, bgs and so on.

Surface soil samples (up to 1 foot bgs) are intended to provide data for evaluation of potential ecological exposure concerns. Surface soil and subsurface soil (to a depth of 10 feet bgs) are intended to provide data for evaluation of potential human health exposure concerns.

Following sample collection each borehole will be backfilled with the remaining soil to the extent practicable, in order to minimize the burden of waste disposal. The surface of the borehole will then be patched with bentonite grout.

Samples will be packed in ice and shipped next day air to the fixed-base laboratory. Because of previously encountered delays associated with sample shipments from Puerto Rico to the United States, additional insurance to cover re-sampling costs should be claimed on the bill of laden. At least one member of the field team will remain on the island until verification by the laboratory of receipt of all shipments. This will minimize any potential re-sampling costs associated with mobilization. Tracking numbers for each shipment will be forwarded to the project manager for assisting in verification of receipt.

All analysis at the laboratory will be performed using current methodologies for the compound list and with the quantitation limits presented in Table 3-2. To ensure that the data to be collected is of sufficient quality the quantitation limits have been reviewed against the screening levels presented in Table 5-1 and determined to meet these levels with a few exceptions. These quantitation limits have also been reviewed by the analytical laboratory to ensure that they can be met. In all cases, the quantitation limits are the lowest achievable by laboratory for the specified analytical method. The specific third party data validator is to be determined. All analytical work that is conducted on the mainland of the U.S.A. must be certified by a licensed Puerto Rico chemist.

3.2 Groundwater Sample Locations

Groundwater samples will be obtained from permanent monitoring wells to be installed at the two subsurface soil sampling locations (near 19E-SS06 and 19E-03) that may be selected based on field screening or other observations, as noted in Section 3.1. The groundwater samples will be collected in order to evaluate whether contamination may have migrated vertically into the aquifer at the two locations where subsurface contamination is suspected. These locations are shown on Figure 3-1. These well locations may be advanced to a total depth not to exceed 30 feet below ground surface in order to find subsurface fractures containing groundwater. Samples from the two locations, as well as one duplicate will be obtained from the top of the groundwater table and analyzed for Appendix IX VOCs, SVOCs, low level PAHs, and dissolved inorganics, as presented in Table 3-1.

Groundwater samples will also be collected from a permanent monitoring well to be installed at the location of the subsurface soil boring for investigating the vertical migration of the elevated vanadium concentrations near 19E-SS07. This location is also shown on Figure 3-1. This well will also be advanced to a total depth not to exceed 30 feet below ground surface in order to find subsurface fractures containing groundwater. One ground water sample from this location will be obtained from the middle of the screened interval and analyzed only for Appendix IX dissolved inorganics, as presented in Table 3-1.

Monitoring wells will be installed using techniques that will be selected depending on the underlying stratigraphy. The wells will be constructed of 2-inch ID, Schedule 40 PVC, with flush joint threads. Well screens will be 10-feet long and installed to straddle the water table.

- Soil sampling will be conducted in order to classify the soil during well installation. Upon completion of soil sampling, the borehole will be reamed as necessary to the desired depth using the prescribed drilling method. The well construction materials will be installed

through the HSAs, casing, or in an open borehole, depending on the selected drilling technique.

- The well screen and bottom cap will be set at the bottom of the borehole. The screen will be connected to threaded, flush-joint, riser. An expandable, water tight locking cap or slip-cap with a vent hole will be placed at the top of the casing.

- The annular space around the well screen will be backfilled with a well-graded, fine to medium sand as the drilling tool or casing is being withdrawn from the borehole. The sand will extend to approximately 2 feet above the top of the screened interval. The thickness of the sand above the screened interval may be reduced if the well is too shallow to allow for placement of adequate sealing material.

- An approximately 2-foot thick sodium bentonite seal (minimum of 6 inches for very shallow wells) will be placed above the sand pack. If bentonite pellets or chips are used, they will be sized appropriately given the well and borehole diameter and placed in a careful manner that will prevent bridging. The bentonite will be hydrated with potable water, as necessary.

- The annular space above the bentonite seal will be backfilled with cement/bentonite grout to prevent surface and near subsurface water from infiltrating into the screened groundwater monitoring zone. The grout will consist of five to ten percent (by dry weight) of bentonite powder and seven gallons of potable water per 94-pound bag of portland cement. For very shallow wells, the cement/bentonite grout may be omitted.

- The depth intervals of all backfilled materials will be measured with a weighted measuring tape to the nearest 0.1-foot and recorded in the field logbook.

- The entire site area is heavily vegetated; therefore the wells will be provided with 2 to 3 feet of "stickup" above ground surface. Steel protective casing will be placed over the riser and surrounded by a concrete pad. The pad will be a minimum of 2 feet by 2 feet (length x width) and 6 inches in thickness (with 2 inches set into the ground outside the casing), and extending 2 feet bgs inside the annular space around the well. If water table conditions prevent having a 24-inch thick bentonite seal, the concrete pad depth in the annular space around the well may be decreased. Steel bollards will be installed around the concrete pad as additional protection and painted a bright color to aid in visibility.

- All wells will have a locking cap installed on the PVC riser or protective steel casing.

Each new permanent monitor well will be developed using pumping and surging methods (see SOP F103 in Baker, 1995) after allowing suitable time for the cement/bentonite grout to cure (typically a minimum of 24 hours). The purpose of well development is to restore the permeability of the formation which may have been reduced by the drilling operations and to remove fine-grained materials that may have entered/accumulated in the well or filter pack. The wells will be developed until the discharged water runs relatively clear of fine-grained materials. It should be noted that the water in some wells does not clear with continued development. Typical limits placed on well development may include any one or a combination of the following:

- Clarity of water based on visual determination
- A maximum time period (typically two hours for shallow wells)

- A maximum borehole volume (typically three to five borehole volumes plus the amount of any water added during the drilling or installation process)
- Stability of pH, specific conductance, and temperature measurements (typically less than 10 percent change between three successive measurements)
- Clarity based on turbidity measurements [typically less than 20 Nephelometric Turbidity Units (NTU)]
- A record of the well development will be completed to document the development process.

The groundwater will be sampled using a low flow sampling technique. Appendix C includes a detailed description of the low flow sampling technique. Field parameters of pH, temperature, turbidity, conductivity, dissolved oxygen, and oxidation-reduction potential will be obtained with appropriate instrumentation during sampling if enough volume of groundwater is present. The groundwater samples will be placed into appropriate laboratory supplied containers. The groundwater sampled will be filtered in the field for the dissolved metals analyses.

The groundwater sample designations will correspond to the soil boring location. For example, groundwater collected from soil boring location 73SB01 will have a groundwater sample identification of 73GW01.

Samples will be packed in ice and shipped next day air to the "fixed base" laboratory. Because of previously encountered delays associated with sample shipments from Puerto Rico to the United States, additional insurance to cover re-sampling costs should be claimed on the bill of laden. At least one member of the field team will remain on the island until verification by the laboratory of receipt of all shipments. This will minimize any potential re-sampling costs associated with mobilization. Tracking numbers for each shipment will be forwarded to the project manager for assisting in verification of receipt.

All analyses at the laboratory will be performed using current methodologies for the compound list and with the quantitation limits presented in Table 3-2. The quantitation limits have been reviewed against the screening levels presented in Table 5-2 and determined to meet these levels with a few exceptions. These quantitation limits have also been reviewed by the analytical laboratory to ensure that they can be met. In all cases, the quantitation limits are the lowest achievable by laboratory for the specified analytical method. The specific data validator is to be determined. All analytical work that is conducted on the mainland of the U.S.A. must be certified by a licensed Puerto Rico chemist.

3.3 Other Field Activities

During the investigation, the following activities will be performed:

- Utility Clearance
- Investigation Derived Waste (IDW) Management
- Decontamination
- Surveying
- Health and Safety Procedures
- Chain of Custody

3.3.1 Utility Clearance

If this work plan is initiated while NAPR is still under operation, the following procedure must be followed to obtain utility clearance. Fifteen days prior to the initiation of the proposed fieldwork, a digging permit request will be submitted to the Facility Management Transportation and Utility Division (FMTUD) of the Public Works Department at NAPR. All proposed soil borings and monitoring well locations will be cleared by the base utility department.

3.3.2 Investigation Derived Wastes (IDW)

The generation of IDW associated with soil sampling and monitoring well installation, including soil cuttings and decontamination fluids, will be collected and stored temporarily in 55-gallon drums. However, the soil cuttings from the subsurface soil sampling will be placed back into the boring from which they came, unless contamination is present. As much as possible, soils last out of the hole will be returned first, thereby, approximating original stratigraphy.

Two IDW samples will be collected during this investigation. One composite aqueous sample will be collected from all drums containing decontamination fluid (from sampling equipment and drill rig), and one composite soil sample will be collected from all drums containing drill cuttings. The samples will be analyzed for parameters as shown in Table 3-1 by methods presented in Table 3-2. These samples will provide the necessary data to be able to dispose of the generated IDW at an appropriate disposal facility. Upon completion of the field program, the drums will be moved and stored at a secure location by the contractor. The soil and water IDW will be removed and disposed of from the site by an approved vendor upon receipt and review of the IDW sample analytical data.

3.3.3 Decontamination

All reusable (non-dedicated and non-disposable) soil sampling and monitoring well installation equipment (i.e. augers, bits, split-spoon samplers, or selected drilling tool), will be decontaminated between each sampling location in accordance with SOPs F501 and F502 in Baker, 1995. The drill rig will be decontaminated before arriving at the site and before leaving the site. The remaining contaminant-free sampling equipment and materials utilized during this investigation will be disposable.

3.3.4 Surveying

All sampling locations will be surveyed. Traditional survey equipment or survey grade GPS unit will be utilized to obtain vertical (+/- 0.01 foot) and horizontal (+/- 0.1 foot) locations and top of PVC elevations of the wells for generating groundwater contours used for reporting purposes.

3.3.5 Health and Safety Procedures

The health and safety procedures previously presented in the RFI Management Plans (Baker, 1995) will be employed during this investigation.

3.3.6 Chain-of-Custody

Chain-of-Custody procedures will be followed to ensure a documented, traceable link between measurement results and the sample/parameter that they represent. These procedures are intended to provide a legally acceptable record of sample preparation, storage, and analysis.

To track sample custody transfers before ultimate disposition, sample custody will be documented using a similar chain-of-custody form as presented in the RFI Management Plans (Baker, 1995). A chain-of-custody form will be completed for each shipment in which the samples are shipped. After the samples are properly packaged, the shipping container will be sealed and prepared for shipment to the analytical laboratory.

3.4 Data Validation

All mainland laboratory data generated by the investigation will be subjected to independent, third party, validation to ensure that the data is of sufficient quality. The USEPA Region II Data Validation Standard Operating Procedures will be followed. The data will be qualified in accordance with these SOPs (i.e., ensuring that the measurement performance criteria for the various data quality indicators are met). The specific data validator will be determined at a later date.

3.5 Quality Assurance/Quality Control

QA/QC samples will be obtained during these investigations. These will include the collection of equipment rinsate samples, field blanks, trip blanks, field duplicates, and matrix spike/matrix spike duplicate (MS/MSD). QA/QC samples will be analyzed for parameters as shown in Table 3-1 by methods presented in Table 3-2.

Equipment rinsate blanks from reusable (non-dedicated and non-disposable) sampling equipment will be collected daily during the sampling event. Initially, samples from every other day should be analyzed. If analytes pertinent to the project are detected in any equipment rinsate blank, the remaining rinsate blanks will be analyzed. As an added level of QA/QC, a rinsate blank will also be collected from each batch of disposable sampling tools such as stainless steel spoons, groundwater sample tubing, etc. The results from the blanks will be used to verify that the decontamination of reusable equipment had rendered them free of cross-contaminating chemicals at levels of concern for the site; and to verify that disposable sampling tools were free of contaminants at levels of concern for the site. This comparison is made during data validation, and the equipment rinsate blank is analyzed for the same parameters as the related samples. One equipment rinsate will be collected per day of field sampling.

One field blank sample will be collected which will consist of lab grade deionized water (D.I.) used in the collection of the equipment rinsate sample.

Trip blank samples will be required to accompany the samples to the laboratory for volatile organic constituent samples scheduled for collection. One trip blank sample will accompany each cooler containing samples of this analysis.

Soil sample field duplicates will be homogenized and split and collected at a frequency of ten percent. One field duplicate groundwater sample for dissolved fraction will also be collected.

Analysis of duplicate and blanks associated with soil and groundwater sampling will include Appendix IX constituents for the analytical suites selected in Table 3-1.

MS/MSD samples are collected to evaluate the matrix effect of the sample upon the analytical methodology. An MS and MSD must be performed for each group of samples of a similar matrix (e.g., surface soil). MS/MSD samples will be collected at a frequency of five percent per media.

4.0 CMS INVESTIGATION REPORT

A report will be prepared on the methodologies and findings of the CMS investigation at SWMU 73. A draft report will be submitted to the USEPA 45 days upon receipt of the validated analytical data. The main elements of the document will consist of the following:

- Introduction
- Investigation Methodologies
- Nature and Extent of Contamination
- Conclusions, Justifications, and Recommendations for either a streamlined CMS or a full CMS

4.1 Introduction

The introduction will consist of a discussion of the historical background of the investigations conducted at SWMU 73 and incorporate the results from this CMS investigation in that context. The introduction will also provide a regulatory framework for SWMU 73, as well as a discussion of current conditions.

4.2 Investigation Methodologies

The investigation methodologies section will detail the investigation. The section will discuss sample locations, sample collection and handling procedures, QA/QC procedures, and analytical methods used. This section will also discuss problems encountered (including deviations, if any) and problem resolution.

4.3 Nature and Extent of Contamination

The nature and extent of contamination section will present analytical results and interpretation of the data. The soil data will be screened against USEPA Region IX Preliminary Remediation Goals (PRGs) and the ecological surface soil screening values developed for NAPR. The groundwater data will be compared to USEPA Region IX Tap Water PRGs and the Federal maximum contaminant levels (MCLs). Additionally, inorganics will be statistically compared against their respective background values using Navy guidance (Naval Facilities Engineering Support Center, [NFESC], 2002 and 2004). The background data to be used in the statistical evaluations are those presented in the *Revised Final Summary Report for Environmental Background Concentrations of Inorganic Compounds* (Baker, 2006a). The results of the screening of the data against these criteria as well as the results of the statistical comparison to background data will be discussed. Data will be presented on tables and figures with textual explanation. Results of QA/QC procedures will also be presented

4.4 Conclusions and Recommendations for a Streamlined CMS

Information from the nature and extent of contamination will be synthesized into conclusions regarding site conditions. Recommendations will be made from these conclusions, which will then be incorporated into the SWMU 73 CMS as appropriate. If the results of the investigation indicate that a streamlined CMS approach is appropriate then a CMS will be prepared in accordance with Section 8 Tasks III and IV, otherwise a full CMS will be prepared in accordance with Section 8 Tasks I through IV.

5.0 ECOLOGICAL RISK ASSESSMENT

This section presents the technical approach (described in general terms) for conducting an ecological risk assessment (ERA) at SWMU 73 (DRMO Scrap Metal Recycling Yard) NAPR, Ceiba, Puerto Rico. The ERA process at SWMU 73 will be conducted in accordance with the Navy policy for conducting ERAs (Chief of Naval Operations [CNO], 1999) the Navy guidance for conducting ERAs (available at http://web.ead.anl.gov/ecorisk/), as well as guidance provided by the USEPA (1997a).

The Navy ERA process (see Figure 5-1) consists of eight steps organized into three tiers and represents a clarification and interpretation of the eight-step ERA process outlined in the USEPA ERA guidance for the Superfund program (USEPA, 1997a). Tier 1 of the Navy ERA process represents the screening-level ERA:

- Screening-level problem formulation and ecological effects evaluation (Step 1).
- Screening-level exposure estimate and risk calculation (Step 2).

Under Navy policy, if the results of Step 1 and Step 2 (Tier 1 screening-level ERA) indicate that, based on a set of conservative exposure assumptions, there are chemicals present in environmental media that may present a risk to receptor species/communities, the ERA process proceeds to the baseline ERA. According to Superfund guidance (USEPA, 1997a), Step 3 represents the problem formulation phase of the baseline ERA. Under Navy policy, the baseline ERA is defined as Tier 2, and the first activity under Tier 2 is Step 3a. Step 3a precedes the baseline risk assessment problem formulation (Step 3b). In Step 3a, the conservative exposure assumptions applied in Tier 1 are refined and risk estimates are recalculated using the same conceptual site model. The evaluation of risks in Step 3a may also include consideration of background data, and chemical bioavailability. If the re-evaluation of the conservative exposure assumptions in Step 3a does not support an acceptable risk determination, the site continues in the baseline ERA process (i.e., Steps 3b through 7; see Figure 5-1):

As CAOs for the protection of the environment will be developed (if necessary) based on the results of the screening-level ERA (Steps 1 and 2) and refinement of the screening-level ERA exposure assumptions (Step 3a), this section only presents the general methodology that will be used in Steps 1, 2, and 3a of the Navy ERA process.

5.1 Screening-Level Problem Formulation

The screening-level problem formulation is the first phase of the ERA process and establishes the goals, scope, and focus of the screening-level ERA. Major components of the screening-level problem formulation will include:

- **Environmental Setting** – A general description of the SWMU history and SWMU features, with emphasis on the habitats and ecological receptors known or likely to be present on or near the SWMU. This description is typically based on existing information and mapping.
- **Existing Analytical Data** – A summary of existing analytical chemistry data for ecologically relevant media at the SWMU.
- **Contaminant Fate and Transport Mechanisms** – A characterization of known or potential contaminant sources and the likely transport mechanisms (if any) to ecological habitats based on the fate properties of the site-specific chemicals. The mechanisms of toxicity for these chemicals are also considered.

- **Exposure Routes and Pathways** – An evaluation of potential exposure routes and a determination of the existence of any potentially complete exposure pathways.
- **Conceptual Model** – The screening-level problem formulation culminates in the development of a preliminary conceptual model, which describes how chemicals associated with the SWMU may come into contact with ecological receptors.
- **Endpoint Selection** – Assessment and measurement endpoints to be evaluated in the screening-level ERA are selected for potentially complete exposure pathways identified in the conceptual model.
- **Selection of Receptors** – Receptor species are selected based on the environmental setting and selected assessment endpoints

These major components of the screening-level problem formulation are described in more detail in the following sections. This phase of the ERA process is intended to answer two main questions: (1) do complete exposure pathways exist at the SWMU 73 and (2) are sufficient data available to conduct the screening-level ERA?

5.1.1 Environmental Setting

As described above, the description of the environmental setting focuses on the SWMU history (how the SWMU was used in the past and how it is currently being used), physical site features, and habitats and biota. The environmental setting will be described both for NAPR as a whole and for SWMU 73.

5.1.1.1 Site Description and Physical Features

Information on the site history provides an indication of the types of chemicals expected at the SWMU and the media in which they are likely to be present. The physical features of the SWMU, which include geological (e.g., soils), hydrogeological (e.g., surface water and groundwater flow patterns), and climatologic (e.g., precipitation) parameters, are important in determining how chemicals from source areas could be transported to ecological habitats. Sources of this information may include SWMU-specific documents, facility personnel, available mapping, soil survey documents, weather records, and site visits.

5.1.1.2 Habitat Types and Ecological Receptors

Descriptions of the habitat types and ecological receptors known or likely to be present on the SWMU are an important part of describing the environmental setting. This can encompass aquatic habitats (e.g., creeks and ponds) and receptors (e.g., fish), wetland habitats (e.g., marshes) and receptors (e.g., amphibians), and/or terrestrial habitats (e.g., forests) and receptors (e.g., wildlife and vegetation). Sources of this information may include facility-specific documents (e.g., natural resource management plans), available mapping, the literature, and site visits.

5.1.2 Existing Analytical Data

The existing analytical data for ecologically relevant media will be compiled and evaluated. The evaluation will consider such factors as sample size (i.e., number of samples of a given medium collected for analytical testing), sample location, analytical parameters, and reporting limits to determine if the available data are adequate to conduct the screening-level ERA. For example, low sample size could result in inadequate spatial coverage within habitats of potential interest to the ERA. In this case, insufficient data would be available on which to base a risk estimate.

5.1.3 Contaminant Fate and Transport Mechanisms

In the absence of measured values of chemicals within biotic media, the transport and partitioning of constituents into particular environmental compartments, and their ultimate fate in those compartments, can be predicted from key physical-chemical characteristics. The physical-chemical characteristics that are most relevant for exposure modeling in this assessment include water solubility, adsorption to solids, octanol-water partitioning, and degradability. These characteristics are defined below.

The water solubility of a compound influences it's partitioning to aqueous media. Highly water-soluble constituents, such as most VOCs, have a tendency to remain dissolved in the water column rather than partitioning to sediment (Howard, 1991). Compounds with high water solubility also generally exhibit a lower tendency to bioconcentrate in aquatic organisms and a greater likelihood of biodegradation, at least over the short term (Howard, 1991).

Adsorption is a measure of a compound's affinity for binding to solids, such as soil or sediment particles. Adsorption is expressed in terms of partitioning, either adsorption coefficient (K_d); (a unitless expression of the equilibrium concentration in the solid phase versus the water phase) or as organic carbon partition coefficient (K_{oc}) (K_d normalized to the organic carbon content of the solid phase; again unitless) (Howard, 1991). For a given organic chemical, the higher the K_{oc} or K_d, the greater the tendency for that chemical to adhere strongly to soil or sediment particles. K_{oc} values can be measured directly or can be estimated from either water solubility or the octanol-water partition coefficient using one of several available regression equations (Howard, 1991).

Octanol-water partitioning indicates whether a compound is hydrophilic or hydrophobic. The Octanol-water partition coefficient (K_{ow}) expresses the relative partitioning of a compound between octanol (lipids) and water. A high affinity for lipids equates to a high K_{ow} and vice versa. As discussed above, K_{ow} has been shown to correlate well with Bioconcentration Factors (BCFs) in aquatic organisms, adsorption to soil or sediment particles, and the potential to bioaccumulate in the food chain (Howard, 1991). Typically expressed as log K_{ow}, a value of three (3.0) or less generally indicates that the chemical will not bioconcentrate to a significant degree (Maki and Duthie, 1978).

5.1.4 Exposure Routes and Pathways

An exposure pathway links a source of contamination with one or more receptors through exposure to one or more ecologically relevant media. Exposure, and thus potential risk, can only occur if complete exposure pathways exist.

An exposure route describes the specific mechanism(s) by which a receptor is exposed to a chemical present in an environmental medium. The most common exposure routes are dermal contact, ingestion, and inhalation. Terrestrial vegetation may be exposed to chemicals present in surface soils through their root surfaces during water and nutrient uptake. Unrooted, floating aquatic plants, rooted submerged aquatic plants, and algae may be exposed to chemicals directly from the water or (for rooted plants) from sediments. Terrestrial and aquatic invertebrates may be exposed to chemicals in surface soil, sediment, or surface water through dermal adsorption and ingestion. Much of the toxicological data available for terrestrial and aquatic invertebrates are based on *in situ* studies that represent both pathways. Therefore, both pathways are typically considered together. Invertebrates also present a link between soil/sediment chemicals and invertebrate consumers through food web transfer. As such, they are typically included as prey items for upper trophic level dietary exposures.

Birds and mammals may be exposed to chemicals through: (1) the inhalation of gaseous chemicals or chemicals adhered to particulate matter; (2) the incidental ingestion of contaminated abiotic media (e.g., soil or sediment) during feeding or cleaning activities; (3) the ingestion of contaminated water; (4) the ingestion of contaminated plant and/or animal tissues for chemicals that have entered food webs; and/or (5) dermal contact with contaminated abiotic media. Their relative importance depends in part on the chemical being evaluated. For chemicals having the potential to bioaccumulate (e.g., PCBs), the greatest exposure to wildlife is likely to be from the ingestion of prey. For chemicals having a limited potential to bioaccumulate (.e.g., aluminum), the exposure of wildlife to chemicals is likely to be greatest through the direct ingestion of abiotic media, such as soil or sediment.

5.1.5 Conceptual Model

The conceptual model is designed to diagrammatically relate potentially exposed receptor populations with potential contaminant source areas based on the physical nature of the SWMU and potential exposure pathways. Important components of the preliminary conceptual model are the identification of potential sources of contaminants, transport pathways, exposure media, potential exposure routes, and potential receptor groups. Actual or potential exposures of ecological receptors associated with SWMU 73 will be determined by identifying the most likely pathways of contaminant release and transport. A complete exposure pathway has four components: (1) a source of chemicals that can be released to the environment; (2) a release and transport mechanism to move the chemicals from the source to an exposure point; (3) an exposure point where ecological receptors could contact the affected media; and (4) an exposure route whereby chemicals can be taken up by ecological receptors.

The main objective of the conceptual model in Step 1 of the ERA process is to identify any complete exposure pathways present at a site. The ERA will provide a conceptual model that relates directly to SWMU 73.

5.1.6 Endpoints and Risk Hypotheses

The screening-level problem formulation includes the selection of ecological endpoints. Endpoints in the screening-level ERA define ecological attributes that are to be protected (assessment endpoints) and a measurable characteristic of those attributes (measurement endpoints) that can be used to gauge the degree of impact that has or may occur (USEPA, 1992, 1997a, and 1998). Assessment endpoints most often relate to attributes of biological populations or communities, and are intended to focus the risk assessment on particular components of the ecosystem that could be adversely affected by chemicals attributable to the site (USEPA, 1997a). Assessment endpoints contain an entity (e.g., red-tailed hawk) and an attribute of that entity (e.g., survival rate). Individual assessment endpoints usually encompass a group of species or populations (the receptor) with some common characteristic, such as specific exposure route or contaminant sensitivity, with the receptor then used to represent the assessment endpoint in the risk evaluation.

The considerations for selecting assessment and measurement endpoints are summarized in USEPA (1992 and 1997a) and discussed in detail in Suter II (1989, 1990, and 1993). Assessment and measurement endpoints may involve ecological components from any level of biological organization, from individual organisms to the ecosystem (USEPA, 1992). Effects on individuals are important for some receptors, such as rare and endangered species, but population- and community-level effects are typically more relevant to ecosystems. Population- and community-level effects are usually difficult to evaluate directly without long-term and extensive study.

However, measurement endpoint evaluations at the individual level, such as an evaluation of the effects of chemical exposure on reproduction, can be used to predict effects on an assessment endpoint at the population- or community-level. In addition, use of criteria values designed to protect the vast majority (e.g., 95 percent) of the components of a community (e.g., Ambient Water Quality Criteria for the Protection of Aquatic Life) can be useful in evaluating potential community- and/or population-level effects.

The most appropriate generic assessment endpoint for ERAs will be the maintenance of receptor populations. Therefore, the specific objective of the ERA will be to determine if exposure to site-related chemicals present in environmental media are likely to result in declines in ecological receptor populations. Declines in populations could result in a shift in community structure and possible elimination of resident species.

Measurement endpoints are used in ERAs because it is often difficult or impossible to directly assess whether the environmental value that is to be protected (the assessment endpoint) is being impacted. For example, an assessment endpoint may involve a decline in a particular population or a shift in the structure of a community. While these things might be quantifiable, the necessary studies would generally be time-consuming and difficult to interpret. However, measurement endpoints indicative of observed adverse effects on individuals are relatively easy to measure in toxicity studies and can be related to the assessment endpoint. For example, contaminant concentrations that lead to decreased reproductive success or increased mortality of individuals in toxicity tests could, if found in the environment, result in shifts in population structure, potentially altering the community composition associated with a site.

5.1.7 Selection of Receptors

Because of the complexity of natural systems, it is generally not possible to directly assess the potential impacts to all ecological receptors present within an area. Therefore, receptor species (e.g., American robin) or species groups (e.g., terrestrial invertebrates and plants) are often selected as surrogates to evaluate potential risks to larger components of the ecological community (guilds; e.g., omnivorous birds) represented in the assessment endpoints (e.g., survival and reproduction of omnivorous birds). Selection criteria typically include those species that:

- Are known to occur, or are likely to occur, at the site.
- Have a particular ecological, economic, or aesthetic value.
- Are representative of taxonomic groups, life history traits, and/or trophic levels in the habitats present at the site for which complete exposure pathways are likely to exist.
- Can, because of toxicological sensitivity or potential exposure magnitude, be expected to represent potentially sensitive populations at the site.
- Have sufficient ecotoxicological information available on which to base an evaluation.

Upper trophic level receptor species will be chosen for dietary exposure modeling based on the criteria listed above, the general guidelines presented in USEPA (1991), the environmental setting (e.g., habitats), and the assessment endpoints selected for SWMU 73. Lower trophic level receptor species (e.g., terrestrial and aquatic invertebrates and plants) are generally evaluated in screening-level ERAs based on those taxonomic groupings for which screening values have been developed. These groupings and screening values are used in most ERAs. As such, specific species of lower trophic level biota will not be chosen as receptor species because of the limited

information available for specific species and because these biota are dealt with on a community level via a comparison to medium-specific screening values. It is noted that only avian species will be selected as upper trophic level ecological receptors for evaluation in the ERA since the terrestrial mammals represented by potentially complete exposure pathways are limited to nonindigenous, nuisance species (i.e., Norway rat, black rat, and mongoose) that have been implicated in the decline of native bird populations (United States Fish and Wildlife Service [USFWS], 1996)

5.1.8 Screening-Level Problem Formulation Decision Point

As discussed in Section 5.1, the screening-level problem formulation is intended to answer two main questions: (1) do complete exposure pathways exist at the SWMU 73 and (2) are sufficient data available to conduct the screening-level ERA? Complete exposure pathways from a source area are likely to exist if all of the following are present:

- Habitat that supports ecological receptor populations.
- Contaminant transport pathways to ecologically relevant media.
- Complete exposure routes.

If no complete exposure pathways exist at SWMU 73, the ERA process will terminate at the screening-level problem formulation with a conclusion of negligible risk. If one or more complete exposure pathways are known or likely to exist, the ERA process will continue to the screening-level ecological effects evaluation, screening-level exposure estimation, and screening-level risk calculation but will only evaluate those pathways that have been determined to be complete.

5.2 Screening-Level Ecological Effects Evaluation

The purpose of the screening-level ecological effects evaluation is the establishment of chemical exposure levels (screening values) that represent conservative thresholds for adverse ecological effects. One set of screening values is typically developed for each of the selected assessment endpoints.

Two types of screening values (media-specific screening values and ingestion-based screening values) will be developed for the ERA at SWMU 73. Media-specific screening values will be developed for ecologically relevant media at SWMU 73 (e.g., surface soil). Ingestion-based screening values will be developed for upper trophic level food web (dietary) exposures.

5.2.1 Media-Specific Screening Values

The sections that follow describe the various criteria and toxicological benchmarks that will be used as media-specific screening values (toxicological thresholds) for chemicals in surface soil (collected from the 0 to 1-foot depth interval), subsurface soil (collected from the 1 to 3-foot depth interval), and groundwater. The media-specific screening values represent conservative exposure thresholds above which adverse ecological effects may occur.

5.2.1.1 Soil Screening Values

USEPA Ecological Soil Screening Levels (Eco-SSLs) for terrestrial plants and invertebrates (available at http://www.epa.gov/ecotox/ecossl/) will be preferentially used as surface and subsurface soil screening values. For a given metal, if an Eco-SSL has been established for both terrestrial plants and invertebrates, the lowest value will be selected as the soil screening value.

For those chemicals lacking an Eco-SSL, the literature-based toxicological benchmarks listed below will be used as soil screening values.

- Toxicological thresholds for earthworms and microorganisms (Efroymson et al., 1997a)
- Toxicological thresholds for plants (Efroymson et al., 1997b)

If more than one screening value is available from Efroymson et al. (1997a and 1997b), the lowest value will be selected as the soil screening value. For those chemicals lacking an Eco-SSL or a toxicological threshold from Efroymson et al. (1997a and 1997b), the following literature-based values, listed in their order of decreasing preference, will be used as soil screening values.

- Toxicity reference values for plants and invertebrates listed in USEPA, 1999
- Soil standards developed by the Ministry of Housing, Spatial Planning and Environment (MHSPE, 2000), assuming a minimum default soil organic carbon content of 2.0 percent
- Canadian soil quality guidelines (agricultural land use) developed by the Canadian Council of Ministers of the Environment (CCME, 2006)

CCME soil quality guidelines will be given the lowest preference since they are background-based values that do not represent effect concentrations. A listing of the soil screening values for Appendix IX VOCs, SVOCs, PAHs, organochlorine pesticides, and metals, selected using the preference hierarchy presented above, is provided in Table 5-1. The soil screening values summarized in Table 5-1 have previously been accepted by the USEPA for use in ERAs at NAPR (Baker, 2006b and 2006c).

5.2.1.2 Groundwater Screening Values

As SWMU 56 is located upgradient of open water marine habitat, groundwater data will be screened against saltwater toxicological thresholds (open water marine habitat represents a likely discharge point for groundwater). Chronic saltwater National Ambient Water Quality Criteria (NAWQC) (USEPA, 2006; available at http://www.epa.gov/waterscience/criteria/wqcriteria.html) will be used as groundwater screening values. USEPA NAWQC for arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc are expressed as dissolved concentrations. As a measure of conservatism, they will be converted to total recoverable concentrations using the appropriate conversion factors (USEPA, 2006). For those chemicals lacking a saltwater NAWQC, groundwater screening values will be identified from the following information listed in their order of decreasing preference:

- Final Chronic Values (FCVs) for saltwater contained in Ecotox Thresholds (USEPA, 1996a)
- Chronic screening values for saltwater contained in Ecological Risk Assessment Bulletins – Supplement to Risk Assessment Guidelines (RAGS) (USEPA, 2001)
- Minimum chronic toxicity test endpoints (No Observed Effect Concentration [NOEC], No Observed Effect Level [NOEL], and Maximum Acceptable Toxicant Concentration [MATC] values) for saltwater species reported in the ECOTOX Database System (Aquatic Toxicity Information Retrieval [AQUIRE] database) (USEPA, 2003a) and the Ecotoxicity Database (USEPA, 2005)
- Chronic Lowest Observable Effect Levels (LOELs) for saltwater contained in National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQUIRTs) (Buchman, 1999)

The order of preference was selected based on their level of protection. For example, FCVs would be expected to offer a greater degree of protection than a single species NOEC, MATC, or LOEL since their derivation considers a larger toxicological database. In the absence of the above-mentioned FCVs, USEPA Region IV chronic screening values, chronic test endpoints, and chronic LOELs, screening values will be derived from the acute literature values listed below:

- Acute LOELs for saltwater contained in NOAA SQUIRTs (Buchman, 1999)
- Acute toxicity test endpoints (NOEC, NOEL, LOEL, Lowest Observed Effect Concentration [LOEC], median lethal concentration [LC_{50}], and median effective concentration [EC_{50}] values) for saltwater species contained in the ECOTOX Database System (AQUIRE database) (USEPA, 2003a) and the Ecotoxicity Database (USEPA, 2005)
- LC_{50} values for saltwater species contained in Superfund Chemical Matrix (USEPA, 1996b)

Chronic-based screening values will be extrapolated from acute NOEC, NOEL, LOEC, LOEL, LC_{50}, and EC_{50} values as follows:

- An uncertainty factor of 10 will be used to convert an acute NOEC, NOEL, LOEC, or LOEL to a chronic-based screening value
- An uncertainty factor of 100 will be used to convert an EC_{50} or LC_{50} to a chronic-based screening value

When acute toxicity data are used to extrapolate a chronic screening value, NOECs/NOELs will be given preference over LOECs/LOELs, LOECs/LOELs will be given preference over LC_{50} and EC_{50} values, and EC_{50} values will be given preference over LC_{50} values. When more than one value is available from the literature for a given test endpoint (e.g., NOEC), the minimum value will be conservatively used to extrapolate a chronic screening value. In some cases, chronic and acute LOELs for chemical classes (e.g., PAHs) are available from Buchman (1999). A LOEL based on a chemical class will be used to derive a chronic screening value only if that chemical lacked literature-based benchmarks and/or toxicity test endpoints.

For those chemicals lacking saltwater toxicological thresholds and literature values, surface water screening values will be identified or developed from freshwater values using the sources and procedures discussed in the preceding paragraphs with one exception. This exception involves the consideration of freshwater Secondary Chronic Values (SCVs) developed by the USEPA (1996a) and Suter II (1996). A listing of the groundwater screening values for Appendix IX VOCs, SVOCs, PAHs, and metals, selected using the preference hierarchy presented above, is provided in Table 5-2. The screening values summarized in Table 5-2 have previously been accepted by the USEPA for use in ERAs at NAPR (Baker, 2006b and 2006c).

5.2.2 Ingestion-Based Screening Values

Ingestion-based screening values for upper trophic level dietary exposures will be derived for each receptor species and chemical evaluated for food web exposures. Toxicological information from the literature for wildlife species most closely related to the receptor species will be used if available. This information will be supplemented by laboratory studies of non-wildlife species (e.g., laboratory mice) when necessary.

Chronic No Observed Adverse Effect Levels (NOAELs) based on growth or reproduction will be preferentially used as ingestion-based screening values for upper trophic level receptors.

NOAELs represent the highest dose of a chemical at which an effect being measured in a toxicity test does not occur. If several chronic toxicity studies are available from the literature for a given chemical, the most appropriate study will be selected for each receptor species based on study design, study methodology, study duration, study endpoint and test species. When chronic NOAEL values are unavailable, estimates will be derived or extrapolated from chronic Lowest Observed Adverse Effect Levels (LOAELs) or acute values (LD_{50}). LOAELs represent the lowest dose of a chemical at which an effect being measured in a toxicity test occurs, while an LD_{50} represents the dose of a chemical at which half of the organisms being tested die. An uncertainty factor of 10 will be used to convert a reported LOAEL to a NOAEL, while an uncertainty factor of 100 will be used to convert the acute LD_{50} to a chronic NOAEL (i.e., the LD_{50} will be multiplied by 0.01 to obtain the chronic NOAEL).

As discussed in Section 5.1.7, only avian species will be evaluated for upper trophic level food web exposures. Ingestion-based screening values for birds, expressed as milligrams of chemical per kilogram body weight of the receptor per day (mg/kg-BW/day), are summarized in Table 5-3. The ingestion-based screening values listed in Table 5-3 have previously been accepted by the USEPA for use in ERAs at NAPR (Baker, 2006b and 2006c). It is noted that Sample et al. (1996) consider a scaling factor of 1.0 most appropriate for interspecies extrapolation between birds. Therefore, the NOAEL and LOAEL values summarized in Table 5-3 will not be adjusted to reflect differences in body weights between avian test species and avian receptor species. Not all chemicals analyzed in ecologically relevant media will be evaluated for food web exposures. The Appendix IX VOCs and SVOCs that will be evaluated for food web exposures are those with the potential to bioaccumulate to a significant extent. Bioaccumulative chemicals are defined herein as those with a maximum reported log octanol-water partition coefficient (log K_{ow}) greater than or equal to 3.0. Rationale for using a log K_{ow} of 3.0 to define an organic chemical with the potential to bioaccumulate is included as Appendix D. This approach has previously been accepted by the USEPA for the selection of organic chemicals evaluated for upper trophic level food web exposures (Baker, 2006b and 2006c). For conservatism, all Appendix IX metals will be evaluated for food web exposures.

5.3 Screening-Level Exposure Estimation

This portion of the screening-level ERA involves the identification of the data to be used to represent concentrations of chemicals to which ecological receptors may be exposed to in various media and the derivation of exposure point concentrations from those data (typically the maximum detected concentration). Exposure assumptions, exposure models, and model input parameters are also developed.

5.3.1 Selection Criteria for Analytical Data

Available analytical data for ecologically relevant media will be selected for use in the screening-level ERA based on a set of selection criteria that will include (where applicable):

- Data must be validated by a qualified data validator using acceptable data validation methods. Rejected (R) values will not be used in the ERA. Unqualified data and data qualified as J will be treated as detected. Data qualified as U or UJ will be treated as non-detected.
- Maximum reporting limits will be conservatively used to estimate exposure for non-detected chemicals.
- In some instances, duplicate samples have been or will be collected in the field. The maximum concentration of each chemical in the original or duplicate sample will be used as a conservative estimate of chemical concentrations at a particular sampling point.

- For surface soil, analytical data for samples collected from the surface to a maximum depth of one foot below ground surface (bgs) will be used since this depth range is the most active biological zone (Suter II 1995).
- For surface water and groundwater, total (unfiltered) metals data will be used in the medium-specific screening evaluation.

5.3.2 Exposure Point Concentrations – Abiotic Media

Maximum detected concentrations in abiotic media (e.g., surface soil) will be used to conservatively estimate potential chemical exposures for the ecological receptors selected to represent the assessment endpoints. For conservatism, the maximum reporting limit for chemicals that were analyzed for but not detected also will be compared to medium-specific screening values and (where applicable) used for food web exposure modeling. This will be done to ensure that reporting limits are similar to, or less than, chemical concentrations at which potential adverse effects to ecological receptors may occur. For samples with duplicate analyses, the higher of the two concentrations will be used in the screening (when both values are detects or both values are non-detects). In cases where one result is a detection and the other a non-detect, the detected value will be used in the assessment.

5.3.3 Exposure Point Concentrations – Prey Items

Exposures for upper trophic level receptor species via the food web will be determined by estimating the chemical-specific concentrations in each dietary component using uptake and food web models. Ingestion of abiotic media, if appropriate, will also be included when calculating the total level of exposure. As indicated previously, maximum measured concentrations in abiotic media will be used in all calculations to provide a conservative assessment.

Estimates for food web exposures will be based on bioaccumulation factors developed from the literature. The uptake of chemicals from the abiotic media into these food items will be based on conservative (e.g., maximum or 90th percentile) BCFs or bioaccumulation factors (BAFs). Default factors of 1.0 (dry weight to dry weight) will be used only where data are unavailable for a chemical in the literature. The completed screening-level will contain tables listing the BAFs/BCFs selected for each prey item. The methodology and models used to derive these estimates also will be included within the completed screening-level ERA.

Dietary intakes for each upper trophic level receptor species selected to represent the assessment endpoints will be calculated using the following formula (modified from USEPA [1993]):

$$DI_x = \frac{[[\sum_i [(FIR)(FC_{xi})(PDF_i)] + [(FIR)(SC_x)(PDS)] + [(WIR)(WC_x)]][AUF]}{BW}$$

where:

DI_x	=	Dietary intake for chemical x (mg chemical/kg body weight/day)
FIR	=	Food ingestion rate (kg/day, dry weight)
FC_{xi}	=	Concentration of chemical x in food item i (mg/kg, dry weight)
PDF_i	=	Proportion of diet composed of food item i (dry weight basis)
SC_x	=	Concentration of chemical x in soil/sediment (mg/kg, dry weight)
PDS	=	Proportion of diet composed of soil/sediment (dry weight basis)
WIR	=	Water ingestion rate (L/day)
WC_x	=	Concentration of chemical x in water (mg/L)

BW = Body weight (kg, wet weight)
AUF = Area Use Factor (unitless)

As discussed in USEPA (1997a), exposure parameter values used in this food web model will be selected to provide for a conservative evaluation in the screening-level ERA. Examples of these conservative assumptions include:

- All of the dietary items consumed by the receptor are obtained from the site (i.e., an Area Use Factor [AUF] of 1 will be assumed) at the point of maximum concentrations.
- Chemicals are assumed to be 100 percent bioavailable.
- Maximum ingestion rates will be used (calculated maximum ingestion rates are based on the maximum body weight).
- Minimum body weights will be used.

5.4 Screening-Level Risk Calculation

The screening-level risk calculation is the final step in a screening-level ERA. In this step, the maximum exposure concentrations (abiotic media) or exposure doses (upper trophic level receptor species) are compared with the corresponding screening values to derive screening risk estimates. The outcome of this step is a list of Ecological Chemicals of Potential Concern (ecological COPCs) for each medium-pathway-receptor combination evaluated or a conclusion of negligible risk.

5.4.1 Selection of Ecological Chemicals of Potential Concern

Ecological COPCs will be selected using the hazard quotient (HQ) method. HQs are calculated by dividing the maximum chemical concentration in the medium being evaluated by the corresponding medium-specific screening value or, in the case of upper trophic level receptors, by dividing the exposure dose by the corresponding ingestion-based screening value. Chemicals with HQs greater than 1.0 will be considered ecological COPCs in the screening-level ERA.

The following conservative methodology will be used to identify ecological COPCs for abiotic media:

- The maximum detected concentration in each ecologically relevant media will be used to calculate media-specific HQs. For a given medium, chemicals with HQs greater than 1.0 based on maximum detected concentrations will be identified as ecological COPCs for that medium.
- For chemicals not detected in any samples of a particular medium, the maximum reporting limit will be used to calculate media-specific HQs. For a given medium, non-detected chemicals with HQs greater than 1.0 based on maximum reporting limits will be identified as ecological COPCs for that medium.
- Chemicals (detected and non-detected) without screening values for a given medium will be identified as ecological COPCs for that medium.

To select ecological COPCs for food web exposures, maximum chemical concentrations in ecologically relevant abiotic media will be used to estimate dietary doses for each receptor. All chemicals identified as important bioaccumulative chemicals (see Appendix D) will be evaluated for upper trophic level food web exposures. HQs will be calculated with NOAELs, LOAELs, and Maximum Acceptable Toxicant Concentrations (MATCs) (the geometric mean of the NOAEL and LOAEL). Calculations with NOAELs provide the most conservative risk estimate, while

calculations with LOAELs provide the least conservative risk estimate. Calculations with MATCs provide realistic risk estimates since the MATC represents an estimation of the threshold concentration (i.e., the concentration above which a toxic effect on the test endpoint is produced). For the screening-level ERA, chemicals (detected and non-detected) with NOAEL-based HQs greater than or equal to 1.0 will be identified as preliminary ecological COPCs. Identical to the media-specific screening, chemicals without ingestion-based screening values also will be retained as ecological COPCs for upper trophic level receptors.

HQs exceeding one indicate the potential for risk since the chemical concentration or dose (exposure) exceeds the screening value (effect). However, screening values and exposure estimates are derived using intentionally conservative assumptions such that HQs greater than or equal to one do not necessarily indicate that risks are present or impacts are occurring. Rather, it identifies chemical-pathway-receptor combinations requiring further evaluation. Following the same reasoning, HQs that are less than one indicate that risks are very unlikely, enabling a conclusion of no unacceptable risk to be reached with high confidence.

5.5 Uncertainties

Once the screening-level ERA is complete, the results will be evaluated to identify the type and magnitude of uncertainty associated with the risk conclusions. Reliance on results from a risk assessment can be misleading without a consideration of uncertainties, limitations, and assumptions inherent in the process. Uncertainties are present in all risk assessments because of the limitations of the available data and the need to make certain assumptions and extrapolations based on incomplete information.

5.6 Screening-Level ERA Decision Point

The results of the screening-level ERA will be used to evaluate the status of SWMU 73 in terms of potential ecological risk. Possible decision points following completion of the screening-level ERA are:

- **No further action is warranted**. This decision is appropriate if the screening-level ERA indicates that sufficient data are available on which to base a conclusion of no unacceptable risk (HQ values for each media-pathway-receptor combination is less than one).
- **Further evaluation is warranted**. This decision is appropriate if the screening-level ERA indicates that there is the potential for unacceptable risk for one or more media-pathway-receptor combinations. In this instance, the ERA process will proceed to Step 3a wherein the risk estimates are refined based on more realistic and site-specific assumptions and data.
- **Further data are required**. This decision is appropriate if the screening-level ERA indicates that there are insufficient data on which to base a risk estimate. This decision may also be appropriate if the potential for unacceptable risks is identified following the screening-level ERA and additional data are needed to refine these estimates in Step 3a.
- **Take remedial action**. This decision may be appropriate for sites in which the potential for unacceptable risks was identified following the screening-level ERA but these potential risks could be best addressed through remedial action (e.g., presumptive remedy, soil removal) rather than additional study.

5.7 Step 3a of the Baseline Ecological Risk Assessment

If the results of the screening-level ERA suggest that further ecological risk evaluation or data collection is warranted, the ERA process will proceed to Step 3a of the baseline ERA. This section documents the technical approach that will be used for conducting Step 3a of the baseline ERA at SWMU 73.

5.7.1 General Methodology for Step 3a

In Step 3a, the conservative assumptions employed in the screening-level ERA (Tier 1) are refined and risk estimates are recalculated using the same conceptual model. Step 3a may also include consideration of background data and chemical bioavailability.

The specific assumptions, parameters, and methods that will be modified for the recalculation of media-specific and food web HQ values are identified below, along with justification for each modification. These refinements and methods will be used in Step 3a of the baseline ERA to weigh the evidence of potential risk for each ecological COPC identified for each media and receptor to determine whether the development of CAOs is warranted.

- Refined risk estimates will be derived using average (arithmetic mean) chemical concentrations. For individual receptor species, average chemical concentrations provide a better estimate of the likely level of chemical exposure because each receptor would be expected to forage in several different areas of the site, and, in many cases, off-site. Average concentrations are also appropriate for evaluating impacts *to populations* of lower trophic level receptors (e.g., terrestrial invertebrates). Because some of these receptors are relatively immobile, *individuals* are likely to be impacted by locations of maximum concentrations. However, evaluation of the average exposure case is more indicative of the level of impact that might be expected at the *population* level.
- Literature-based BCFs and BAFs based on, or modeled from, central tendency estimates (e.g., mean, median, midpoint) will be used in place of maximum or high-end (e.g., 90th percentile) estimates. An assumed BCF/BAF of 1.0 will still used for those chemicals lacking a literature-based BAF/BCF. The refined BCFs and BAFs for those chemicals carried into Step 3a of the baseline ERA will be summarized in tables.
- Central tendency estimates (e.g., mean, median, midpoint) for body weight and food ingestion rate will be used to develop exposure estimates for upper trophic level receptors rather than the minimum body weights and maximum food ingestion rates used in the screening-level ERA. The use of central tendency estimates is more relevant because they represent the characteristics of a greater proportion of the individuals in the population. The evaluation of food web exposures will still assumed an AUF of 1.0.
- In addition to the NOAELs-based risk estimates used in the screening-level ERA, consideration also will given to food web exposure risk estimates based on LOAELs and MATCs.
- Consideration will be given to background data by statistically comparing site concentrations to background concentrations in accordance with Navy guidance (NFESC, 2002, 2003, and 2004). The process that will be used to statistically evaluate data is depicted on Figure 5-2. As evidenced by the figure, statistical comparisons will include descriptive summaries of each data set (maximum, minimum, and mean concentrations), statistical tests on the mean/median of the distributions (i.e., student's t-test, Wilcoxin rank sum test, Gehan test, and Satterthwaite's t-test), and statistical tests on the right tail of the distributions (i.e., quantile test and/or slippage test). The significance level (the

probability criteria for rejecting the null hypotheses that data sets were sampled from the same population) will be set at 0.05 for all statistical tests (NFESC, 2002, 2003, and 2004). For a given medium, the background data to be used in the statistical evaluation will be the background data set presented and discussed within the *Revised Final Summary Report for Environmental Background Concentrations of Inorganic Compounds* (Baker, 2006a).

- As exposure does not necessarily equate to risk, consideration will be given to site-specific factors that can affect the bioavailability of chemicals.
- Chemicals not identified as ecological COPCs because maximum detected concentrations (or maximum reporting limits in the case of non-detected chemicals) are less than medium-specific screening values will not evaluated in Step 3a of the baseline ERA since a conclusion of no unacceptable risk can be made with high confidence.

5.7.2 Step 3a Decision Points

Possible decision points based on the results of Step 3a include:

- **No further action is warranted.** This decision is appropriate if Step 3a of the baseline ERA indicates that there is no reasonable potential for unacceptable ecological risk within acceptable uncertainty.
- **Evaluate the need for corrective measures.** This decision is appropriate if Step 3a of the baseline ERA indicates that there is a reasonable likelihood for unacceptable ecological risks within acceptable uncertainty. Whether or not corrective measures are taken will depend upon a number of risk management factors such as the results of any human health risk assessments and the potential impact of the remedial action itself on the habitats and biota present on the site.

5.8 Ecological Corrective Action Objectives

Corrective Action Objectives (CAOs) will be established for chemicals retained as ecological COPCs in Step 3a of the Navy ERA process. CAOs for abiotic media (e.g., surface soil) will be developed by multiplying medium-specific screening values by 0.99:

$$CAO_x = (SV_x)(0.99)$$

where CAO_x is the Corrective Action Objective for chemical x and SV_x is the medium-specific screening value for chemical x, and 0.99 represents a default HQ for the derivation of CAOs. CAOs calculated using this default value correspond to medium-specific chemical concentrations that result in risk estimates equal to 0.99. As discussed in Section 5.4.1, HQ values less than 1.0 indicates that risks are unlikely. CAOs for food web exposures will be developed by modifying the dietary intake equation presented in Section 5.3.3. Using surface soil as an example, the CAOs for food web exposures will be calculated as follows:

$$CAO_x = \frac{(0.99)(SV_{xj})(BW_j)}{[[\sum_i (FIR_j)(BAF_{ix} or BCF_{ix})(PDF_{ij})] + [(FIR_j)(PDS_j)]][AUF]}$$

where:

CAO_x = Corrective Action Objective for chemical x (mg/kg, dry weight)

SV_{ij}	=	Ingestion-based screening value for chemical i applied to receptor j (mg chemical/kg body weight/day)
BWj	=	Body weight for receptor j (kg, wet weight)
FIR	=	Food ingestion rate for receptor j (kg/day, dry-weight)
BAF_{ix}	=	Surface soil-Biota BAF for chemical x and food item i (dry weight basis)
BCF_{ix}	=	Surface soil-Biota BCF for chemical x and food item i (dry weight basis)
PDF_{ij}	=	Proportion of diet composed of food item i for receptor j (dry weight basis)
PDS_j	=	Proportion of diet composed of surface soil for receptor j (dry weight basis)
AUF_j	=	Area Use Factor for receptor j (unitless)

For a given medium, if a chemical is retained as an ecological COPC based on the abiotic screening and food web exposure evaluation (e.g., retained as a surface soil COPC and as an upper trophic level terrestrial receptor COPC in Step 3a of the ERA process), the minimum CAO will be selected as the final CAO.

6.0 ESTABLISHMENT OF CORRECTIVE ACTION OBJECTIVES

6.1 Introduction

This section of the document will discuss the steps required to establish the site-specific objectives and clean up goals used to identify corrective measures.

The first step in evaluating corrective measures will be to develop CAOs, which consist of medium- and chemical-specific goals for protecting human health and the environment. The CAOs will be used to focus the development of corrective measure alternatives on technologies that may achieve appropriate target levels, thereby limiting the number of alternatives analyzed.

CAOs can be specific and numerical (i.e., quantitative) or general and descriptive (i.e., qualitative). They are achieved by reducing exposure (e.g., installing a soil cover or limiting access) or by reducing contaminant levels (e.g., active remediation) (USEPA, 1988). CAOs will be used to evaluate the extent of contamination within a site that may require corrective measures, and the corrective measures alternative that best protects human health and the environment.

6.2 Land Use and Potentially Exposed Receptors

To focus on developing practicable and cost-effective corrective measures alternatives for SWMU 73, and to streamline its environmental cleanup process, USEPA guidance ("Land Use in the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] Remedy Selection Process," (USEPA, 1995) and U.S. Department of Defense (Longuemare, 1997) direct that CAOs should reflect the reasonably anticipated land use.

SWMU 73 is in an industrial area of NAPR. Future property use of these sites is expected to remain industrial for the duration of Naval operations (caretaker) of NAPR, as well as after property is transferred. As a result, potential human exposure is limited to industrial or commercial property use, now and in the foreseeable future.

Therefore, based on USEPA and Department of Defense guidance that CAOs should reflect actual anticipated land use, the assumed land use will be industrial (airfield), with industrial workers (i.e., civilians and or military personnel stationed at NAPR) the most likely receptors. Construction workers may be exposed to soil from the surface to a depth of ten feet below ground surface. Additionally, it is conservatively assumed that on-site trespassers could access the site and potentially be exposed to COPCs at the site. It is unlikely this site would ever be developed into a residential area given the current use of the area. If land use changes in the future, the SWMU will be reevaluated.

6.3 Selection of Contaminants of Potential Concern

The CAO development process in the CMS for SWMU 73 will identify the potential for human health risk to receptors exposed to surface soil (trespassers, industrial workers, and construction workers), subsurface soil (construction workers), and groundwater (industrial workers via inhalation of volatiles in indoor air and construction workers via dermal contact) at SWMU 73, which are affected by site-related activities. The previously mentioned potential COPCs from the ECP (NAVFAC Atlantic, 2005) will be incorporated into the CMS.

COPCs are those contaminants retained for further evaluation at this stage of the CMS process. They are contaminants that are detected in at least one sample in a given media at concentrations that are greater than screening criteria. As noted in USEPA's Risk Assessment Guidance for

Superfund (RAGS) (USEPA, 1989), estimated concentrations, such as "J" qualified (estimated) data, will be included in the COPC screening process and subsequent quantitative risk assessment (if a contaminant is retained as a COPC). The screening criteria are USEPA Region IX residential and industrial soil preliminary remediation goals (PRGs), the Federal MCLs, and the USEPA Region IX Tap Water PRGs. PRGs are derived by USEPA Region IX using default exposure parameter values and the most recent toxicological criteria available. The PRGs used for this report are those issued in October 2004 (USEPA, 2004a) (or the most recent version at the time the CMS is completed) and are based on conservative residential and industrial exposure for soil and residential tap water exposure for groundwater. (The target risk used to calculate the PRGs is $1x10^{-6}$, while the target HQ is 0.1 to account for cumulative effects.)

Tables will be provided which summarize the data for the media identified at SWMU 73 (soil and groundwater) and the COPC selection process.

6.4 Exposure Assessment and Methodology for Development of CAOs

6.4.1 Qualitative CAOs

6.4.1.1 Groundwater

There is no direct current exposure to contaminated groundwater at SWMU 73 nor is future exposure likely based on the future land use scenarios discussed in Section 6.2. (Indirect exposure via inhalation of volatiles emitted from the contaminated groundwater through the overlying soils is possible, as discussed in detail below.) Groundwater is not currently used for potable purposes because drinking water is supplied via pipeline from El Yunque (rain forest), which supplies all of NAPRs present and projected needs.

Under nonresidential land use – particularly the continued industrial future land use scenario, in which the U.S. Navy determines the specific use of the property – it is reasonable to assume that no groundwater well will be installed within the limited volume of contaminated groundwater and be used for domestic purposes. Section 6.4.2 describes the methodology and exposure pathways for developing quantitative CAOs. The qualitative CAOs for contaminated groundwater are:

- To prevent further degradation of Puerto Rico's waters (Anti-degradation Policy, Regulation No. 4282, Puerto Rico Water Quality Standards Regulation, effective August 19, 1990.)

- To further restrict and prevent possible exposure to contaminated groundwater (e.g., by institutional controls).

- To protect public health and the environment in accordance with regulatory requirements (i.e., the general objective of all corrective measures).

6.4.1.2 Soil

Under the continued industrial land use scenario, contact with contaminants will occur from both surface and subsurface soil at SWMU 73. Section 6.4.2 describes the methodology and exposure pathways for developing quantitative CAOs based on these potential exposures. The qualitative CAOs for soil are:

- To prevent further degradation of Puerto Rico's waters (Anti-degradation Policy, Regulation No. 4282, Puerto Rico Water Quality Standards Regulation, effective August 19, 1990.)

- To protect human health and the environment in accordance with regulatory requirements (i.e., the general objective of all corrective measures).

6.4.2 Quantitative CAOs

Quantitative CAOs are acceptable residual contaminant concentrations. The following components will be used to determine CAOs for soil and groundwater:

- Intake by assumed exposure pathways.

- Chemical-specific toxicity data in the form of health effects criteria (see Section 6.5).

- Assumed target cancer risk level and noncancer hazard quotient.

The target risk level and HQ are general health effects levels deemed acceptable for exposure to individual carcinogenic and noncarcinogenic contaminants, respectively. The general equation for chemical intake that will be used in the human health RA is:

$$Intake(mg/kg\text{-}day) = \frac{C \times IR \times EF \times ED \times CF}{BW \times AT} \qquad \text{(Eq 6-1)}$$

where:

C	=	chemical concentration
IR	=	intake rate
EF	=	exposure frequency
ED	=	exposure duration
CF	=	conversion factor (to attain proper units)
BW	=	body weight
AT	=	averaging time for cancer or noncancer effects.

(Note: Units for the above parameters will vary depending on the medium of concern, i.e., soil or groundwater.)

This equation is algebraically combined with the general expressions for cancer risk and noncancer health effects, respectively:

$$Risk = Intake * SF \qquad \text{(Eq 6-2)}$$

$$HQ = Intake/RfD \qquad \text{(Eq 6-3)}$$

where:

Risk = target risk level ($1x10^{-6}$, or one in 1 million excess cancer cases due to exposure to a chemical, given the assumed exposure pathway). (unitless)

SF = slope factor, or health effects criterion for cancer effects. $(mg/kg/day)^{-1}$

HQ = target HQ (1.0, implying that intake should not exceed the RfD). (unitless)

RfD = reference dose, or health effects criterion for noncancer effects. (mg/kg/day)

Assumed values for risk and HQ and chemical-specific SFs or RfDs are used to solve for the concentration term, or the pathway-specific CAO.

For the continued industrial land use scenario at these sites, the industrial worker and construction worker will be used to characterize potential future exposure to contaminated soil and groundwater. Industrial worker exposure is limited to surface soil (defined as zero to two feet) at SWMU 73, while construction workers may also be exposed to subsurface soil (zero to ten feet) at SWMU 73. Additionally, it is conservatively assumed that adult and/or adolescent trespassers may gain access to the site in the future and will also be used in the evaluation of potential exposure to contaminated surface soil.

The exposure pathways evaluated for developing quantitative CAOs for soil in the CMS are likely to be inadvertent ingestion, inhalation of contaminants in particulates; inhalation of volatiles emitted from soil, and dermal absorption of contaminants following direct contact with soil and groundwater.

Industrial workers will only likely to be exposed to contaminants in groundwater via inhalation of volatiles emitted through the soil into buildings. The methodology outlined in USEPA's November 29, 2002 Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance) (USEPA, 2002) will be used to determine whether the subsurface vapor intrusion pathway is complete and, if so, whether vapors are present at levels that may pose unacceptable exposure risk. This guidance includes a three-tiered approach for screening the exposure pathway. The three tiers involve increasing levels of complexity and specificity, and generic screening levels allow for a simple quantitative screen of contaminant concentrations.

The Johnson and Ettinger (1991) model, included as part of the guidance, may be used to quantify this exposure if the screening procedure outlined in the Subsurface Vapor Intrusion Guidance (USEPA, 2002) suggests it is necessary. USEPA placed this model into a spreadsheet format and produced a User's Guide for use at contaminated sites (USEPA, 2000). The new version of the Johnson and Ettinger model states that exposure by indoor inhalation of contaminants is much greater than outdoor exposure due to greater dilution in outside air and enhanced volatilization indoors due to chimney and pressure effects. For these reasons, and because the model assumes full time exposure indoors (i.e., leaving no time for additional outdoor exposure), outdoor inhalation exposure to groundwater is not quantitatively evaluated.

6.5 Toxicity Evaluation

For the development of quantitative CAOs based on exposure to chemicals, the following health effects criteria will be of principal importance:

- RfDs for oral exposure – estimates of acceptable daily intake for chronic and subchronic exposure that will not produce deleterious noncancer effects. USEPA defines subchronic exposure as periods of less than 7 years (USEPA, 1989). Therefore, subchronic RfDs apply to construction workers, while chronic RfDs apply to industrial workers.

- Reference concentrations (RfCs) for inhalation exposure – estimates of acceptable concentrations for chronic and subchronic exposure that will not produce deleterious noncancer effects. These values are converted to inhalation RfDs by multiplying the RfC by the reference IR value of 20 m^3/day and dividing by the reference BW of 70 kilograms. RfCs are used in the Johnson and Ettinger (1991) model, while other inhalation pathways use the inhalation RfD. Subchronic inhalation RfDs and RfCs apply to the construction worker only, as discussed for RfDs for oral exposure.

- SFs for oral exposure – plausible upper-bound estimates of the probability of an individual developing cancer as a result of lifetime exposure to a potential carcinogen (USEPA, 1989).

- SFs for the inhalation route – plausible upper-bound estimates of the probability of an individual developing cancer as a result of lifetime exposure to a potential carcinogen (USEPA, 1989). Inhalation SFs are calculated from inhalation unit risk values in a similar manner as described above for inhalation RfDs. Unit risk values are used in the Johnson and Ettinger (1991) model, while all other inhalation pathways use the inhalation SF.

The primary source of chemical-specific health effects criteria which will be used during the CMS will be USEPA's Integrated Risk Information System (IRIS) database (USEPA, 2007). IRIS is a computer-housed catalog of USEPA health effects criteria and information. Data in IRIS are reviewed and updated monthly. If health effects criteria are not available in IRIS, USEPA recommends use of the Provisional Peer Reviewed Toxicity Values (PPRTVs) (database of values developed on a chemical-specific basis when requested by USEPA's Superfund program) as a secondary data source (USEPA, 2003b). Additional health effects criteria not provided in IRIS or as PPRTVs are obtained from other USEPA (e.g., Health Effects Assessment Summary Table [HEAST] [USEPA, 1997b]) and non-USEPA (e.g., Agency for Toxic Substances and Disease Registry [ATSDR] Minimal Risk Levels) sources of toxicity information. These sources should provide toxicity information based on similar methods and procedures as those used for IRIS and PPRTVs, contain values which are peer reviewed, are available to the public, and are transparent about the methods and processes used to develop the values.

Health effects criteria are available only for the oral and inhalation routes, and most of these criteria are based on the administered rather than the absorbed dose (i.e., the amount of chemical at a human exchange boundary, such as skin, that is available for absorption – but not the amount actually absorbed into the blood).

Adjustment will be made using oral absorption efficiency data (i.e., data on gastrointestinal absorption) from the species on which the oral health effects criteria are based. The administered dose oral health effects criterion will be multiplied (for RfDs) or divided (for SFs) by the gastrointestinal absorption factor to derive the absorbed dose criterion. Recommended oral absorption efficiencies for those compounds/analytes with chemical-specific dermal absorption factors from soil will be obtained from Risk Assessment Guidance for Superfund (RAGS) Part E (USEPA, 2004b).

6.6 Background Concentrations as CAOs

Background concentrations of inorganics may be used as quantitative CAOs when they exceed risk-based CAOs. The National Contingency Plan (NCP) preamble (55 *Federal Register*, 8717) states that preliminary remediation goals (PRGs; i.e., the CERCLA equivalent to quantitative

CAOs) may be revised based on consideration of "technical factors," which may include background levels of contaminants. Therefore, if a calculated CAO is less than background inorganic constituents, the background concentration is used as the CAO.

7.0 IDENTIFICATION OF COCs

Contaminants of concern (COCs) are those contaminants detected at a site at concentrations that exceed human health based CAOs (derived using the protocol described in Section 6.0) or that pose an unacceptable ecological risk as determined by exceedance of ecological CAOs (derived using the protocol described in Section 5.0). Once COCs are identified they are evaluated as potential candidates for clean-up throughout the remainder of the CMS process. This evaluation includes examination of the spatial and concentration distributions of COCs within the media in which they occur.

8.0 POTENTIAL CORRECTIVE MEASURES

This section of the CMS work plan describes the stepwise approach to be taken in performing the CMS for SWMU 73 (DRMO Scrap Metal Recycling Yard). The CMS consists of four tasks, which are described in the sections that follow.

8.1 Task I - Identification and Development of the Corrective Measure Alternative or Alternatives

This task will identify, screen, and develop the alternative or alternatives for removal, containment, treatment and/or other disposition of the contamination based on the objectives established for the corrective measure. The analysis will be based on the results of the all previous investigations at SWMU 73 as well as the CMS investigation described in Sections 3.0 and 4.0 of this document.

8.1.1 Description of the Current Situation

The current situation and the known nature and extent of contamination at SWMU 73 will be described in this section. A statement of the purpose for the response, based on the results of the ECP and CMS investigations will be provided, as will the actual or potential exposure pathways to potential human or ecological receptors of concern that will be addressed by the corrective measures.

8.1.2 Establishment of Corrective Action Objectives

Site specific objectives for the corrective action will be established in conjunction with the USEPA. These objectives will be based on public health and environmental criteria, information obtained from site investigations, USEPA guidance, and any applicable federal or Commonwealth of Puerto Rico statutes. The CAOs will be consistent with 40 CFR 264.100 as applicable.

8.1.3 Screening of Corrective Measure Technologies

The corrective measure technologies, which are applicable at the facility, will be reviewed based on all the available data and information at SWMU 73. This screening process focuses on eliminating those technologies that have severe limitations for a given set of waste and site-specific conditions or due to inherent technology limitations.

8.1.4 Identification of the Corrective Measure Alternative or Alternatives

The corrective measure alternative or alternatives will be developed based on the CAOs and analysis of the corrective measure technologies. Those alternatives that appear most suitable for the site based on sound engineering will be retained. Technologies can be combined to form the overall corrective action alternative or alternatives. The reasons for excluding any technology shall be documented.

8.2 Task II - Evaluation of the Corrective Measure Alternative or Alternatives

Each corrective measure technology and its components that passed through the initial screening in Task I will be described and evaluated. This evaluation will be based on technical, environmental, human health, and institutional concerns. Cost estimates for each corrective measure will also be developed.

8.2.1 Technical/Environmental/Human Health/Institutional

A description of each corrective measure alternative which includes but is not limited to preliminary process flow sheets, preliminary sizing and type of construction for buildings and structures, and rough quantities of utilities required will be provided. Each alternative will be evaluated in the following four areas:

8.2.1.1 Technical

Each corrective measure alternative will be evaluated based on performance, reliability, implementability, and safety.

8.2.1.2 Environmental

An environmental assessment will be performed for each alternative, which will focus on the facility conditions and pathways of contamination actually addressed by each alternative. The environmental assessment for each alternative will include, at a minimum, an evaluation of: the short and long term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

8.2.1.3 Human Health

Each alternative will be assessed in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to the USEPA.

8.2.1.4 Institutional

The relevant institutional needs for each alternative will be assessed. Specifically the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative will be examined.

8.2.2 Cost Estimate

A cost estimate of each corrective measure alternative will be developed. The cost estimate will include capital, operation, and maintenance costs.

8.3 Task III - Justification and Recommendation of the Corrective Measure or Measures

The corrective measure alternative will be recommended and justified using technical, human health, and environmental criteria. Tradeoffs among health risks, environmental effects, and other pertinent factors will be highlighted. The USEPA will select the corrective measure alternative or alternatives to be implemented based on the results of Task II and III. At a minimum the criteria in the sections that follow will be used to justify the final corrective measure or measures.

8.3.1 Technical

8.3.1.1 Performance

Corrective measure or measures that are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference.

8.3.1.2 Reliability

Corrective measure or measures that do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference.

8.3.1.3 Implementability

Corrective measure or measures that can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred.

8.3.1.4 Safety

Corrective measure or measures that pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

8.3.2 Human Health

The corrective measure or measures will comply with existing USEPA criteria, standards, or guidelines for the protection of human health. Corrective measures that provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

8.3.3 Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

8.4 Task IV - Reports

8.4.1 Corrective Measures Study Report(s)

A CMS Task 1 Report will be prepared and submitted for approval within forty-five (45) days after receipt of the data validation report for data collected during the CMS Investigation

described in this work plan. The Task I report shall include the items listed in Section 8.1 of this work plan, including establishment of CAOs. Alternatively, a CMS Investigation report will be prepared and submitted, proposing a streamlined CMS process.

Upon approval of the CMS Task 1 Report or CMS Investigation Report, a CMS Final Report will be prepared and submitted for approval within sixty (60) days. The CMS Final Report to be developed will include all the information gathered under the approved CMS Work Plan. At a minimum the report will include:

- A description of the facility;
  - Site topographic map & preliminary layouts.

- A summary of the corrective measure or measures;
  - Description of the corrective measure or measures and rationale for selection;
  - Performance expectations;
  - Preliminary design criteria and rationale;
  - General operation and maintenance requirements; and
  - Long-term monitoring requirements.

- A summary of the previous investigations and impact on the selected corrective measure or measures;
  - Field studies (groundwater and soil);
  - Laboratory studies (bench scale treatability studies); and
  - Pilot-scale tests.

- Design and Implementation Precautions;
  - Special technical problems;
  - Additional engineering data required;
  - Permits and regulatory requirements;
  - Access, easements, right-of-way;
  - Health and safety requirements; and
  - Community relations activities.

- Cost Estimates and Schedules;
  - Capital cost estimate;
  - Operation and maintenance cost estimate; and
  - Project schedule (design, construction, operation).

9.0 SCHEDULE

A schedule for the implementation of this work plan, and follow-up reports for the CMS reports for SWMU 73 is provided as Figure 9-1.

It should be noted that this schedule is dependent upon USEPA review time. Many other factors can also extend the schedule such as resampling if further re-characterization is required, weather delays in the field, funding is delayed by the Navy, or consensus cannot be reached on how the USEPA's comments are to be incorporated.

10.0 PROJECT ORGANIZATION

An organizational chart presenting the proposed staffing for this project is provided on Figure 10-1. This section also outlines the responsibilities and reporting requirements of field personnel and staff.

10.1 Project Team Responsibilities

A Project Manager (Mr. David Jones, U.S. Army Reserve) will manage the Project Team. His responsibilities will be to direct the technical performance of the project staff, costs and schedule, ensuring that QA/QC procedures are followed during the course of the project. He will maintain communication with the BRAC PMO SE, Navy Technical Representative (NTR), Mr. Mark Davidson. A QA/QC Manager (Mr. Gene Sinar, U.S. Army Reserve) will be assigned to administer overall QA/QC for this project.

The field activities of this project will consist of one field team managed by the Geologist (Mr. David Jones, U.S. Army Reserve). The Mr. Jones's responsibilities include directing the field team and subcontractors. A report coordinator (Mr. Barrett Borry, U.S. Army Reserve) will direct the reporting effort of the field investigation. The report coordinator will direct and ensure that all necessary staffing is utilized to assist in developing the CMS Reports for SWMU 73.

10.2 Field Reporting Requirements

The Geologist will maintain a daily summary of each day's field activities. The following information will be included in this summary:

- Contractor and subcontractor personnel on site
- Major activities of the day
- Samples collected
- Problems encountered
- Other pertinent site information

The Geologist will receive direction from the Project Manager regarding any changes in scope of the investigation.

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TABLES

TABLE 3-1

Revised: January 25, 2008

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
ENVIRONMENTAL SAMPLES
SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

		Fixed Based Analytical Lab Analysis								
Media	**Sample Depth (ft bgs)**	App IX VOCs	App IX SVOCs	Low Level PAHs	Organochlorine Pesticides	App IX Metals (Total)	App IX Metals (Dissolved)	RCRA Metals	Benzene	**Comment**
Surface Soil Samples										
73SB01-00	0.0 - 1.0	X	X	X	X	X				
73SB01-00D	0.0 - 1.0	X	X	X	X	X				Duplicate
73SB01-00MS/MSD	0.0 - 1.0	X	X	X	X	X				Matrix Spike/Matrix Spike Duplicate
73SB02-00	0.0 - 1.0	X	X	X	X	X				
73SB03-00	0.0 - 1.0	X	X	X	X	X				
73SB04-00	0.0 - 1.0	X	X	X	X	X				
73SB05-00	0.0 - 1.0	X	X	X	X	X				
73SB06-00	0.0 - 1.0	X	X	X	X	X				
73SB07-00	0.0 - 1.0	X	X	X	X	X				
73SB08-00	0.0 - 1.0	X	X	X	X	X				
73SB09-00	0.0 - 1.0	X	X	X	X	X				
73SB10-00	0.0 - 1.0	X	X	X	X	X				
73SB11-00	0.0 - 1.0	X	X	X	X	X				
73SB11-00D	0.0 - 1.0	X	X	X	X	X				Duplicate
73SB12-00	0.0 - 1.0	X	X	X	X	X				
73SB13-00	0.0 - 1.0	X	X	X	X	X				
73SB14-00	0.0 - 1.0	X	X	X	X	X				
73SB15-00	0.0 - 1.0	X	X	X	X	X				
73SB16-00	0.0 - 1.0	X	X	X	X	X				
73SB17-00	0.0 - 1.0	X	X	X	X	X				
73SB18-00	0.0 - 1.0	X	X	X	X	X				
73SB19-00	0.0 - 1.0	X	X	X	X	X				
73SB20-00	0.0 - 1.0	X	X	X	X	X				
73SB21-00	0.0 - 1.0	X	X	X	X	X				
73SB21-0D	0.0 - 1.0	X	X	X	X	X				Duplicate
73SB21-00MS/MSD	0.0 - 1.0	X	X	X	X	X				Matrix Spike/Matrix Spike Duplicate
73SB22-00	0.0 - 1.0	X	X	X	X	X				
73SB23-00	0.0 - 1.0	X	X	X	X	X				
73SB24-00	0.0 - 1.0					X				
73SB25-00	0.0 - 1.0					X				
73SB26-00	0.0 - 1.0					X				
73SB27-00	0.0 - 1.0					X				
73SB28-00	0.0 - 1.0					X				
73SB29-00	0.0 - 1.0					X				
73SB30-00	0.0 - 1.0					X				
73SB31-00	0.0 - 1.0					X				
73SB31-00D	0.0 - 1.0					X				Duplicate
73SB32-00	0.0 - 1.0					X				
73SB33-00	0.0 - 1.0					X				
73SB34-00	0.0 - 1.0					X				
73SB35-00	0.0 - 1.0					X				

TABLE 3-1

Revised: January 25, 2008

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
ENVIRONMENTAL SAMPLES
SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

		Fixed Based Analytical Lab Analysis								
Media	**Sample Depth (ft bgs)**	App IX VOCs	App IX SVOCs	Low Level PAHs	Organochlorine Pesticides	App IX Metals (Total)	App IX Metals (Dissolved)	RCRA Metals	Benzene	**Comment**
Subsurface Soil Samples (Depths will be approximately 1-2 and 9-11 feet bgs)										
73SB01-01	1.0-3.0	X	X	X	X	X				
73SB01-05[(1)]	9.0-11.0	X	X	X	X	X				
73SB02-01	1.0-3.0	X	X	X	X	X				
73SB02-05[(1)]	9.0-11.0	X	X	X	X	X				
73SB03-01	1.0-3.0					X				
73SB03-01D	1.0-3.0					X				Duplicate
73SB03-01MS/MSD	1.0-3.0					X				Matrix Spike/Matrix Spike Duplicate
73SB03-05[(1)]	9.0-11.0					X				
Groundwater Samples										
73GW01[(1)]	NA	X	X	X			X			
73GW02[(1)]	NA	X	X	X			X			
73GW02D[(1)]	NA	X	X	X			X			Duplicate
73GW02MS[(1)]	NA	X	X	X			X			Matrix Spike
73GW02MSD[(1)]	NA	X	X	X			X			Matrix Spike Duplicate
73GW03[(1)]	NA						X			
Other Field QA/QC Samples										
Trip Blank Samples										
73TB-XX	NA	X								One sample will accompany each cooler containing samples for VOC analysis
Equipment Rinsate Samples										
73ER01	NA	X	X	X	X		X			Stainless Steel Spoon
73ER02	NA	X	X	X	X		X			Groundwater sample tubing
73ER-XX	NA	X	X	X	X		X			Auger or selected drilling tool, one per day of sampling
Field Blank Samples										
73FB01	NA	X	X	X	X	X				Lab Grade Deionized Water
73FB02	NA	X	X	X	X	X				Store-bought Distilled Water
73FB03	NA	X	X	X	X	X				NAPR Potable Water
IDW Samples										
73IDW01	NA							X	X	Solid waste
73IDW02	NA							X	X	Aqueous waste

Notes:

[(1)] - The sample designator will be determined based on the soil boring location identifier.
ft bgs - feet below ground surface.
NA - Not Applicable.

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APPENDIX IX COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Appendix IX - VOCs	Quantitation Limits*		Method Number (Description)
	Water (µg/L)	Low Soil (µg/kg)	
Acetone	5.0	20	8260B (5030)(low level)
Acetonitrile	20	100	8260B (5030)(low level)
Acrolein	25.0	100	8260B (5030)(low level)
Acrylonitrile	5.0	20	8260B (5030)(low level)
Benzene	0.5	5.0	8260B (5030)(low level)
Bromodichloromethane	0.5	5.0	8260B (5030)(low level)
Bromoform	0.5	5.0	8260B (5030)(low level)
Bromomethane	0.5	5.0	8260B (5030)(low level)
Carbon Disulfide	0.5	5.0	8260B (5030)(low level)
Carbon Tetrachloride	0.5	5.0	8260B (5030)(low level)
Chlorobenzene	0.5	5.0	8260B (5030)(low level)
Chloroethane	0.5	5.0	8260B (5030)(low level)
Chloroform	0.5	5.0	8260B (5030)(low level)
Chloromethane	0.5	5.0	8260B (5030)(low level)
Chloroprene (2-Chloro-1,3-butadiene)	0.5	5.0	8260B (5030)(low level)
3-Chloro-1-propene (Allyl chloride)	0.5	5.0	8260B (5030)(low level)
1,2-Dibromo-3-chloropropane	2.0	5.0	8260B (5030)(low level)
Dibromochloromethane	0.5	5.0	8260B (5030)(low level)
1,2-Dibromoethane	0.5	5.0	8260B (5030)(low level)
Dibromomethane	0.5	5.0	8260B (5030)(low level)
trans-1,4-Dichloro-2-butene	5.0	50	8260B (5030)(low level)
Dichlorodifluoromethane	0.5	5.0	8260B (5030)(low level)
1,1-Dichloroethane	0.5	5.0	8260B (5030)(low level)
1,2-Dichloroethane	0.5	5.0	8260B (5030)(low level)
cis-1,2-dichloroethene	0.5	5.0	8260B (5030)(low level)
trans-1,2-dichloroethene	0.5	5.0	8260B (5030)(low level)
1,1-Dichloroethene	0.5	5.0	8260B (5030)(low level)
Methylene Chloride	0.5	5.0	8260B (5030)(low level)
1,2-Dichloropropane	0.5	5.0	8260B (5030)(low level)
cis-1,3-Dichloropropene	0.5	5.0	8260B (5030)(low level)
trans-1,3-Dichloropropene	0.5	5.0	8260B (5030)(low level)
Ethyl benzene	0.5	5.0	8260B (5030)(low level)
Ethyl methacrylate	0.5	5.0	8260B (5030)(low level)
2-Hexanone	5.0	10	8260B (5030)(low level)
Iodomethane (Methyl iodide)	0.5	5.0	8260B (5030)(low level)
Isobutanol	25	250	8260B (5030)(low level)
Methacrylonitrile	5.0	50	8260B (5030)(low level)
2-Butanone	5.0	10	8260B (5030)(low level)
Methyl methacrylate	0.5	5.0	8260B (5030)(low level)
4-Methyl-2-pentanone	5.0	10	8260B (5030)(low level)
Pentachloroethane	0.5	5.0	8260B (5030)(low level)
Propionitrile	10	100	8260B (5030)(low level)
Stryene	0.5	5.0	8260B (5030)(low level)
1,1,1,2-Tetrachloroethane	0.5	5.0	8260B (5030)(low level)
1,1,2,2-Tetrachloroethane	0.5	5.0	8260B (5030)(low level)
Tetrachloroethene	0.5	5.0	8260B (5030)(low level)
Toluene	0.5	5.0	8260B (5030)(low level)
1,1,1-Trichloroethane	0.5	5.0	8260B (5030)(low level)
1,1,2-Trichloroethane	0.5	5.0	8260B (5030)(low level)

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APPENDIX IX COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Appendix IX - VOCs (Cont.)	Quantitation Limits* Water (µg/L)	Quantitation Limits* Low Soil (µg/kg)	Method Number (Description)
Trichloroethene	0.5	5.0	8260B (5030)(low level)
Trichlorofluoromethane	0.5	5.0	8260B (5030)(low level)
1,2,3-Trichloropropane	1.0	5.0	8260B (5030)(low level)
Vinyl Acetate	0.5	10	8260B (5030)(low level)
Vinyl Chloride	0.5	5.0	8260B (5030)(low level)
Xylene (total)	0.5	5.0	8260B (5030)(low level)
Appendix IX - SVOCs	**Quantitation Limits* Water (µg/L)**	**Quantitation Limits* Low Soil (µg/kg)**	**Method Number (Description)**
Acenaphthene	5.0	170	8270C
Acenaphthylene	5.0	170	8270C
Acetophenone	5.0	170	8270C
2-Acetylaminofluorene	5.0	170	8270C
4-Aminobiphenyl	5.0	500	8270C
Aniline	5.0	500	8270C
Anthracene	5.0	170	8270C
Aramite	15	1700	8270C
Benzo(a)anthracene	5.0	170	8270C
Benzo(b)fluoranthene	5.0	170	8270C
Benzo(k)fluoranthene	5.0	170	8270C
Benzo(g,h,i)perylene	5.0	170	8270C
Benzo(a)pyrene	5.0	170	8270C
Benzyl alcohol	15	500	8270C
Bis(2-chloroethoxyl)methane	5.0	170	8270C
Bis(2-chloroethyl)ether	5.0	170	8270C
Bis(2-ethylhexyl)phthalate	5.0	330	8270C
4-Bromophenyl phenyl ether	5.0	170	8270C
Butylbenzylphthalate	5.0	170	8270C
4-Chloroaniline	5.0	170	8270C
Chlorobenzilate	10	170	8270C
4-Chloro-3-methylphenol	5.0	170	8270C
2-Chloronaphthalene	5.0	170	8270C
2-Chlorophenol	5.0	170	8270C
4-Chlorophenyl phenyl ether	5.0	170	8270C
Chrysene	5.0	170	8270C
3&4 Methylphenol	10	330	8270C
2-Methylphenol	5.0	170	8270C
Diallate (trans/cis)	5.0	170	8270C
Dibenzofuran	5.0	170	8270C
Di-n-butyl phthalate	5.0	170	8270C
Dibenz(a,h)anthracene	5.0	170	8270C
o-Dichlorobenzene	5.0	170	8270C
m-Dichlorobenzene	5.0	170	8270C
p-Dichlorobenzene	5.0	170	8270C
3,3'-Dichlorobenzidine	5.0	330	8270C
2,4-Dichlorophenol	5.0	170	8270C
2,6-Dichlorophenol	5.0	170	8270C
Diethylphthalate	5.0	170	8270C
Dimethoate	10	500	8270C

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APPENDIX IX COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Appendix IX - SVOCs (Cont.)	Quantitation Limits*		Method Number (Description)
	Water (µg/L)	Low Soil (µg/kg)	
p-(Dimethylamino)azobenzene	5.0	170	8270C
7,12-Dimethyl benz(a)anthracene	5.0	170	8270C
3,3-Dimethyl benzidine	25	1,000	8270C
2,4-Dimethylphenol	10	170	8270C
alpha, alpha-Dimethylphenethylamine	50	1,700	8270C
Dimethyl phthalate	5.0	170	8270C
m-Dinitrobenzene	5.0	170	8270C
4,6-Dinitro-2-methylphenol	15	500	8270C
2,4-Dinitrophenol	60	2,000	8270C
2,4-Dinitrotoluene	5.0	170	8270C
2,6-Dinitrotoluene	5.0	170	8270C
Di-n-octylphthalate	5.0	170	8270C
1,4-Dioxane	5.0	330	8270C
Ethylmethanesulfonate	5.0	170	8270C
Fluoranthene	5.0	170	8270C
Fluorene	5.0	170	8270C
Hexachlorobenzene	5.0	170	8270C
Hexachlorobutadiene	5.0	170	8270C
Hexachlorocyclopentadiene	15	500	8270C
Hexachloroethane	5.0	170	8270C
Hexachloropropene	5.0	330	8270C
Indeno(1,2,3-cd)pyrene	5.0	170	8270C
Isodrin	5.0	170	8270C
Isophorone	5.0	170	8270C
Isosafrole	5.0	170	8270C
Methapyrilene	50	5,000	8270C
3-Methylcholanthrene	5.0	170	8270C
Methyl methanesulfonate	5.0	170	8270C
2-Methylnaphthalene	5.0	170	8270C
Naphthalene	5.0	170	8270C
1,4-Naphthoquinone	30	3,300	8270C
1-Naphthylamine	15	500	8270C
2-Naphthylamine	15	500	8270C
2-Nitroaniline	5.0	170	8270C
3-Nitroaniline	5.0	170	8270C
4-Nitroaniline	5.0	170	8270C
Nitrobenzene	5.0	170	8270C
2-Nitrophenol	5.0	170	8270C
4-Nitrophenol	30	500	8270C
4-Nitroquinoline-1-oxide	60	1,000	8270C
n-Nitrosodi-n-butylamine	5.0	170	8270C
n-Nitrosodiethylamine	5.0	170	8270C
n-Nitrosodimethylamine	5.0	170	8270C
n-Nitrosodiphenylamine	5.0	170	8270C
n-Nitrosodi-n-propylamine	5.0	170	8270C

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SWMU 73 CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Appendix IX - SVOCs (Cont.)	Quantitation Limits*		Method Number (Description)
	Water (µg/L)	Low Soil (µg/kg)	
n-Nitrosomethylethylamine	5.0	170	8270C
n-Nitrosomorpholine	5.0	170	8270C
n-Nitrosopiperidine	5.0	170	8270C
n-Nitrosopyrrolidine	5.0	170	8270C
5-Nitro-o-toluidine	5.0	500	8270C
bis-(2-chloroisopropyl)ether	5.0	170	8270C
Pentachlorobenzene	5.0	170	8270C
Pentachloronitrobenzene	5.0	170	8270C
Pentachlorophenol	15	500	8270C
Phenacetin	5.0	170	8270C
Phenanthrene	5.0	170	8270C
Phenol	5.0	170	8270C
1,4-Phenylenediamine	250	33,000	8270C
2-Picoline	5.0	330	8270C
Pronamide	5.0	170	8270C
Pyrene	5.0	170	8270C
Pyridine	5.0	170	8270C
Safrole	5.0	170	8270C
1,2,4,5-Tetrachlorobenzene	5.0	170	8270C
2,3,4,6-Tetrachlorophenol	5.0	170	8270C
Tetraethyldithiopyrophosphate (Sulfotep)	5.0	170	8270C
Thionazin	5.0	170	8270C
o-Toluidine	5.0	670	8270C
1,2,4-Trichlorobenzene	5.0	170	8270C
2,4,5-Trichlorophenol	5.0	170	8270C
2,4,6-Trichlorophenol	5.0	170	8270C
O,O,O-Triethylphosphorothioate	5.0	170	8270C
1,3,5-Trinitrobenzene	15	500	8270C

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Organochlorine Pesticides	Quantitation Limits* Water (ng/L)	Quantitation Limits* Low Soil (ng/g)	Method Number (Description)
Aldrin	0.02	0.83	8081A
Alpha-BHC	0.01	1.0	8081A
beta-BHC	0.02	2.0	8081A
delta-BHC	0.01	0.83	8081A
gamma-BHC (Lindane)	0.01	0.83	8081A
Chlordane	0.5	17	8081A
4,4'-DDT	0.02	1.7	8081A
4,4'-DDE	0.02	1.7	8081A
4,4'-DDD	0.02	1.7	8081A
Dieldrin	0.02	1.7	8081A
Endosulfan I	0.01	0.83	8081A
Endosulfan II	0.02	1.7	8081A
Endosulfan sulfate	0.02	1.7	8081A
Endrin	0.02	1.7	8081A
Kepone	0.2	7.0	8081A
Toxaphene	3.0	33	8081A
Endrin Aldehyde	0.1	1.7	8081A
Heptachlor	0.01	0.83	8081A
Heptachlor epoxide	0.01	0.83	8081A
Methoxychlor	0.1	8.3	8081A
Low Level PAHs (1)	**Quantitation Limits* Water (µg/L)**	**Quantitation Limits* Low Soil (µg/kg)**	**Method Number**
Acenaphthene	0.05	1.7	8270C-SIM
Acenaphthylene	0.05	1.7	8270C-SIM
Anthracene	0.05	1.7	8270C-SIM
Benzo(a)anthracene	0.05	1.7	8270C-SIM
Benzo(b)fluoranthene	0.05	1.7	8270C-SIM
Benzo(k)fluoranthene	0.05	1.7	8270C-SIM
Benzo(g,h,i)perylene	0.05	1.7	8270C-SIM
Benzo(a)pyrene	0.05	1.7	8270C-SIM
Chrysene	0.05	1.7	8270C-SIM
Dibenz(a,h)anthracene	0.05	1.7	8270C-SIM
Fluoranthene	0.05	1.7	8270C-SIM
Fluorene	0.05	1.7	8270C-SIM
Indeno(1,2,3-cd)pyrene	0.05	1.7	8270C-SIM
1-Methylnaphthalene	0.05	3.3	8270C-SIM
2-Methylnaphthalene	0.05	1.7	8270C-SIM
Naphthalene	0.05	3.3	8270C-SIM
Phenanthrene	0.05	1.7	8270C-SIM
Pyrene	0.05	1.7	8270C-SIM

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Appendix IX - Metals	Quantitation Limits*		Method Number (Description)
	Water (µg/L)	Low Soil (mg/kg)	
Antimony	5.0	5.0	6020 (Inductively Coupled Plasma-Mass Spec)
Arsenic	4.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Barium	5.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Beryllium	2.5	2.5	6020 (Inductively Coupled Plasma-Mass Spec)
Cadmium	2.0	0.5	6020 (Inductively Coupled Plasma-Mass Spec)
Chromium	4.0	2.5	6020 (Inductively Coupled Plasma-Mass Spec)
Cobalt	5.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Copper	5.0	1.0	6020 (Inductively Coupled Plasma-Mass Spec)
Lead	4.0	2	6020 (Inductively Coupled Plasma-Mass Spec)
Mercury	0.2	0.03	7470A/7471A (Cold Vapor AA)
Nickel	10	1.0	6020 (Inductively Coupled Plasma-Mass Spec)
Selenium	5.0	1.0	6020 (Inductively Coupled Plasma-Mass Spec)
Silver	2.0	0.5	6020 (Inductively Coupled Plasma-Mass Spec)
Thallium	4.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Tin	20	1.0	6010 (Inductively Coupled Plasma)
Vanadium	5.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Zinc	20	5.0	6020 (Inductively Coupled Plasma-Mass Spec)
	Quantitation Limits*		**Method Number (Description)**
	Water (µg/L)	**Low Soil (mg/kg)**	
RCRA Metals			
Arsenic	4.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Barium	5.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Cadmium	2.0	0.5	6020 (Inductively Coupled Plasma-Mass Spec)
Chromium	4.0	2.5	6020 (Inductively Coupled Plasma-Mass Spec)
Lead	4.0	2.0	6020 (Inductively Coupled Plasma-Mass Spec)
Mercury	0.2	0.03	7471A/7470A (Cold Vapor AA)
Selenium	5.0	1.0	6020 (Inductively Coupled Plasma-Mass Spec)
Silver	2.0	0.5	6020 (Inductively Coupled Plasma-Mass Spec)

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, will be higher.

µg/L - micrograms per liter
µg/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
NA - Not Applicable

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TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Soil Screening Value	Reference	Comment
Volatile Organics (ug/kg):			
1,1,1,2-Tetrachloroethane	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,1,1-Trichloroethane	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,1,2,2-Tetrachloroethane	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,1,2-Trichloroethane	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,1-Dichloroethane	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,1-Dichloroethene	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,2,3-Trichloropropane	NA	---	---
1,2-Dibromo-3-chloropropane	NA	---	---
1,2-Dibromoethane (EDB)	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,2-Dichloroethane	402 (1)	MHSPE 2000	---
1,2-Dichloropropane	700,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
2-Butanone (Methyl ethyl ketone)	NA	---	---
2-Hexanone	NA	---	---
3-Chloropropene (Allyl chloride)	NA	---	---
4-Methyl-2-pentanone (MIBK)	NA	---	---
Acetone	NA	---	---
Acetonitrile	NA	---	---
Acrolein (Propenal)	NA	---	---
Acrylonitrile	1,000,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Benzene	101 (1)	MHSPE 2000	---
Bromodichloromethane	NA	---	---
Bromoform	NA	---	---
Bromomethane (Methyl bromide)	NA	---	---
Carbon disulfide	NA	---	---
Carbon tetrachloride	1,000,000	Efroymson et al. 1997a	Toxicological threshold for microbial processes
Chlorobenzene	40,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Chloroethane	NA	---	---
Chloroform	1,002 (1)	MHSPE 2000	---
Chloromethane (Methyl chloride)	NA	---	---
Chloroprene	NA	---	---

TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Soil Screening Value	Reference	Comment
Volatile Organics (ug/kg):			
cis-1,3-Dichloropropene	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
Dibromochloromethane	NA	---	---
Dibromomethane (Methylene bromide)	NA	---	---
Dichlorodifluoromethane	NA	---	---
Ethylbenzene	5,003 (1)	MHSPE 2000	---
Ethyl methacrylate	NA	---	---
Iodomethane (Methyl iodide)	NA	---	---
Isobutanol (Isobutyl alcohol)	NA	---	---
Methacrylonitrile	NA	---	---
Methylene chloride (Dichloromethane)	1,004 (1)	MHSPE 2000	---
Methyl methacrylate	NA	---	---
Pentachloroethane	NA	---	---
Propionitrile	NA	---	---
Styrene	10,030 (1)	MHSPE 2000	---
Tetrachloroethene	400 (1)	MHSPE 2000	---
Toluene	13,001 (1)	MHSPE 2000	---
1,2-Dichloroethene (total)	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
trans-1,2-Dichloroethene	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
trans-1,3-Dichloropropene	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
trans-1,4-Dichloro-2-butene	1,000,000	Efroymson et al. 1997a	Toxicological threshold for microbial processess
Trichloroethene	6,010 (1)	MHSPE 2000	---
Trichlorofluoromethane	NA	---	---
Vinyl acetate	NA	---	---
Vinyl chloride	11.0 (1)	MHSPE 2000	---
Xylene	2,501 (1)	MHSPE 2000	---
Semi-Volatile Organics (ug/kg):			
1,2,4,5-Tetrachlorobenzene	50.0	CCME 2006	Canadian soil quality guideline based on agricultural land uses
1,2,4-Trichlorobenzene	20,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
1,3-Dichlorobenzene (m-Dichlorobenzene)	3,003 (1)	MHSPE 2000	Value for total chlorobenzenes (2)

TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Soil Screening Value	Reference	Comment
Semi-Volatile Organics (ug/kg) (continued):			
1,4-Dichlorobenzene (p-Dichlorobenzene)	20,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
1,4-Dioxane	NA	---	---
1,4-Naphthoquinone	NA	---	---
1,4-Phenylenediamine (p-phenylenediamine)	NA	---	---
1-Naphthylamine	NA	---	---
2,3,4,6-Tetrachlorophenol	1,001 (1)	MHSPE 2000	Value for total chlorophenols (3)
2,4,5-Trichlorophenol	4,000	Efroymson et al. 1997b	Toxicological threshold for plants
2,4,6-Trichlorophenol	10,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
2,2'-Oxybis(1-chloropropane)	NA	---	---
2,4-Dichlorophenol	1,001 (1)	MHSPE 2000	Value for total chlorophenols (3)
2,4-Dimethylphenol	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
2,4-Dinitrophenol	20,000	Efroymson et al. 1997b	Toxicological threshold for plants
2,6-Dichlorophenol	1,001 (1)	MHSPE 2000	Value for total chlorophenols (3)
2-Acetylaminofluorene	NA	---	---
2-Chloronaphthalene	NA	---	---
2-Chlorophenol	1,001 (1)	MHSPE 2000	Value for total chlorophenols (3)
2-Naphthylamine	NA	---	---
2-Nitroaniline (o-Nitroaniline)	NA	---	---
2-Nitrophenol (o-Nitrophenol)	7,000	---	Value for 4-nitrophenol used as a surrogate
2-Picoline	NA	---	---
3,3'-Dichlorobenzidine	NA	---	---
3,3'-Dimethylbenzidine	NA	---	---
3-Methylcholanthrene	NA	---	---
3-Nitroaniline (m-Nitroaniline)	NA	---	---
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	NA	---	---
4-Aminobiphenyl	NA	---	---
4-Bromophenylphenyl ether	NA	---	---
4-Chloro-3-methylphenol	NA	---	---
4-Chloroaniline	NA	---	---

TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Soil Screening Value	Reference	Comment
Semi-Volatile Organics (ug/kg) (continued):			
4-Chlorophenylphenyl ether	NA	---	---
4-Nitroaniline (p-Nitroaniline)	NA	---	---
4-Nitrophenol (p-nitrophenol)	7,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
4-Nitroquinoline-1-oxide	NA	---	---
5-Nitro-o-toluidine	NA	---	---
7,12-Dimethylbenz(a)anthracene	NA	---	---
Acetophenone	NA	---	---
A,A-Dimethylphenethylamine	NA	---	---
Aniline	NA	---	---
Aramite	NA	---	---
Benzyl alcohol	NA	---	---
bis(2-Chloroethoxy)methane	NA	---	---
bis(2-Chloroethyl)ether	NA	---	---
bis(2-Ethylhexyl)phthalate	6,010 (1)	MHSPE 2000	Value for total phthalates (4)
Butylbenzylphthalate	6,010 (1)	MHSPE 2000	Value for total phthalates (4)
Chlorobenzilate	NA	---	---
Diallate	NA	---	---
Dibenzofuran	NA	---	---
Diethylphthalate	100,000	Efroymson et al. 1997b	Toxicological threshold for plants
Dimethylphthalate	200,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Dimethoate	NA	---	---
Di-n-butylphthalate	200,000	Efroymson et al 1997b	Toxicological threshold for plants
Di-n-octylphthalate	6,010 (1)	MHSPE 2000	Value for total phthalates (4)
Ethyl methanesulfonate	NA	---	---
Hexachlorobenzene	1,000,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Hexachlorobutadiene	NA	---	---
Hexachlorocyclopentadiene	10,000	Efroymson et al. 1997b	Toxicological threshold for plants
Hexachloroethane	NA	---	---
Hexachloropropene	NA	---	---
Isodrin	100	Friday 1998	Background-based value
Isophorone	NA	---	---

TABLE 5-1
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SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Soil Screening Value	Reference	Comment
Semi-Volatile Organics (ug/kg) (continued):			
Isosafrole	NA	---	---
m-Dinitrobenzene (1,3-Dinitrobenzene)	NA	---	---
m-Cresol (3-Methylphenol)	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
Methapyrilene	NA	---	---
Methyl methanesulfonate	NA	---	---
N-Nitrosodiethylamine	20,000	---	Value for n-Nitrosdiphenylamine used as a surrogate
N-Nitrosodimethylamine	20,000	---	Value for n-Nitrosdiphenylamine used as a surrogate
N-Nitroso-di-n-butylamine	20,000	---	Value for n-Nitrosdiphenylamine used as a surrogate
N-Nitroso-di-n-propylamine	20,000	---	Value for n-Nitrosdiphenylamine used as a surrogate
N-Nitrosodiphenylamine	20,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
N-Nitrosomethylethylamine	20,000	---	Value for n-Nitrosdiphenylamine used as a surrogate
N-Nitrosomorpholine	NA	---	---
N-Nitrosopiperidine	NA	---	---
N-Nitrosopyrrolidine	NA	---	---
o-Cresol (2-Methylpheneol)	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
o-Toluidine	NA	---	---
p-Cresol (4-Methylphenol)	100	CCME 2006	Canadian soil quality guideline based on agricultural land uses
p-(Dimethylamino)azobenzene	NA	---	---
Pentachlorobenzene	1,150	USEPA 1999	Toxicological threshold for earthworms
Pentachloronitrobenzene	NA	---	---
Pentachlorophenol	1,730	USEPA 1999	Toxicological threshold for plants
Phenacetin	NA	---	---
Phenol	30,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Pronamide	NA	---	---
Pryridine	NA	---	---
Safrole	NA	---	---
Sulfotepp	NA	---	---
Thionazin	NA	---	---
o,o,o-Triethylphosphorothioate	NA	---	---
PAHs (ug/kg):			
1-Methylnaphthalene	1,200	---	Value for benzo(a)pyrene used as a surrogate
2-Methylnaphthalene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Acenaphthene	20,000	Efroymson et al. 1997b	Toxicological threshold for plants

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SOIL SCREENING VALUES
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Chemical	Soil Screening Value	Reference	Comment
PAHs (ug/kg) (continued):			
Acenaphthylene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Anthracene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Benzo(a)anthracene	1,200	USEPA 1999	Value for benzo(a)pyrene used as a surrogate
Benzo(a)pyrene	1,200	USEPA 1999	Toxicological threshold for plants
Benzo(b)fluoranthene	1,200	USEPA 1999	Toxicological threshold for plants
Benzo(g,h,i)perylene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Benzo(k)fluoranthene	1,200	USEPA 1999	Value for benzo(a)pyrene used as a surrogate
Chrysene	1,200	USEPA 1999	Value for benzo(a)pyrene used as a surrogate
Dibenzo(a,h)anthracene	1,200	USEPA 1999	Value for benzo(a)pyrene used as a surrogate
Fluoranthene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Fluorene	30,000	Efroymson et al. 1997a	Toxicological threshold for earthworms
Indeno(1,2,3-cd)pyrene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Naphthalene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Phenanthrene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Pyrene	1,200	---	Value for benzo(a)pyrene used as a surrogate
Organochlorine Pesticides (ug/kg):			
4,4'-DDD	401 (1)	MHSPE 2000	Value for total DDD, DDE, and DDT (5)
4,4'-DDE	401 (1)	MHSPE 2000	Value for total DDD, DDE, and DDT (5)
4,4'-DDT	401 (1)	MHSPE 2000	Value for total DDD, DDE, and DDT (5)
Aldrin	401 (1)	MHSPE 2000	Value for total aldrin, endrin, and dieldrin (6)
alpha-BHC	201 (1)	MHSPE 2000	Value for total BHC compounds (7)
alpha-Chlordane	100	Friday 1998	Background-based value
beta-BHC	201 (1)	MHSPE 2000	Value for total BHC compounds (7)
delta-BHC	201 (1)	MHSPE 2000	Value for total BHC compounds (7)
Dieldrin	401 (1)	MHSPE 2000	Value for total aldrin, endrin, and dieldrin (6)
Endosulfan I	100	Friday 1998	Background-based value
Endosulfan II	100	Friday 1998	Background-based value
Endosulfan sulfate	100	Friday 1998	Background-based value
Endrin	401 (1)	MHSPE 2000	Value for total aldrin, endrin, and dieldrin (6)
Endrin aldehyde	100	Friday 1998	Background-based value
gamma-BHC (lindane)	201 (1)	MHSPE 2000	Value for total BHC compounds (7)

TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
DRAFT CORRECTIVE MEASURES STUDY WORK PLAN
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Chemical	Soil Screening Value	Reference	Comment
Organochlorine Pesticides (ug/kg) (continued):			
gamma-Chlordane	100	Friday 1998	Background-based value
Heptachlor	100	Friday 1998	Background-based value
Heptachlor epoxide	100	Friday 1998	Background-based value
Kepone	100	Friday 1998	Background-based value
Methoxychlor	100	Friday 1998	Background-based value
Toxaphene	100	Friday 1998	Background-based value
Inorganics (mg/kg):			
Antimony	78	USEPA 2005a	Ecological soil screening level for invertebrates
Arsenic	18	USEPA 2005b	Ecological soil screening level for plants
Barium	330	USEPA 2005c	Ecological soil screening level for invertebrates
Beryllium	40	USEPA 2005d	Ecological soil screening level for invertebrates
Cadmium	32	USEPA 2005e	Ecological soil screening level for plants
Chromium (total)	0.4	Efroymson et al. 1997a	Toxicological threshold for earthworms
Cyanide	0.9	CCME 2006	Canadian soil quality guideline based on agricultural land uses
Cobalt	13	USEPA 2005f	Ecological soil screening level for plants
Copper	70	USEPA 2006a	Ecological soil screening level for plants
Lead	120	USEPA 2005g	Ecological soil screening level for plants
Mercury	0.1	Efroymson et al. 1997a	Toxicological threshold for earthworms
Nickel	30	Efroymson et al. 1997b	Toxicological threshold for plants
Selenium	1	Efroymson et al. 1997b	Toxicological threshold for plants
Silver	560	USEPA 2006b	Ecoloigcal soil screening level for plants
Thallium	1	Efroymson et al. 1997b	Toxicological threshold for plants
Vanadium	2	Efroymson et al. 1997b	Toxicological threshold for plants
Zinc	50	Efroymson et al. 1997b	Toxicological threshold for plants

Notes:

NA = Not Available
MHSPE = Ministry of Housing, Spatial Planning and Environment
CCME = Canadian Council of Ministers of the Environment
USEPA = United States Environmental Protection Agency
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
BHC = Benzene hexachloride
µg/kg = microgram per kilogram
mg/kg = milligram per kilogram

TABLE 5-1
SOIL SCREENING VALUES
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
DRAFT CORRECTIVE MEASURES STUDY WORK PLAN
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Notes (continued):

(1) The screening value shown is an average of the target and intervention soil standards. The value is based on a default organic carbon content of 0.02 (2 percent), which represents a minimum value (adjustment range is 2 to 30 percent).

(2) The value represents a total concentration for chlorobenzenes (mono, di, tri, tetra, penta, and hexachlorobenzene).

(3) The value represents a total concentration for all chlorophenols (mono, di, tri, tetra, and pentachlorophenol).

(4) The value represents a total concentration for all phthalates.

(5) The value represents a sum of the DDT, DDD, and DDE concentrations.

(6) The value represents the sum of the aldrin, dieldrin, and endrin concentrations.

(7) Value represents the sum of alpha-BHC, beta-BHC, delta-BHC, and gamma-BHC concentrations.

Table References:

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USEPA. 2006b. Ecological Soil Screening Levels for Silver (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWEER Directive 9285.7-61

USEPA. 2005a. Ecological Soil Screening Levels for Antimony (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-61.

USEPA. 2005b. Ecological Soil Screening Levels for Arsenic (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-62.

TABLE 5-1
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USEPA. 2005d. Ecological Soil Screening Levels for Beryllium (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-63.

USEPA. 2005e. Ecological Soil Screening Levels for Cadmium (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-65.

USEPA. 2005f. Ecological Soil Screening Levels for Cobalt (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-67

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TABLE 5-2
GROUNDWATER SCREENING VALUES
SWMU 73 - DEFENSE REUTILIZATION SCRAPE METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Surface Water Screening Value (1)	Reference	Comment
Volatile Organics (ug/L):			
1,1,1,2-Tetrachloroethane	902	Buchman 1999	Acute LOEL with a safety factor of 10
1,1,1-Trichloroethane	312	USEPA 2001	EPA Region 4 chronic screening value
1,1,2,2-Tetrachloroethane	90.2	USEPA 2001	EPA Region 4 chronic screening value
1,1,2-Trichloroethane	340	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Pleuronectes platessa* [sand dab]) with a safety factor of 100
1,1-Dichloroethane	47.0 (2)	USEPA 1996a	Tier II Value
1,1-Dichloroethene	2,240	USEPA 2001	EPA Region 4 chronic screening value
1,2,3-Trichloropropane	274 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
1,2-Dibromo-3-chloropropane	100	USEPA 2003	Minimum acute value (48-hr EC_{50} for *Mercenaria mercenaria* [hard clam]) with a safety factor of 100
1,2-Dibromoethane (EDB)	48.0	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 100
1,2-Dichloroethane	1,130	USEPA 2001	EPA Region 4 chronic screening value
1,2-Dichloropropane	2,400	USEPA 2001	EPA Region 4 chronic screening value
2-Butanone (Methyl ethyl ketone)	40,000	USEPA 2003	Minimum acute value (96-hour NOEC for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 10
2-Hexanone	98.8 (2)	Suter II 1996	Tier II secondary chronic value
3-Chloropropene (Allyl chloride)	3.40 (2)	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Xenopus laevis* [clawed toad]) with a safety factor of 100
4-Methyl-2-pentanone (MIBK)	164	Suter II 1996	Tier II Secondary Chronic Value
Acetone	1,000	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Lumbriculus variegatus* [Oligochaete]) with a safety factor of 100
Acetonitrile	160,000 (2)	USEPA 2003	Minimum chronic value (21-day NOEC for *daphnia magna* based on reproduction)
Acrolein (Propenal)	0.55	USEPA 2001	EPA Region 4 chronic screening value
Acrylonitrile	58.1	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Americamysis bahia* [opossum shrimp]) with a safety factor of 100
Benzene	109	USEPA 2001	EPA Region 4 chronic screening value
Bromodichloromethane	6,400	Buchman 1999	Chronic LOEL for chemical class
Bromoform	640	USEPA 2001	EPA Region 4 chronic screening value
Bromomethane (Methyl bromide)	120	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Menidia beryllina* [inland silverside]) with a safety factor of 100
Carbon disulfide	650 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Alburnus alburnus* [bleak]) with a safety factor of 100
Carbon tetrachloride	1,500	USEPA 2001	EPA Region 4 chronic screening value
Chlorobenzene	105	USEPA 2001	EPA Region 4 chronic screening value
Chloroethane	NA	---	---
Chloroform	815	USEPA 2001	EPA Region 4 chronic screening value
Chloromethane (Methyl chloride)	2,700	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Menidia beryllina* [inland silverside]) with a safety factor of 100
Chloroprene	NA	---	---
cis-1,3-Dichloropropene	7.90	USEPA 2001	EPA Region 4 chronic screening value (cis and trans)
Dibromochloromethane	6,400	Buchman 1999	Chronic LOEL for chemical class
Dibromomethane (Methyl bromide)	6,400	Buchman 1999	Chronic LOEL for chemical class
Dichlorodifluoromethane	6,400	Buchman 1999	Chronic LOEL for chemical class
Ethylbenzene	4.30	USEPA 2001	EPA Region 4 chronic screening value
Ethyl methacrylate	NA	---	---

TABLE 5-2
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Chemical	Surface Water Screening Value [1]	Reference	Comment
Volatile Organics (ug/L):			
Iodomethane (Methyl iodide)	NA	---	---
Isobutanol (Isobutyl alcohol)	10,000	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Alburnus alburnus* [bleak]) with a safety factor of 100
Methacrylonitrile	NA	---	---
Methylene chloride (Dichloromethane)	2,560	USEPA 2001	EPA Region 4 chronic screening value
Methyl methacrylate	1,300 [2]	USEPA 2003	Minumum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
Pentachloroethane	281	Buchman 1999	Chronic LOEL
Propionitrile	15,200 [2]	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
Styrene	510	USEPA 2003	Minimum acute value (96-hr NOEC for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 10
Tetrachloroethene	45.0	USEPA 2001	EPA Region 4 chronic screening value
Toluene	37.0	USEPA 2001	EPA Region 4 chronic screening value
trans-1,2-dichloroethene	22,400	Buchman 1999	Acute LOEL (summation of all isomers) with a safety factor of 10
trans-1,3-Dichloropropene	7.90	USEPA 2001	EPA Region 4 chronic screening value (cis and trans)
trans-1,4-Dichloro-2-butene	NA	---	---
Trichloroethene	200	Buchman 1999	Acute LOEL with a safety factor of 10
Trichlorofluoromethane	6,400	Buchman 1999	Chronic LOEL for chemical class
Vinyl acetate	100	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Crangon crangon* [sand shrimp]) with a safety factor of 100
Vinyl chloride	87.8 [2]	Suter II 1996	Tier II secondary chronic value
Xylene	41.0 [3]	USEPA 2003	Minimum acute value (96-hr EC_{50} for *Strongylocentrotus droebachiensis* [green sea urchin]) with a safety factor of 100
Semi-Volatile Organics (ug/L):			
1,2,4,5-Tetrachlorobenzene	30.0	USEPA 2003	Minimum acute value (96-hr NOEC for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 10
1,2,4-Trichlorobenzene	4.50	USEPA 2001	EPA Region 4 chronic screening value
1,3,5-Trinitrobenzene	80.0 [2]	USEPA 2003	Minimum chronic value (71-day NOEC for *Oncorhynchus mykiss* [rainbow trout] based on reproduction)
1,2-Dichlorobenzene (o-Dichlorobenzene)	19.7	USEPA 2001	EPA Region 4 chronic screening value
1,3-Dichlorobenzene (m-Dichlorobenzene)	28.5	USEPA 2001	EPA Region 4 chronic screening value
1,4-Dichlorobenzene (p-Dichlorobenzene)	19.9	USEPA 2001	EPA Region 4 chronic screening value
1,4-Dioxane	67,000	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Menidia beryllina* [inland silverside]) with a safety factor of 100
1,4-Naphthoquinone	NA	---	---
1,4-Phenylenediamine (p-phenylenediamine)	200 [2]	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Oryzias latipes* [medaka]) with a safety factor of 100
1-Naphthylamine	NA	---	---
2,3,4,6-Tetrachlorophenol	44.0	Buchman 1999	Acute LOEL with a safety factor of 10
2,4,5-Trichlorophenol	11.0	Buchman 1999	Proposed CCC
2,4,6-Trichlorophenol	12.1	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Palaemonetes pugio* [daggerblade grass shrimp]) with a safety factor of 100
2,2'-Oxybis(1-chloropropane)	NA	---	---
2,4-Dichlorophenol	5.00	USEPA 2003	Minimum acute value (96-hr NOEC for *Allorchestes compressa* [scud]) with a safety factor of 10
2,4-Dimethylphenol	131	USEPA 2003	Minimum chronic value (28-day NOEC for *Menidia beryllina* [inland silverside] based on survival)
2,4-Dinitrophenol	48.5	USEPA 2001	EPA Region 4 chronic screening value
2,4-Dinitrotoluene	20.0 [2]	USEPA 2003	Minimum chronic value (21-day NOEC for *Daphnia magna* based on reproduction)

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Chemical	Surface Water Screening Value (1)	Reference	Comment
Semi-Volatile Organics (ug/L):			
2,6-Dichlorophenol	54.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Platichthys flesus* [european flounder]) with a safety factor of 100
2,6-Dinitrotoluene	60.0 (2)	USEPA 2003	Minimum chronic value (21-day NOEC for *Daphnia magna* based on reproduction)
2-Acetylaminofluorene	100 (2)	USEPA 2003	Minimum acute value (96-hr LOEC for *Xenopus laevis* [clawed toad]) with a safety factor of 10
2-Chloronaphthalene	0.75	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
2-Chlorophenol	53.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Crangon septemspinosa* [bay shrimp]) with a safety factor of 100
2-Naphthylamine	NA	---	---
2-Nitroaniline (o-Nitroaniline)	48.9 (2)	USEPA 2003	Minumum acute value (48-hr EC_{50} for *daphnia magna*) with a safety factor of 100
2-Nitrophenol (o-Nitrophenol)	10,000	USEPA 2003	Minimum chronic value (28-day MATC for *Cyprinodon variegatus* [sheepshead minnow] based on egg hatchability)
2-Picoline	8,979 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
3,3'-Dichlorobenzidine	10.5 (2)	USEPA 2003	Minimum acute value (48-hr EC_{50} for *Daphnia magna*) with a safety factor of 100
3,3'-Dimethylbenzidine	160 (2)	USEPA 2003	Minimum chronic value (21-day NOEC for *Daphnia magna* based on behavior [equilibrium])
3-Methylcholanthrene	NA	---	---
3-Nitroaniline (m-Nitroaniline)	9.80 (2)	USEPA 2003	Minimum acute value (48-hr EC_{50} for *Daphnia magna*) with a safety factor of 100
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	10.0 (2)	USEPA 2003	Minimum chronic value (21-day NOEC for *Daphnia magna* based on reproduction)
4-Aminobiphenyl	NA	---	---
4-Bromophenylphenyl ether	3.60 (2)	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Daphnia magna*) with a safety factor of 100
4-Chloro-3-methylphenol	1,300 (2)	USEPA 2003	Minimum chronic value (21-day NOEC for *Daphnia magna* based on for reproduction)
4-Chloroaniline	129	Buchman 1999	Chronic LOEL for chemical class
4-Chlorophenylphenyl ether	7.30 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Salvelinus fontinalis* [brook trout]) with a safety factor of 100
4-Nitroaniline (p-Nitroaniline)	170 (2)	USEPA 2003	Minimum acute value (48-hr EC_{50} for *Daphnia magna*) with a safety factor of 100)
4-Nitrophenol (p-nitrophenol)	71.7	USEPA 2001	EPA Region 4 chronic screening value
4-Nitroquinoline-1-oxide	NA	---	---
5-Nitro-o-toluidine	190 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
7,12-Dimethylbenz(a)anthracene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Acetophenone	1,550 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Pimephales promelas* [fathead minnow]) with a safety factor of 100
A,A-Dimethylphenethylamine	NA	---	---
Aniline	294	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Crangon septemspinosa* [sand shrimp]) with a safety factor of 100
Aramite	0.60 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Gammarus fasciatus* [scud]) with a safety factor of 100
Benzyl alcohol	150	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Menidia beryllina* [inland silverside]) with a safety factor of 100
bis(2-Chloroethoxy)methane	6,400	Buchman 1999	Chronic LOEL for the chemical class
bis(2-Chloroethyl)ether	910 (2)	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Oncorhynchus mykiss* [rainbow trout]) with a safety factor of 100
bis(2-Ethylhexyl)phthalate	360	Buchman 1999	Proposed CCC
Butylbenzylphthalate	29.4	USEPA 2001	EPA Region 4 chronic screening value
Chlorobenzilate	76.0	USEPA 2005	Minimum acute value (96-hr NOEL for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 10
Diallate	82.0 (2)	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Rasbora heteromorpha* [harlequinfish]) with a safety factor of 100

TABLE 5-2
GROUNDWATER SCREENING VALUES
SWMU 73 - DEFENSE REUTILIZATION SCRAPE METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Surface Water Screening Value (1)	Reference	Comment
Semi-Volatile Organics (ug/L):			
Dibenzofuran	100	USEPA 2003	Minimum acute value (96-hr NOEC for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 10
Diethylphthalate	75.9	USEPA 2001	EPA Region 4 chronic screening value
Dimethylphthalate	580	USEPA 2001	EPA Region 4 chronic screening value
Dimethoate	2,500	USEPA 2005	Minimum acute value (96-hr NOEL for *Americamysis bahia* [mysid shrimp]) with a safety factor of 10
Di-n-butylphthalate	3.40	USEPA 2001	EPA Region 4 chronic screening value
Di-n-octylphthalate	3,450	USEPA 2003	Minimum acute value (96-hr NOEC for *Americamysis bahia* [opossum shrimp]) with a safety factor of 10
Ethyl methanesulfonate	NA	---	---
Hexachlorobenzene	10.0	USEPA 2003	Minimum acute value (48-hr EC_{50} for *Crassostrea virginica* [Virginia oyster]) with a safety factor of 100
Hexachlorobutadiene	0.32	USEPA 2001	EPA Region 4 chronic screening value
Hexachlorocyclopentadiene	0.07	USEPA 2001	EPA Region 4 chronic screening value
Hexachloroethane	9.40	USEPA 2001	EPA Region 4 chronic screening value
Hexachloropropene	NA	---	---
Isodrin	0.12 (2)	USEPA 2003	Minimum acute value (24-hr LC50 for *Lepomis macrochirus* [bluegill]) with a safety factor of 100
Isophorone	129	USEPA 2001	EPA Region 4 chronic screening value
Isosafrole	NA	---	---
m-Dinitrobenzene (1,3-Dinitrobenzene)	500 (2)	USEPA 2003	Minimum chronic value (69-day NOEC for *Oncorhynchus mykiss* [rainbow trout] based on reproduction)
m-Cresol (3-Methylphenol)	100	USEPA 2003	Minimum acute value (48-hr LC_{50} for *Crangon crangon* [sand shrimp]) with a safety factor of 100
Methapyrilene	NA	---	---
Methyl methanesulfonate	NA	---	---
N-Nitrosodiethylamine	330,000	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
N-Nitrosodimethylamine	13,650 (2)	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Dugesia dorotocephala* [flatworm]) with a safety factor of 100
N-Nitroso-di-n-butylamine	330,000	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
N-Nitroso-di-n-propylamine	330,000	Assumed	Acute LOEL for chemical class with a safety factor of 10
N-Nitrosodiphenylamine	33,000	USEPA 2001	EPA Region 4 chronic screening value
N-Nitrosomethylethylamine	330,000	Assumed	Acute LOEL for chemical class with a safety factor of 10
N-Nitrosomorpholine	NA	---	---
N-Nitrosopiperidine	NA	---	---
N-Nitrosopyrrolidine	NA	---	---
Nitrobenzene	66.8	USEPA 2001	EPA Region 4 chronic screening value
o-Cresol (2-Methylpheneol)	102	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Elasmopus pectinicrus* [scud]) with a safety factor of 100
o-Toluidine	400	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Elasmopus pectinicrus* [scud]) with a safety factor of 100
p-Cresol (4-Methylphenol)	50.0	USEPA 2003	Minimum acute value (96-hr EC_{50} for *Strongylocentrotus droebachiensis* [green sea urchin]) with a safety factor of 100
p-(Dimethylamino)azobenzene	NA	---	---
Pentachlorobenzene	129	USEPA 2001	EPA Region 4 chronic screening value
Pentachloronitrobenzene	0.23	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Americamysis bahia* [opossum shrimp]) with a safety factor of 100
Pentachlorophenol	7.90	USEPA 2006	CCC
Phenacetin	NA	---	---
Phenol	58.0	USEPA 2001	EPA Region 4 chronic screening value

TABLE 5-2
GROUNDWATER SCREENING VALUES
SWMU 73 - DEFENSE REUTILIZATION SCRAPE METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Surface Water Screening Value [1]	Reference	Comment
Semi-Volatile Organics (ug/L):			
Pronamide	35.0	USEPA 2003	Minimum acute value (96-hr EC_{50} for *Crassostrea virginica* [Virginia oyster]) with a safety factor of 100
Pryridine	500	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Crangon septemspinosa* [sand shrimp]) with a safety factor of 100
Safrole	NA	---	---
Sulfotepp	3.0	USEPA 2005	Minimum acute value (96-hr NOEC for *Lepomis macrochirus* [bluegill sunfish]) with a safety factor of 10
Thionazin	NA	---	---
o,o,o-Triethylphosphorothioate	NA	---	---
PAHs (ug/L):			
1-Methylnaphthalene	19.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Cancer magister* [dungeness crab]) with a safety factor of 100
2-Methylnaphthalene	3.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Gadus morhua* [Atlantic cod]) with a safety factor of 100
Acenaphthene	9.70	USEPA 2001	EPA Region 4 chronic screening value
Acenaphthylene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Anthracene	50.0	USEPA 1996b	Acute value (LC_{50}) with a safety factor of 100
Benzo(a)anthracene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Benzo(a)pyrene	10.0	USEPA 1996b	Acute value (LC_{50}) with a safety factor of 100
Benzo(b)fluoranthene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Benzo(g,h,i)perylene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Benzo(k)fluoranthene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Chrysene	10.0	USEPA 1996b	Acute value (LC_{50}) with a safety factor of 100
Dibenzo(a,h)anthracene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Fluoranthene	11.0	USEPA 1996a	Final Chronic Value
Fluorene	10.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Nereis arenaceodentata* [polychaete]) with a safety factor of 100
Indeno(1,2,3-cd)pyrene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Naphthalene	23.5	USEPA 2001	EPA Region 4 chronic screening value
Phenanthrene	8.30	USEPA 1996a	Final Chronic Value
Pyrene	30.0	Buchman 1999	Acute LOEL for chemical class with a safety factor of 10
Inorganics (ug/L):			
Antimony	500	Buchman 1999	Proposed CCC
Arsenic	36.0	USEPA 2006	Total recoverable CCC for trivalent arsenic
Barium	50,000	USEPA 2003	Minimum acute value (96-hr NOEC for *Cyprinodon variegatus* [sheepshead minnow]) with a safety factor of 100
Beryllium	310	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Fundulus heteroclitus* [mummichog]) with a safety factor of 100
Cadmium	8.85	USEPA 2006	Total recoverable CCC
Chromium (total)	50.4	USEPA 2006	Total recoverable CCC for hexavalent chromium
Cobalt	45.0	USEPA 2003	Minimum acute value (96-hr LC_{50} for *Nitocra spinipes* [Harpacticoid copepod] with a safety factor of 100
Copper	3.73	USEPA 2006	Total recoverable CCC
Lead	8.52	USEPA 2006	Total recoverable CCC
Mercury	1.11	USEPA 2006	Total recoverable CCC
Nickel	8.28	USEPA 2006	Total recoverable CCC
Selenium	71.1	USEPA 2006	Total recoverable CCC
Silver	0.23	USEPA 2001	EPA Region 4 chronic screening value

TABLE 5-2
GROUNDWATER SCREENING VALUES
SWMU 73 - DEFENSE REUTILIZATION SCRAPE METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Surface Water Screening Value [1]	Reference	Comment
Metals (ug/L):			
Thallium	21.3	USEPA 2001	EPA Region 4 chronic screening value
Tin	NA	---	---
Vanadium	120 [2]	USEPA 2003	Minimum chronic value (28-day NOEC for *Pimephales promelas* [fathead minnow] based on growth)
Zinc	85.6	USEPA 2006	Total recoverable CCC

Notes:

NA = Not Available
EPA = Environmental Protection Agency
CCC = Criteria Continuous Concentration
PAH = Polynuclear Aromatic Hydrocarbon
LOEL = Lowest Observed Effect Level
MATC = Maximum Acceptable Toxicant Concentra
NOEC = No Observed Effect Concentration

NOEL = No Observed Effect Level
USEPA = United States Environmental Protection Agency
CCC = Criteria Continuoous Concentration
EC_{50} = Median Effective Concentration
LC_{50} = Median Lethal Concentration
µg/L = microgram per liter

[1] The values shown are marine/estuarine screening values unless otherwise noted.
[2] The chemical lacks a marine/estuarine surface water screening value. The value shown is a freshwater screening value.
[3] The value shown is for o-xylene.

Table References:

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TABLE 5-3
INGESTION-BASED SCREENING VALUES FOR BIRDS
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	Test Material	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Volatile Organics:									
1,1,1,2-Tetrachloroethane	---	---	---	---	---	---	NA	NA	---
Carbon tetrachloride	---	---	---	---	---	---	NA	NA	---
Chlorobenzene	---	---	---	---	---	---	NA	NA	---
Chloroform	---	---	---	---	---	---	NA	NA	---
Ethylbenzene	---	---	---	---	---	---	NA	NA	---
Pentachloroethane	---	---	---	---	---	---	NA	NA	---
Styrene	---	---	---	---	---	---	NA	NA	---
Toluene	---	---	---	---	---	---	NA	NA	---
Trichloroethene	---	---	---	---	---	---	NA	NA	---
Xylene	Quail	0.191	Subacute	?	"Toxicity"	---	405	40.5	Hill and Camardese 1986
Semi-Volatile Organics:									
1,2,4,5-Tetrachlorobenzene	---	---	---	---	---	---	NA	NA	---
1,2,4-Trichlorobenzene	---	---	---	---	---	---	NA	NA	---
1,2-Dichlorobenzene (o-Dichlorobenzene)	Northern bobwhite	0.157	14 days	Oral (gavage)	Growth/mortality	?	2,500	250	Grimes and Jaber 1989
1,3-Dichlorobenzene (m-Dichlorobenzne)	Northern bobwhite	0.157	14 days	Oral (gavage)	Growth/mortality	?	2,500	250	Grimes and Jaber 1989
1,4-Dichlorobenzene (p-Dichlorobenzne)	Northern bobwhite	0.157	14 days	Oral (gavage)	Growth/mortality	?	2,500	250	Grimes and Jaber 1989
2,3,4,6-Tetrachlorophenol	---	---	---	---	---	---	NA	NA	---
2,4,5-Trichlorophenol	---	---	---	---	---	---	NA	NA	---
2,4,6-Trichlorophenol	---	---	---	---	---	---	NA	NA	---
2,4-Dichlorophenol	---	---	---	---	---	---	NA	NA	---
2-Acetylaminofluorene	---	---	---	---	---	---	NA	NA	---
2-Chloronaphthalene	---	---	---	---	---	---	NA	NA	---
3,3'-Dichlorobenzidine	---	---	---	---	---	---	NA	NA	---
3,3-Dimethylbenzidine	---	---	---	---	---	---	NA	NA	---
3-Methylcholanthrene	---	---	---	---	---	---	NA	NA	---
4-Bromophenylphenyl ether	---	---	---	---	---	---	NA	NA	---
4-Chloro-3-methylphenol	---	---	---	---	---	---	NA	NA	---
4-Chlorophenylphenyl ether	---	---	---	---	---	---	NA	NA	---
7-12-Dimethyl benz(a)anthracene	---	---	---	---	---	---	NA	NA	---
Aramite	---	---	---	---	---	---	NA	NA	---
bis(2-Ethylhexyl)phthalate	Ringed dove	0.155	4 weeks	Oral in diet	Reproduction	Not Applicable	11.0	1.10	Sample et al. 1996
Butylbenzylphthalate	---	---	---	---	---	---	NA	NA	---
Chlorobenzilate	Bobwhite quail	?	14 days	Oral (gavage)	Mortality	Not Applicable	19.73	9.73	USEPA 2005a
Diallate	---	---	---	---	---	---	NA	NA	---
Dibenzofuran	---	---	---	---	---	---	NA	NA	---
Diethylphthalate	---	---	---	---	---	---	NA	NA	---
Di-n-butylphthalate	Ringed dove	0.155	4 weeks	Oral in diet	Reproduction	Not Applicable	1.10	0.11	Sample et al. 1996
Di-n-octylphthalate	Ring-necked pheasant	1.00	?	?	Mortality	Not Applicable	500	50.0	TERRTOX 1998
Dinoseb (2-sec-butyl-4,6-Dintrophenol)	Ring-necked pheasant	?	14 days	Oral (gavage)	Mortality	Not Applicable	2.64	0.264	USEPA 2005a
Hexachlorobenzene	Japanese quail	0.19	90 days	Oral	Reproduction	Not Applicable	0.80	0.08	Coulston and Kolbye 1994
Hexachlorobutadiene	Japanese quail	0.19	?	Oral	Reproduction	Not Applicable	8.00	2.50	Coulston and Kolbye 1994
Hexachlorocyclopentadiene	---	---	---	---	---	---	NA	NA	---
Hexachloroethane	---	---	---	---	---	---	NA	NA	---
Hexachlorophene	---	---	---	---	---	---	NA	NA	---
Hexachloropropene	---	---	---	---	---	---	NA	NA	---
Isosafrole	---	---	---	---	---	---	---	---	---

TABLE 5-3
INGESTION-BASED SCREENING VALUES FOR BIRDS
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	Test Material	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Semi-Volatile Organics:									
N-Nitrosodiphenylamine	---	---	---	---	---	---	NA	NA	---
p-Dimethylaminoazobenzene	---	---	---	---	---	---	NA	NA	---
Pentachlorobenzene	---	---	---	---	---	---	NA	NA	---
Pentachloronitrobenzene	Chicken	1.50	35 weeks	Oral in diet	Reproduction	Not Applicable	70.7	7.07	Sample et al. 1996
Pentachlorophenol	Chicken	1.50	8 weeks	Oral	Growth	Not Applicable	200	100	Eisler 1989
Pronamide	---	---	---	---	---	---	NA	NA	---
Sulfotepp	---	---	---	---	---	---	NA	NA	---
PAHs:									
1-Methylnaphthalene	Mallard duck	1.04	7 months	Oral in diet	Hepatic	Not Applicable	228	22.8	Patton and Dieter 1980
2-Methylnaphthalene	Mallard duck	1.04	7 months	Oral in diet	Hepatic	Not Applicable	228	22.8	Patton and Dieter 1980
Acenaphthene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Acenaphthylene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Anthracene	Mallard duck	1.043	7 months	Oral in diet	Hepatic	Not Applicable	228	22.8	Patton and Dieter 1980
Benzo(a)anthracene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Benzo(a)pyrene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Benzo(b)fluoranthene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Benzo(g,h,i)perylene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Benzo(k)fluoranthene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Chrysene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Dibenz(a,h)anthracene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Fluoranthene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Fluorene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Indeno(1,2,3-cd)pyrene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Naphthalene	Mallard duck	1.04	7 months	Oral in diet	Hepatic	Not Applicable	228	22.8	Patton and Dieter 1980
Phenanthrene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Pyrene	Chicken	1.50	34 days	Oral in diet	Reproduction	Not Applicable	395	39.5	Rigdon and Neal 1963
Organochlorine Pesticides:									
4,4'-DDD	American kestrel	0.115	2 years	Oral	Reproduction	Not Applicable	0.50	0.05	McLane and Hall 1972
4,4'-DDE	American kestrel	0.115	2 years	Oral	Reproduction	Not Applicable	0.50	0.05	McLane and Hall 1972
4,4'-DDT	American kestrel	0.115	2 years	Oral	Reproduction	Not Applicable	0.50	0.05	McLane and Hall 1972
Aldrin	Mallard duck	1.134	Chronic	Oral	Mortality	Not Applicable	5.00	0.50	Tucker and Crabtree 1970
alpha-BHC	Japanese quail	0.15	90 days	Oral in diet	Reproduction	Not Applicable	2.25	0.56	Sample et al. 1996
alpha-Chlordane	Red-winged blackbird	0.064	84 Days	Oral in diet	Mortality	Not Applicable	10.7	2.14	Sample et al. 1996
beta-BHC	Japanese quail	0.15	90 days	Oral in diet	Reproduction	Not Applicable	2.25	0.56	Sample et al. 1996
delta-BHC	Japanese quail	0.15	90 days	Oral in diet	Reproduction	Not Applicable	2.25	0.56	Sample et al. 1996
Dieldrin	Barn owl	0.466	2 years	Oral in diet	Reproduction	Not Applicable	0.77	0.077	Sample et al. 1996
Endosulfan 1	Grey partridge	0.40	4 weeks	Oral in diet	Reproduction	Not Applicable	100	10	Sample et al. 1996
Endosulfan 11	Grey partridge	0.40	4 weeks	Oral in diet	Reproduction	Not Applicable	100	10	Sample et al. 1996
Endosulfan sulfate	Grey partridge	0.40	4 weeks	Oral in diet	Reproduction	Not Applicable	100	10.0	Sample et al. 1996
Endrin	Screech owl	0.181	>83 days	Oral in diet	Reproduction	Not Applicable	0.10	0.01	Sample et al. 1996
Endrin aldehyde	Screech owl	0.181	>83 days	Oral in diet	Reproduction	Not Applicable	0.10	0.01	Sample et al. 1996
gamma-BHC (Lindane)	Mallard duck	1.00	8 weeks	Oral (intubation)	Reproduction	Not Applicable	20.0	2.00	Sample et al. 1996
gamma-Chlordane	Red-winged blackbird	0.064	84 Days	Oral in diet	Mortality	Not Applicable	10.7	2.14	Sample et al. 1996
Heptachlor	Quail	0.191	5 days	Oral in diet	Mortality	Not Applicable	4.05	0.405	Hill et. al 1975
Heptachlor epoxide	Quail	0.191	5 days	Oral in diet	Mortality	Not Applicable	4.05	0.405	Hill et. al 1975

TABLE 5-3
INGESTION-BASED SCREENING VALUES FOR BIRDS
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
DRAFT CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	Test Material	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Organochlorine Pesticides:									
Kepone	Mallard duck	?	14 days	Oral (gavage)	Mortality	Not Applicable	11.67	1.67	USEPA 2004
Methoxychlor	Quail	0.191	5 days	Oral in diet	Mortality	Not Applicable	4,050	405	Hill and Camardese 1986
Toxaphene	Mallard duck	1.043	5 days	Oral in diet	Mortality	Not Applicable	3.07	0.307	Hill and Camardese 1986
Inorganics:									
Antimony	Northern bobwhite	0.19	6 weeks	Oral	?	Unknown	47,400	4,740	Opresko et al. 1993
Arsenic	Chicken	Unknown	19 days	Oral in diet	Mortality	Unknown	22.4	2.24	USEPA 2005b
Barium	One-day old chicks	0.121	4 weeks	Oral in diet	Mortality	Barium hydroxide	41.7	20.8	Sample et al. 1996
Beryllium	---	---	---	---	---	---	NA	NA	---
Cadmium	Multiple species	Unknown	Various	Oral in diet	Reproduction/growth	Unknown	11.47	1.47 (1)	USEPA 2005c
Chromium	Multiple species	Unknown	Various	Oral in diet	Reproduction/growth	Trivalent chromium	26.6	2.66 (1)(2)	USEPA 2005d
Cobalt	Multiple species	Unknown	Various	Oral in diet	Growth	Unknown	76.1	7.61 (1)	USEPA 2005e
Copper	Chicken	Unknown	84 days	Oral in diet	Reproduction	Unknown	12.1	4.05	USEPA 2006a
Lead	Chicken	Unknown	4 weeks	Oral in diet	Reproduction	Unknown	3.26	1.63	USEPA 2005f
Mercury	Mallard duck	1.00	3 generations	Oral in diet	Reproduction	Methyl mercury dicyandiamide	0.078	0.026	USEPA 1997
Nickel	Mallard duckling	0.782	90 days	Oral in diet	Growth/mortality	Nickel sulfate	107	77.4	Sample et al. 1996
Selenium	Mallard duck	1.00	100 days	Oral in diet	Reproduction	Selanomethionine	0.80	0.40	Sample et al. 1996
Silver	Turkey	Unknown	5 weeks	Oral in diet	Growth	Unknown	20	2.02	USEPA 2006b
Thallium	European starling	Unknown	acute	Oral	Unknown	Unknown	3.50	0.35	USEPA 1999
Tin	Japanese quail	0.15	6 weeks	Oral in diet	Reproduction	bis(Tributyltin)-oxide	16.9	6.80	Sample et al. 1996
Vanadium	Chicken	Unknown	5 weeks	Oral in diet	Growth	Unknown	0.688	0.344	USEPA 2005g
Zinc	White leghorn hen	1.935	44 weeks	Oral in diet	Reproduction	Zinc sulfate	131	14.5	Sample et al. 1996

Notes:

NA = Not Available
NOAEL = No Observed Adverse Effect Level
LOAEL = Lowest Observed Adverse Effect Level
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
BHC = Benzene hexachloride
USEPA = United States Environmental Protection Agency
mg/kg/day = milligram per kiligram-body weight per day
kg = kilogram

(1) The NOAEL value represents a geometric mean of NOAEL values for growth and/or reproduction. The NOAEL value was used bu the USEPA in the derivation of the avian ecological soil screening level.
(2) The NOAEL value shown is for trivalent chromium.

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TABLE 5-3
INGESTION-BASED SCREENING VALUES FOR BIRDS
SWMU 73 - FORMER DEFENSE REUTILIZATION OFFICE (DRMO) SCRAP METAL YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Table References (continued):

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USEPA. 2005c. Ecological Soil Screening Levels for Cadmium (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-65.

USEPA. 2005d. Ecological Soil Screening Levels for Chromium (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-66.

USEPA. 2005e. Ecological Soil Screening Levels for Cobalt (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-67

USEPA. 2005f. Ecological Soil Screening Levels for Lead (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-70.

USEPA. 2005g. Ecological Soil Screening Levels for Vanadium (Interim Final). Office of Solid Waste and Emergency Response, Washington, D.C. OSWER Directive 9285.7-75.

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USEPA. 1997. Mercury Study Report to Congress. Volume VI: An Ecological Assessment for Anthropogenic Mercury Emissions in the United States. EPA-452/R-97-008.

FIGURES

4 0 2 4 8

1 inch = 4 miles

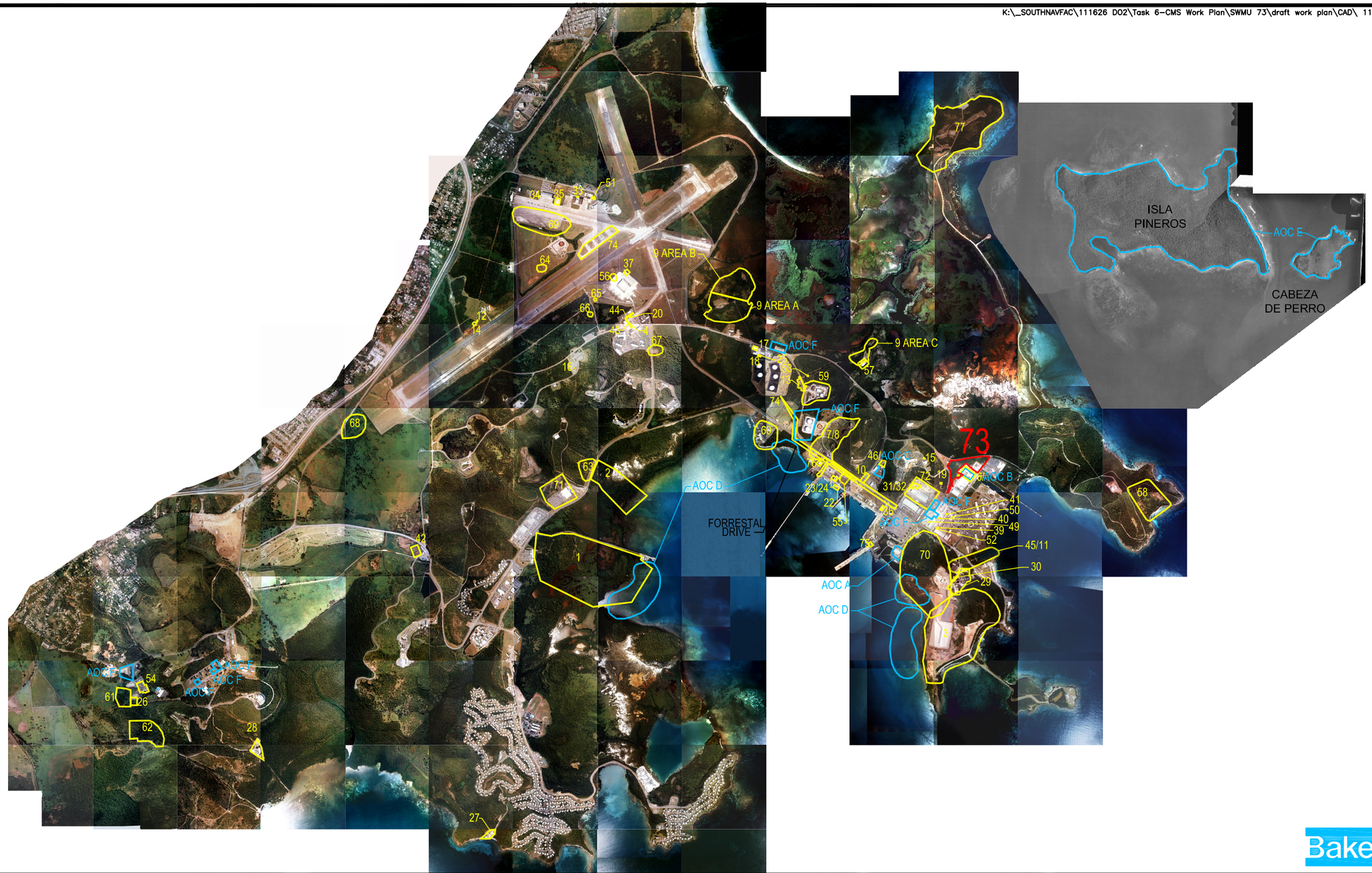
Baker

FIGURE 1-1
REGIONAL LOCATION MAP
SWMU 73-DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN

SOURCE: METRODATA, INC., 1999.

NAVAL ACTIVITY PUERTO RICO

K:_SOUTHNAVFAC\111626 D02\Task 6-CMS Work Plan\SWMU 73\draft work plan\CAD\ 111626_73_02



Baker

LEGEND

1 – SWMUs

73 – AREA TO WHICH THIS INVESTIGATION PERTAINS

AOC D – AOCs

SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.

3000 0 1500 3000

1 inch = 3000 ft.

FIGURE 1-2
SWMU/AOC LOCATION MAP
SWMU 73-DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN

NAVAL ACTIVITY PUERTO RICO

300 0 150 300
1 inch = 300 ft.

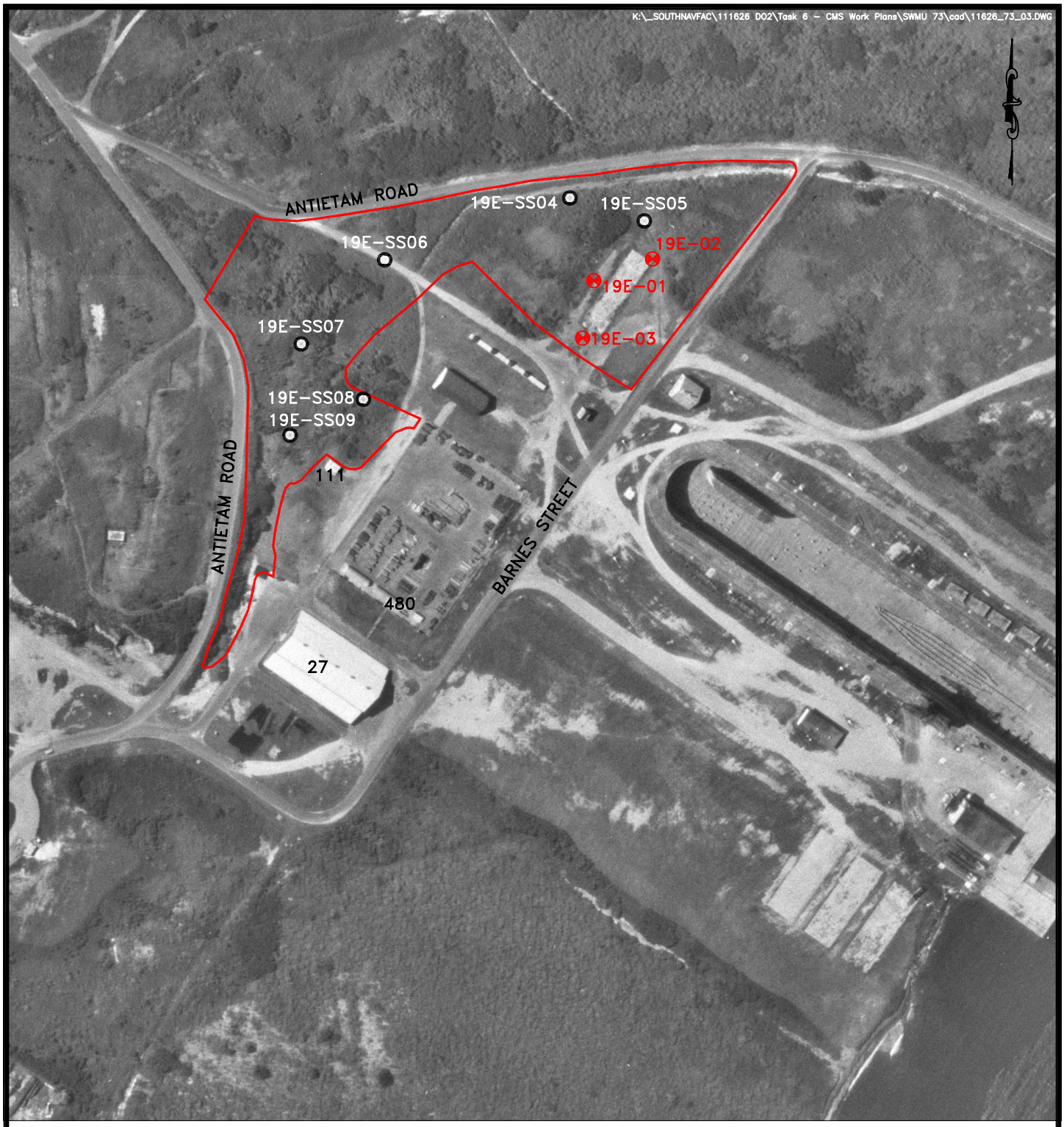
Baker

LEGEND
- SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- SWMU SITE BOUNDARY

SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.
AERIAL IMAGE FROM 1998

FIGURE 1-3
ECP SAMPLE LOCATION MAP
SWMU 73-DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN

NAVAL ACTIVITY PUERTO RICO



300 0 150 300
1 inch = 300 ft.

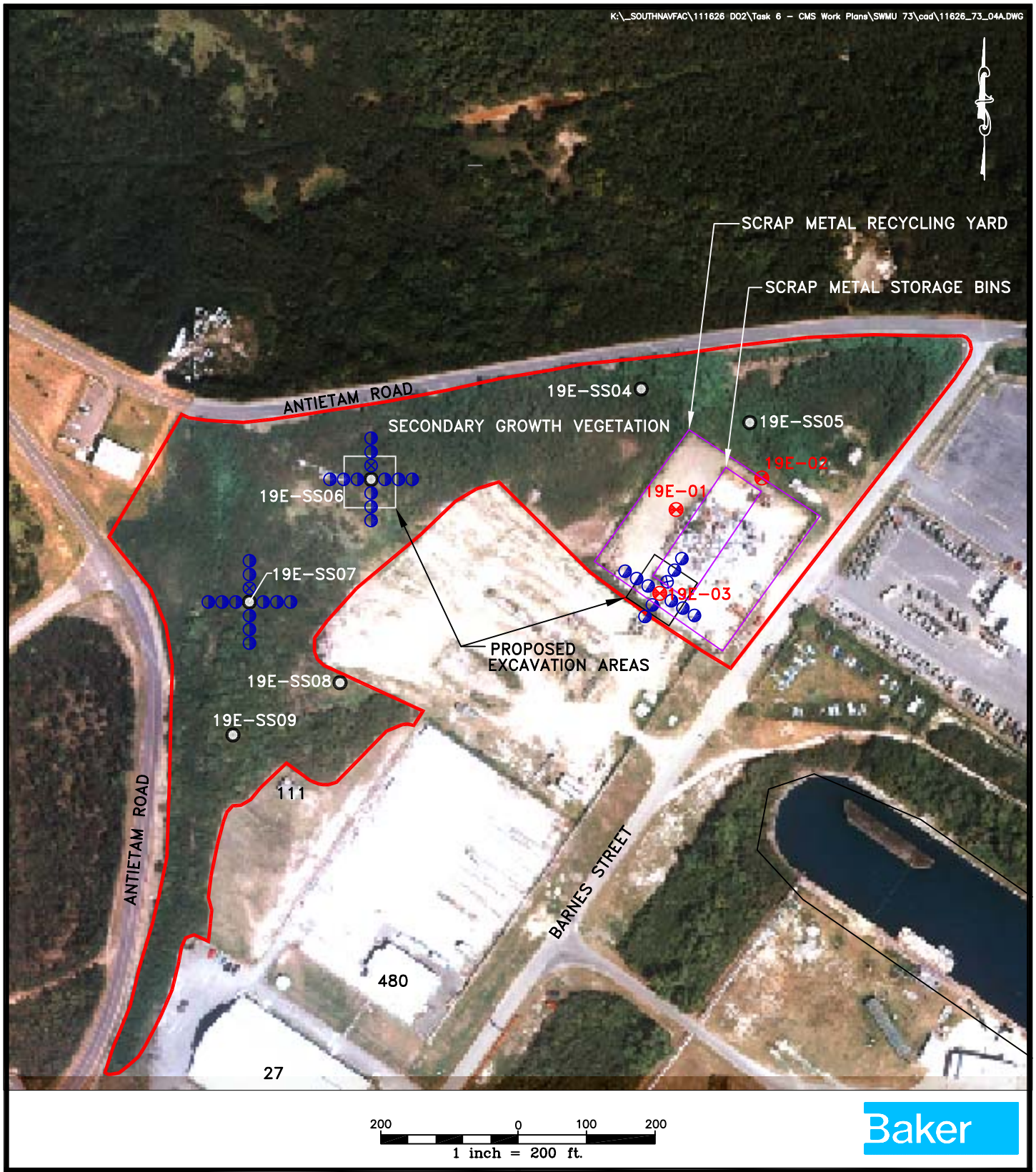
Baker

LEGEND
- SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- SWMU SITE BOUNDARY

SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.

FIGURE 1-4
1958 AERIAL MAP
SWMU 73-DRMO SCRAP
METAL RECYCLING YARD
CMS WORK PLAN

NAVAL ACTIVITY PUERTO RICO



LEGEND

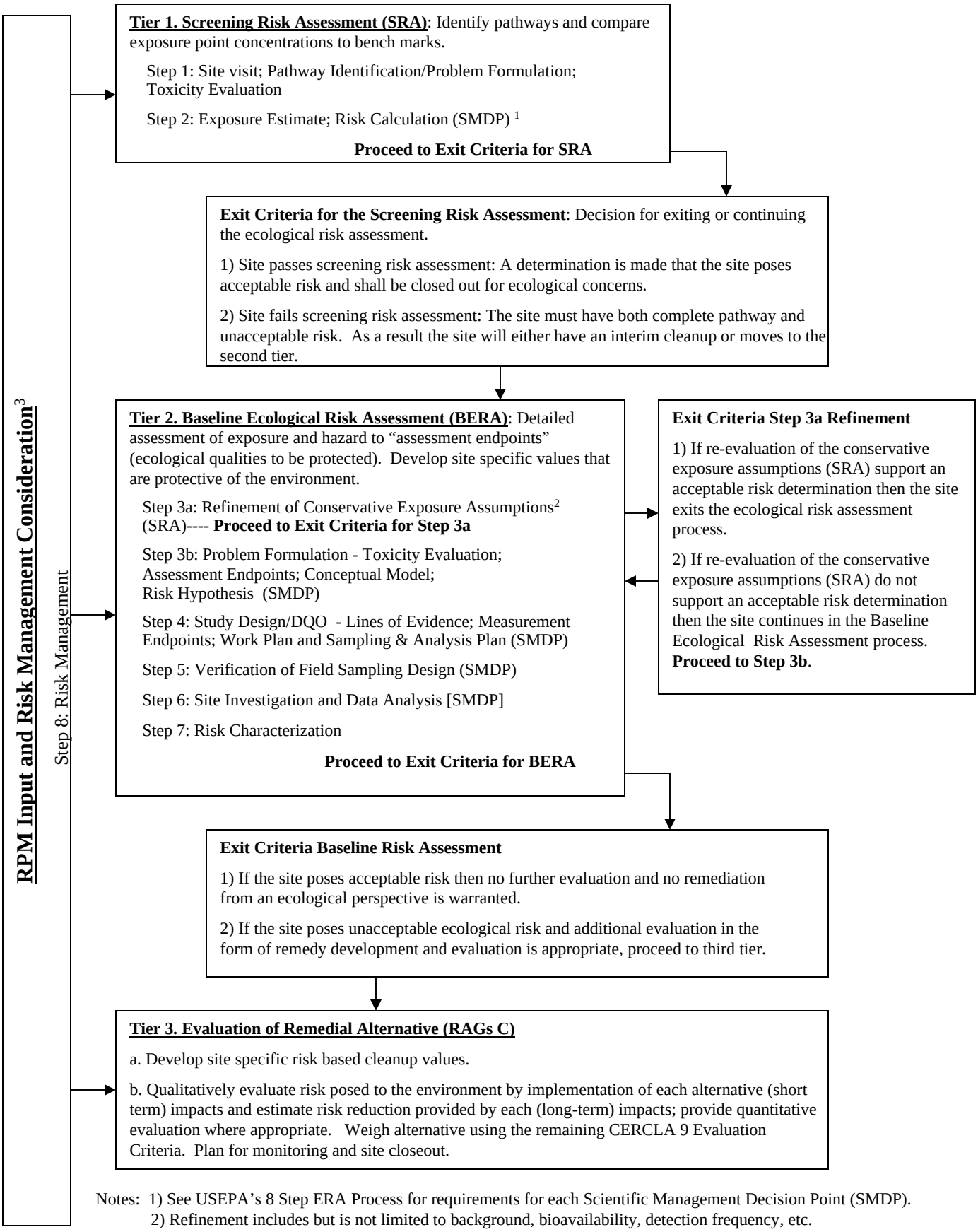
- ⊗ – SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLE LOCATION, (ECP 2004)
- ○ – SURFACE SOIL SAMPLE LOCATION, (ECP 2004)
- ◇ – SWMU SITE BOUNDARY
- ▭ – PROPOSED LIMIT OF EXCAVATIONS
- ◑ – PROPOSED SURFACE SOIL SAMPLING LOCATION
- ⊗ – PROPOSED SURFACE SOIL, SUBSURFACE SOIL, AND GROUNDWATER SAMPLING LOCATION

SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.
AERIAL IMAGE FROM 1998

FIGURE 3-1
PROPOSED SAMPLE LOCATION MAP
SWMU 73-DRMO SCRAP
METAL RECYCLING YARD
CMS WORK PLAN

NAVAL ACTIVITY PUERTO RICO

Figure 5-1: Navy Ecological Risk Assessment Tiered Approach



Notes: 1) See USEPA's 8 Step ERA Process for requirements for each Scientific Management Decision Point (SMDP).
2) Refinement includes but is not limited to background, bioavailability, detection frequency, etc.
3) Risk Management is incorporated throughout the tiered approach.

FIGURE 5-2

STATISTICAL ANALYSIS PROCESS
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

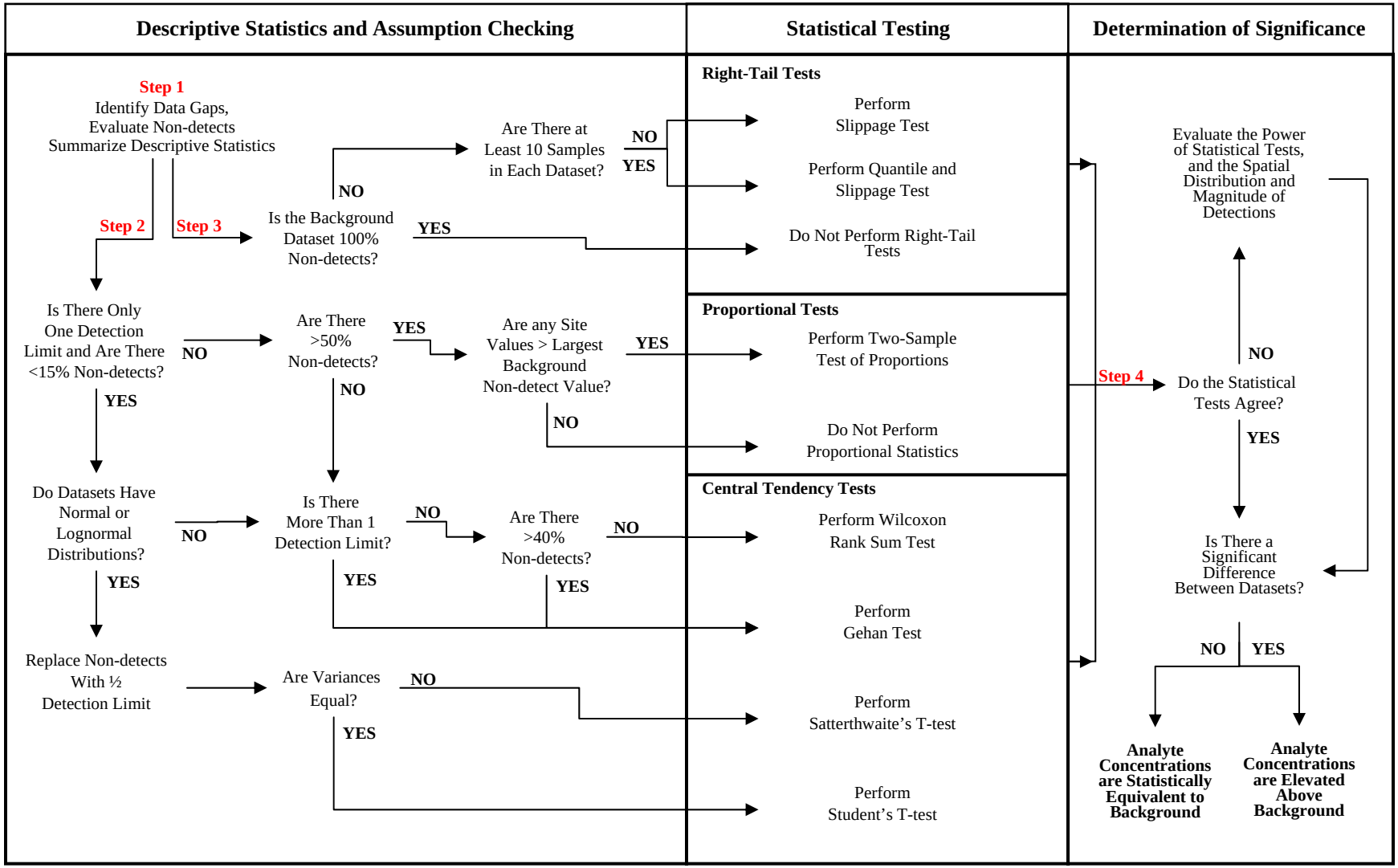


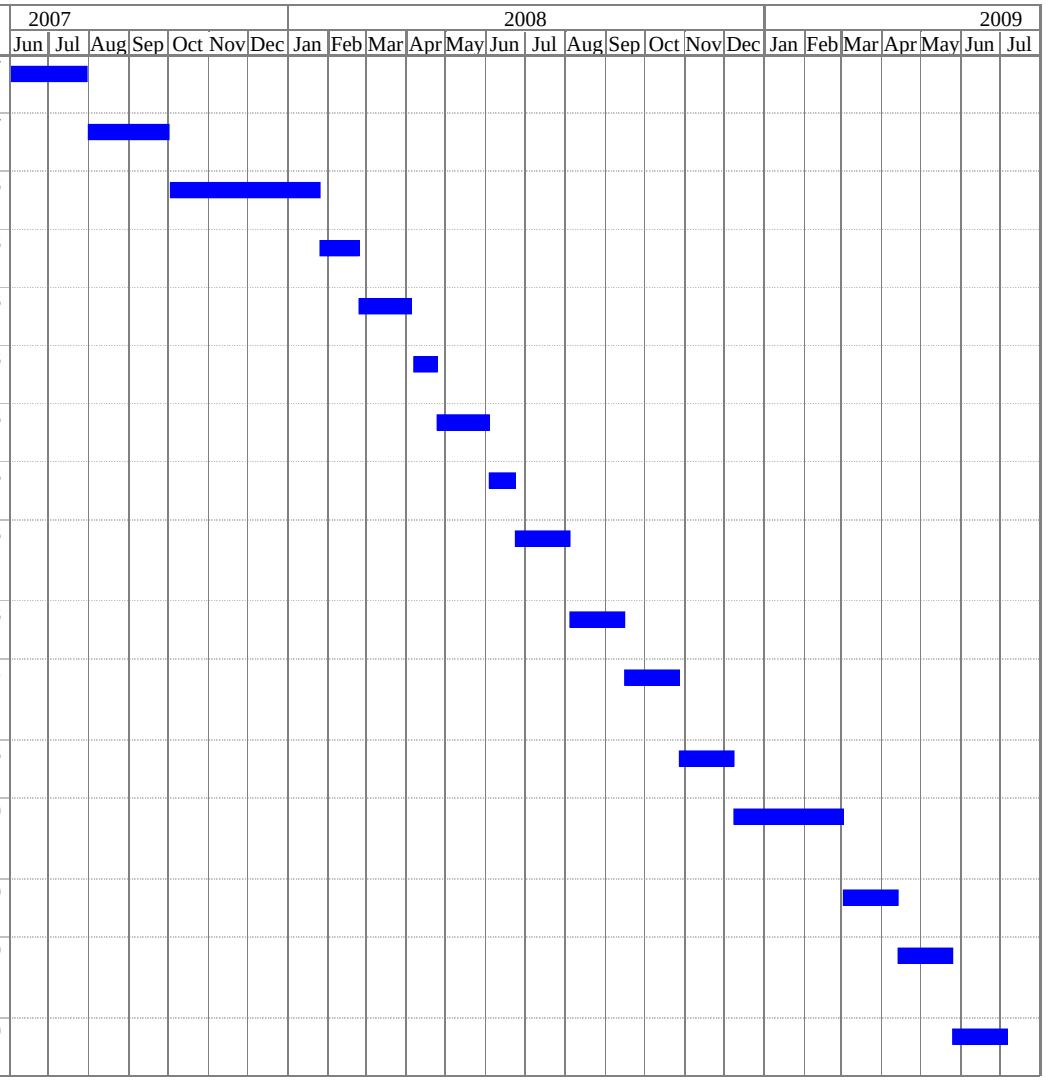
Figure Adapted from NFESC, 1998

T-tests performed on log-transformed data if datasets have lognormal distributions.

Revised: January 25, 2008

FIGURE 9-1
PROPOSED PROJECT SCHEDULE
SWMU 73
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

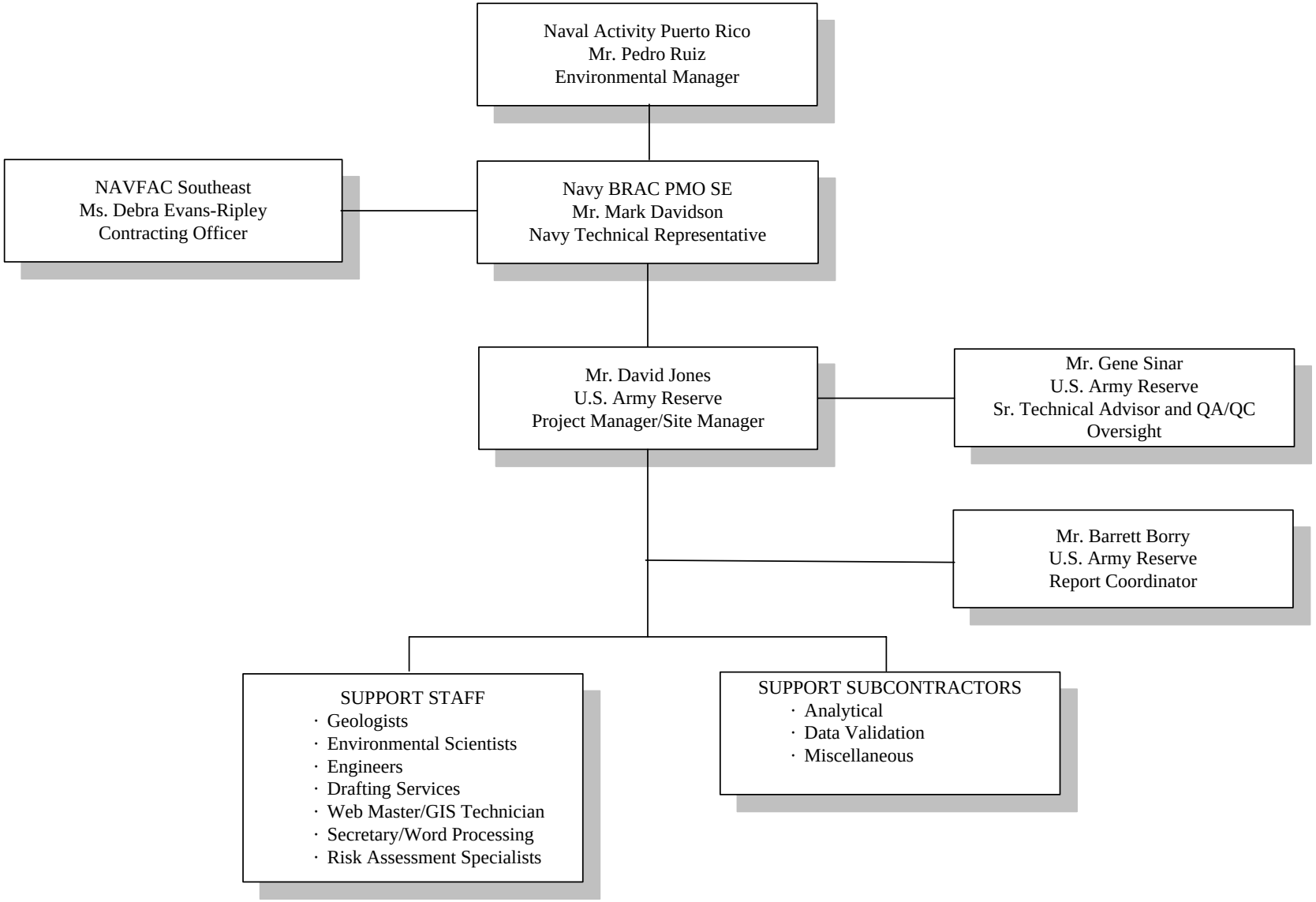
ID	Task Name	Duration	Start	Finish
1	Draft CMS Work Plan to the EPA	60 edays	6/1/07	7/31/07
2	EPA Review	62 edays	8/1/07	10/2/07
3	Final CMS Work Plan to the EPA	115 edays	10/2/07	1/25/08
4	EPA Review & Approval	30 edays	1/25/08	2/24/08
5	Initiate Field Work	30 days	2/25/08	4/4/08
6	Field Investigation	14 days	4/7/08	4/24/08
7	Laboratory Analysis	28 days	4/25/08	6/3/08
8	Data Validation	14 days	6/4/08	6/23/08
9	Draft CMS Task 1 or CMS Investigation Report for SWMU 73 to EPA	30 days	6/24/08	8/4/08
10	EPA Review	30 days	8/5/08	9/15/08
11	Final CMS Task 1 or CMS Investigation Report for SWMU 73 to EPA	30 days	9/16/08	10/27/08
12	EPA Review & Approval	30 days	10/28/08	12/8/08
13	Draft CMS Final Report for SWMU 73 to EPA	60 days	12/9/08	3/2/09
14	EPA Review	30 days	3/3/09	4/13/09
15	Final CMS Final Report for SWMU 73 to EPA	30 days	4/14/09	5/25/09
16	EPA Review & Approval	30 days	5/26/09	7/6/09



Task

Project: CMS Work Plan
Date: 1/25/08

FIGURE 10-1
PROJECT ORGANIZATION
CMS WORK PLAN – SWMU 73
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO



APPENDIX A
PHOTOGRAPHS OF SWMU 73, ECP SITE 19

Photograph A-43. ECP Site 19 – DRMO Scrap Metal Recycling Yard

Photograph A-44. ECP Site 19 – DRMO Scrap Metal Recycling Yard

Photograph A-45. ECP Site 19 – DRMO Scrap Metal Recycling Yard

Photograph A-46. ECP Site 19 – DRMO Scrap Metal Recycling Yard

Photograph A-47. ECP Site 19 – DRMO
Scrap Metal Recycling Yard

APPENDIX B
SUMMARY OF ANALYTICAL RESULTS FROM PHASE II ECP STUDY

APPENDIX B.1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	19E-01	19E-02	19E-03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample ID	Industrial	**Residential**	19E-SS01	19E-SS02	19E-SS03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample Date	RBCs	**RBCs**	05/06/04	05/06/04	05/06/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04
Sample Depth (ft bgs)	(ug/kg)	(ug/kg)	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00
Volatile Organic Compounds (ug/kg)											
Carbon tetrachloride	22,000	4,900	2.6 J	2.9 J	5.6 U	7.9 U	6.8 U	5.8 U	6 U	6.5 U	6.3 U
Xylene	20,000,000	1,600,000	9.7 U	11 U	3.8 J	16 U	14 U	12 U	12 U	13 U	12 U
Tetrachloroethene	5,300	1,200	4.8 U	5.6 U	5.6 U	7.9 U	3.8 J	5.7 J	6 U	6.5 U	6.3 U
Chlorobenzene	2,000,000	160,000	4.8 U	5.6 U	5.6 U	7.9 U	6.8 U	1.8 J	6 U	6.5 U	6.3 U
Semivolatile Organic Compounds (ug/kg)											
Butylbenzylphthalate	20,000,000	16,000,000	52 J	380 U	420 U	320 J	490 U	400 U	440 U	450 U	440 U
Fluoranthene	4,100,000	310,000	34 J	380 U	41 J	540 U	490 U	200 J	440 U	56 J	440 U
Indeno(1,2,3-cd)pyrene	3,900	870	43 J	380 U	420 U	540 U	490 U	190 J	440 U	450 U	440 U
Pyrene	3,100,000	230,000	39 J	18 J	43 J	540 U	490 U	300 J	440 U	54 J	440 U
Benzo(g,h,i)perylene	NE	NE	49 J	380 U	32 J	540 U	490 U	230 J	440 U	450 U	440 U
Benzo(k)fluoranthene	39,000	8,700	26 J	380 U	420 U	540 U	490 U	350 J	440 U	450 U	440 U
Chrysene	390,000	87,000	360 U	380 U	420 U	540 U	490 U	320 J	440 U	450 U	440 U
Acenaphthylene	NE	NE	360 U	380 U	420 U	540 U	490 U	71 J	440 U	450 U	440 U
Anthracene	31,000,000	2,300,000	360 U	380 U	420 U	540 U	490 U	48 J	440 U	450 U	440 U
Benzo(a)anthracene	3,900	870	360 U	380 U	420 U	540 U	490 U	220 J	440 U	450 U	440 U
Benzo(a)pyrene	390	87	360 U	380 U	420 U	540 U	490 U	**270** J	440 U	450 U	440 U
Benzo(b)fluoranthene	3,900	870	360 U	380 U	420 U	540 U	490 U	320 J	440 U	450 U	440 U

APPENDIX B.1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID	EPA Region III	**EPA Region III**	19E-01	19E-02	19E-03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample ID	Industrial	**Residential**	19E-SS01	19E-SS02	19E-SS03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample Date	RBCs	**RBCs**	05/06/04	05/06/04	05/06/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04
Sample Depth (ft bgs)	(ug/kg)	(ug/kg)	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00
Pesticides/PCBs (ug/kg)											
Dieldrin	180	40	7.7	1.9 J	840 U	5.4 U	6.7	4 U	4.4 U	4.5 U	4.4 U
Heptachlor	640	140	3.7 P	3.9 U	430 U	2.8 U	2.5 U	2 U	2.3 U	2.3 U	2.3 U
4,4'-DDT	12,000	2,700	7.2 U	10	**5,300**	7.1	4.9 U	4.9	4.4 U	4.5 U	3.7 J
4,4'-DDE	8,400	1,900	7.6	66	**4,700**	22	8.8	4.3	4.4 U	4.5 U	1 JP
4,4'-DDD	8,400	1,900	7.2 U	1.4 JP	810 J	5.4 U	4.9 U	4 U	4.4 U	4.5 U	4.4 U
Kepone	360	80	370 U	390 U	43,000 U	280 U	250 U	26 J	230 U	230 U	230 U
Aroclor-1248	1,400	320	140	75 U	8,400 U	54 U	49 U	40 U	44 U	45 U	44 U
Aroclor-1254	1,400	320	72 U	40 J	8,400 U	54 U	49 U	40 U	44 U	45 U	44 U
Aroclor-1260	1,400	320	120	15 JP	8,400 U	54 U	73	40 U	44 U	45 U	44 U

OP-Pesticides (ug/kg)
Not Detected

Chlorinated Herbicides (ug/kg)
Not Detected

Notes:
J - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
P - The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two GC columns or HPLC detectors.
NE - Not Established.
ft bgs - feet below ground surface.
ug/kg - micrograms per kilogram.

APPENDIX B.1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date Sample Depth (ft bgs)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs (ug/kg)**	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location of Maximum Detection
Volatile Organic Compounds (ug/kg)							
Carbon tetrachloride	22,000	4,900	0/9	---	0/9	---	19E-SS02
Xylene	20,000,000	1,600,000	0/9	---	0/9	---	193-SS03
Tetrachloroethene	5,300	1,200	0/9	---	0/9	---	19E-SS06
Chlorobenzene	2,000,000	160,000	0/9	---	0/9	---	19E-SS06
Semivolatile Organic Compounds (ug/kg)							
Butylbenzylphthalate	20,000,000	16,000,000	0/9	---	0/9	---	19E-SS04
Fluoranthene	4,100,000	310,000	0/9	---	0/9	---	19E-SS06
Indeno(1,2,3-cd)pyrene	3,900	870	0/9	---	0/9	---	19E-SS06
Pyrene	3,100,000	230,000	0/9	---	0/9	---	19E-SS06
Benzo(g,h,i)perylene	NE	NE	NE	---	NE	---	19E-SS06
Benzo(k)fluoranthene	39,000	8,700	0/9	---	0/9	---	19E-SS06
Chrysene	390,000	87,000	0/9	---	0/9	---	19E-SS06
Acenaphthylene	NE	NE	NE	---	NE	---	19E-SS06
Anthracene	31,000,000	2,300,000	0/9	---	0/9	---	19E-SS06
Benzo(a)anthracene	3,900	870	0/9	---	0/9	---	19E-SS06
Benzo(a)pyrene	390	87	0/9	---	1/9	270J	19E-SS06
Benzo(b)fluoranthene	3,900	870	0/9	---	0/9	---	19E-SSS06

APPENDIX B.1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date Sample Depth (ft bgs)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs (ug/kg)**	Exceeding EPA Region III Industrial RBCs	Exceeding EPA Region III Industrial RBCs	**Exceeding EPA Region III Residential RBCs**	**Exceeding EPA Region III Residential RBCs**	Location of Maximum Detection
Pesticides/PCBs (ug/kg)							
Dieldrin	180	40	0/9	---	0/9	---	19E-SS01
Heptachlor	640	140	0/9	---	0/9	---	19E-SS01
4,4'-DDT	12,000	2,700	0/9	---	1/9	5,300	19E-SS03
4,4'-DDE	8,400	1,900	0/9	---	1/9	4,700	19E-SS03
4,4'-DDD	8,400	1,900	0/9	---	0/9	---	19E-SS03
Kepone	360	80	0/9	---	0/9	---	19E-SS06
Aroclor-1248	1,400	320	0/9	---	0/9	---	19E-SS01
Aroclor-1254	1,400	320	0/9	---	0/9	---	19E-SS02
Aroclor-1260	1,400	320	0/9	---	0/9	---	19E-SS01

OP-Pesticides (ug/kg)
Not Detected

Chlorinated Herbicides (ug/kg)
Not Detected

Notes:
J - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
P - The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two GC columns or HPLC detectors.
NE - Not Established.
ft bgs - feet below ground surface.
ug/kg - micrograms per kilogram.

APPENDIX B.2

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID	EPA Region III Industrial RBCs	**EPA Region III Residential RBCs**	2x Average Detected Background	19E-01	19E-02	19E-03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample ID				19E-SS01	19E-SS02	19E-SS03	19E-SS04	19E-SS05	19E-SS06	19E-SS07	19E-SS08	19E-SS09
Sample Date				05/06/04	05/06/04	05/06/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04	05/13/04
Sample Depth (ft bgs)	(mg/kg)	(mg/kg)	(mg/kg)	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00	0.00 - 1.00
Appendix IX Inorganics (mg/kg)												
Silver	510	39	0.37	0.14 B	1 U	1.1 U	1.5 U	1.4 U	1.1 U	1.2 U	1.3 U	1.2 U
Arsenic	1.9	0.43	2.4	**2.3**	**1.8**	**1** B	1.5 U	1.4 U	**3.8**	1.2 U	**4.6**	**1.5**
Barium	7,200	550	181	83	82	130	67	89	46	53	120	140
Beryllium	200	16	0.45	0.32 B	0.22 B	0.2 B	0.28 B	0.23 B	0.16 B	0.57	0.35 B	0.36 B
Cadmium	100	7.8	0.27	4.2	0.28 B	1	0.77 U	0.87	0.35 B	3 U	0.65 U	0.62 U
Cobalt	2,000	160	44.0	16	16	13	22	26	10	7.7	19	27
Chromium	310	23	59.3	**27**	19	**25**	**28**	**24**	22	22	**24**	**34**
Copper	4,100	310	234	120	110	110	170	250	210	290	170	180
Nickel	2,000	160	16.6	44 E	17 E	21 E	15	16	11	6.4	12	14
Lead	400[1]	400[1]	125	73	9.3	56	26	67	58	4.6	13	21
Tin	61,000	4,700	2.43	2.7 B	2.8 B	2.6 B	4 B	4.3 B	2.9 B	2.8 B	4.1 B	4 B
Vanadium	100	7.8	355	**100**	**110**	**85**	**130**	**130**	**65**	**270**	**160**	**150**
Zinc	31,000	2,300	125	240	72	160	210 E	220 E	120 E	71 E	160 E	120 E
Cyanide	2,000	160	0.52	0.53 U	0.56 U	0.63 U	0.8 U	0.72 U	0.6 U	0.65 U	0.36 B	0.37 B
Sulfide	NE	NE	28.48	27 U	28 U	32 U	41 U	37 U	30 U	34 U	34 B	33 U
Mercury	31[2]	2.3[2]	0.11	0.033	0.055	0.25 S	0.3 S	0.29 S	2.1	0.022 B	0.038	0.092 S

Notes:

B - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
S - The result was determined by Method of Standard Addition.
E - The reported value is an estimated because of the presence of matrix interference.
NE - Not Established.
ft bgs - feet below ground surface.
mg/kg - milligrams per kilogram.
[1] - 1996 Soil Screening Guidance.
[2] - Value based on the RBC for Mercuric Chloride.

APPENDIX B.2

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date Sample Depth (ft bgs)	EPA Region III Industrial RBCs (mg/kg)	**EPA Region III Residential RBCs** (mg/kg)	2x Average Detected Background (mg/kg)	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Number Exceeding 2x Average Detected Background	Range Exceeding 2x Average Detected Background	Location of Maximum Detection
Appendix IX Inorganics (mg/kg)							---			
Silver	510	39	0.37	0/9	---	0/9	---	0/9	---	19E-SS01
Arsenic	1.9	0.43	2.4	3/9	2.3 - 4.6	6/9	1 - 4.6	2/9	3.8 - 4.6	19E-SS08
Barium	7,200	550	181	0/9	---	0/9	---	0/9	---	19E-SS09
Beryllium	200	16	0.45	0/9	---	0/9	---	1/9	0.57	19E-SS07
Cadmium	100	7.8	0.27	0/9	---	0/9	---	5/9	0.28B - 4.2	19E-SS01
Cobalt	2,000	160	44.0	0/9	---	0/9	---	0/9	---	19E-SS09
Chromium	310	23	59.3	0/9	---	6/9	24 - 34	0/9	---	19E-SS09
Copper	4,100	310	234	0/9	---	0/9	---	2/9	250 - 290	19E-SS07
Nickel	2,000	160	16.6	0/9	---	0/9	---	3/9	17E - 44E	19E-SS01
Lead	400[(1)]	400[(1)]	125	0/9	---	0/9	---	0/9	---	19E-SS01
Tin	61,000	4,700	2.43	0/9	---	0/9	---	9/9	2.6B - 4.3B	19E-SS05
Vanadium	100	7.8	355	6/9	110 - 270	9/9	65 - 270	0/9	---	19E-SS07
Zinc	31,000	2,300	125	0/9	---	0/9	---	5/9	160 - 240	19E-SS01
Cyanide	2,000	160	0.52	0/9	---	0/9	---	0/9	---	19E-SS09
Sulfide	NE	NE	28.48	NE	---	NE	---	0/9	---	19E-SS08
Mercury	31[(2)]	2.3[(2)]	0.11	0/9	---	0/9	---	4/9	0.25S - 2.1	19E-SS06

Notes:

B - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
S - The result was determined by Method of Standard Addition.
E - The reported value is an estimated because of the presence of matrix interference.
NE - Not Established.
ft bgs - feet below ground surface.
mg/kg - milligrams per kilogram.
(1) - 1996 Soil Screening Guidance.
(2) - Value based on the RBC for Mercuric Chloride.

APPENDIX B.3

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date Sample Depth (ft bgs)	EPA Region III Industrial RBCs (ug/kg)	**EPA Region III Residential RBCs** (ug/kg)	19E-01 19E-SB01-02 05/06/04 3.00 - 5.00	19E-02 19E-SB02-03 05/06/04 5.00 - 7.00	19E-03 19E-SB03-03 05/06/04 5.00 - 7.00	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Location of Maximum Detection
Volatile Organic Compounds (ug/kg)										
Carbon tetrachloride	22,000	4,900	5.1 U	1.1 J	5.2 U	0/3	---	0/3	---	19E-SB02-03
Semivolatile Organic Compounds (ug/kg)										
Not Detected										
Pesticides/PCBs (ug/kg)										
4,4'-DDT	8,400	1,900	7.4 U	1.2 JP	230	0/3	---	0/3	---	19E-SB03-03
4,4'-DDE	8,400	1,900	7.4 U	9	120	0/3	---	0/3	---	19E-SB03-03
4,4'-DDD	12,000	2,700	7.4 U	7.4 U	19 J	0/3	---	0/3	---	19E-SB03-03
OP-Pesticides (ug/kg)										
Not Detected										
Chlorinated Herbicides (ug/kg)										
Not Detected										

Notes:

J - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
P - The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two GC columns or HPLC detectors.
ft bgs - feet below ground surface.
ug/kg - micrograms per kilogram.

APPENDIX B.4

SUMMARY OF INORGANIC DETECTIONS IN SUBSURFACE SOIL
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date Sample Depth (ft bgs)	EPA Region III Industrial RBCs (mg/kg)	**EPA Region III Residential RBCs (mg/kg)**	2x Average Detected Background (mg/kg)	19E-01 19E-SB01-02 05/06/04 3.00 - 5.00	19E-02 19E-SB02-03 05/06/04 5.00 - 7.00	19E-03 19E-SB03-03 05/06/04 5.00 - 7.00	Number Exceeding EPA Region III Industrial RBCs	Range Exceeding EPA Region III Industrial RBCs	**Number Exceeding EPA Region III Residential RBCs**	**Range Exceeding EPA Region III Residential RBCs**	Number Exceeding 2x Average Detected Background	Range Exceeding 2x Average Detected Background	Location of Maximum Detection
Appendix IX Inorganics (mg/kg)													
Silver	510	39	0.46	0.13 B	1 U	0.12 B	0/3	---	0/3	---	0/3	---	19E-SB01-02
Barium	7,200	550	222	73	97	110	0/3	---	0/3	---	0/3	---	19E-SB03-03
Beryllium	200	16	0.74	0.15 B	0.14 B	0.18 B	0/3	---	0/3	---	0/3	---	19E-SB03-03
Cadmium	100	7.8	0.74	0.61	0.15 B	0.51 U	0/3	---	0/3	---	0/3	---	19E-SB01-02
Cobalt	2,000	160	30.0	23	23	20	0/3	---	0/3	---	0/3	---	19E-SB01-02, 19E-
Chromium	310	23	133	**37**	21	**28**	0/3	---	2/3	28 - 37	0/3	---	19E-SB01-02
Copper	4,100	310	193	130	130	120	0/3	---	0/3	---	0/3	---	19E-SB01-02, 19E-
Nickel	2,000	160	31.9	14 E	18 E	17 E	0/3	---	0/3	---	0/3	---	19E-SB02-03
Lead	400[1]	400[1]	8.68	1.1	1.6	5.7	0/3	---	0/3	---	0/3	---	19E-SB03-03
Tin	61,000	4,700	2.96	1.6 B	3 B	2.8 B	0/3	---	0/3	---	1/3	3B	19E-SB02-03
Vanadium	100	7.8	462	**110**	**140**	**100**	2/3	110 - 140	3/3	100 - 140	0/3	---	19E-SB02-03
Zinc	31,000	2,300	88.6	200	81	85	0/3	---	0/3	---	1/3	200	19E-SB01-02
Sulfide	NE	NE	32.58	28 B	28 U	27 U	NE	---	NE	---	0/3	---	19E-SB01-02
Mercury	31[2]	2.3[2]	0.093	0.0048 B	0.014 B	0.0055 B	0/3	---	0/3	---	0/3	---	19E-SB02-03

Notes:

B - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
E - The reported value is an estimated because of the presence of matrix interference.
[1] - 1996 Soil Screening Guidance.
[2] - Value based on the RBC for Mercuric Chloride.
NE - Not Established.
ft bgs - feet below ground surface.
mg/kg - milligrams per kilogram.

APPENDIX B.5

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCLs (ug/L)	**EPA Region III Tap Water RBCs** (ug/L)	PR Water Quality Standards (ug/L)	19E-01 19E-GW01 05/10/04	19E-02 19E-GW02 05/10/04	19E-03 19E-GW03 05/10/04	Number Exceeding Federal MCLs	Range Exceeding Federal MCLs	**Number Exceeding EPA Region III Tap Water RBCs**	**Range Exceeding EPA Region III Tap Water RBCs**	Number Exceeding PR Water Quality Standards	Range Exceeding PR Water Quality Standards	Location Maximum Detection
Volatile Organic Compounds (ug/L)													
Ethyl benzene	700	130	700	1 U	0.61 J	1 U	0/3	---	0/3	---	0/3	---	19E-GW02
Toluene	1,000	75	1,000	1	1.2	1 U	0/3	---	0/3	---	0/3	---	19E-GW02
Carbon disulfide	NE	100	NE	1.3	1.6	1 U	NE	---	0/3	---	NE	---	19E-GW02
Semivolatile Organic Compounds (ug/L)													
Cresol, m & p	NE	NE	NE	10 U	1.8 J	10 U	NE	---	NE	---	NE	---	19E-GW02
Pesticides/PCBs (ug/L)													
4,4'-DDT	NE	0.20	NE	0.1 U	0.1 U	0.088 J	NE	---	0/3	---	NE	---	19E-GW03
4,4'-DDE	NE	0.20	NE	0.1 U	0.015 J	0.11	NE	---	0/3	---	NE	---	19E-GW03
4,4'-DDD	NE	0.28	NE	0.1 U	0.088 J	0.04 J	NE	---	0/3	---	NE	---	193-GW02

OP-Pesticides (ug/L)
Not Detected

Chlorinated Herbicides (ug/L)
Not Detected

Notes:
J - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
ug/L - micrograms per liter.
NE - Not Established.

APPENDIX B.6

SUMMARY OF INORGANIC DETECTIONS IN GROUNDWATER
SWMU 73 - DRMO SCRAP METAL RECYCLING YARD
CMS WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date	Federal MCLs (mg/L)	**EPA Region III Tap Water RBCs** (mg/L)	--- Quality Standards (mg/L)	19E-01 19E-GW01 05/10/04	19E-02 19E-GW02 05/10/04	19E-03 19E-GW03 05/10/04	Number Exceeding Federal MCLs	Range Exceeding Federal MCLs	**Number Exceeding EPA Region III Tap Water RBCs**	**Range Exceeding EPA Region III Tap Water RBCs**	Number Exceeding PR Water Quality Standards	Range Exceeding PR Water Quality Standards	Location Maximum Detection
Appendix IX (Dissolved) Inorganics (mg/L)													
Barium	2	0.26	NE	0.015	0.01 B	0.021	0/3	---	0/3	---	NE	---	19E-GW03
Cobalt	NE	0.073	NE	0.01 U	0.002 B	0.002 B	NE	---	0/3	---	NE	---	19E-GW02, 19E-GW03
Nickel	NE	0.073	NE	0.003 B	0.04 U	0.04 U	NE	---	0/3	---	NE	---	19E-GW01
Vanadium	NE	0.0037	NE	**0.026**	**0.014**	0.003 B	NE	---	2/3	0.014 - 0.026	NE	---	19E-GW01

Total Cyanide and Sulfide (mg/L)
Not Detected

Notes:
B - The reported result is an estimated concentration that is less than the PQL, but greater than or equal to the MDL.
U - The compound was analyzed for, but was not detected at or above the MDL/PQL.
NE - Not Established.
mg/L - milligrams per liter.

APPENDIX C
USEPA REGION II GROUND WATER SAMPLING PROCEDURE
LOW STRESS (Low Flow) PURGING AND SAMPLING

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II

GROUND WATER SAMPLING PROCEDURE
LOW STRESS (Low Flow) PURGING AND SAMPLING

I. SCOPE & APPLICATION

This Low Stress (or Low-Flow) Purging and Sampling Procedure is the EPA Region II standard method for collecting low stress (low flow) ground water samples from monitoring wells. Low stress Purging and Sampling results in collection of ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by minimizing stress on the geological formation and minimizing disturbance of sediment that has collected in the well. The procedure applies to monitoring wells that have an inner casing with a diameter of 2.0 inches or greater, and maximum screened intervals of ten feet unless multiple intervals are sampled. The procedure is appropriate for collection of ground water samples that will be analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and microbiological and other contaminants in association with all EPA programs.

This procedure does not address the collection of light or dense non-aqueous phase liquids (LNAPL or DNAPL) samples, and should be used for aqueous samples only. For sampling NAPLs, the reader is referred to the following EPA publications: DNAPL Site Evaluation (Cohen & Mercer, 1993) and the RCRA Ground-Water Monitoring: Draft Technical Guidance (EPA/530-R-93-001), and references therein.

II. METHOD SUMMARY

The purpose of the low stress purging and sampling procedure is to collect ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by setting the intake velocity of the sampling pump to a flow rate that limits drawdown inside the well casing.

Sampling at the prescribed (low) flow rate has three primary benefits. First, it minimizes disturbance of sediment in the bottom of the well, thereby producing a sample with low turbidity (i.e., low concentration of suspended particles). Typically, this saves time and analytical costs by eliminating the need for collecting and analyzing an additional filtered sample from the same well. Second, this procedure minimizes aeration of the ground water during sample collection, which improves the sample quality for VOC analysis. Third, in most cases the procedure significantly reduces the volume of ground water purged from a well and the costs associated with its proper treatment and disposal.

III. ADDRESSING POTENTIAL PROBLEMS

Problems that may be encountered using this technique include a) difficulty in sampling wells with insufficient yield; b) failure of one or more key indicator parameters to stabilize; c) cascading of water and/or formation of air bubbles in the tubing; and d) cross-contamination between wells.

Insufficient Yield

Wells with insufficient yield (i.e., low recharge rate of the well) may dewater during purging. Care should be taken to avoid loss of pressure in the tubing line due to dewatering of the well below the level of the pump=s intake. Purging should be interrupted before the water level in the well drops below the top of the pump, as this may induce cascading of the sand pack. Pumping the well dry should therefore be avoided to the extent possible in all cases. Sampling should commence as soon as the volume in the well has recovered sufficiently to allow collection of samples. Alternatively, ground water samples may be obtained with techniques designed for the unsaturated zone, such as lysimeters.

Failure to Stabilize Key Indicator Parameters

If one or more key indicator parameters fails to stabilize after 4 hours, one of four options should be considered: a) continue purging in an attempt to achieve stabilization; b) discontinue

purging, do not collect samples, and document attempts to reach stabilization in the log book; c) discontinue purging, collect samples, and document attempts to reach stabilization in the log book; or d) Secure the well, purge and collect samples the next day (preferred). The key indicator parameter for samples to be analyzed for VOCs is dissolved oxygen. The key indicator parameter for all other samples is turbidity.

Cascading

To prevent cascading and/or air bubble formation in the tubing, care should be taken to ensure that the flow rate is sufficient to maintain pump suction. Minimize the length and diameter of tubing (i.e., 1/4 or 3/8 inch ID) to ensure that the tubing remains filled with ground water during sampling.

Cross-Contamination

To prevent cross-contamination between wells, it is strongly recommended that dedicated, in-place pumps be used. As an alternative, the potential for cross-contamination can be reduced by performing the more thorough Adaily@ decontamination procedures between sampling of each well in addition to the start of each sampling day (see Section VII, below).

Equipment Failure

Adequate equipment should be on-hand so that equipment failures do not adversely impact sampling activities.

IV. PLANNING DOCUMENTATION AND EQUIPMENT

< Approved site-specific Field Sampling Plan/Quality Assurance Project Plan (QAPP). This plan must specify the type of pump and other equipment to be used. The QAPP must also specify the depth to which the pump intake should be lowered in each well. Generally, the target depth will correspond to the mid-point of the most permeable zone in the screened interval. Borehole geologic and geophysical logs can be used to help select the most permeable zone. However, in some cases, other criteria may be used to select the target depth for the pump

intake. In all cases, the target depth must be approved by the EPA hydrogeologist or EPA project scientist.

< Well construction data, location map, field data from last sampling event.

< Polyethylene sheeting.

< Flame Ionization Detector (FID) and Photo Ionization Detector (PID).

< Adjustable rate, positive displacement ground water sampling pump (e.g., centrifugal or bladder pumps constructed of stainless steel or Teflon). A peristaltic pump may only be used for inorganic sample collection.

< Interface probe or equivalent device for determining the presence or absence of NAPL.

< Teflon or Teflon-lined polyethylene tubing to collect samples for organic analysis. Teflon or Teflon-lined polyethylene, PVC, Tygon or polyethylene tubing to collect samples for inorganic analysis. Sufficient tubing of the appropriate material must be available so that each well has dedicated tubing.

< Water level measuring device, minimum 0.01 foot accuracy, (electronic preferred for tracking water level drawdown during all pumping operations).

< Flow measurement supplies (e.g., graduated cylinder and stop watch or in-line flow meter).

< Power source (generator, nitrogen tank, etc.).

< Monitoring instruments for indicator parameters. Eh and dissolved oxygen must be monitored in-line using an instrument with a continuous readout display. Specific conductance, pH, and temperature may be monitored either in-line or using separate probes. A nephalometer is used to measure turbidity.

< Decontamination supplies (see Section VII, below).

< Logbook (see Section VIII, below).

< Sample bottles.

< Sample preservation supplies (as required by the analytical methods).

< Sample tags or labels, chain of custody.

V. SAMPLING PROCEDURES

Pre-Sampling Activities

1. Start at the well known or believed to have the least contaminated ground water and proceed systematically to the well with the most contaminated ground water. Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations.

2. Lay out sheet of polyethylene for placement of monitoring and sampling equipment.

3. Measure VOCs at the rim of the unopened well with a PID and FID instrument and record the reading in the field log book.

4. Remove well cap.

5. Measure VOCs at the rim of the opened well with a PID and an FID instrument and record the reading in the field log book.
6. If the well casing does not have a reference point (usually a V-cut or indelible mark in the well casing), make one. Note that the reference point should be surveyed for correction of ground water elevations to the mean geodesic datum (MSL).

7. Measure and record the depth to water (to 0.01 ft) in all wells to be sampled prior to purging. Care should be taken to minimize disturbance in the water column and dislodging of any particulate matter attached to the sides or settled at the bottom of the well.

8. If desired, measure and record the depth of any NAPLs using an interface probe. Care should be taken to minimize disturbance of any sediment that has accumulated at the bottom of the well. Record the observations in the log book. If LNAPLs and/or DNAPLs are detected, install the pump at this time, as described in step 9, below. Allow the well to sit for several days between the measurement or sampling of any DNAPLs and the low-stress purging and sampling of the ground water.

Sampling Procedures

9. Install Pump: Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well in the EPA-approved QAPP or a depth otherwise approved by the EPA hydrogeologist or EPA project scientist. The pump intake must be kept at least two (2) feet above the bottom of the well to prevent disturbance and resuspension of any sediment or NAPL present in the bottom of the well. Record the depth to which the pump is lowered.

10. Measure Water Level: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

11. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

12. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO)

approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):

±0.1 for pH
±3% for specific conductance (conductivity)
±10 mv for redox potential
±10% for DO and turbidity

Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

13. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

    Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Ground water purged from the well prior to sampling can be used for this purpose.

14. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.

15. Measure and record well depth.

16. Close and lock the well.

VI. FIELD QUALITY CONTROL SAMPLES

Quality control samples must be collected to determine if sample collection and handling procedures have adversely affected the quality of the ground water samples. The appropriate EPA Program Guidance should be consulted in preparing the field QC sample requirements of the site-specific QAPP.

All field quality control samples must be prepared exactly as regular investigation samples with regard to sample volume, containers, and preservation. The following quality control samples should be collected during the sampling event:

< Field duplicates
< Trip blanks for VOCs only
< Equipment blank (not necessary if equipment is dedicated to the well)

As noted above, ground water samples should be collected systematically from wells with the lowest level of contamination through to wells with highest level of contamination. The equipment blank should be collected after sampling from the most contaminated well.

VII. DECONTAMINATION

Non-disposable sampling equipment, including the pump and support cable and electrical wires which contact the sample, must be decontaminated thoroughly each day before use (Adaily decon@) and after each well is sampled (Abetween-well decon@). Dedicated, in-place pumps and tubing must be thoroughly decontaminated using Adaily decon@ procedures (see #17, below) prior to their initial use. For centrifugal pumps, it is strongly recommended that non-disposable sampling equipment, including the pump and support cable and electrical wires in contact with the sample, be decontaminated thoroughly each day before use (Adaily decon@).

EPA=s field experience indicates that the life of centrifugal pumps may be extended by removing entrained grit. This also permits inspection and replacement of the cooling water in centrifugal pumps. All non-dedicated sampling equipment (pumps, tubing, etc.)

must be decontaminated after each well is sampled (Abetween-well decon,@ see #18 below).

17. **Daily Decon**

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Disassemble pump.

E) Wash pump parts: Place the disassembled parts of the pump into a deep basin containing 8 to 10 gallons of non-phosphate detergent solution. Scrub all pump parts with a test tube brush.

F) Rinse pump parts with potable water.

G) Rinse the following pump parts with distilled/ deionized water: inlet screen, the shaft, the suction interconnector, the motor lead assembly, and the stator housing.

H) Place impeller assembly in a large glass beaker and rinse with 1% nitric acid (HNO_3).

I) Rinse impeller assembly with potable water.

J) Place impeller assembly in a large glass bleaker and rinse with isopropanol.

K) Rinse impeller assembly with distilled/deionized water.

18. **Between-Well Decon**

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.
B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Final Rinse: Operate pump in a deep basin of distilled/deionized water to pump out 1 to 2 gallons of this final rinse water.

VIII. FIELD LOG BOOK

A field log book must be kept each time ground water monitoring activities are conducted in the field. The field log book should document the following:

< Well identification number and physical condition.
< Well depth, and measurement technique.
< Static water level depth, date, time, and measurement technique.
< Presence and thickness of immiscible liquid layers and detection method.
< Collection method for immiscible liquid layers.
< Pumping rate, drawdown, indicator parameters values, and clock time, at three to five minute intervals; calculate or measure total volume pumped.
< Well sampling sequence and time of sample collection.
< Types of sample bottles used and sample identification numbers.
< Preservatives used.
< Parameters requested for analysis.

- Field observations of sampling event.
- Name of sample collector(s).
- Weather conditions.
- QA/QC data for field instruments.

IX. REFERENCES

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APPENDIX D
IDENTIFICATION OF BIOACCUMULATIVE CHEMICALS

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IDENTIFICATION OF BIOACCUMULATIVE CHEMICALS

Only those organic chemicals with a log octanol-water partition coefficient (K_{ow}) value greater than or equal to 3.0 will be considered a bioaccumulative chemical. Justification for defining bioaccumulative organic chemicals as those with log K_{ow} values greater than or equal to 3.0 is provided below.

- The potential for organic chemicals to accumulate in organisms has been shown to correlate well with the K_{ow}. USEPA (1985), as sited in USEPA/ACOE (1998), recommends that only chemicals for which the log K_{ow} is greater than 3.5 be considered for evaluation of bioaccumulation potential since chemicals with log K_{ow} values less than 3.5 are not likely to bioaccumulate to a significant degree.

- Although organic chemicals with log K_{ow} values in the 2 to 7 range have at least some potential to bioconcentrate (Connell, 1990), significant bioconcentration does not generally occur for chemicals with log K_{ow} values less than 3.0 (Maki and Duthie, 1978) to 5.0 (Gobas and Mackay, 1990). Most work with bioconcentration (uptake from the surrounding medium, such as water) and bioaccumulation (uptake from all exposure routes, including via food) of organic chemicals has concerned chemicals with log K_{ow} values of 3.0 or more (USEPA, 1995a), since organic chemicals with lower log K_{ow} values generally have little potential for significant bioaccumulation.

- The USEPA has developed a number of scoring algorithms to evaluate the relative hazard of chemicals to human or ecological receptors. All of these algorithms have a component that addresses bioaccumulation potential. The evaluation of bioaccumulation potential is generally based on measured or estimated (using log K_{ow} values) BCFs or BAFs, or less commonly using log K_{ow} itself. For example, USEPA (1980) developed a bioaccumulation potential scoring system that considered organics with BCF values of less than 100 (equivalent to a log K_{ow} of approximately 3.0) to have negligible potential to bioaccumulate in aquatic food webs, while organic chemicals with BCFs in the 100 to 1,000 range (equivalent to log K_{ow} values of about 3.0 to 4.3) are considered to have low bioaccumulation potential. The more recent Scoring and Ranking Assessment Model (SCRAM), developed by EPA Region 5 for the Great Lakes, has similar bioaccumulation scoring cut-offs (USEPA, 2000).

- The proposed categorization of persistent, bioaccumulative, and toxic (PBT) chemicals under the Toxic Substances Control Act (TSCA) defines chemicals with a tendency to accumulate in organisms as those with a BCF or BAF of greater than 1,000 (Federal Register 63(192):53417; 10/5/98). Using the equation listed below (USEPA, 1995b), a BCF/BAF of 1,000 equates to a log K_{ow} value of approximately 4.3.

$$Log\ BCF = [(0.79)(\log K_{ow}) - 0.40] \qquad \text{(Equation D-1)}$$

- The Beta Test Version 1.0 of the EPA Waste Minimization Prioritization Tool (WMPT), used to develop a list of PBTs for the Resource Conservation and Recovery Act (RCRA) program, defined organic chemicals with a low potential to bioaccumulate as those with log K_{ow} values of less than 3.5 and those with a high potential to bioaccumulate as those with log K_{ow} values greater than 5.0 (USEPA, 1998). The 1998 version of the EPA WMPT defines bioaccumulation potential based on BCF or BAF values (rather than on log K_{ow} values directly), with a scoring "fenceline" for organic chemicals with a low

bioaccumulation potential defined as a BCF or BAF of less than 250. Although the tool no longer uses log K_{ow} directly, log K_{ow} values can be used to estimate a BCF or BAF value. Using Equation D-1, a BCF/BAF of 250 equates to a log K_{ow} value of approximately 3.5.

- Garten and Trabalka (1983) have reviewed terrestrial food web data and concluded that only organic chemicals with log K_{ow} values greater than 3.5 have the potential to significantly bioaccumulate from food to birds to mammals.

The information listed above indicates that a log K_{ow} of 3.0 to 3.5 is a reasonable, non-arbitrary parameter value to use in defining an organic chemical with the potential to bioaccumulate. For conservatism, the low end (3.0) of this log K_{ow} range will be used to define a bioaccumulative organic chemical. Table D-1 lists log K_{ow} values (range and recommended value) for volatile and semi-volatile organic chemicals, that will be analyzed for in media collected from SWMU 73. Log K_{ow} values were primarily obtained from the USEPA (1995c and 1996). The recommended value from these sources generally represents a "high-end" or best estimate from empirical data. The organic chemicals that will be evaluated in the dietary intake models are those with a log K_{ow} value of greater than or equal to 3.0. For conservatism, the maximum value in the log K_{ow} range is used for this determination not the recommended value.

Inorganic chemicals were not quantitatively screened for bioaccumulation potential since log K_{ow} values are not available for these chemicals. However, cyanide was eliminated from the list since it is readily metabolized and is not known to bioaccumulate (Eisler, 1991). Although all Appendix IX metals are retained for evaluation in the upper trophic level food chain models, only mercury and selenium are known to biomagnify in food chains (in organic forms; Suter, 1993) and only cadmium, copper, and zinc generally have the potential to bioaccumulate significantly. The other metals are retained by default.

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TABLE D-1
LOG K_{ow} VALUES FOR ORGANIC CHEMICALS
SWMU 73 - FORMER DRMO SCRAP METAL RECYCLING YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

	Log K_{ow} Range	Recommended Log K_{ow}	Reference	Bioaccumulative Chemical [(1)]
Volatile Organics:				
1,1,1,2-Tetrachloroethane	2.63 to 3.03	2.63	USEPA 1995	Yes
1,1,1-Trichloroethane	2.47 to 2.51	2.48	USEPA 1995	No
1,1,2,2-Tetrachloroethane	2.31 to 2.64	2.39	USEPA 1995	No
1,1,2-Trichloroethane	2.03 to 2.07	2.05	USEPA 1995	No
1,1-Dichloroethane	1.78 to 1.85	1.79	USEPA 1995	No
1,1-Dichloroethene	2.13 to 2.37	2.13	USEPA 1995	No
1,2,3-Trichloropropane	1.98 to 2.63	2.25	USEPA 1995	No
1,2-Dibromo-3-chloropropane	2.26 to 2.41	2.34	USEPA 1995	No
1,2-Dibromoethane (EDB)	Not Reported	2.00	USEPA 1996	No
1,2-Dichloroethane	1.4 to 1.48	1.47	USEPA 1995	No
1,2-Dichloropropane	1.94 to 1.99	1.97	USEPA 1995	No
2-Butanone (Methyl ethyl ketone)	0.28 to 0.69	0.28	USEPA 1995	No
2-Hexanone	Not Reported	1.38	USEPA 1996	No
3-Chloropropene (Ally chloride)	Not Reported	1.93	SRC 1998	No
4-Methyl-2-pentanone (MIBK)	Not Reported	1.31	SRC 1998	No
Acetone	-0.21 to -0.24	-0.24	USEPA 1995	No
Acetonitrile	-0.34 to -0.39	-0.34	USEPA 1995	No
Acrolein (Propenal)	-0.01 to 0.90	-0.01	USEPA 1995	No
Acrylonitrile	-0.92 to 1.20	0.25	USEPA 1995	No
Benzene	1.83 to 2.50	2.13	USEPA 1995	No
Bromodichloromethane	1.88 to 2.14	2.10	USEPA 1995	No
Bromoform	2.30 to 2.38	2.35	USEPA 1995	No
Bromomethane (Methyl bromide)	Not Reported	1.19	USEPA 1996	No
Carbon disulfide	1.84 to 2.16	2.00	USEPA 1995	No
Carbon tetrachloride	2.03 to 3.10	2.73	USEPA 1995	Yes
Chlorobenzene	2.56 to 3.79	2.86	USEPA 1995	Yes
Chloroethane	Not Reported	1.43	USEPA 1996	No
Chloroform	1.81 to 3.04	1.92	USEPA 1995	Yes
Chloromethane (Methyl chloride)	Not Reported	0.91	USEPA 1996	No
Chloroprene	2.03 to 2.13	2.08	USEPA 1995	No
cis-1,3-Dichloropropene	Not Reported	2.06	SRC 1998	No
Dibromochloromethane	2.13 to 2.24	2.17	USEPA 1995	No
Dibromomethane (Methylene bromide)	Not Reported	1.53	USEPA 1996	No
Dichlorodifluoromethane	2.0 to 2.37	2.16	USEPA 1995	No
Ethylbenzene	3.07 to 3.57	3.14	USEPA 1995	Yes
Ethyl methacrylate	1.59 to 1.65	1.59	USEPA 1996	No
Iodomethane (Methyl iodide)	Not Reported	1.51	SRC 1998	No
Isobutanol (Isobutyl alcohol)	0.65 to 0.76	0.75	USEPA 1995	No
Methacrylonitrile	0.54 to 0.70	-0.54	USEPA 1996	No
Methylene chloride (Dichloromethane)	1.22 to 1.40	1.25	USEPA 1995	No
Methyl methacrylate	1.11 to 1.38	1.38	USEPA 1995	No
Pentachloroethane	Not Reported	3.06	USEPA 1996	Yes
Propionitrile (ethyl cyanide)	Not Reported	0.16	SRC 1998	No
Styrene	2.76 to 3.16	2.94	USEPA 1995	Yes
Tetrachloroethene	2.53 to 2.98	2.67	USEPA 1995	No
Toluene	2.21 to 3.13	2.75	USEPA 1995	Yes
trans-1,2-Dichloroethene	1.77 to 2.10	2.07	USEPA 1995	No
trans-1,3-Dichloropropene	Not Reported	2.03	SRC 1998	No
trans-1,4-Dichloro-2-butene	Not Reported	2.60	SRC 1998	No
Trichloroethene	2.42 to 3.14	2.71	USEPA 1995	Yes
Trichlorofluoromethane	2.44 to 2.58	2.53	USEPA 1995	No

TABLE D-1
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SWMU 73 - FORMER DRMO SCRAP METAL RECYCLING YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

	Log K_{ow} Range	Recommended Log K_{ow}	Reference	Bioaccumulative Chemical [(1)]
Volatile Organics (continued):				
Vinyl acetate	0.21 to 0.83	0.73	USEPA 1995	No
Vinyl chloride	1.23 to 1.52	1.50	USEPA 1995	No
Xylene [(2)]	2.77 to 3.54	3.13	USEPA 1995	Yes
Semi-Volatile Organics:				
1,2,4,5-Tetrachlorobenzene	4.51 to 4.83	4.64	USEPA 1995	Yes
1,2,4-Trichlorobenzene	3.89 to 4.23	4.01	USEPA 1995	Yes
1,3,5-Trinitrobenzene	1.18 to 1.37	1.18	USEPA 1995	No
1,2-Dichlorobenzene (o-Dichlorobenzene)	3.20 to 3.61	3.43	USEPA 1995	Yes
1,3-Dichlorobenzene (m-Dichlorobenzene)	Not Reported	3.60	USEPA 1996	Yes
1,4,-Dichlorobenzene (p-Dichlorobenzene)	3.26 to 3.78	3.42	USEPA 1995	Yes
1,4-Dioxane	Not Reported	-0.27	USEPA 1996	No
1,4-Naphthoquinone	Not Reported	1.71	SRC 1998	No
1,4-Phenylenediamine (p-Phenylenediamine)	Not Reported	-0.30	SRC 1998	No
1-Naphthylamine	2.09 to 2.40	2.24	USEPA 1995	No
2,3,4,6-Tetrachlorophenol	Not Reported	4.45	USEPA 1996	Yes
2,4,5-Trichlorophenol	Not Reported	3.72	USEPA 1996	Yes
2,4,6-Trichlorophenol	3.29 to 4.05	3.70	USEPA 1995	Yes
2,2'-Oxybis(1-Chloropropane)	Not Reported	2.48	USEPA 1996	No
2,4-Dichlorophenol	2.80 to 3.30	3.08	USEPA 1995	Yes
2,4-Dinitrotoluene	1.98 to 2.05	2.01	USEPA 1995	No
2,4-Dimethylphenol	1.99 to 2.49	2.36	USEPA 1995	No
2,4-Dinitrophenol	1.40 to 1.79	1.55	USEPA 1995	No
2,6-Dichlorophenol	Not Reported	2.75	SRC 1998	No
2,6-Dinitrotoluene	1.72 to 2.03	1.87	USEPA 1995	No
2-Acetylaminofluorene	Not Reported	3.12	SRC 1998	Yes
2-Chloronaphthalene	Not Reported	3.38	USEPA 1996	Yes
2-Chlorophenol	0.83 to 2.32	2.15	USEPA 1995	No
2-Naphthylamine	2.09 to 2.42	2.28	USEPA 1995	No
2-Nitroaniline (o-Nitroaniline)	Not Reported	1.85	USEPA 1996	No
2-Nitrophenol (o-Nitrophenol)	Not Reported	1.79	USEPA 1996	No
2-Picoline	Not Reported	1.11	SRC 1998	No
3,3'-Dichlorobenzidine	3.51 to 3.95	3.51	USEPA 1995	Yes
3,3'-Dimethylbenzidine	2.34 to 3.01	2.68	USEPA 1995	Yes
3-Methylcholanthrene	6.42 to 6.76	6.42	USEPA 1995	Yes
3-Nitroaniline (m-nitroaniline)	Not Reported	1.37	USEPA 1996	No
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	Not Reported	2.12	USEPA 1996	No
4-Aminobiphenyl	Not Reported	2.86	SRC 1998	No
4-Bromophenylphenyl ether	4.89 to 5.24	5.00	USEPA 1995	Yes
4-Chloro-3-methylphenol	Not Reported	3.10	SRC 1998	Yes
4-Chloroaniline	1.57 to 2.02	1.85	USEPA 1995	No
4-Chlorophenylphenyl ether	4.08 to 5.09	4.95	USEPA 1995	Yes
4-Nitroaniline (p-Nitroaniline)	Not Reported	1.39	USEPA 1996	No
4-Nitrophenol (p-Nitrophenol)	Not Reported	1.91	SRC 1998	No
4-Nitroquinoline-1-oxide	Not Reported	1.09	SRC 1998	No
5-Nitro-o-toluidine	Not Reported	1.87	SRC 1998	No
7,12-Dimethylbenz(a)anthracene	5.98 to 6.66	6.62	USEPA 1995	Yes
Acetophenone	1.55 to 1.72	1.64	USEPA 1995	No
A, A-Dimethylphenethylamine	Not Reported	1.90	USEPA 1996	No
Aniline	0.78 to 1.24	0.98	USEPA 1995	No
Aramite	Not Reported	4.82	SRC 1998	Yes
Benzyl alcohol	0.87 to 1.22	1.11	USEPA 1995	No

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	Log K_{ow} Range	Recommended Log K_{ow}	Reference	Bioaccumulative Chemical [(1)]
Semi-Volatile Organics (continued):				
bis(2-Chloroethoxy)methane	Not Reported	0.75	USEPA 1996	No
bis(2-Chloroethyl)ether	1.0 to 1.29	1.21	USEPA 1995	No
bis(2-Chloroisopropyl)ether	2.4 to 2.58	2.58	USEPA 1995	No
bis(2-Ethylhexyl)phthalate	4.20 to 8.61	7.30	USEPA 1995	Yes
Butylbenzylphthalate	3.57 to 5.02	4.84	USEPA 1995	Yes
Chlorobenzilate	Not Reported	4.74	SRC 1998	Yes
Diallate	3.79 to 5.23	4.49	USEPA 1995	Yes
Dibenzofuran	Not Reported	4.20	USEPA 1996	Yes
Diethylphthalate	1.40 to 3.00	2.50	USEPA 1995	Yes
Dimethoate	0.50 to 0.79	0.69	USEPA 1995	No
Dimethylphthalate	1.34 to 1.90	1.57	USEPA 1995	No
Di-n-butylphthalate	3.74 to 4.79	4.61	USEPA 1995	Yes
Di-n-octylphthalate	8.03 to 9.49	8.06	USEPA 1995	Yes
Dinoseb (2-sec-butyl-4,6-Dinitrophenol)	Not Reported	3.69	USEPA 1996	Yes
Ethyl methanesulfonate	0.01 to 0.05	0.05	USEPA 1995	No
Hexachlorobenzene	5.00 to 7.42	5.89	USEPA 1995	Yes
Hexachlorobutadiene	4.74 to 5.16	4.81	USEPA 1995	Yes
Hexachlorocyclopentadiene	5.04 to 5.51	5.39	USEPA 1995	Yes
Hexachloroethane	3.82 to 4.14	4.00	USEPA 1995	Yes
Hexachlorophene	7.08 to 7.60	7.54	USEPA 1995	Yes
Hexachloropropene	Not Reported	4.38	SRC 1998	Yes
Isophorone	1.67 to 1.90	1.70	USEPA 1995	No
Isosafrole	Not Reported	3.37	SRC 1998	Yes
m-Cresol (3-Methylphenol)	1.92 to 2.05	1.97	USEPA 1995	No
m-Dinitrobenzene (1,3-Dinitrobenzene)	1.49 to 1.63	1.50	USEPA 1995	No
Methapyrilene	Not Reported	2.87	SRC 1998	No
Methyl methanesulfonate	Not Reported	-0.66	SRC 1998	No
n-Nitrosodiethylamine	0.29 to 0.56	0.48	USEPA 1995	No
n-Nitrosodimethylamine	-0.77 to -0.48	-0.57	USEPA 1995	No
n-Nitroso-di-n-butylamine	2.41 to 2.45	2.41	USEPA 1995	No
n-Nitroso-di-n-propylamine	1.31 to 1.45	1.40	USEPA 1995	No
n-Nitrosodiphenylamine	3.13 to 3.45	3.16	USEPA 1995	Yes
n-Nitrosomethylethylamine	-0.24 to 1.35	-0.12	USEPA 1995	No
n-Nitrosomorpholine	Not Reported	-0.44	SRC 1998	No
n-Nitrosopiperidine	0.25 to 0.63	0.63	USEPA 1995	No
n-Nitrosopyrrolidine	-0.29 to -0.19	-0.19	USEPA 1995	No
Nitrobenzene	Not Reported	1.84	USEPA 1996	No
o-Cresol (2-Methylphenol)	1.90 to 2.04	1.99	USEPA 1995	No
o-Toluidine	1.34 to 1.63	1.34	USEPA 1995	No
p-Cresol (4-Methylphenol)	1.38 to 2.04	1.95	USEPA 1995	No
p-Dimethylaminoazobenzene	Not Reported	4.58	SRC 1998	Yes
Pentachlorobenzene	4.88 to 6.12	5.26	USEPA 1995	Yes
Pentachloronitrobenzene	4.18 to 4.64	4.64	USEPA 1995	Yes
Pentachlorophenol	3.29 to 5.24	5.09	USEPA 1995	Yes
Phenacetin	Not Reported	1.58	SRC 1998	No
Phenol	0.79 to 1.55	1.48	USEPA 1995	No
Pronamide	3.26 to 3.86	3.51	USEPA 1995	Yes
Pryridine	0.62 to 1.28	0.67	USEPA 1995	No
Safrole	2.66 to 2.88	2.66	USEPA 1995	No
Sulfotepp	Not Reported	4.46	SRC 1998	Yes
Thionazin	Not Reported	1.86	SRC 1998	No
o,o,o-Triethylphosphorothioate	Not Reported	2.64	SRC 1998	No

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SWMU 73 - FORMER DRMO SCRAP METAL RECYCLING YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

	Log K_{ow} Range	Recommended Log K_{ow}	Reference	Bioaccumulative Chemical [1]
PAHs (continued):				
1-Methylnaphthalene	Not Reported	3.87	SRC 1998	Yes
2-Methylnaphthalene	Not Reported	3.90	USEPA 1996	Yes
Acenaphthene	3.77 to 4.49	3.92	USEPA 1995	Yes
Acenaphthylene	Not Reported	4.10	USEPA 1996	Yes
Anthracene	3.45 to 4.80	4.55	USEPA 1995	Yes
Benzo(a)anthracene	4.00 to 5.79	5.70	USEPA 1995	Yes
Benzo(a)pyrene	5.98 to 6.42	6.11	USEPA 1995	Yes
Benzo(b)fluoranthene	5.79 to 6.40	6.20	USEPA 1995	Yes
Benzo(g,h,i)perylene	6.63 to 7.05	6.70	USEPA 1995	Yes
Benzo(k)fluoranthene	6.12 to 6.27	6.20	USEPA 1995	Yes
Chrysene	5.41 to 5.79	5.70	USEPA 1995	Yes
Dibenzo(a,h)anthracene	6.50 to 6.88	6.69	USEPA 1995	Yes
Fluoranthene	4.31 to 5.39	5.12	USEPA 1995	Yes
Fluorene	4.04 to 4.40	4.21	USEPA 1995	Yes
Indeno(1,2,3-cd)pyrene	6.58 to 6.72	6.65	USEPA 1995	Yes
Naphthalene	3.01 to 4.70	3.36	USEPA 1995	Yes
Phenanthrene	4.28 to 4.57	4.55	USEPA 1995	Yes
Pyrene	4.76 to 5.52	5.11	USEPA 1995	Yes
Organochlorine Pesticides:				
4,4'-DDD	4.73 to 6.38	6.10	USEPA 1995	Yes
4,4'-DDE	5.63 to 6.94	6.76	USEPA 1995	Yes
4,4'-DDT	4.64 to 7.01	6.53	USEPA 1995	Yes
Aldrin	5.11 to 7.50	6.50	USEPA 1995	Yes
alpha-BHC	3.75 to 3.81	3.80	USEPA 1995	Yes
alpha-Chlordane	5.80 to 6.41	6.32	USEPA 1995	Yes
beta-BHC	3.75 to 3.84	3.81	USEPA 1995	Yes
delta-BHC	Not Reported	4.14	USEPA 1996	Yes
Dieldrin	Not Reported	5.40	SRC 1998	Yes
Endosulfan 1	Not Reported	4.10	USEPA 1996	Yes
Endosulfan 11	Not Reported	4.10	USEPA 1996	Yes
Endosulfan sulfate	Not Reported	3.66	USEPA 1996	Yes
Endrin	2.92 to 5.20	5.06	USEPA 1995	Yes
Endrin aldehyde	Not Reported	4.00	USEPA 1995	Yes
gamma-BHC (lindane)	3.00 to 4.95	3.73	USEPA 1995	Yes
gamma-Chlordane	5.80 to 6.41	6.32	USEPA 1995	Yes
Heptachlor	4.93 to 6.26	6.26	USEPA 1995	Yes
Heptachlor epoxide	3.50 to 5.40	5.00	USEPA 1995	Yes
Isodrin	Not Reported	6.50	SRC 1998	Yes
Kepone	4.45 to 5.30	5.30	USEPA 1995	Yes
Methoxychlor	3.31 to 5.60	5.08	USEPA 1995	Yes
Toxaphene	3.23 to 5.56	5.50	USEPA 1995	Yes

Notes:

K_{ow} = Ocatnol-Water Partitian Coefficient
USEPA = United States Environmental Protection Agency
SRC = Syracuse Research Corporation

[1] An organic chemical is considered a bioaccumulative chemical if its Log K_{ow} value is greater than or equal to 3.0. When a range of Log K_{ow} values is reported, the upper value within the range was conservatively used to identify bioaccumulative chemicals.

[2] The log K_{ow} values shown are for o-xylene

TABLE D-1
LOG K_{ow} VALUES FOR ORGANIC CHEMICALS
SWMU 73 - FORMER DRMO SCRAP METAL RECYCLING YARD
CORRECTIVE MEASURES STUDY WORK PLAN
NAVAL ACTIVITY PUERTO RICO, CEIBA, PUERTO RICO

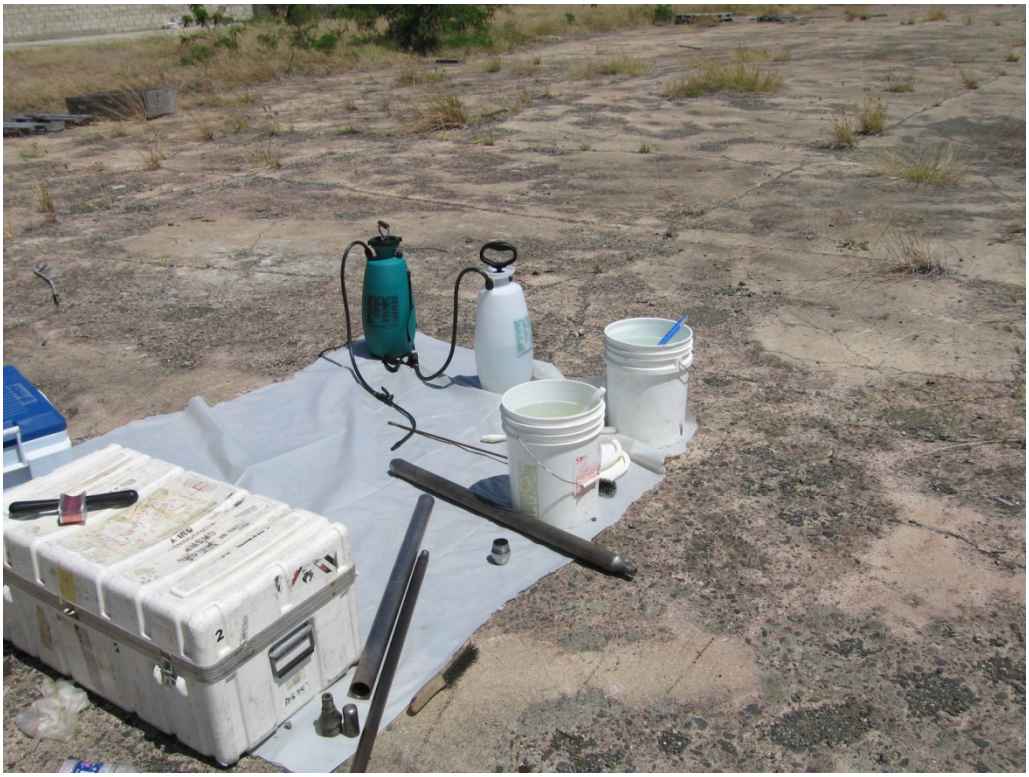
Table references:

USEPA. 1996. Superfund Chemical Data Matrix. EPA/540/R-96/028

USEPA. 1995. Internal Report on Summary of Measured, Calculated and Recommended Log K_{ow} Values. Environmental Research Laboratory, Athens, GA. April 10, 1995.

Syracuse Research Corporation (SRC). 1998. Experimental Octanol/Water Partition Coefficient (Log P) Database. http://www.syrres.com/esc/default.htm

APPENDIX B
PHOTOGRAPHIC LOG



Photograph B-1. Sampling equipment decontamination line

Photograph B-2. Surface soil sample collection at 73SS01-00.

Photograph B-3. Surface soil sample collection at 73SS04-00.

Photograph B-4. Sample preparation and collection table.

Photograph B-5. Preparation and collection of surface soil samples.

Photograph B-6. Surface soil sample collection at 73SS22-00.

Photograph B-7. Debris pile near EBS sample location 19B-SS06 (viewing toward SW).

Photograph B-8. Debris pile near EBS sample location 19B-SS06 (viewing toward SW).

Photograph B-9. Debris near sample location 73SS24-00 (viewing toward SE).

Photograph B-10. Debris pile near EBS sample location 19B-SS06 (viewing toward N).

Photograph B-11. Debris pile near 73SB24-00 (viewing toward S).

Photograph B-12. Debris between EBS sample locations 19B-SS06 and 19B-SS07.

Photograph B-13. Debris mounds near 73SB27-00 (viewing toward W).

Photograph B-14. Surface soil abandonment at 73SS03-00.

Photograph B-15. Use of Global Positioning System to obtain coordinates at 73SB06.

Photograph B-16. Direct push technology to collected subsurface soil samples at 73SB27.

Photograph B-17. Subsurface soil core at 73SB27.

Photograph B-18. Hollow stem augur drilling to install 73MW02 in borehole 73SB27.

Photograph B-19. Hollow stem augur drilling to install 73MW02 in borehole 73SB27.

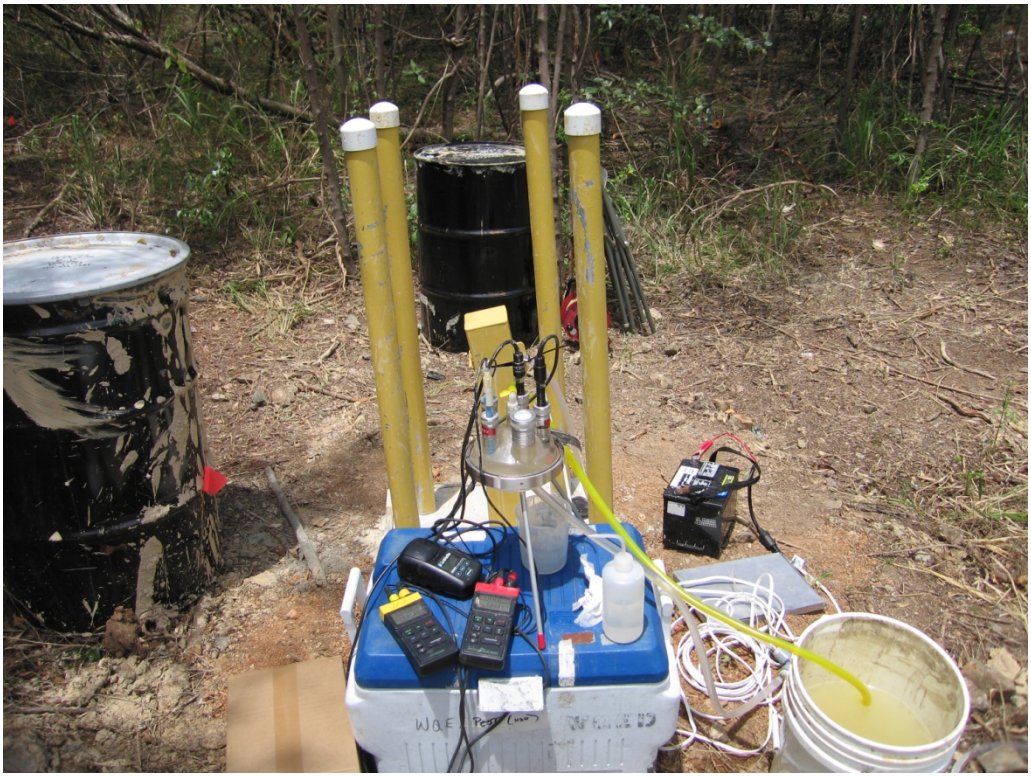
Photograph B-20. Installation of 73MW02.

Photograph B-21. Completion of 73MW02.

Photograph B-22. Decontamination of augurs at the decontamination pit.

Photograph B-23. Hollow stem augur drilling to install 73MW01 in borehole 73SB02.

Photograph B-24. Decontamination of the back of the rig within decontamination pit.



Photograph B-25. Ground-water sampling at 73MW02.

Photograph B-26. Ground-water sample collection at 73MW02.

APPENDIX C
FIELD LOGS

SURFACE SOIL SAMPLING LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

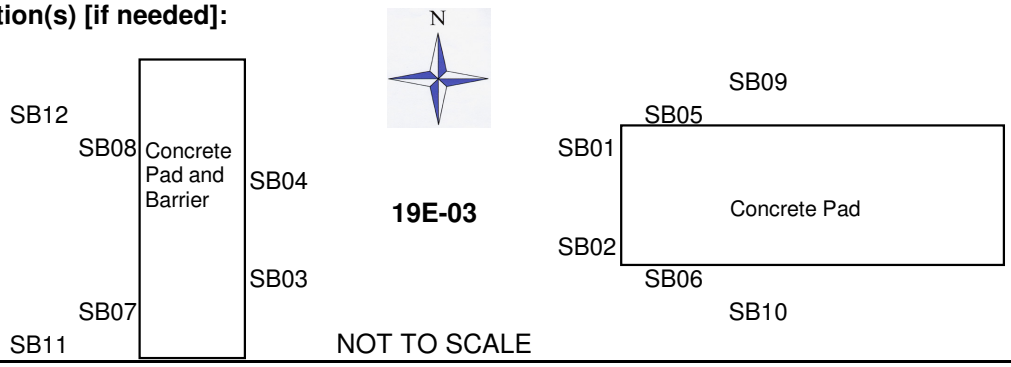
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB01-00	73SB01A-00	73SB02-00	73SB03-00	73SB04-00
Date:	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08	31-Mar-08
Time:	1125	1125	1200	1240	1300
PID 0-6":	8.4 ppm	N/A ppm	3.2 ppm	0 ppm	0.3 ppm
PID 6"-1':	3.7 ppm	N/A ppm	8.4 ppm	0 ppm	0 ppm
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals

Sample ID:	73SB05-00	73SB06-00	73SB07-00	73SB08-00	73SB09-00
Date:	31-Mar-08	31-Mar-08	1-Apr-08	1-Apr-08	1-Apr-08
Time:	1330	1400	0945	1030	0900
PID 0-6":	0 ppm	0 ppm	0 ppm	0 ppm	ppm
PID 6"-1':	0 ppm	0 ppm	0 ppm	0 ppm	ppm
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals

Sample ID:	73SB10-00	73SB11-00	73SB12-00		
Date:	1-Apr-08	1-Apr-08	1-Apr-08		
Time:	0930	1130	1100		
PID 0-6":	0 ppm	0 ppm	0 ppm		
PID 6"-1':	0 ppm	0 ppm	0 ppm		
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals		

Sketch of Sample Location(s) [if needed]:



Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides Metals-Total Metals
Moisture and Trip Blanks included with VOCs (cross out non-applicable analytes in 'Analysis' row)
A' designation indicates duplicate sample.
All soil in area was gravel fill material.

Sampled by: Jones/Maners/Sinar (QA Oversight)

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

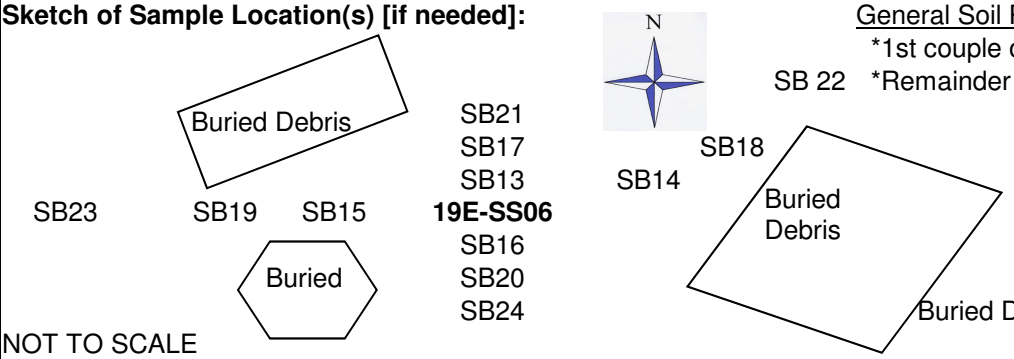
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB13-00	73SB13A-00	73SB17-00	73SB21-00	73SB16-00
Date:	2-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08
Time:	0930	0930	1000	1045	1115
PID 0-6":	0.3 ppm	N/A ppm	0 ppm	0 ppm	0 ppm
PID 6"-1':	0 ppm	N/A ppm	0 ppm	0 ppm	0 ppm
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals

Sample ID:	73SB20-00	73SB24-00	73SB15-00	73SB19-00	73SB22-00
Date:	2-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08	2-Apr-08
Time:	1145	1200	1300	1315	1400
PID 0-6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 6"-1':	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals

Sample ID:	73SB23-00	73SB18-00	73SB14-00	73SB18A-00	
Date:	2-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	
Time:	1330	1100	1130	1100	
PID 0-6":	0 ppm	0 ppm	0 ppm	N/A ppm	
PID 6"-1':	0 ppm	0 ppm	0 ppm	N/A ppm	
Analysis:	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	V S LLP OP Metals	

Sketch of Sample Location(s) [if needed]:



NOT TO SCALE

General Soil Profile:
*1st couple of inches: Topsoil
*Remainder to 1' is fill

Buried Debris: concrete, wood, and metal

Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides Metals-Total Metals
Moisture and Trip Blanks included with VOCs (cross out non-applicable analytes in 'Analysis' row)
A' designation represents a duplicate sample.

SB 19 & SB23: soil profile consists of sandy SILT and sandy CLAY.
SB 22: soil profile consists of mostly shell fragments.
Sampled by: Jones/Maners/Sinar (QA Oversight)

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

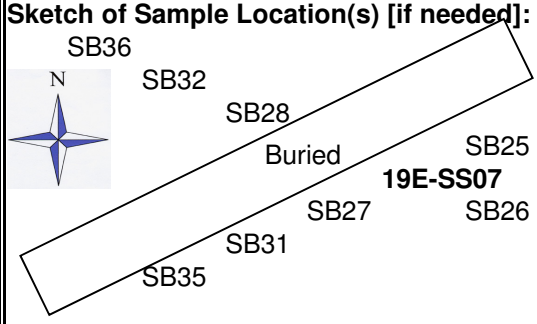
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB35-00	73SB31-00	73SB27-00	73SB27A-00	73SB36-00
Date:	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Time:	1345	1355	1405	1405	1415
PID 0-6":	0 ppm	0 ppm	4.9 ppm	N/A ppm	0 ppm
PID 6"-1':	0 ppm	0 ppm	1.2 ppm	N/A ppm	0 ppm
Analysis:	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals

Sample ID:	73SB32-00	73SB28-00	73SB33-00	73SB29-00	73SB25-00
Date:	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08	3-Apr-08
Time:	1425	1430	1435	1445	1455
PID 0-6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 6"-1':	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
Analysis:	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals

Sample ID:	73SB34-00	73SB30-00	73SB26-00		
Date:	3-Apr-08	3-Apr-08	3-Apr-08		
Time:	1505	1510	1520		
PID 0-6":	0 ppm	0 ppm	0 ppm		
PID 6"-1':	0 ppm	0 ppm	0 ppm		
Analysis:	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals	~~V S LLP OP~~ Metals		

Sketch of Sample Location(s) [if needed]:



NOT TO SCALE

SB35	topsoil to 6", brown-red-grey clayey soil	
31	"	
27	"	
32	"	
SB36	topsoil to 4", olive yellow sandy SILT	
SB28	topsoil to 3", brown silty SAND	
SB33	topsoil to 3", brownish-red silty CLAY	
29	"	
34	"	
30	"	
25 & 26	"	

Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides Metals-Total Metals
Moisture and Trip Blanks included with VOCs (cross out non-applicable analytes in 'Analysis' row)
A' designation represents a duplicate sample.

Sampled by: Jones/Maners/Sinar (QA Oversight)

Buried Debris: concrete, wood, and metal

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

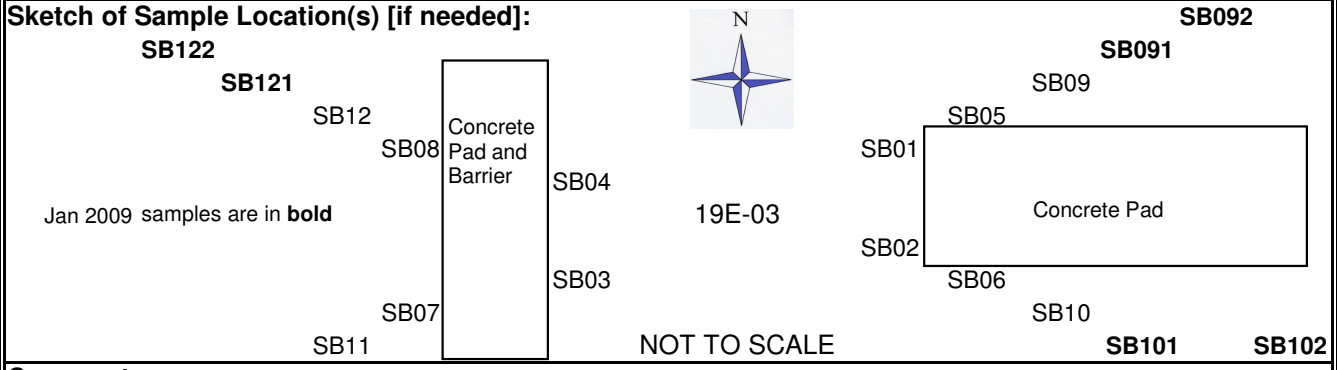
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB091-00	73SB092-00	73SB101-00	73SB102-00	73SB121-00
Date:	14-Jan-09	14-Jan-09	14-Jan-09	14-Jan-09	14-Jan-09
Time:	1025	1030	1000	1000	1100
PID 0-6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 6"-1':	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Analysis:	Ni	Ni	Zn	Zn	Hg Zn

Sample ID:	73SB122-00				
Date:	14-Jan-09				
Time:	1110				
PID 0-6":	N/A ppm				
PID 6"-1':	N/A ppm				
Analysis:	Hg Zn				

Sample ID:					
Date:					
Time:					
PID 0-6":					
PID 6"-1':					
Analysis:					

Sketch of Sample Location(s) [if needed]:



Comments:
Hg-Mercury Ni-Nickel Zn-Zinc

(cross out non-applicable analytes in 'Analysis' row)

A' designation indicates duplicate sample.
All soil in area was gravel fill material.
Original paperwork was lost in transit (PID measurements were not available)

Sampled by: Jones/Maners

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

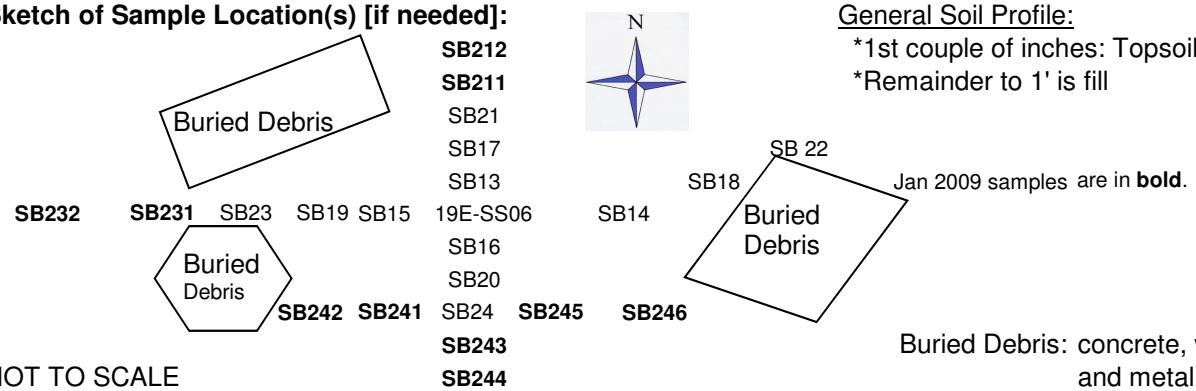
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB211-00	73SB212-00	73SB231-00	73SB232-00	73SB232A-00
Date:	15-Jan-09	15-Jan-09	15-Jan-09	15-Jan-09	15-Jan-09
Time:	1100	1110	1035	1045	1045
PID 0-6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 6"-1':	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Analysis:	Hg	Hg	Cr Co Hg Zn	Cr Co Hg Zn	Cr Co Hg Zn

Sample ID:	73SB241-00	73SB242-00	73SB243-00	73SB244-00	73SB245-00
Date:	15-Jan-09	15-Jan-09	15-Jan-09	15-Jan-09	15-Jan-09
Time:	1515	1500	1345	1315	1430
PID 0-6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 6"-1':	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Analysis:	LLP Cu Hg Zn	LLP Cu Hg Zn	LLP Cu Hg Zn	LLP Cu Hg Zn	LLP Cu Hg Zn

Sample ID:	73SB246-00	73SB246A-00			
Date:	15-Jan-09	15-Jan-09			
Time:	1415	1415			
PID 0-6":	N/A ppm	N/A ppm			
PID 6"-1':	N/A ppm	N/A ppm			
Analysis:	LLP Cu Hg Zn	LLP Cu Hg Zn			

Sketch of Sample Location(s) [if needed]:



NOT TO SCALE

General Soil Profile:
*1st couple of inches: Topsoil
*Remainder to 1' is fill

Jan 2009 samples are in **bold**.

Buried Debris: concrete, wood, and metal

Comments:
LLP-Low Level PAHs Cr-Chromium Co-Cobalt Cu-Copper Hg-Mercury Zn-Zinc
(cross out non-applicable analytes in 'Analysis' row)
A' designation represents a duplicate sample.
Original paperwork was lost in transit (PID measurements were not available)

Sampled by: Jones/Maners

U.S. Army Center for Health Promotion and Preventive Medicine
Surface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

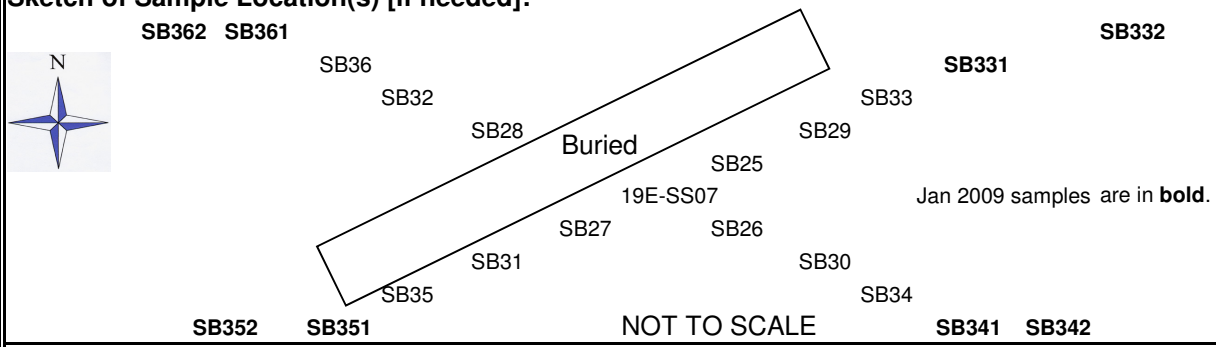
Media: Soil
Sample Depth: 0-1'

Sample ID:	73SB331-00	73SB332-00	73SB341-00	73SB342-00	73SB351-00
Date:	14-Jan-09	14-Jan-09	14-Jan-09	14-Jan-09	15-Jan-09
Time:	1600	1530	1700	1630	0920
PID 0-6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 6"-1':	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Analysis:	Cu V	Cu V	Cu V	Cu V	Cr Co Zn

Sample ID:	73SB352-00	73SB361-00	73SB362-00	73SB362A-00	
Date:	15-Jan-09	15-Jan-09	15-Jan-09	15-Jan-09	
Time:	0915	0945	0955	0955	
PID 0-6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	
PID 6"-1':	N/A ppm	N/A ppm	N/A ppm	N/A ppm	
Analysis:	Cr Co Zn	Co Cu Zn	Co Cu Zn	Co Cu Zn	

Sample ID:					
Date:					
Time:					
PID 0-6":					
PID 6"-1':					
Analysis:					

Sketch of Sample Location(s) [if needed]:



Comments:
Cr-Chromium Co-Cobalt Cu-Copper V-Vanadium Zn-Zinc
(cross out non-applicable analytes in 'Analysis' row)
A' designation represents a duplicate sample.
Original paperwork was lost in transit (PID measurements were not available)

Sampled by: Jones/Maners

Buried Debris: concrete, wood, and metal

SUBSURFACE SOIL SAMPLING LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
Subsurface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Soil

Sample ID:	73SB02-01	73SB02-02	73SB02-03	73SB02-04	
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	
Time:	1015	N/A	N/A	1025	
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	
Depth:	1'-3'	3'-5'	5-7'	7'-9'	
Analysis:	V S LLP OP Metals	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	V S LLP OP Metals	

Sample ID:					
Date:					
Time:					
PID 1st 6":					
PID 2nd 6":					
PID 3rd 6":					
PID 4th 6":					
Depth:					
Analysis:					

Sample ID:					
Date:					
Time:					
PID 1st 6":					
PID 2nd 6":					
PID 3rd 6":					
PID 4th 6":					
Depth:					
Analysis:					

Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides Metals-Total Metals
Moisture and Trip Blanks included with VOCs

Sampled by Jones/Maners/Sinar (QA Oversight)

Water encountered at 9' depth - discontinue soil sampling

Installed 73MW01

U.S. Army Center for Health Promotion and Preventive Medicine
Subsurface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Soil

Sample ID:	73SB14-01	73SB14-02	73SB14-03	73SB14-04	73SB14-05
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Time:	1105	N/A	N/A	1245	N/A
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
Depth:	1'-3'	3'-5'	5-7'	7'-9'	9'-11'
Analysis:	V S LLP OP Metals	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	V S LLP OP Metals	~~V S LLP OP Metals~~

Sample ID:	73SB14-06	73SB14-07	73SB14-08	73SB14-09	73SB14-10
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Time:	N/A	N/A	N/A	N/A	N/A
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
Depth:	11'-13'	13'-15'	15'-17'	17'-19'	19'-21'
Analysis:	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~

Sample ID:	73SB14-11	73SB14-12	73SB14-13	73SB14-14	73SB14-15
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Time:	N/A	N/A	N/A	N/A	N/A
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	N/A ppm
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	N/A ppm
Depth:	21'-23'	23'-25'	25'-27'	27'-29'	29'-30'
Analysis:	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~

Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides Metals-Total Metals
Moisture and Trip Blanks included with VOCs

Sampled by Jones/Maners/Sinar (QA Oversight)

No water encountered in boring. Well not installed at this location.

U.S. Army Center for Health Promotion and Preventive Medicine
Subsurface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Soil

Sample ID:	73SB27-01	73SB27-02	73SB27-03	73SB27-04	73SB27-05
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Time:	1345	N/A	N/A	N/A	N/A
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
Depth:	1'-3'	3'-5'	5-7'	7'-9'	9'-11'
Analysis:	~~V S LLP OP~~ Metals	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~

Sample ID:	73SB27-06	73SB27-07	73SB27-08	73SB27-09	73SB27-10
Date:	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08	7-Apr-08
Time:	N/A	N/A	N/A	1425	N/A
PID 1st 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 2nd 6":	0 ppm	0 ppm	0 ppm	0 ppm	0 ppm
PID 3rd 6":	0 ppm	0 ppm	0 ppm	0 ppm	N/A ppm
PID 4th 6":	0 ppm	0 ppm	0 ppm	0 ppm	N/A ppm
Depth:	11'-13'	13'-15'	15-17'	17'-19'	19'-20'
Analysis:	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP Metals~~	~~V S LLP OP~~ Metals	~~V S LLP OP Metals~~

Sample ID:	73SB27-01A				
Date:	7-Apr-08				
Time:	1345				
PID 1st 6":	N/A ppm				
PID 2nd 6":	N/A ppm				
PID 3rd 6":	N/A ppm				
PID 4th 6":	N/A ppm				
Depth:					
Analysis:	~~V S LLP OP~~ Metals				

Comments:
~~V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides~~ Metals-Total Metals
~~Moisture and Trip Blanks included with VOCs~~

Sampled by Jones/Maners/Sinar (QA Oversight)

Water encountered at 20' depth - discontinue soil sampling

Installed 73MW02

U.S. Army Center for Health Promotion and Preventive Medicine
Subsurface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Soil

Sample ID:	73SB02B-02	73SB02B-03			
Date:	14-Jan-09	14-Jan-09			
Time:	0945	0945			
PID 1st 6":	N/A ppm	N/A ppm			
PID 2nd 6":	N/A ppm	N/A ppm			
PID 3rd 6":	N/A ppm	N/A ppm			
PID 4th 6":	N/A ppm	N/A ppm			
Depth:	3'-5'	5-7'			
Analysis:	OP	OP			

Sample ID:					
Date:					
Time:					
PID 1st 6":					
PID 2nd 6":					
PID 3rd 6":					
PID 4th 6":					
Depth:					
Analysis:					

Sample ID:					
Date:					
Time:					
PID 1st 6":					
PID 2nd 6":					
PID 3rd 6":					
PID 4th 6":					
Depth:					
Analysis:					

Comments:
OP-Organochlorine Pesticides

Original paperwork was lost in transit (PID measurements were not available)
Sampled by Jones/Maners

Next to 73SB02/MW02

U.S. Army Center for Health Promotion and Preventive Medicine
Subsurface Soil Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Soil

Sample ID:	73SB24-01	73SB24-02	73SB24-03	73SB24-04	73SB24-05
Date:	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09
Time:	1010	N/A	N/A	N/A	N/A
PID 1st 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 2nd 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 3rd 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 4th 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Depth:	1'-3'	3'-5'	5-7'	7'-9'	9'-11'
Analysis:	LLP As Cu Hg Zn	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~

Sample ID:	73SB24-06	73SB24-07	73SB24-08	73SB24-09	73SB24-10
Date:	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09	13-Jan-09
Time:	N/A	N/A	N/A	1045	N/A
PID 1st 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 2nd 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 3rd 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
PID 4th 6":	N/A ppm	N/A ppm	N/A ppm	N/A ppm	N/A ppm
Depth:	11'-13'	13'-15'	15'-17'	17'-19'	19'-21'
Analysis:	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~	LLP As Cu Hg Zn

Sample ID:	73SB24-11	73SB24-12			
Date:	13-Jan-09	13-Jan-09			
Time:	N/A	N/A			
PID 1st 6":	N/A ppm	N/A ppm			
PID 2nd 6":	N/A ppm	N/A ppm			
PID 3rd 6":	N/A ppm	N/A ppm			
PID 4th 6":	N/A ppm	N/A ppm			
Depth:	21'-23'	23'-25'			
Analysis:	~~LLP As Cu Hg Zn~~	~~LLP As Cu Hg Zn~~			

Comments:
LLP-Low Level PAHs As - Arsenic Cu-Copper Hg-Mercury Zn-Zinc

Original paperwork was lost in transit (PID measurements were not available)
Sampled by Jones/Maners

Water encountered at ~24'

Installed 73MW03: Y ~~N~~

GEOLOGIC LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
Boring Log
CMS-SWMU73
Camp Moscrip-65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

BORING / MONITORING WELL INSTALLATION LOG

JOB NO 0995 Boring/Well No. SB02/MW01 Depth of Hole 15 feet Sheet 1 Of 1
Geologist D. Jones Sample Method Geoprobe Hole Diameter 8in. Drill Rig Geoprobe Model 66DT
Driller GeoEnviroTech Drilling Method 3-¼″ ID HSA Started 7 APR 08 Completed 8 APR 08

WELL MATERIALS INVENTORY

Well Casing Type PVC In. Dia. 2″ Pack Type & Size No.2 silica sand Seal Type & Size Bentonite Chips
Install Method Through Augers Protective Casing X Y N Protective Casing Type Carbon Steel
Well Screen PVC In. Dia. 2″ Screen Slot Size 0.010″ Grout Type Cement Bentonite Grout

Depth (Ft.)	Sample No.	REC (%)	Lithologic Description / USCS Classification		Well Diagram / Comments
			0-1': Gravelly FILL.		
	See Sample Log	N/A	1'-4': Brown silty fine to medium SAND, little to some angular gravel, moist.	sm	Top of Bentonite: 2' bgs
3					Top of Sand: 3' bgs
			4'-6': Gravelly FILL.	gw	Top of Well Screen: 5' bgs PID reading: 0 ppm
6			6'-9': Brown silty fine to medium SAND, little to some angular gravel, moist.	sm	
9			9'-12.5': Grey silty GRAVEL, angular gravel, saturated.	gm	Water Encountered: 9' bgs
12			12.5'-15': Brownish Red PEAT, strong odor, dry.	pt	PID reading: 300 ppm Bottom of Well: 15' bgs
15			Terminate Boring at 15 feet below ground surface (bgs).		
18					

U.S. Army Center for Health Promotion and Preventive Medicine
Boring Log
CMS-SWMU73
Camp Moscrip-65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

BORING / MONITORING WELL INSTALLATION LOG

JOB NO 0995 Boring/Well No. SB14 Depth of Hole 30 feet Sheet 1 Of 1
Geologist D. Jones Sample Method Geoprobe Hole Diameter 8in. Drill Rig Geoprobe Model 66DT
Driller GeoEnviroTech Drilling Method Geoprobe Started 7 APR 08 Completed 7 APR 08

WELL MATERIALS INVENTORY

Well Casing Type N/A In. Dia. N/A Pack Type & Size N/A Seal Type & Size N/A
Install Method N/A Protective Casing Y N Protective Casing Type N/A
Well Screen N/A In. Dia. N/A Screen Slot Size N/A Grout Type N/A

Depth (Ft.)	Sample No.	REC (%)	Lithologic Description / USCS Classification		Well Diagram / Comments
	See Sample Log	N/A	0-4"': Topsoil with rootlets.		
			4"-2': gravel and clay FILL.		
			2'-11': Reddish brown stiff silty CLAY, moist.	cl	No appreciable water encountered in borehole.
5					
10					PID reading: 0 ppm
			11'-12': Brown plastic CLAY, little silt, moist.	ch	
			12'-20': Lt Grey (also a little red and yellow) stiff silty CLAY, dry.	cl	
15					
20			20'-28': Reddish brown and Lt Grey stiff silty CLAY, dry.		PID reading: 0 ppm
25					
			28'-28.1': Grey medium to coarse SAND, wet.	sp	
			28.1'-30': Brown plastic CLAY, some silt, moist.	ch	
30			Terminate Boring at 30 feet below ground surface (bgs).		Bottom of Boring: 30' bgs

U.S. Army Center for Health Promotion and Preventive Medicine
Boring Log
CMS-SWMU73
Camp Moscrip-65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

BORING / MONITORING WELL INSTALLATION LOG

JOB NO 0995 Boring/Well No. SB27/MW02 Depth of Hole 25 feet Sheet 1 Of 1
Geologist D. Jones Sample Method Geoprobe Hole Diameter 8in. Drill Rig Geoprobe Model 66DT
Driller GeoEnviroTech Drilling Method 3-¼" ID HSA Started 7 APR 08 Completed 8 APR 08

WELL MATERIALS INVENTORY

Well Casing Type PVC In. Dia. 2" Pack Type & Size No.2 silica sand Seal Type & Size Bentonite Chips
Install Method Through Augers Protective Casing X Y N Protective Casing Type Carbon Steel
Well Screen PVC In. Dia. 2" Screen Slot Size 0.010" Grout Type Cement Bentonite Grout

Depth (Ft.)	Sample No.	REC (%)	Lithologic Description / USCS Classification		Well Diagram / Comments
	See Sample Log	N/A	0-4"': Topsoil with rootlets.		Top of Grout: 0' bgs
			4"-3': Yellowish red Clayey SILT, moist.	ml	
5			3'-12': Reddish-brown stiff silty CLAY, moist.	ml	
10					PID reading: 0 ppm Top of Bentonite: 11' bgs
			12'-13': Brown Silty fine SAND, moist.	sm	
15			13'-17': Reddish-brown stiff silty CLAY, moist.	ml	Top of Sand: 13' bgs Top of Well Screen: 15' bgs
			17'-20': Grey (mottled red and yellow) stiff silty CLAY with iron laminations, little coarse sand to gravel, low plasticity, dry.		PID reading: 0 ppm
20			20'-25': Brown fine to medium SAND, some silt., saturated.	sp	Water Encountered: 20' bgs
25			Terminate Boring at 25 feet below ground surface (bgs).		Bottom of Well: 25' bgs
30					

MONITORING WELL CONSTRUCTION

Monitoring Well Construction Summary
CMS - SWMU 73
Camp Moscrip
Naval Activity Puerto Rico
Ceiba, PR

Monitoring Well	**73MW01**	**73MW02**	**73MW03**
Date Constructed	08 Apr 08	08 Apr 08	14 Jan 09
Site Location	19E-03	19E-SS07	19E-SS06
Estimated Water Level	9’	20’	18’
Grout	0-2’	0-11’	0-9’
Bentonite	2’-3’	11’-13’	9’-11’
Sandpack	3’-15’	13’-25’	11’-24’
Riser	Top-5’	Top-15’	Top-13’
Screen	5’-15’	15’-25’	13’-23’
Total Depth	15’	25’	24’

WELL DEVELOPMENT LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
Well Development Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Developed By: Jones/Maners/Sinar (QA)

Well Number: 73MW01
Well Inside Diameter: 2"
Outside Boring Diameter: 8"
Water Level (WL): 9.46'
Total Depth (TD): 17.40'

Well Volume Calculation (WV):

0-2": $V=\Pi r^2 h=(7.94\Pi/144)*7.48gal/ft^3= 1.3gal/well\ volume\ (wv)$

2"-8": $V=\Pi r^2 h-1.3gal/well\ volume=(7.94\Pi/9)*7.48gal/ft^3= 20.7gal/wv-1.3gal/wv=19.5gal/wv*30\%\ porosity=5.8gal/wv$
1WV=1.3gal/wv+5.8gal/wv=7.1 gal/wv
3WV=3*7.1gal/wv=**21.3gal**

Well Development Record

Surge Method: 1 1/2" stainless steel bailer and submersible whale pump
Development Method: submersible whale pump

Date	Time	Cumulative Water Removed (gallons)	Field Parameters			Turbidity (visual)
			Temperature (Centigrade)	pH (su)	Conductivity (mS/cm)	
09 Apr 08	0840	0	22.2	6.45	3.83	v. turbid
09 Apr 08	0843	1	21.7	6.50	3.91	v. turbid
09 Apr 08	0850	2	21.7	6.54	3.94	v. turbid
09 Apr 08	0900	5	22.2	6.48	3.79	v. turbid
09 Apr 08	0950	7	22.9	6.55	2.98	turbid
09 Apr 08	0953	9	22.8	6.69	2.69	turbid
09 Apr 08	1003	12	22.0	6.75	2.71	cloudy
09 Apr 08	1025	20	22.9	6.81	2.52	cloudy
09 Apr 08	1034	23	23.1	6.52	2.33	sl. cloudy
09 Apr 08	1046	26	22.5	6.61	2.33	sl. cloudy
No Further Readings						

Comments:
switch to pump at 0900, continue surge
0945 cease pump and surge, pump only

water has odor of decaying organic materials

temp of pH measurements used

U.S. Army Center for Health Promotion and Preventive Medicine
Well Development Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Developed By: Jones/Maners/Sinar (QA)

Well Number: 73MW02
Well Inside Diameter: 2"
Outside Boring Diameter: 8"
Water Level (WL): 12.33'
Total Depth (TD): 25.52'

Well Volume Calculation (WV):

0-2": $V=\Pi r^2 h=(13.19\Pi/144)*7.48 gal/ft^3= 2.2 gal/well\ volume\ (wv)$

2"-8": $V=\Pi r^2 h-1.3 gal/well\ volume=(13.19\Pi/9)*7.48 gal/ft^3= 34.4 gal/wv-2.2 gal/wv=32.2 gal/wv*30\%\ porosity=9.66 gal/wv$

1WV=2.2gal/wv+9.7gal/wv= 11.9gal/wv

3WV=3*11.9gal/wv=**35.7gal**

Well Development Record

Surge Method: 1 1/2" stainless steel bailer and submersible whale pump
Development Method: submersible whale pump

Date	Time	Cumulative Water Removed (gallons)	Field Parameters			Turbidity (visual)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	
09 Apr 08	1112	0	22.2	5.64	2.90	v. turbid
09 Apr 08	1120	1	21.7	5.87	2.87	v.turbid
09 Apr 08	1130	4	21.5	5.99	29.8	turbid
09 Apr 08	1149	11	21.7	5.75	36.9	cloudy
09 Apr 08	1151	15	21.3	5.72	362	cloudy
09 Apr 08	1156	20	21.3	5.74	364	sl. cloudy
09 Apr 08	1159	25	20.9	5.75	365	sl. cloudy
09 Apr 08	1203	30	21.6	5.72	364	sl. cloudy
09 Apr 08	1206	35	20.8	5.83	363	sl. cloudy
No Further Readings						

Comments:
switch to pump at 5 gallons, continue surge
At 10 gallons removed, cease pump and surge and pump only
temp of pH measurements used

U.S. Army Center for Health Promotion and Preventive Medicine
Well Development Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Developed By: Jones/Maners

Well Number: 73MW03
Well Inside Diameter: 2"
Outside Boring Diameter: 8"
Water Level (WL): ~11'
Total Depth (TD): ~24'

Well Volume Calculation (WV):

0-2": $V=\Pi r^2h=(\quad /144)*7.48gal/ft^3=$ gal/well volume (wv)

2"-8": $V=\Pi r^2h-$ gal/well volume=(/9)*7.48gal/ft^3= gal/wv- gal/wv= gal/wv*30% porosity= gal/wv

1WV= gal/wv+ gal/wv= gal/wv

No Data Available **3WV**=3* gal/wv= **gal**

Well Development Record

Surge Method: 1 1/2" stainless steel bailer and submersible whale pump
Development Method: submersible whale pump

Date	Time	Cumulative Water Removed (gallons)	Field Parameters			Turbidity (visual)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	
No Data Available						

Comments:

Surge well with heavy stainless steel bailer until 5 gallons then swtich to submersible pump.
Approximately 35 gallons were removed during development.

GROUND-WATER SAMPLING LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
GW Sampling Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Sample No./Time: 73MW01 & 73MW01A/1010

Well Number: 73MW01
Well Inside Diameter: 2"
Water Level (WL): 9.54'
Total Depth (TD): 17.46'

Well Volume Calculation (WV) (if needed):

Sampled By: Jones/Maners

N/A

Well Purging Record

Purging/Sampling Method: low flow submersible pump
Pump Rate: ~400ml/m

Date	Time	Cumulative Water Removed (gallons)	Field Parameters				Dissolved Oxygen (%)	Turbidity (Ntu)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	Redox (mV)		
10 Apr 08	0910	0	31.3	6.58	24.4	-237	58.5	60
10 Apr 08	0915	(see pump rate)	31.7	6.55	27.3	-273	121.4	55
10 Apr 08	0920	"	32.1	6.57	26.5	-284	180.1	45
10 Apr 08	0925	"	32.3	6.52	27.2	-295	146.4	45
10 Apr 08	0930	"	32.3	6.47	27.2	-315	45.1	34
10 Apr 08	0935	"	32.5	6.44	26.8	-317	40.0	28
10 Apr 08	0940	"	32.5	6.42	26.5	-325	0.9	22
10 Apr 08	0945	"	32.6	6.38	25.9	-336	0.0	13
10 Apr 08	0950	"	32.6	6.38	25.5	-341	0.0	9.5
10 Apr 08	0955	"	32.6	6.39	24.9	-344	0.0	9.2
10 Apr 08	1000	"	32.6	6.40	24.8	-344	0.0	8.7
10 Apr 08	1005	"	32.7	6.40	24.7	-345	0.0	9.0
No Further Readings								

Comments:
Analysis: VOCs, SVOCs, Low Level PAHs, ~~Organochlorine Pesticides~~, Dissolved Metals (cross out non-applicable)
Trip Blanks included with VOCs

temp of conductivity measurement used

Pump set 5' above bottom of well
Approximately 5 gallons of water removed during purge and sampling

U.S. Army Center for Health Promotion and Preventive Medicine
GW Sampling Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Well Number: 73MW02
Well Inside Diameter: 2"
Water Level (WL): 12.36'
Total Depth (TD): 27.10'

Sample No./Time: 73MW02/1240

Well Volume Calculation (WV) (if needed):

Sampled By: Jones/Maners

N/A

Well Purging Record

Purging/Sampling Method: low flow submersible pump
Pump Rate: ~400ml/m

Date	Time	Cumulative Water Removed (gallons)	Field Parameters				Dissolved Oxygen (%)	Turbidity (Ntu)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	Redox (mV)		
10 Apr 08	1140	0	32.4	5.72	323	24	7.6	120
10 Apr 08	1145	(see pump rate)	31.4	5.71	329	7	0.0	230
10 Apr 08	1150	"	31.3	5.71	333	-5	0.0	165
10 Apr 08	1155	"	31.3	5.71	333	-7	0.0	120
10 Apr 08	1200	"	31.2	5.73	336	-30	0.0	100
10 Apr 08	1205	"	31.2	5.74	338	-48	0.0	85
10 Apr 08	1210	"	31.0	5.75	345	-80	0.0	50
10 Apr 08	1215	"	30.9	5.75	344	-96	0.0	38
10 Apr 08	1220	"	31.0	5.76	346	-122	0.0	26
10 Apr 08	1225	"	33.0	5.76	344	-116	0.0	24
10 Apr 08	1230	"	33.4	5.75	344	-105	0.0	20
10 Apr 08	1235	"	33.5	5.75	344	-108	0.0	19
No Further Readings								

Comments:
Analysis: ~~VOCs, SVOCs, Low Level PAHs, Organochlorine Pesticides,~~ Dissolved Metals (cross out non-applicable)
~~Trip Blanks included with VOCs~~

temp of conductivity measurement used

Pump set a 10' above bottom of well
Approximately 4 gallons of water removed during purge and sampling

U.S. Army Center for Health Promotion and Preventive Medicine
GW Sampling Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Well Number: 73MW02
Well Inside Diameter: 2"
Water Level (WL): 11.08'
Total Depth (TD): 27.10'

Sample No./Time: 73MW02/1115

Well Volume Calculation (WV) (if needed):

N/A

Sampled By: Jones/Maners

Well Purging Record

Purging/Sampling Method: low flow submersible pump
Pump Rate: ~400ml/m

Date	Time	Cumulative Water Removed (gallons)	Field Parameters				Dissolved Oxygen (%)	Turbidity (Ntu)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	Redox (mV)		
16 Jan 09	**No Data Available**							
No Further Readings								

Comments:
Analysis: As (D), Cu (D), Ni (D), Ag (D) (D)-Dissolved

Pump set a 10' above bottom of well

U.S. Army Center for Health Promotion and Preventive Medicine
GW Sampling Log

CMS-SWMU 73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Well Data

Well Number: 73MW03
Well Inside Diameter: 2"
Water Level (WL): 10.77'
Total Depth (TD): ~24'

Sample No./Time: 73MW03 & 73MW03A/1020

Well Volume Calculation (WV) (if needed):

N/A

Sampled By: Jones/Maners

Well Purging Record

Purging/Sampling Method: low flow submersible pump
Pump Rate: ~400ml/m

Date	Time	Cumulative Water Removed (gallons)	Field Parameters				Dissolved Oxygen (%)	Turbidity (Ntu)
			Temperature (Centigrade)	pH (su)	Conductivity (uS/cm)	Redox (mV)		
16 Jan 09	**No Data Available**							
No Further Readings								

Comments:
Analysis: Low Level PAHs, As (D), Cu (D), Hg (D), Ni (D), Ag (D) (D)-Dissolved

Pump set a 10' above bottom of well

QA/QC FIELD SAMPLING LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
General Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Water

Sample ID:	73ER-01	73ER-02 (Hold)	73ER-03	73ER-04	73ER-05 (Hold)
Date:	31-Mar-08	1-Apr-08	1-Apr-08	2-Apr-08	3-Apr-08
Time:	1500	1340	1430	1500	0930
Equip:	shoe/sleeve/Al foil	shoe/sleeve/Al foil	vinyl gloves	shoe/sleeve/Al foil	shoe/sleeve/Al foil
Analysis:	V S LLP OP TMetals	V S LLP OP TMetals	V S LLP OP TMetals	V S LLP OP TMetals	V S LLP OP TMetals

Sample ID:	73ER-06	73ER-07			
Date:	7-Apr-08	10-Apr-08			
Time:	1525	1330			
Equip:	scoop/sleeve/shoe	gw sample tubing			
Analysis:	V S LLP OP TMetals	V S LLP ~~OP~~ TMetals			

Sample ID:					
Date:					
Time:					
Equip:					
Analysis:					

Sample ID:					
Date:					
Time:					
Equip:					
Analysis:					

Sample ID:	73FB-01	73FB-02	73FB-03	73FB-03A	
Date:	1-Apr-08	1-Apr-08	1-Apr-08	1-Apr-08	
Time:	1330	1400	0830	0830	
Water:	Lab Grade Deionized	Distilled	NAPR Tap	NAPR Tap	
Analysis:	V S LLP OP TMetals	V S LLP OP TMetals	V S LLP OP TMetals	V S LLP OP TMetals	

Comments:
V-VOCs S-SVOCs LLP-Low Level PAHs OP-Organochlorine Pesticides TMetals-Total Metals
A' designation indicates dulicate sample
Sampled by: Jones/Maners/Sinar (QA Oversight)

U.S. Army Center for Health Promotion and Preventive Medicine
General Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Media: Water

Sample ID:	73ER-08 (Hold)	73ER-09	73ER-10		
Date:	13-Jan-09	14-Jan-09	15-Jan-09		
Time:	1600	1730	1600		
Equip:	Shoe & Liner	shoe and bowl	shoe and bowl		
Analysis:	~~LLP OP TMetals~~	~~LLP~~ OP TMetals	LLP OP TMetals		
Sample ID:					
Date:					
Time:					
Equip:					
Analysis:					
Sample ID:					
Date:					
Time:					
Equip:					
Analysis:					
Sample ID:					
Date:					
Time:					
Equip:					
Analysis:					
Sample ID:	73FB-04	73FB-05	73FB-06	73FB-06A	
Date:	16-Jan-09	16-Jan-09	16-Jan-09	16-Jan-09	
Time:	1400	1430	1500	1500	
Water:	Lab Grade Deionized	Distilled	NAPR Tap	NAPR Tap	
Analysis:	LLP OP TMetals	LLP OP TMetals	LLP OP TMetals	LLP OP TMetals	

Comments:
LLP-Low Level PAHs OP-Organochlorine Pesticides TMetals-Total Metals
A' designation indicates dulicate sample
Sampled by: Jones/Maners

IDW SAMPLING LOGS

U.S. Army Center for Health Promotion and Preventive Medicine
IDW Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Sample ID:	73IDW-01	73IDW-02
Date:	10-Apr-08	10-Apr-08
Time:	1400	1430
Media	Soil	Water
Type:	Composite	Composite
Analysis:	Benzene/Moisture RCRA Metals	Benzene RCRA Metals

Comments:
Trip Blanks included with Benzene

Sampled by: Jones/Maners

U.S. Army Center for Health Promotion and Preventive Medicine
IDW Sampling Log

CMS-SWMU73
Camp Moscrip - 65th RRC
Naval Activity Puerto Rico
Ceiba, Puerto Rico

Sample Collection Information:

Sample ID:	73IDW-03	73IDW-04
Date:	16-Jan-09	16-Jan-09
Time:	1515	1530
Media	Soil	Water
Type:	Composite	Composite
Analysis:	RCRA Metals	RCRA Metals

Comments:

Sampled by: Jones/Maners

EQUIPMENT CALIBRATION LOGS

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Pocket Meter Multiline P3
pH - Conductivity-Temperature
Calibration Form

Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Model: P3 Serial No. 01190023 MMCN: _____

ID.#: LF-2

Lo Battery Indication X No _____ Yes, Replace Batteries Batteries Replaced X No ____ Yes, Proceed

pH Electrode Wet(After removing wetting cap) ____ No, Replace electrode or soak in neutral buffer solution for 24 hours
X Yes, Proceed

pH Buffer Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

pH 4 Buffer Solution: Expiration Date 6/08 Lot No. 6AF055
pH 7 Buffer Solution: Expiration Date 5/08 Lot No. 6AE069
pH 10 Buffer Solution: Expiration Date _____ Lot No. _____

pH Two Point Calibration

pH / Temperature Probe Model No: SENTIX41 pH Probe Serial No: A031109166

1st Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 7 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 7.03 7.00 Adjusted Reading, Press Run 11 mV Admissible Asymmetry Range(+/-30mV)

2nd Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 4or10 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 4.04 4:00 Adjusted Reading, Press Run 57.4 mV Slope
Admissible Slope Range (-50.0 mV/pH ... -62.0 mV/pH)

One Point Conductivity Calibration

Conductivity Cell Model No: Tetracon 325 Conductivity Cell Serial No: 01110052

Conductivity Control Standard Solution Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Solution 1413
Reading 1412

Conductivity Control Standard Solution: Expiration Date 10/08 Lot No: ~~270354~~ 7AJ122

1. Rinse Conductivity Cell ✓ 2. Set unit to Conductivity measurement

3. Immerse in Control Standard Solution (0.01 mol/L KCL) ✓ 4. Press Cal, then Run ✓

5. Record Cell Constant 484 (Acceptable 0.475/cm +/-0.025 /cm)

Temperature Calibration

Certified Thermometer Serial No. 5A3A Calibration Date: VOID 11/09

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ✓
(Wait for a stable reading)

3. Record Probe Reading 16.2 4. Record Thermometer Reading 17
(Admissible Range +/- 1 digit)

Technicians Signature: MANERS Date: 4-9-08

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Pocket Meter Multiline P3

REDOX and DISSOLVED OXYGEN METER

Calibration Form

Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Model: P3 Serial No. 01130006 MMCN: _____

ID.# LF-2

Lo Battery Indication ✓ No _____ Yes, Replace Batteries Batteries Replaced ✓ No ____ Yes, Proceed

REDOX Calibration

ORP Probe Model No: Pt 4805 / S7 ORP Probe Serial No: K013401012

REDOX Buffer Solution Manufacturer: Mettler Toledo GmbH
ProzeBanalytik
D-61449, Steinbach

REDOX Buffer Solution: Expiration Date 4/08 Lot No: 109740

Redox Buffer Voltage 218 mV & Temperature Value of Redox Buffer 27
(Both From Bottle Data)

1. Probe full of electrolyte ___ No, Refill w/ KCL Solution ✓ Yes, Proceed 2. Rinse probe, (*NEVER WIPE DRY*) ✓

3. Set measuring mode to the Redox mV function. 4. Immerse probe in redox buffer solution. (Wait for stability)

Calibration Reading 210 mV
(Acceptable Range +/- 30mV)

Dissolved Oxygen Calibration

Dissolved Oxygen Probe Model No: CELLOX 325 Dissolved Oxygen Probe Serial No: 01460332

1. Set measuring mode to dissloved oxygen. 2. Remove sensor from air chamber and moisten sponge ✓

3. Seal probe in air chamber, ✓ Press Cal then Run. 4. Record relative slope of the probe 1.12
(Admissible Range 0.6-1.25)

Temperature Calibration

Certified Thermometer Serial No. _____ Calibration Date: _____

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ____
(Wait for a stable reading)

3. Record Probe Reading _____ 4. Record Thermometer Reading ____
(Admissible Range +/- 1 digit)

Technicians Signature: Manes Date: 4-8-08

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Pocket Meter Multiline P3
pH - Conductivity-Temperature
Calibration Form

Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Model: P3 Serial No. 01190023 MMCN: _____

ID.# : LF-2

Lo Battery Indication ✓ No _____ Yes, Replace Batteries Batteries Replaced ✓ No ____ Yes, Proceed

pH Electrode Wet(After removing wetting cap) ____ No, Replace electrode or soak in neutral buffer solution for 24 hours
✓ Yes, Proceed

pH Buffer Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

pH 4 Buffer Solution: Expiration Date 6/08 Lot No. 6AF055
pH 7 Buffer Solution: Expiration Date 5/08 Lot No. 6AE069
pH 10 Buffer Solution: Expiration Date _____ Lot No. _____

pH Two Point Calibration

pH / Temperature Probe Model No: SENTIX41 pH Probe Serial No: A031109166

1st Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 7 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 6.89 7.00 Adjusted Reading, Press Run 13 mV Admissible Asymmetry Range(+/-30mV)

2nd Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 4or10 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 4.06 4.00 Adjusted Reading, Press Run -57.4 mV Slope
Admissible Slope Range (-50.0 mV/pH ... -62.0 mV/pH)

One Point Conductivity Calibration

Conductivity Cell Model No: Tetracon 325 Conductivity Cell Serial No: 01110052

Conductivity Control Standard Solution Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Conductivity Control Standard Solution: Expiration Date 10/08 Lot No: ~~[illegible]~~ 7AJ122

1. Rinse Conductivity Cell ____ 2. Set unit to Conductivity measurement

3. Immerse in Control Standard Solution (0.01 mol/L KCL) ✓ 4. Press Cal, then Run ✓

5. Record Cell Constant 475 (Acceptable 0.475/cm +/-0.025 /cm)

Temperature Calibration

Certified Thermometer Serial No. 5A3A Calibration Date: VOID 11/09

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ✓
(Wait for a stable reading)

3. Record Probe Reading 27 4. Record Thermometer Reading 27
(Admissible Range +/- 1 digit)

Technicians Signature: Maren Date: 4/8/08

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Pocket Meter Multiline P3
pH - Conductivity-Temperature
Calibration Form

Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Model: P3 Serial No. 01190023 MMCN: _____

ID.#: LF-2

Lo Battery Indication X No _____ Yes, Replace Batteries Batteries Replaced X No ____ Yes, Proceed

pH Electrode Wet(After removing wetting cap) ____ No, Replace electrode or soak in neutral buffer solution for 24 hours
✓ Yes, Proceed

pH Buffer Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

pH 4 Buffer Solution: Expiration Date 6/08 Lot No. 6AF055
pH 7 Buffer Solution: Expiration Date 5/08 Lot No. 6AE069
pH 10 Buffer Solution: Expiration Date _____ Lot No. _____

pH Two Point Calibration

pH / Temperature Probe Model No: SENTIX41 pH Probe Serial No: A031109166

1st Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 7 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 6.93 6.99 Adjusted Reading, Press Run 5 mV Admissible Asymmetry Range(+/-30mV)

2nd Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 4 or 10 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 3.94 4.00 Adjusted Reading, Press Run 57.4 mV Slope
Admissible Slope Range (-50.0 mV/pH ... -62.0 mV/pH)

One Point Conductivity Calibration

Conductivity Cell Model No: Tetracon 325 Conductivity Cell Serial No: 01110052

Conductivity Control Standard Solution Manufacturer: WTW Measurement Systems
3170 Metro Parkway
Ft. Myers, Fl. 33916

Solution 1413
Reading 1418

Conductivity Control Standard Solution: Expiration Date 10/08 Lot No: ~~2703543~~ 7AJ122

1. Rinse Conductivity Cell ✓ 2. Set unit to Conductivity measurement

3. Immerse in Control Standard Solution (0.01 mol/L KCL) ____ 4. Press Cal, then Run ____

5. Record Cell Constant 485 (Acceptable 0.475/cm +/-0.025 /cm)

Temperature Calibration

Certified Thermometer Serial No. 5A3A Calibration Date: VOID 11/09

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ____
(Wait for a stable reading)

3. Record Probe Reading 22.8 4. Record Thermometer Reading 22.5
(Admissible Range +/- 1 digit)

Technicians Signature: MANERS Date: 4-10-08

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Pocket Meter Multiline P3
REDOX and DISSOLVED OXYGEN METER
Calibration Form

Manufacturer: WTW Measurement Systems Model: P3 Serial No. 01130006 MMCN: _____
3170 Metro Parkway
Ft. Myers, Fl. 33916
ID.# LF-2

Lo Battery Indication X No _____ Yes, Replace Batteries Batteries Replaced X No ____ Yes, Proceed

REDOX Calibration

ORP Probe Model No: Pt 4805 / S7 ORP Probe Serial No: K013401012

REDOX Buffer Solution Manufacturer: Mettler Toledo GmbH
ProzeBanalytik
D-61449, Steinbach

REDOX Buffer Solution: Expiration Date 4/08 Lot No: 109740

Redox Buffer Voltage 206 mV & Temperature Value of Redox Buffer 22°C
(Both From Bottle Data)

1. Probe full of electrolyte ___ No, Refill w/ KCL Solution ✓ Yes, Proceed 2. Rinse probe, (*NEVER WIPE DRY*) ✓

3. Set measuring mode to the Redox mV function. 4. Immerse probe in redox buffer solution. (Wait for stability)

Calibration Reading 216 mV
(Acceptable Range +/- 30mV)

Dissolved Oxygen Calibration

Dissolved Oxygen Probe Model No: CELLOX 325 Dissolved Oxygen Probe Serial No: 01460332

1. Set measuring mode to dissloved oxygen. 2. Remove sensor from air chamber and moisten sponge ✓

3. Seal probe in air chamber, ✓ Press Cal then Run. 4. Record relative slope of the probe .82
(Admissible Range 0.6-1.25)

Temperature Calibration

Certified Thermometer Serial No. _____ Calibration Date: _____

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ____
(Wait for a stable reading)

3. Record Probe Reading _____ 4. Record Thermometer Reading ____
(Admissible Range +/- 1 digit)

Technicians Signature: MANERS Date: 4-10-08

U.S. Army Center for Health Promotion and Preventive Medicine
Photoionization Detector Calibration Log

Instrument Information:

Manufacturer: RAE Systems
1339 Moffett Park Drive
Sunnyvale, Ca. 94089
408-752-0723

Model: MiniRae 2000 (PGM-7600)
Serial Number: 110-009550
MMCN: N/A
Lamp:____ 9.5eV __X_10.2eV ____10.6eV____11.7eV

Calibration Gas Information: Select a Cal Gas Supplier

_____	Zero Gas	Span Gas
Manufacture:	Manufacture:	Manufacture:
Liquid Technology	Rae Systems	Calgaz LLC
2564 Pemberton Dr.	1339 Moffett Park Dr.	821 Chesapeake Dr.
Apopka, Fl.	Sunnyvale, Ca. 94089	Cambridge, Md. 21613
407-292-2990	408-752-0723	410-228-6400

Calibration Gas: 100 ppm Isobutylene in air.
Lot No.: 84034 Exp. Date: April 2008

Zero Air Calibration Gas
Lot No.: 86511 Exp. Date: MAY 2009

Calibration Information:

Date	Time	Battery Check	Cylinder Pressure +30psi ?	Zero Cal Reading	Cal Gas Reading	Tech Initial	Comments
1-28-08	1000	Fresh ✓ Alk	Zero 300+ / Span 850	0.0	100.0	MEJ.	SAVED AS MEMORY #0 ISOBUTYLENE 100PPM
3-31-08	0840	✓	270	0.0	103.0	GDM	PUERTO RICO Isobutylene 100 ppm
4-1-08	0830	✓	270	0.0	98.2	GDM	" "
4-2-08	0815	✓	250	0.2	98.4	GDM	" "
4-3-08	0800	✓	250	0.0	100.0	GDM	PUERTO RICO Isobutylene 100 ppm
4-7-08	0750	✓	225	0.1	101.0	GDM	NEW BATTERIES INSTALLED
4-8-08	0730	✓	190	0.0	102.00	GDM	PUERTO RICO
4-24-08	1400	✓	✓	0.0	100.0	GDM	POST PUERTO RICO

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Turbidimeter Calibration Log

Instrument Information:
Manufacturer: La Motte Company, Chestertown, MD Model No.: 2020
Serial Number: 2842-4501

Calibration Fluid Information:
Standard A: 1
Manufacturer: LaMotte
Lot No.: P677871 Exp. Date: 7/08
Standard B: 10
Manufacturer: AMCO
Lot No.: P674931 Exp. Date: 7/08
Standard C: 40
Manufacturer: ORBECO-HELLICE
Lot No.: B4094 Exp. Date: 12/07

Calibration Data: +/- 2% for <100 NTU, +/- 3% for >100 NTU

Date	Time	Battery Check	Standard A Calibration	Standard B Calibration	Standard C Calibration	Technician Initial	Comments
10/24/07	1530		1	9.8	40	GDM	DETRICK
4-10-08	0750	✓	.95	10	40	GDM	PUERTO RICO

Field Checks:

Date	Time	Battery Check	Standard A Reading (1.0)	Standard B Reading (10.0)	Standard C Reading (40.0)	Technician Initial	Comments
10/29/07	1051	✓	1.7	10	50	TM	Detrick
10/30/07	0755	✓	1.4	9.8	50	TM	Detrick
10/31/07	0729	✓	1.5	9.6	50	TM	Detrick
10/31/07	1429	✓	1.6	10.0	50	TM	Post Detrick
11/23/07	1100	✓	1.5	9.9	50	TMT	Camp Parks
12/10/07	0945	✓	1.3	9.6	50	TM	Camp PARKS
12/11/07	0949	✓	1.6	10.0	50	TM	Camp Parks
3/4/08	1513	✓	1.2	8.5	45	TJS	PARKS
3/5/08	1	✓	1.2	9.4	45	RA	Panetta
4-10-08	0750	✓	.95	10.0	40	GDM	Puerto Rico
4-23-08	0930	✓	1.0	9.8	40	GDM	POST PUERTO RICO
5-12-08	1225	✓	1.0	10.0	40	TM	Pre Ft Detrick Sludge

U.S. Army Center for Health Promotion and Preventive Medicine
Photoionization Detector Calibration Log

Instrument Information:

Manufacturer: RAE Systems
1339 Moffett Park Drive
Sunnyvale, Ca. 94089
408-752-0723

Model: MiniRae 2000 (PGM-7600)
Serial Number: 110-009550
MMCN: N/A
Lamp: ____ 9.5eV __X_ 10.2eV ____ 10.6eV ____ 11.7eV

Calibration Gas Information: Select a Cal Gas Supplier

	Zero Gas	Span Gas
Manufacture:	Manufacture:	Manufacture:
Liquid Technology	Rae Systems	Calgaz LLC
2564 Pemberton Dr.	1339 Moffett Park Dr.	821 Chesapeake Dr.
Apopka, Fl.	Sunnyvale, Ca. 94089	Cambridge, Md. 21613
407-292-2990	408-752-0723	410-228-6400

Calibration Gas: 100 ppm Isobutylene in air.
Lot No.: 84034 Exp. Date: April 2008

Zero Air Calibration Gas
Lot No.: 86511 Exp. Date: MAY 2009

Calibration Information:

Date	Time	Battery Check	Cylinder Pressure +30psi ?	Zero Cal Reading	Cal Gas Reading	Tech Initial	Comments
1-28-08	1000	Fresh ✓ Alk	Zero 300+ / Span 850	0.0	100.0	MEJ.	SAVED AS MEMORY #0 ISOBUTYLENE 100 ppm
3-31-08	0840	✓	270	0.0	103.0	GDM	Puerto Rico Isobutylene 100 ppm
4-1-08	0830	✓	270	0.0	98.2	GDM	" "
4-2-08	0815	✓	250	0.2	98.4	GDM	" "
4-3-08	0800	✓	250	0.0	100.0	GDM	Puerto Rico Isobutylene 100 ppm
4-7-08	0750	✓	225	0.1	101.0	GDM	New Batteries installed
4-8-08	0730	✓	190	0.0	102.00	GDM	Puerto Rico
4-24-08	1400	✓	✓	0.0	100.0	GDM	Post Puerto Rico
10-6-08	1530	✓	✓	0.0	101.00	GDM	Fort Meade
11-14-08	1030	✓	✓	0.0	99.1	CL	Orland Park, IL
1-8-09	1000	✓	✓	0.0	100.0	GDM	Pre Puerto Rico
1-13-09	0900	✓		0.0		GDM	Puerto Rico / New Batteries
1-14-09	1300	✓	✓	0.0	100.0	GDM	Puerto Rico
1-15-09	0900	✓	✓	0.0	100.0	GDM	Puerto Rico

U.S. Army Center for Health Promotion and Preventive Medicine

Ground Water and Solid Waste Program

Turbidimeter Calibration Log

Instrument Information:
Manufacturer: La Motte Company, Chestertown, MD Model No.: 2020
Serial Number: 2842-4501

Calibration Fluid Information:
Standard A: 1.0 NTU
Manufacturer: LaMotte
Lot No.: P887311 Exp. Date: 2/10

Standard B: 10.0 NTU
Manufacturer: LaMotte
Lot No.: P887309 Exp. Date: 10/09

Standard C: 100 NTU
Manufacturer: LaMotte
Lot No.: P784628 Exp. Date: 4/10

Calibration Data: +/- 2% for <100 NTU, +/- 3% for >100 NTU

Date	Time	Battery Check	Standard A Calibration	Standard B Calibration	Standard C Calibration	Technician Initial	Comments
23 OCT 08	1500	OK	1.50/1.00	10.84/10.0	68.4/90.1	CL	

Field Checks:

Date	Time	Battery Check	Standard A Reading	Standard B Reading	Standard C Reading	Technician Initial	Comments
16 JAN 09	0830	✓	1.0	10.0	100.0	GDM	Puerto Rico

U.S. Army Center for Health Promotion and Preventive Medicine
Ground Water and Solid Waste Program

Pocket Meter Multiline P3
pH - Conductivity-Temperature
Calibration Assurance Form

Manufacturer: Model: P3 Serial No. 00340038 MMCN: ____
ID.# LF-3

Lo Battery Indication ____ No ____ Yes, Replace Batteries Batteries Replaced ___ No ___ Yes, Proceed

pH Electrode Wet(After removing wetting cap) ____ No, Replace electrode or soak in neutral buffer solution for 24 hours
____ Yes, Proceed

pH Buffer Manufacturer:

pH 4 Buffer Solution: Expiration Date 2/10 Lot No. 3381818 Lamotte
pH 7 Buffer Solution: Expiration Date 3/10 Lot No. 84C002 GeoTech
pH 10 Buffer Solution: Expiration Date ____ Lot No. ____

pH Two Point Calibration

pH / Temperature Probe Model No: pH Probe Serial No: A070812062

1st Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 7 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 7.14 7.00 Adjusted Reading, Press Run -26 mV Admissible Asymmetry Range(+/-30mV)

2nd Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 4or10 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 4.03 3.99 Adjusted Reading, Press Run -59.2 mV Slope
Admissible Slope Range (-50.0 mV/pH ... -62.0 mV/pH)

One Point Conductivity Calibration

Conductivity Cell Model No: Conductivity Cell Serial No: 00310112

Conductivity Control Standard Solution Manufacturer: Solution 1413 Reading 1420

Conductivity Control Standard Solution: Expiration Date 4/09 Lot No: 2804173

1. Rinse Conductivity Cell ✓ 2. Set unit to Conductivity measurement

3. Immerse in Control Standard Solution (0.01 mol/L KCL) ✓ (1413µmhos) 4. Press Cal, then Run ✓

5. Record Cell Constant .479 (Acceptable 0.475/cm +/-0.025 /cm) 6. Record Reading 1420 µmhos
+/- 10% of Standard Acceptable

Temperature Calibration

NIST Traceable Certified Thermometer Serial No. 54326 Calibration Void: 11 Nov 09
Certified By: U.S. Army
Test Measurement and Diagnostic Equipment Support Center
Electrical Standards Laboratory (Bldg. 2482) - Aberdeen Proving Ground, Md.

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ____
(Wait for a stable reading)

3. Record Probe Reading 28.3 4. Record Thermometer Reading 28
(Admissible Range +/- 1 digit)

Technicians Signature: Marlen Date: 1-14-09

U.S. Army Center for Health Promotion and Preventive Medicine
Ground Water and Solid Waste Program

Pocket Meter Multiline P3
pH - Conductivity-Temperature
Calibration Assurance Form

Manufacturer: Model: P3 Serial No. 00340038 MMCN: _____
ID.# LF-3

Lo Battery Indication ✓ No _____ Yes, Replace Batteries Batteries Replaced ✓ No ____ Yes, Proceed

pH Electrode Wet(After removing wetting cap) ____ No, Replace electrode or soak in neutral buffer solution for 24 hours
✓ Yes, Proceed

pH Buffer Manufacturer:

pH 4 Buffer Solution: Expiration Date 2/10 Lot No. 3381818 Lamotte
pH 7 Buffer Solution: Expiration Date 3/10 Lot No. 84C002 GeoTech
pH 10 Buffer Solution: Expiration Date _____ Lot No. _____

pH Two Point Calibration

pH / Temperature Probe Model No: pH Probe Serial No: 4070812062

1st Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 7 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 7.12 7.00 Adjusted Reading, Press Run -26 mV Admissible Asymmetry Range(+/-30mV)

2nd Pt. 1. Rinse pH Probe: ✓ 2. Set unit to pH mode and immerse in pH 4or10 Buffer Solution ✓ 3. Press Cal, then Run.

Calibration Reading 4.09 4.00 Adjusted Reading, Press Run -59.2 mV Slope
Admissible Slope Range (-50.0 mV/pH ... -62.0 mV/pH)

One Point Conductivity Calibration

Conductivity Cell Model No: Conductivity Cell Serial No: 00310112

Conductivity Control Standard Solution Manufacturer:

Conductivity Control Standard Solution: Expiration Date 4/09 Lot No: 2804173

1. Rinse Conductivity Cell ✓ 2. Set unit to Conductivity measuremant

3. Immerse in Control Standard Solution (0.01 mol/L KCL) ✓ (1413µmhos) 4. Press Cal, then Run ✓

5. Record Cell Constant 1474 (Acceptable 0.476/cm +/-0.026 /cm) 6. Record Reading 1411 µmhos
+/- 10% of Standard Acceptable

Temperature Calibration

NIST Traceable Certified Thermometer Serial No. 5A326 Calibration Void: 11 Nov 09
Certified By: U.S. Army
Test Measurement and Diagnostic Equipment Support Center
Electrical Standards Laboratory (Bldg. 2482) - Aberdeen Proving Ground, Md.

1. Set measuring mode to pH. 2. Place pH probe in distilled water or buffer solution along with thermometer ✓
(Wait for a stable reading)

3. Record Probe Reading 25.7 4. Record Thermometer Reading 25.5
(Admissible Range +/- 1 digit)

Technicians Signature: Mauen Date: 1-16-09

U.S. Army Center for Health Promotion and Preventive Medicine
Ground Water and Solid Waste Program

Pocket Meter Multiline P3
REDOX and DISSOLVED OXYGEN METER
Calibration Assurance Form

Manufacturer: Model: P3 Serial No. 00380004 MMCN: _____

ID.#: LF3

Lo Battery Indication X No _____ Yes, Replace Batteries Batteries Replaced X No ____ Yes, Proceed

REDOX Probe Information

ORP Probe Model No: SenTix ORP Probe Serial No: K021609042

REDOX Buffer Solution Manufacturer:

OR

REDOX Buffer Solution: Expiration Date 11/2011 Lot No: G1590

1. Set measuring mode to the Redox mV function.
Redox Buffer Voltage 200-275 mV & Temperature Value of Redox Buffer 25°C
(Both From Bottle Data)

1. Probe full of electrolyte ___ No, Refill w/ KCL Solution ✓ Yes, Proceed 2. Rinse probe, (*NEVER WIPE DRY*) ✓

4. Immerse probe in redox buffer solution.
(Wait for stability)

Calibration Reading 235 mV
(Acceptable Range +/- 30mV)

Dissolved Oxygen Calibration

Dissolved Oxygen Probe Model No: Dissolved Oxygen Probe Serial No: 03360160

Probe Recalibration Indicator Flashing _____ No, Proceed ✓ Yes, Perform Recalibration

1. Set measuring mode to dissloved oxygen. 2. Remove sensor from air chamber and moisten sponge ✓

3. Seal probe in air chamber, ✓ Press Cal then Run. 4. Record relative slope of the probe .85
(Admissible Range 0.6-1.25)

Technicians Signature: [signature] Date: 1-16-09

FIELD CHAIN OF CUSTODY LOGS

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

CANC.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C		4C	4C								

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moisture	+Moist SVOC	+Post LL PAH	Org Pest	Moisture	Moisture	RCRA	Boron	Org Pest	Mercury
73SB01-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB01A-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB02-00	31 MAR 08	1200	✓		SO	5	3		1	1							
73SB03-00	31 MAR 08	1240	✓		SO	5	3		1	1							
73SB04-00	31 MAR 08	1300	✓		SO	5	3		1	1							
73SB05-00	31 MAR 08	1330	✓		SO	5	3		1	1							
73SB06-00	31 MAR 08	1400	✓		SO	5	3		1	1							
ER-01	31 MAR 08	1500	✓		W	8	3		2	2						1	
Trip Blanks					W	3	3										
Nothing Follows																	
						41	<- Total Number of Containers										

SHIPMENT METHOD - FedEx
Date Shipped-

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature]	31 MAR 08/1400			
		Kathy Binkley	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify) water VOCs have HCl preservative
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

Lanc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ___ HIGH (10 BUS DAYS) ___ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low Level PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB 00-00		1030	✓		SO	5	3		1	1							
73SB 09-00		09,00	✓		SO	5	3		1	1							
73SB 10-00		0930	✓		SO	5	3		1	1							
73SB 11-00		1130	✓		SO	5	3		1	1							
73SB 12-00		1100	✓		SO	5	3		1	1			Pkg				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	
						62											

<- Total Number of Containers

SHIPMENT METHOD - Fedex

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1200			
		Kathy Binkley	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

Canc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Org + LL PAH	Org Pest	Metal Total	Metal Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB 00-00		1030	✓		SO	5											
73SB 09-00		0900	✓		SO	5											
73SB 10-00		0930	✓		SO	5											
73SB 11-00		1130	✓		SO	5											
73SB 12-00		1100	✓		SO	5							Diss				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	

62 <- Total Number of Containers

SHIPMENT METHOD - Fedex

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1700			
		Kathy Binkley	4/2/08 - 0915	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

CHAIN OF CUSTODY RECORD

USACHPPM Readiness Born Health

PAGE 1 OF 1

LANC

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	+SVOC LL PAH	+ Pest	Metals +Hg Tot	Metal Dis	RCRA M	Benz		
73SB13-00	2APR08	0930	✓		SO	5	3			1	1						
73SB13A-00		0930	✓		SO	5	3			1	1						
73SB17-00		1000	✓		SO	5	3			1	1						
73SB21-00		1045	✓		SO	5	3			1	1						
73SB16-00		1115	✓		SO	5	3			1	1						
73SB20-00		1145	✓		SO	5	3			1	1						
73SB24-00		1200	✓		SO	5	3			1	1						
73SB15-00		1300	✓		SO	5	3			1	1						
73SB19-00		1315	✓		SO	5	3			1	1						
73SB22-00		1400	✓		SO	5	3			1	1						
73SB23-00		1330	✓		SO	5	3			1	1						
73ER-04	✓	1500	✓		W	7	3		1	1	1	1*	1* bottle form [illegible]				
NOTHING FOLLOWS																	

[illegible] LI. 4/4/08 4/3/08

62 <- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped- 2 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[illegible] to USAC	2APR08/1700	[illegible]	4 Apr 0845	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals	SVOC	LL PAH + SVOC	Pest + moist	Met Tot	Met Dis	RCRA M	Benz		
TRIP BLANKS					W	3	3										
73ER-05 (Hold)	3APR08	0930	✓		W	6	3		1	1	1						
73SB18-08 (MS/MSD)		1100	✓		SO	9	7			1	1						
73SB18A-08		1100	✓		SO	5	3			1	1						
73SB14-08		1130	✓		SO	5	3			1	1						
NOTHING FOLLOWS																	

28 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 3APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
11SACHPPM	3APR08/1800			
			4.4.08	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Jane.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH +SVOC	OP Pest +Most	Met Tot	Met Dis	RCRA M	Bnz		
73SB02-01	7APR08	1015	U		SO	5	3			1	1						
73SB02-04	7APR08	1025	U		SO	5	3			1	1						
73SB14-01	7APR08	1145	U		SO	5	3			1	1						
73SB14-04	7APR08	1215	U		SO	5	3			1	1		Metals bottle				
73ER-06	7APR08	1525	U		W	8	3		1	1	1		(not used)				
NOTHING FOLLOWS' Day																	
TRIP BLANKS'					W	3	3										
NOTHING FOLLOWS'																	

31 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature] USACHPPM	7APR08/1800			
		[signature]	[illegible]	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

C-55

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc,

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73 FB-03 (MS/MSD)	7 APR 08	0830	✓		W	16*	5		4	4	3	~~2~~					
73 FB-03A	7 APR 08	0830	✓		W	9	3		2	2	2	~~1~~	Dig				
NOTHING FOLLOWS																	

X <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7 APR / 1600			
			4/8/08 0830	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

CHAIN OF CUSTODY RECORD

USACHPPM Readiness thru Health

PAGE 1 OF 1

CHPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	OPest	Met Tot (+Hg)	Met Dis	RCRA M	Benz		
73 SB02-01	7APR08	1015	✓		SO	1						1					
73 SB 02-04		1025	✓		SO	1						1					
73 SB 14-01		1135	✓		SO	1						1					
73 SB 14-04		1245	✓		SO	1						1					
73 SB 27-01		1345	✓		SO	1						1					
73 SB 27A-01		1345	✓		SO	1						1					
73 SB 27-09 (MS/MSD)		1425	✓		SO	2						2					
73 ER-06		1525	✓		W	~~1~~ Hg 1 ~~FMA~~											
NOTHING FOLLOWS																	

8 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
		Fedex	4-8-08 0940	
[signature]	4-8-08	See Comment		To SMC holding refrigerator Rm0202

Matrix Codes: **GW**-Ground Water **SO**-Soil **O**-Other(specify)
Preservative Codes: **4C** - Ice only **H** - HCl+ice **N** - HNO3+ice **O** - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

CHAIN OF CUSTODY RECORD

USACHPPM Readiness thru Health

PAGE 1 OF 1

CHPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz	Met MS/MSD	Mercury MS/MSD
73FB-03	7APR08	0830	U		W	2						2 Hg WET				1	1
73FB-03A	7APR08	0830	U		W	1 = Hg						1					
NOTHING FOLLOWS																	
						3	<- Total Number of Containers										

SHIPMENT METHOD - FEDEX

Date Shipped- 7APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
Stay USACHPPM	7APR08 / FEDEX	from FedEx Barb Smelser	4-8-08 0940	
Barb Smelser	4-8-08	See Comment		To SMC holding refrigerator RM0202

Matrix Codes: **GW**-Ground Water **SO**-Soil **O**-Other(specify)
Preservative Codes: **4C** - Ice only **H** - HCl+ice **N** - HNO3+ice **O** - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

CHAIN OF CUSTODY RECORD

USACHPPM Readiness thru Health

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz	Merc.	
												4C				N	
73 SB01-00	31 MAR08	1125	✓		SO	1						1					
73 SB02-00	31 MAR08	1200	✓		SO	1						1					
73 SB01A-00	31 MAR08	1125	✓		SO	1						1					
73 SB03-00	31 MAR08	1240	✓		SO	1						1					
73 SB04-00	31 MAR08	1300	✓		SO	1						1					
73 SB05-00	31 MAR08	1330	✓		SO	1						1					
73 SB06-00	31 MAR08	1400	✓		SO	1						1					
ER-01	31 MAR08	1500	✓		W	2						1				1	
NOTHING FOLLOWS																	
						9											

<- Total Number of Containers

SHIPMENT METHOD - FEDEX Date Shipped-

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[illegible]	31 MAR08 1700	From FedEx Alberta Brown	4-2-08 @ 0915	
Alberta Brown	4-2-08 @ 1000	See SMC Comments	4-2-08 @ 1000	TO holding refrigerator in room#0202. A. Brown

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify) Water metal + Hg Preservative #NO3
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Cooler# 2 (9°C)

C-59

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

CHPPM

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB07-00	1APR08	0945	✓		SO	1						1					
73SB08-00	↓	1030	✓		SO	1						1					
73SB09-00		0900	✓		SO	1						1					
73SB-10-00		0930	✓		SO	1						1					
73SB-11-00		1130	✓		SO	1						1					
73SB12-00		1100	✓		SO	1						1					
73 ER-02 (Hold)		1340	✓		W	2						2					
73FB-01		1330	✓		W	2						2					
73FB-02		1400	✓		W	1						1					
73 ER-03	↓	1430	✓		W	1						1					
NOTHING FOLLOWS																	

12 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 1APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1APR08/1700	from FedEx Alletta Brown	4-2-08 @0915	
Alletta Brown	4-2-08 @1000	See SMLs Comments	4-2-08 @1000	To holding refrigerator in room # 0202. A. Brown

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

C-60

Cooler #1 (3°C)

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF ~~2~~ 3 pg

CHPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	OPest	Met Tot + Hg	Met Dis	RCRA M	Benz		
73SB13-00	2APR08	0930	✓		~~0930~~ SO 09	1						1					
73SB13A-00		0930	✓		SO	1						1					
73SB17-00		1000	✓		SO	1						1					
73SB21-00		1045	✓		SO	1						1					
73SB16-00		1115	✓		SO	1						1					
73SB20-00		1145	✓		SO	1						1					
73SB24-00		1200	✓		SO	1						1					
73SB15-00		1300	✓		SO	1						1					
73SB19-00		1315	✓		SO	1						1					
73SB22-00		1400	✓		SO	1						1					
73SB23-00		1330	✓		SO	1						1					
73ER-04	↓	1500	✓		W	1						1					
73ER-05 (Hold)	3APR08	0930	✓		W	1						1					

29 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 3 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	3APR08/1800	from Fedex	4-4-08 1020	
[illegible]	4-4-08 1015	See Comment		to refrigerator Rm 0202

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

CHPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	OPest	Met Tot	Met Dis	RCRA M	Benz		
73SB18-00 (MS/MSD)	3APR08	1100	✓		SO	1						1					
73SB18A-00	↓	1100	✓		SO	1						1					
73SB14-00		1130	✓		SO	1						1					
73SB35-00		1345	✓		SO	1						1					
73SB31-00		1355	✓		SO	1						1					
73SB27-00		1405	✓		SO	1						1					
73SB27A-00		1405	✓		SO	1						1					
73SB36-00		1415	✓		SO	1						1					
73SB32-00		1425	✓		SO	1						1					
73SB28-00		1430	✓		SO	1						1					
73SB33-00		1435	✓		SO	1						1					
73SB29-00		1445	✓		SO	1						1					
73SB25-00	↓	1455	✓		SO	1						1					

<- Total Number of Containers

SHIPMENT METHOD - _____ Date Shipped- _____

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
		from FedEx [illegible]	4-4-08 1020	
[illegible]	4-4-08 1115	See Comment		To refrigerator RM0202

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

CHPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB34-00	3APR08	1505	✓		SO	1						1					
73SB30-00	↓	1510	✓		SO	1						1					
73SB26-00	↓	1520	✓		SO	1						1					
NOTHING FOLLOWS																	

<- Total Number of Containers

SHIPMENT METHOD - _____ Date Shipped- _____

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
		From Top [illegible]	4-4-08 1020	
[illegible]	4-4-08 1115	See Comment		To refrigerator RM0202

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

CHPPM COPY

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Pest	Met Tot	Met Dis	RCRA M	Benz		
													4N	4N			
73 MW 01	14 APR 08	1810	✓		GW	2							2✓				
73 MW 01A		1810	✓		GW	2							2✓				
73 MW 01 MS/D		1810	✓		GW	1							1				
73 MW 02		1240	✓		GW	2							2✓				
73 ER-07		1330	✓		W	2								2✓			
73 IDW-01		1400		✓	SO	1								1✓ (*)			
73 IDW-02		1430		✓	W	2								2✓			
73 IDW-02 MS/D		1430		✓	W	2								2✓			
NOTHING FOLLOWS														7 DCJ 15 APR 08			
						14											

<- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 10 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	4/14/08 1700	Fed Ex	4-11-08 1015	
[signature]	4-11-08 1040	See Comment		To SMC holding refrigerator EMOZOR

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)

(*) No "N" preservative for 73 IDW-01

FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

QPPM

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Pest	Met Tot	Met Dis (4N)	RCRA M (4N)	Benz		
73 MW 01	14 APR 08	1010	✓		GW	2							2				
73 MW 01A		1010	✓		GW	2							2				
73 MW 01 MS/D		1010	✓		GW	1							1				
73 MW 02		1240	✓		GW	2							2				
73 ER-07		1330	✓		W	2								2			
73 IDW-01		1400		✓	SO	1								1 (*)			
73 IDW-02		1430		✓	W	2								2			
73 IDW-02 MS/D		1430		✓	W	2								2			
NOTHING FOLLOWS														2 DCY 15 APR 08			
						14											

<- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 10 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	4/10/08 1700	Fed Ex	4-11-08 1015	
	4-11-08 1040	Sea Crement		To SMC holding refrigerator EMOZOR

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
(*) No "N" preservative for 73 IDW-01
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

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USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C	4C	N		N	N	N	N	N	N	N

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
73ER-08 (Hold)	13 Jan 09	1600			W	3	X		X				X	X			X
73ER-09	14 Jan 09	1730			W	3		X					X	X	X	X	X
73ER-10	15 Jan 09	1600			W	3	X				X	X	X	X			X
Nothing Follows																	
						9											

<- Total Number of Containers

SHIPMENT METHOD - FEDEX: 8453 2198 3737/8460 9863 6846 Date Shipped- 15 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1/15/09 1800	FEDEX		

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

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CHAIN OF CUSTODY RECORD

USACHPPM Readiness thru Health

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
							4C	4C	4C				4C	4C	4C	4C	4C
73SB24-00	13 Jan 09	1000	X		SO	2	X		X				X	X			X
73SB24-09	13 Jan 09	1045	X		SO	2	X		X				X	X			X
73SB02B-02	14 Jan 09	0945	X		SO	1		X									
73SB02B-03	14 Jan 09	0945	X		SO	1		X									
73SB091-00	14 Jan 09	1025	X		SO	1									X		
73SB092-00	14 Jan 09	1030	X		SO	1									X		
73SB141-00	14 Jan 09	1000	X		SO	1											X
73SB162-00	14 Jan 09	1000	X		SO	1											X
73SB121-00	14 Jan 09	1100	X		SO	1								X			X
73SB122-00	14 Jan 09	1110	X		SO	1								X			X
73SB331-00	14 Jan 09	1600	X		SO	1							X			X	
73SB332-00	14 Jan 09	1530	X		SO	1							X			X	
73SB341-00	14 Jan 09	1700	X		SO	1							X			X	
						15											

<- Total Number of Containers

SHIPMENT METHOD - FEDEX: 8143 2198 3737 Date Shipped-_____

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
DSACHPPM	1/15/09 1500	FEDEX		

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)

①

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

					4C	4C	4C			4C						

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Cd	Cr	Cu	Hg	Ni	V	Zn
73 SB 342 - 00	14 Jan 09	1630	X		SO	1							X			X	
73 SB 351 - 00	15 Jan 09	0920	X		SO	1					X	X					X
73 SB 352 - 00	15 Jan 09	0915	X		SO	1					X	X					X
73 SB 361 - 00	15 Jan 09	0945	X		SO	1					X	X					X
73 SB 362 - 00	15 Jan 09	0955	X		SO	1					X	X					X
73 SB 362 A - 00	15 Jan 09	0955	X		SO	1					X	X					X
73 SB 211 - 00	15 Jan 09	1100	X		SO	1								X			
73 SB 212 - 00	15 Jan 09	1110	X		SO	1								X			
73 SB 231 - 00	15 Jan 09	1035	X		SO	1					X	X		X			X
73 SB 232 - 00	15 Jan 09	1045	X		SO	1					X	X		X			X
73 SB 232 A - 00	15 Jan 09	1045	X		SO	1					X	X		X			X
73 SB 241 - 00	15 Jan 09	1515	X		SO	2	X						X	X			X
73 SB 242 - 00	15 Jan 09	1500	X		SO	2	X						X	X			X
						15	<- Total Number of Containers										

SHIPMENT METHOD - FEDEX: 8143 2198 3737 Date Shipped- 15 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature] USACHPPM	1/16/09 1800	FedEx		

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+ice O - Other (specify)

(7)

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C						4C	4C			4C

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
73 SB 243-00	15 Jan 09	1345	X		SO	2	X						X	X			X
73 SB 244-00	15 Jan 09	1315	X		SO	2	X						X	X			X
73 SB 245-00	15 Jan 09	1430	X		SO	2	X						X	X			X
73 SB 246-00	15 Jan 09	1415	X		SO	2	X						X	X			X
73 SB 246A-00	15 Jan 09	1415	X		SO	2	X						X	X			X
NOTHING FOLLOWS																	
						10											

10 <- Total Number of Containers

SHIPMENT METHOD - FEDEX: 8143 2198 3737 Date Shipped- 15 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1/28/09 1800	FEDEX		

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)

CHAIN OF CUSTODY RECORD

USACHPPM Readiness thru Health

PAGE 1 OF 1

COPY

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
73 IDW-03	16 Jan 09	1515	X	X	SO	1			X	X	X	X	X	X	X	X	X
73 IDW-04 (Dissolved)	16 Jan 09	1550	X	X	W	1			X	X	X	X	X	X	X	X	X
73MW02 (Dissolved)	16 Jan 09	1115	X		GW	1			X	X			X		X		
73 MW03 (Dissolved Metals)	16 Jan 09	1020	X		GW	3	X		X	X			X	X	X		
73 MW03A (Dissolved Metals)	16 Jan 09	1020	X		GW	3	X		X	X			X	X	X		
NOTHING Follows																	
						9											

Dry Weight
RCRA Metals only

<- Total Number of Containers

SHIPMENT METHOD - FEDEX: 8453 1770 6616

Date Shipped- 16 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1/16/09 1900	FEDEX		73IDW-03 — No HNO3 preservative in Soil
FEDEX	1/17/09 915	[illegible]	1/17/09 915	
[illegible]	1/17/09 1000	See Comment		to LAB 0202 Refrigerator [illegible]

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)

Cooler 2

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

COPY

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C	4C	N	N	N	N	N	N	N	N	N

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	comp	Matrix (See codes)	No. of Containers	Li	Be	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
73FB-04	16 Jan 09	1400	X		W	5	X	X	X	X	X	X	X	X	X	X	X
73FB-05	16 Jan 09	1430	X		W	5	X	X	X	X	X	X	X	X	X	X	X
Nothing Follows																	

16 ← Total Number of Containers

SHIPMENT METHOD - FEDEX: 8453 1770 6616 Date Shipped - 16 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	16 Jan 1800	FEDEX		
FEDEX	1/17/09 915	[illegible]	1/17/09 915	
[illegible]	1/17/09 1000	Sal Colmenero		to LAB 0202 Refrigerator #1

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)

Cooler 1

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Actually in Cooler 3

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USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

COPY

INSTALLATION - CMS II SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

ONLY 1 uPAH is labeled 73FB-06 all others labeled 73FB05. Time Does Reflect 1500 & should be changed to 73FB06

PRESERVATIVE (See Codes)

4C	4C	N	N	N	N	N	N	N	N	N

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	LLPAH	Pest	As	Ag	Co	Cr	Cu	Hg	Ni	V	Zn
73 FB-06	16 Jan 09	1500	X		W	9	X	X	X	X	X	X	X	X	X	X	X
73 FB-06A	16 Jan 09	1500	X		W	5	X	X	X	X	X	X	X	X	X	X	X
NOTHING FOLLOWS																	

INCT + (1) PEST (1) uPAH MS & MSD EACH

C-72

14 ← Total Number of Containers

SHIPMENT METHOD - FEDEX: 8453 1770 6616

Date Shipped - 16 Jan 09

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	16 Jan 09 1300	FEDEX		
FedEx	17 Jan 09 915	[illegible signature]	17 Jan 09 915	
[illegible signature]	17 Jan 09 1000	See Comment		TO LAB 0202 REFRIGERATOR Hay

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+Ice O - Other (specify)

Cooler 3

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

FIELD BOOK LOG

27 FEB 08

1000 Meet w/ Pedro Ruiz - Naval Public Works Dept.
- Discuss
Digging Permit - COMPLETED

1300 Meet Mr. Jaime Garcia - USARC
- discuss project
- discuss logistical support needs.

1700 Depart.

(*) NEED 25' measing tape?
or can GPS do it?

27 MAR 08

SAMPLE COORDINATES: NAD83 PR VI, US ft. LAT/LONG

19E-03:
NAD 83: X=942700.65 Y: 801205.62
LAT/LONG: 18.23097204/-65.60758261

19E-SS06:
NAD83: X=942279.84 Y: 801371.82
LAT/LONG: 18.23143495/-65.60879316

19E-SS07:
NAD83: X=942100.45 Y: 801193.07
LAT/LONG: 18.23094492 / -65.60930669
LAT/LONG Conv. to min/sec.

19E-03:

Photo	Description
1	Drum Area
2	Soil Sampling SB01
3	" " SB03
4	" " SB06
5	Sample Table
6	Boring @ 19E-SS07
7	Sample prep @ SB32
8	" @ SB34
9	Debris near 19E-SS06
10	
11	
12	
13	
14	About 100' from 06 toward 07.
15	
16	Near 07
17	Back filled @ SB10

28 MAR 08 Fri

1000 Arrive @ USAR Reserve Ctr - NAPR
Meet Mr. Jaime Garcia.

1100 Manners inventoried supplies + equip.
Goes to NAPR-PWD - change lock
on door

1400 depart site to find chain saw
rental + walmart for future supply run

— No chain saws available

29 MAR Sat.

0900 Depart to NAPR
1025 Commence land clearing @ SWMU 73
1500 Depart site
1600 Arrive in San Juan

30 MAR 08
0915 Depart for NAPR
1015 Commence lab cleaning
1500 Depart NAPR
1600 Arrive in San Juan

7 hrs

31 MAR 08
0630 Depart Sanyuan for NAPR
0748 Arrive @ USdrg Pasur Str.
Set up for sampling
1100 Commence Sampling
1430 finish daily sampling
1500 Collect ER-01.
1515 PACK SAMPLES
1545 DEPART FOR FEDEX
1650 ARRIVE @ FEDEX – send samples
1730 ARRIVE @ SAN JUAN

11 hrs.

1 APR 08

0630 Depart San Juan
0745 Arrive @ NAPR
0840 Set up @ site
0845 Commence Sampling
1000 Jesus Galeng Environmental 65th RRC on site
1130 Jesus Galeng departs site
1400 Complete Soil Sampling + Commence QA Sampling.
1530 PACK SAMPLES
1625 Depart for FEDEX.
1730 Drop off Samples @ FEDEX.
1750 Arrive in San Juan

11.5

2 APR 08

0630 Depart San Juan
0745 Arrive @ NAPR
0840 Set up
0900 Commence sampling @ 156-5586 area
1400 Complete Sampling
1500 Rinsate sample collection / pack samples
1550 Depart NAPR
1650 Drop off samples @ FEDEX
1730 Arrive in San Juan

11

3 APR 08

0630 Depart San Juan
0730 Stop for water + ice
0805 Arrive @ NAPR
0815 Set up for sampling
0900 Heavy Rain - stop work to preserve samples integrity
1030 Weather dess. pits commence sampling
1330 Move to 19E-SS07
1530 Clean up site.
1555 Pack Samples, + Paperwork for lab
1630 Depart NAPR
1745 Arrive @ FEDEX
1800 Arrive @ San Juan

11.5

4 APR 08

0630 Depart San Juan
0745 Arrive @ NAPR - load vehicle
0800 load clean
1030 GPS points in wooded area
1100 depart for hole plug.
1230 Commence filling holes from samples
1400 Pack Surface Soils equipment to ship back to Soils lab.
1500 Depart site
1600 Drop off @ FEDEX
1630 Arrive @ San Juan

10

GPS ± 15'

SB	Coord. Lat	Long
1	18.23105	65.60755
2	18.23101	65.60741
3	18.23097	65.60751
4	18.23103	65.60758
5	18.23110	65.60750
6	18.23100	65.60737
7	18.23085	65.60750
8	18.23097	65.60767
9	18.23115	65.60760
10	18.23103	65.60730
11	18.23082	65.60747
12	18.23097	65.60771
13	18.23148	65.60875
14	18.23147	65.60872
15	18.23137	65.60879
16	18.23137	65.60874
17	18.23151	65.60879
18	18.23153	65.60867
19	18.23133	65.60885
20	18.23132	65.60873
21	18.23155	65.60886
22	18.23155	65.60864
23	18.23128	65.60891
24	18.23127	65.60868
25	18.23093	65.60938
26	18.23092	65.60932
27	18.23092	65.60927
28	18.23086	65.60935
29	18.23099	65.60937
30	18.23100	65.60929
31	18.23089	65.60923
32	18.23082	65.60943
33	18.23108	65.60944
34	18.23104	65.60926
35	18.23084	65.60915
36	18.23074	65.60944
19E-03	18.23099	65.60752
19E-SS06	18.23141	65.60875
19E-SS07	18.23089	065.60931

DATUM: WGS 84

~~± 15~~ 10'

7 APR 08

0630 Depart San Juan
0740 Arrive @ NAPR - Setup
0830 Called Tap H2O Field Blvd
0915 Met Drill Crew. Safety Briefing
1030 Complete Sampling @ PE-003 SB02 Lagoon
1100 Start SB-14 @ PE-SS06 (Manual from EBS area)
1230 Complete SB-14 - MW-02. TAKE LUNCH
1315 Return to site Setup @ SB-27 ↓ Manual depth side
1330 Commence @ SB-27
1350 Complete SB-27. Install MW-02
BZ measurement @ 1500 0.0 ppm
depth @ 18'
" " " " 28' (1520) (0.0 ppm)
1510 Sample team to take ER sample
Observe well installation @ SB-27 (MW2)

- problem w/ well staying in gravel.

1600 Depart NAPR for FEDEX
- Purchase Ice in FAJARDO.
1815 FEDEX to drop ZB samples → 1030 SAN JUAN
70 feet of drilling (B) (17)

Drill Crew: 0915 - 1715 (1230 - 1300 lunch)

8 APR 08

0620 Leave San Juan
0730 Arrive NAPR - Begin setup
0810 Drillers on-site
0830 Completing installation of MW02 @ SB27
0945 Complete well installation @ SB-27/MW02
1000 Mobilize to SB02 to drill & install MW01 @ SB02.

1010 Decon Auger in pit
1030 Complete decon / Commence drilling at MW01
1050 Construction of well (commenced)
1115 - Team Lunch, Drill Crew continues to work
1200 Return to site.
1215 Drill Crew to lunch and pick up drums from gate
1320 Drill Team returns to site
Begin site clean up... decon augers in pit
1345 Complete decon. Break down site
1410 Drillers depart site. Team brings dev. eq. to site
1415 Discuss w/ Mr. GARCIA about blue prints... meet in MAYAGUEZ

1130 Meet w/ Navy Oscar Vera + Pedro Ruiz about drums (blue prints).
Find Pablo Castro in the morning
1430 Depart NAAR for Walnut to log battery
1535 Depart Wal yard
1630 Arrive San Juan

9.5 9

9/APR/08

0630 Depart San Juan
0750 Arrive @ NAAR
0810 Meet w/ Mr. Garcia to look @ Blue prints
0820 Meet w/ Mr. Santiago to look @ Blue prints
- Borrow prints for Surveying
0900 Mobilize to site - Manuel Surveying + building 73 MW01.
1000 (Stop) Cease Purging/Development
1100 Mobilize to MW03 to develop well
- commence well development
1200 Complete well development, break down site. Return to staging blg.
1230 Commence + set up for surveying
1300 Survey well locations
1400 Complete surveying
1410 Return survey equipment to locker
1420 Return drawings to José Santiago
1430 Depart NAAR

	BS+	HI	FS-	MAN hole
				108.11
manhole	4.52	112.63		
MW 1			3.59	109.04
~~TP 1~~			~~4.36~~	
				111.00
manhole A	7.50	118.50		
TP 1			6.86	111.64
	1.89	113.53		
TP 2			4.41	109.12
	14.15	123.27		
TP 3			7.63	115.64
	3.30	118.94		
TP 4			5.89	113.05
	3.82	116.87		
MW 2			1.60	115.27
TP 1			3.82	113.05
	5.75	118.80		
TP 2			3.15	115.65
	7.64	123.29		
TP 3			14.13	109.16
	4.51	113.67		
TP 4			2.01	111.66
	6.80	118.46		
MAN hole			7.44	111.02

C-82

10 APR 08

0630 Depart Sandan
0740 Arrive @ NAPR – Set up for sampling
0750 Get bottles from Rescue Ctr. Organize bottle kits.
0900 Commence low flow sampling @ MW01.
1100 Complete sampling
Prepare for sampling @ MW02
1130 Commence sampling @ MW02 (low flow)
1250 Complete sampling.
Clean up site.
1330 Collect Rinsate, and IDW samples
1445 Complete sampling
Pack samples. Prepare for shipping equipment back to States.
1530 Depart NAPR
1600 Stop for additional ice.
1630 Depart for FEDEX.

12 JAN 09

0800 Arrive @ Army Reserve Ctr. Contact Daniel Navedo.

- Maners checks shipment
- tests instrumentation

0900 Jones to NAPP Admin. Contact Oscar Vera as Pedro Ruiz is not in the office. Oscar call Pedro RE: Key to Bldg. 1700 @ DRMO Yard.

- Pedro will return on Tuesday 13 Jan.

1000 Jones returns to Reserve Ctr

1015 Maners and Jones recon wooded site. Significant regrowth

1115 Lunch

1215 Return to site. Begin site clearing

1600 Complete site clearing. Pack up.

1630 Depart site.

- Pick up battery, water -

1730 Arrive San Jan

9

13 Jan 09

0805 Arrive @ NAVY PWD. Get key to Bldg. 1700. Maners calibrate PID (See Log)

0830 Arrive @ ARMY Res. Ctr., load eq. + materials for transfer to Bldg. 1700

0900 Geotech on site. Transfer equipment

- General H+S briefing
- Geotech sets up Decon area

0945 Mobilize to SB24 location

1000 Commence Drilling (See log)

1st core – H+S air BZ measurement: 0 ppm
BZ " 20' : 0 ppm

1100 Complete Geoprobe

1115 Drillers off site to buy more sand due to existing supply getting wet and breaking open. Jones / Maners to lunch

1225 All personnel return to site. Geotech begins installing the monitoring well.

- Need to see Sgt. Vaggio for key to gate near SB12

1550 Complete 73 MW03. Drill Crew requested to complete pad tomorrow

- Return to Bldg. 1700 to ramp down for day
- Take EQ Samples (See Log)

1650 Depart Site

1740 Arrive San Jan

9.5

14 Jan 09

0810 Arrive on-site, Calibrate equip. (See Log)
0820 Drill Crew on site. Prepare Rig. Dean Ayers
0900 RAIN DELAY
0945 Commence drilling @ SB02. (See Log)
1130 Complete drilling.
1200 Lunch.
1215 Begin development of MW03. Driller clean up
1345 Complete development of MW03 (See Log)
1400 Begin Development of MW02 (See Log)
Driller Depart Site.
1420 Complete development MW02.
1450 Begin Surface Soil Sampling at SS07 area. (See Log)
1700 Complete daily activities
- Collect ER sample
1800 Depart Site.

18

15 Jan 09

0815 Arrive on-site. Prepare for sampling
Warm calibrate equipment. (See Log)
0900 Begin Sampling. (See Log)
1000 Crew break for heat/humidity
1030 Continue sampling ... move equipment to SS06
1130 Lunch break
1200 Return to site. Get supplies from Bldg. 1700
1300 Mobilize to SS07 - continue sampling (See Log)
1530 Complete sampling - Surface Soils
Return to Bldg. 1700
1600 Collect ER-10. (See Log)
1630 Pack Samples + ice, Pt equipment away
1730 Depart NAPR for FEDEX.
1830 Arrive @ FEDEX
1845 Depart FEDEX

10.5

16 Jan 09

0615 Arrive on-site. Get equip, Calibrate (see log)
0910: Set up at MW03
0945 Commence purging @ MW03
water levels
935 - 10.77' - MW03
947 - 11.08' - MW02
953 - 9.00' - MW01

C-85

1200 Survey wells

	BS +	HI	FS -	MW2 115.27 ELEV.
MW2	1.56	116.83		
TP1			4.71	112.12
TP2	4.61	116.73		
MW3			2.06	114.67
TP3			4.60	112.13
	4.87	117.00		
MW2			1.73	115.27

1330 Complete Survey
1400 Collect field blank samples - (see log)
1500 Complete Sampling for field blanks
1515 Collect IDW samples (see log)

1600 pack samples + Eq. + Supplies
1700 Abandon + GPS final locations (see backout field forms attached)
1720 Depart for FOOD
1845 Depart Fedex! — 10.5

- Need to send key to Oscar Vera
- Need to send drum labels to Pedro Ruiz

APPENDIX D
LABORATORY DATA VALIDATION REPORTS

Data Validation Report

Camp Moscrip, Puerto Rico

Prepared by

AE Environmental
7519 Green Valley Road
Frederick, Maryland 21701
301-865-5001

Prepared for

US Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Services
Blackhawk Road
Aberdeen Proving Ground
Edgewood, Maryland

September 4, 2008

AE – Environmental

September 4, 2008

I certify that to the best of my knowledge and belief the attached report is correct and complete within the terms and conditions of the Scope of Work provided by the U.S. Army Center for Health Promotion and Preventive Medicine.

John F. Kearns
President
AE, LLC

1.0 Introduction

This report presents the findings of a technical review of analytical data from the United States Army Center for Health Promotion and Preventive Medicine (USACHPPM) Directorate of Laboratory Sciences (DLS), as well as Lancaster Laboratories, Inc. of Lancaster Pennsylvania, and Microbac Laboratories, Inc. of Baltimore, Maryland, under contract to DLS. The project entailed the collection of soil and groundwater samples, plus two samples of Investigation Derived Waste (IDW), one solid, one aqueous. Field quality control samples including trip blanks, field blanks, equipment rinsates, and field duplicates are also included in this review. The samples were collected over the period March 31 to April 10, 2008 from Camp Moscrip, Puerto Rico. Samples were analyzed for one or more of the following parameters: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), pesticides, polychlorinated biphenyls (PCBs) and metals. The analytical methods were taken from the United States Environmental Protection Agency (USEPA) SW-846 methods manual. The intended use of the data is in comparison to various threshold values.

The data have been provided in 23 separate reports, which contain one or more sample delivery groups (SDGs) or, for purposes of this report, are considered separate sample preparation/sample analysis batches. A listing of the reports, the responsible laboratory, and their contents follows:

Report ID	Laboratory	Analyses
0804145	Microbac	Metals
0804258	Microbac	Metals
0804407	Microbac	Metals
0804485	Microbac	Metals
0805540	Microbac	Arsenic
PUG02	Lancaster	Pesticides/PCBs
PUG03	Lancaster	VOCs
PUG04	Lancaster	VOCs
PUG05	Lancaster	Pesticides/PCBs
PUG06	Lancaster	SVOCs/PAHs
PUG07	Lancaster	VOCs
PUG08	Lancaster	SVOCs/PAHs
PUG09	Lancaster	Pesticides/PCBs
PUG10	Lancaster	VOCs
PUG19	Lancaster	Pesticides/PCBs
PUG20	Lancaster	VOCs
PUG21	Lancaster	SVOCs/PAHs
PUG24	Lancaster	SVOCs/PAHs
PUG25	Lancaster	VOCs
417557	DLS	Metals
417817	DLS	Metals
418225	DLS	Metals
426893	DLS	Metals

Data verification and limited data validation has been performed as part of this review. Data verification is defined as a comparison of the data and its documentation to pre-established contractual and project quality control specifications (Method Quality Objectives --- MQOs) for purposes of identifying data that is broadly unfit for use, and in particular indications of potential false negative data points. It is also intended to identify data that are biased or variable to a greater degree than is normal for the methods of analysis employed and data that are affected by background contamination to the extent that they are not considered representative of site conditions.

In this case, data validation includes an overview of the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) of the data, and assessment of the field QC results in relationship to the field sample results.

Verification procedures are based largely on USEPA National Functional Guidelines (NFGs) modified to reflect the specifications of the actual methods employed. In some cases, the detailed specifications of the USEPA Region 2 modifications to the NFGs have been referenced to resolve differences between the acceptance criteria used by the laboratory and the Functional Guidelines or method specifications.

The report consists of three sections describing methods of work, data verification findings, and data validation assessment. Two appendices support these two sections: Data Verification Checklists and Data Tables.

2.0 Methods of Work

2.1 Data Verification

The following sections describe the approach to data verification employed in the course of this work.

2.1.1 Finalize Project-specific Data Verification Checklists

The specifications of AE-Environmental's standard data verification worksheets have been modified to reflect certain agreed upon project/laboratory-specific acceptance criteria. Those finalized checklists were employed in the data verification process discussed below.

2.1.2 Data Verification

Analytical data packages were received from the laboratories after some initial consolidation and formatting at USACHPPM. Upon receipt, the data packages were logged in and a cursory completeness check on the hard copy deliverables was performed. The data packages are not formatted according to the USEPA Contract Laboratory Program (CLP) and as a result a number of usually employed QC Summary Forms have not been included. To the extent that affected QC criterion could be assessed directly from the raw data, every attempt has been made to do so. However, the absence of these summary forms has made accurate cross referencing of QC results to field samples extremely difficult and the reviewer can only be said to have provided his best effort in this regard. Multiple re-preparations, re-analyses, dilutions, etc, have been taken into account to the fullest degree possible, however, it has proven difficult to ensure that the value reported in the data tables and the applicable QC are from the same preparation and analysis batches.

Upon acceptance, the data packages were referred to the Project Chemist (PC) for review. The PC verified the contents of the data packages against the requirements summarized in the appropriate data verification checklist for the methods of analysis involved. Any deviations from the requirements were noted on the verification checklists and supporting documentation pertaining to any such deviation retained for inclusion in the project records. As necessary, the PC applied data qualifying flags to the analytical result report forms. Data qualifying flags were then transcribed onto spreadsheets derived from the USACHPPM supplied EDD.

2.2 Definitions and Qualifications

Definitions of Data Quality Indicators, data qualifying flags, and reason codes are presented in Tables 1 through 3, respectively.

Table 1
Data Quality Indicators

Data Quality Indicator	Definition
Precision	The degree of agreement between measurements of the same property under the same conditions; variability. Variously measured as the relative percent difference (RPD), variance, standard deviation, or percent relative standard deviation (%RSD). Duplicate (or replicate) samples are used to assess precision.
Accuracy	The degree to which a measurement agrees with a known or standard value for the measured condition. It is generally measured through the use of standards and spikes and is reported as the percent recovery or the percent difference.
Representativeness	The degree to which a measured value accurately and precisely represents the population from which it is drawn. Representativeness may be inferred to some extent by assessment of field duplicates and blanks. However, it is primarily controlled by the statistical validity of the sampling plan.
Comparability	The degree to which one data set may be compared to another. This is a qualitative assessment based on the degree to which the methods of work employed and the sampling design for the two (or more) data sets are the same.
Completeness	The degree to which the data set provides sufficient numbers of data points to perform the specified data analyses, under the actual conditions of sampling and analysis compared to the assumptions of the project planning process.
Sensitivity	The degree to which an analytical measurement can be reliably differentiated from zero and/or reported with planned precision and accuracy. Also, the ability to discriminate between orders of magnitude in the measured continuum.

Table 2
Data Qualifier Definitions

Code/Flag	Interpretation
J	The reported result is an estimate; associated QC results are outside the specified range
UJ	The reported detection/reporting limit is an estimate; associated QC results are outside the specified range
R	The result is rejected or unusable either qualitatively or quantitatively; a data gap is indicated
U	The analyte should be treated as a non-detect at the reported value or the reporting limit whichever is greater.
Q or X	Self defined note; see commentary in report
+/-	When used in conjunction with another flag, indicates direction of bias if the direction can be identified. Double use (i.e., ++ or --) indicates that a very strong bias is observed.

Table 3
Reason Codes

Code	Interpretation
a	Not presently used
b_1	Result is flagged due to **method blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
b_2	Result is flagged due to **calibration blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
b_3	Result is flagged due to **field, ambient, or trip blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
c_1	Result is flagged due to **initial calibration** anomalies related to linearity or response.
c_2	Result is flagged due to **initial calibration verification** anomalies
c_3	Result is flagged due to **continuing calibration** anomalies related to drift or response
c_4	MDL or RL **check standard** %R does not meet specifications
d	Result is flagged due to **duplicate imprecision** (including matrix spike duplicates); RPD greater than specified
e	Not presently used
f	Not presently used
g	Not presently used
h	Result is flagged due to **holding time** failure; a low bias is indicated
i	Result is flagged due to **internal standard** (organic and ICP/LC MS) or **ICP interference check** failure (inorganic)
j	Not presently used
k	Not presently used
l	Result is flagged due to **LCS** anomalies
m	Result is flagged due to **matrix spike** recoveries outside the specified window
n	Not presently used
o	Not presently used
p_1	Result is flagged due to **preservation** or handling problems
p_2	Result is flagged due to **post-digestion spike** failure (inorganics)
q	Result is flagged due to a **quantitation** anomaly
r	Not presently used
s	Result is flagged due to **surrogate** recovery (organic) or **serial dilution** (inorganic) failures
t	Result is a **TIC** (organic); Result is flagged due to **tracer** recovery anomaly (radiological)
u	Not presently used
v	Not presently used
w	Not presently used
x,y,z	Self defined in report

3.0 Data Verification Findings

3.1 Metals

Major Anomalies:

There are no major anomalies (i.e., "R" flagged data) associated with the aqueous samples.

For the soil samples, antimony data are flagged either "UJ--,mb1" or "R,m". The data flagged "UJ--" are samples that originally displayed a positive result but which the validator modified to non-detects based on method blank contamination. All of the antimony data are also impacted by matrix spike (MS) recoveries less than 30% resulting in "R" qualifiers for the samples that originally displayed a non-detect result. Based on professional judgment, the reviewer suggests that all antimony data be treated as though "R" flagged and not used. Some, but not all results, for beryllium and selenium were likewise qualified "R,m" due to poor MS recoveries.

Minor Anomalies:

In the aqueous samples, four antimony results were flagged "UJ,m" due to depressed MS recoveries. The aqueous IDW sample for arsenic was flagged "UJ,m" and three additional samples were flagged "J,m". The aqueous IDW sample and three additional aqueous samples were flagged "J-" (for barium) due to low post digestion spike (PDS) recovery. Four beryllium samples were flagged "UJ, due to a combination of laboratory control sample (LCS) and continuing calibration verification (CCV) anomalies. Two additional beryllium samples were flagged due to CCV anomalies and three more were qualified "UJ" due to MS recoveries. The aqueous IDW sample and three additional field samples were flagged "J" (for lead) due to MS anomalies. The aqueous mercury result for the IDW sample was flagged "UJ" and three other field samples flagged "J-", again, due to matrix effects. The aqueous IDW sample was flagged "J-,lm" for selenium and eight other samples were flagged as estimates ("J") due to a combination of LCS, MS, and PDS anomalies. Four aqueous silver results were flagged "UJ" due to poor LCS recoveries; one additional sample was flagged due to blank contamination. All aqueous zinc results were flagged as estimates due to a variety of QC anomalies.

Eleven of 47 soil arsenic results were flagged "J,d" due to duplicate relative percent differences (RPDs) greater than the acceptance limit. Similarly, 13 of 47 soil barium results were flagged "J,d". Two arsenic results were flagged "J+,i" due to interference check samples (ICS) recoveries greater than the acceptance limit. The soil IDW result for beryllium was flagged "UJ,p2" due to a PDS recovery less than the acceptance limit. Thirteen results for cadmium were qualified "J-" or "UJ" due to MS recoveries less than the lower QC limit. The chromium IDW datum was flagged "J--,m" due to MS recoveries less than the lower QC limit. Six of the soil samples for chromium were flagged "J-,m" or "J--,m" due to MS recoveries less than the lower QC limit. Twenty

seven soil results for chromium were flagged "J+,p2" due to PDS recovery greater than the upper QC limit. Cobalt data were qualified in an identical manner to that of chromium. Lead data for soils were broadly impacted by MS recoveries outside QC criteria. Thirteen samples were flagged "J-,m" and 27 were flagged "J+,m". The soil IDW sample for mercury was flagged "UJ,p2" due to PDS recovery less than the QC lower limit. Two positive mercury results were changed to non-detects due to method blank contamination. The soil IDW sample for nickel was flagged "J+,p2" due to PDS recovery greater than the QC upper limit. Six soil samples for nickel were qualified in the same manner. Thirteen thallium results for soil samples were qualified "UJ,m" due to MS recoveries less than the lower QC limit. The vanadium result for the soil IDW samples was flagged "J+,p2". The PDS recovery was greater than the upper QC limit.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for metals but did not require data qualification, in accord with the verification protocols. Seven soil samples were reanalyzed for arsenic due to extreme method blank contamination. The results of the reanalysis, which displayed acceptable QC performance, are reported in the data tables. Samples analyzed by Microbac did not include results for tin. Due to its elevated concentration in some samples, zinc may have been analyzed either by methods SW-6010 or SW-6020. Similarly, beryllium results may have been analyzed by either method due to matrix interferences. MS/MS duplicates (MSDs) were not reported for antimony, silver or zinc in Microbach report 0804145. No MS was reported for selenium in the same report. A note in the case narrative indicates that in these cases, QC from an alternate batch was employed. Various results in *any* fraction may display elevated reporting limits due to dilutions resulting from matrix interference or concentrations of analyte exceeding the linear range of the calibration curve. Reporting limits have been adjusted for dilution in the data tables. Many samples were received at temperatures greater than the preservation requirement of 4°C±2°C. Based on professional judgment, only VOC samples have been flagged due to this observation. Nonetheless, the data user is advised to consider this anomaly should a result very close to a threshold value be encountered in any fraction. In that case, the data should be used conservatively and an exceedance should be noted.

3.2 Pesticides

Major Anomalies:

There are no major anomalies (i.e., "R" flagged data) associated with the aqueous samples.

For the soils, "R" flags were applied to most analytes (non-detects) in samples 73SB02-01, 73SB02-04, 73SB14-01 and 73SB14-04 due to extremely low MS recoveries. Positive detections were flagged "J".

Minor Anomalies:

Multiple results in aqueous samples 73FB-03 and 73FB-03A were qualified "UJ" due to either calibration or matrix spike anomalies.

LCS recoveries less than the QC limit resulted in "UJ" flags for aldrin, alpha-BHC, beta-BHC, and heptachlor in a broad portion of the soil samples. Likewise, in a broad portion of the data various analytes were flagged as estimates due to the result being reported from beyond the linear range of the calibration curve (q2 reason code), due to large differences (>40%) in the results between two columns (q2 reason code), or due to calibration verification anomalies (c# reason code). Please note the following convention used in flagging data due to calibration anomalies: samples were flagged for calibration anomalies only if neither column displayed acceptable calibration results. As long as at least one column displayed acceptable performance, it is assumed that the result was reported from that column unless otherwise noted. Positive results in sample 73SB18A-00 were flagged "J+" due to surrogate recoveries greater than the upper QC limit. A small number of delta-BHC results were qualified for method blank contamination.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for pesticides but did not require data qualification, in accord with the verification protocols. Sample 73SB18-00 does not appear to be present in the EDD as an original sample, although it does appear as an MS/MSD pair. Results for kepone may be biased due to florisil clean-up in samples displaying heavy matrix interference. Again, these data should be used conservatively. Many matrix spike recovery failures appear to be due to high levels of analyte in the samples relative to the method specified spike amount. In these cases, and in cases where surrogate recoveries are outside acceptance limits due to dilution, no data qualification was performed. Note that retention time updates were applied in the course of various pesticide analytical sequences. There is no discernable negative impact on the data as a result, based on professional judgment. Also, note that a number of analytes are present in the calibration or other QC data that are not reported in the EDD. This observation applies to all organic analyses excepting PCBs and PAHs.

3.3 PCBs

Major Anomalies:

There are no major anomalies (i.e., "R" flagged data) associated with the aqueous samples.

For soils, "R" flags were applied to all analytes (non-detects) in samples 73SB02-01, 73SB02-04, 73SB14-01 and 73SB14-04 due to extremely low MS recoveries.

Minor Anomalies:

There are no minor anomalies associated with the aqueous samples.

For soils, "J+,s" flags were applied to Arochlor 1260 in three samples due to surrogate recoveries greater than the upper QC limit.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for PCBs but did not require data qualification, in accord with the verification protocols. There are no other comments not previously discussed in the narrative above.

3.4 VOCs

Major Anomalies:

The analyte trans-1,4-dichloro-2-butene was flagged "R,m" in (water) samples 73ER-07 and 73MW-01A, and flagged R, p1 for sample 73MW-01.

Minor Anomalies:

In the aqueous samples dichlorodifluoromethane was flagged "UJ,c2" in samples 73FB-03 and 73FB-03A due to low recovery in the initial calibration verification (ICV). The positive result for toluene in sample 73ER-04 was flagged "U,b1" due to method blank contamination.

Virtually the entire VOC data set is impacted by failure to meet preservation temperature requirements and/or holding time requirements. In accord with the reviewer's interpretation of the Region 2 guidelines, those samples adversely affected by temperature have been flagged either "J,p1" or UJ,p1" and a negative bias is indicated. Those affected by holding time issues have been flagged either "J,h" or "UJ,h" and a negative bias is also indicated. Thus, these data should be used with conservatism in comparison to threshold values.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for VOCs but did not require data qualification, in accord with the verification protocols. In the VOC and, to a lesser extent, the SVOC fraction, matrix interferences resulted in internal standard area depression. In general terms, the reported area is only slightly less than the lower control limit. However, in contrast to the above, surrogate recoveries were generally nominal. Thus, it is apparent that the internal standards continued to perform their basic function and, therefore, no data flags were applied on this basis. There are no other comments not previously discussed in the narrative above.

3.5 SVOCs

Major Anomalies:

In the aqueous samples the following compounds were flagged "R" in a broad cross section of the data due to either LCS, MS, or ICV recoveries less than half the lower control limit: 1,4-napthoquinone, 1,4-phenylenediamine, isosafarole, and methapyrilene. Non-detects for phenolic compounds were flagged "R" in samples 73FB-03 and 73FB03A due to surrogate recoveries. Other compounds flagged "R" in this same grouping include 2-naphthalyene and diallate, but at a lesser frequency.

In the soil samples, the following compounds were flagged "R" in a broad cross section of the data due to either LCS, MS, or ICV recoveries less than half the lower control limit: 1,4-phenylenediamine, 2,4-dinitrophenol, 2-naphylamine, 4-nitroqunone-1-oxide, isosafrole, methapyrilene, and diallate. "R" flags were also applied to hexachlorocyclopentadiene but at much reduced frequency.

Minor Anomalies:

In the aqueous samples, "UJ" or "J" flags were applied at relatively low frequency to 1,4-nathoquinone, aramite, diallate, hexachlorocyclopentatdiene, and methyl methane-sulfonate. In sample ER-01 a broad cross section of analytes were flagged "UJ" due to LCS recoveries less than the lower control limit.

In the soil samples, "UJ" or "J" flags were applied to 1,4-naphtoquinone, methyl methanesulfonate, and aramite and hexachlorocyclopentadiene in a broad cross section of the data. Other "J" or "UJ" flags were applied infrequently to such compounds as benzo(b)fluoranthene, diallate, hexachlorocyclopentadiene, methyl methanesulfonate, and aramite.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for SVOCs but did not require data qualification, in accord with the verification protocols. 3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for the analysis. The sum of any positive detects for either of these compounds is reported as 4-methylphenol. There are no other comments not previously discussed in the narrative above.

3.6 PAHs

Major Anomalies:

In the aqueous samples, a number of PAHs were flagged "R" in samples 73FB-03 and 73FB-03A due to matrix spike anomalies.

There are no major anomalies (i.e., "R" flagged data) associated with the soil samples.

Minor Anomalies:

In the aqueous samples, chrysene, 2-methylnaphalene, and pyrene were infrequently flagged as estimates due to matrix spike anomalies.

In the soil samples, a variety of the PAHs were flagged "J" due to matrix spike recoveries less than the lower control limit. As the soil matrix spike samples were, in most cases, heavily impacted by both elevated concentrations of target analyte and interferences, it is difficult to accurately assess the direction of bias.

Comments:

Additional QC anomalies of various kinds were observed in the data reports for PAHs but did not require data qualification, in accord with the verification protocols. There are no other comments not previously discussed in the narrative above.

4.0 Data Validation Findings

4.1 Field QA/QC Samples

In the trip blanks, only a single carbon disulfide detection resulted in "U" flags for samples 73MW01 and 73MW01A.

For the equipment rinsate blank collected on 3/31, toluene and 2-methylnapthalene detections resulted in application of "U" flags to the associated samples.

On 4/1, two field blanks and one equipment rinsate sample were collected. Positive detections in these samples resulted in the application of "U" flags to the associated samples for toluene and 2-methylnapthalene.

For the equipment rinsate blank collected 4/2, no data qualification was required.

For the equipment rinsate blank collected 4/3, only silver required qualification in sample 73SB28-00.

A field blank was collected in duplicate on 4/7 in addition to an equipment rinsate blank. No data qualification was required.

An equipment rinsate blank was collected on 4/10. Toluene was flagged "U" in samples 73MW01 and 73MW01A.

Two aqueous and two soil field duplicates were collected. For the aqueous samples, the relative percent difference (RPD) results were almost universally less than 50%. In the soil duplicates, duplicate pair 73SB01-00/73SB01A-00 displayed several analytes with RPDs approaching or greater than 50% in the pesticide, SVOC, and metals fractions. In the duplicate pair 73SB13-00/73SB13A-00, acetone displayed an RPD approaching 100% and in the PAH fraction most analytes displayed RPD greater than 50% with a number approaching or exceeding 100%. In accord with USEPA Region 2 protocols, no data qualification was performed. See section 4.2.1 for additional information.

4.2 PARCCS

In this section anomalies observed in terms of precision, accuracy, representativeness, completeness, comparability, and/or sensitivity will be highlighted and guidance provided regarding any limitation of use.

4.2.1 Precision

Laboratory analytical precision was generally quite good with only a very limited number of results flagged due to laboratory duplicate or matrix spike duplicate results. One of two soil field duplicates displayed significantly different results. The data user is advised to use any data flagged with a "d" reason code and soil samples of a similar nature to 73SB13-00 with conservatism. The reported results *may* have a range of ±100% in some cases.

4.2.2 Accuracy

Very significant matrix interferences were observed in the QC data and in the chromatography for numerous samples in all the organic fractions. This has resulted in the application of "R", "J", and "UJ" qualifiers. Data flagged "R" should be considered data gaps. With regard to data flagged as estimates, the data user is referred to the data tables where, to the extent possible, the direction and some indication of the magnitude of bias is given.

The VOC fraction deserves separate discussion due to the impact of elevated temperatures and holding time violations. While it is difficult to assign a numeric value to the bias imparted as a result of these issues the data user is advised that virtually all of the VOC results will display a moderate negative bias.

In comparing these data to fixed threshold values, the data user must keep these biases in mind such that when the value in the sample approaches the threshold on either the lower or higher side, the worst-case scenario should be assumed unless a detailed analysis of the direction and magnitude of bias attributed to each datum is applied.

4.2.3 Representativeness

Blank and duplicate performance was generally good and the representativeness of these data appears to be largely acceptable. However, the field duplicate pair 73SB13-00/73SB13A-00 suggests that for some samples, representativeness is questionable. Though the data remain usable, again, it will be prudent to use the data conservatively.

4.2.4 Comparability

The internal comparability of data within media-method groups in this data set appears to be acceptable. The reviewer did not observe any procedural modifications that are expected to have discernable impact on data utility or interpretation. However, there are procedural differences between the laboratories with regard to their methods of work in the case of the metals data.

Although no obvious instances of non-comparability were observed, the data user would be prudent to keep these potential sources of difference in mind both within these results and across subsequent sampling rounds, if any.

4.2.5 Completeness

Completeness was generally acceptable. However, in the soil data, the pesticide and PCB fraction, as well as some individual metals, display completeness less than 95%. The data user must ensure that the amount of usable data is sufficient for any statistical hypothesis testing.

4.2.6 Sensitivity

Reporting limits were elevated in a significant number of instances either due to irresolvable matrix interferences or as a result of dilutions required to accommodate high analyte concentration in the samples. The data user is encouraged to ensure that reporting limits given are lower than the comparison criteria. If not, the comparison of non-detects to the threshold value is invalid.

Data Validation Report

Camp Moscrip, Puerto Rico

Prepared by

AE Environmental
7519 Green Valley Road
Frederick, Maryland 21701
301-865-5001

Prepared for

US Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Services
Blackhawk Road
Aberdeen Proving Ground
Edgewood, Maryland

April 7, 2009

AE – Environmental

April 7, 2009

I certify that to the best of my knowledge and belief the attached report is correct and complete within the terms and conditions of the Scope of Work provided by the U.S. Army Center for Health Promotion and Preventive Medicine.

John F. Kearns
President
AE, LLC

1.0 Introduction

This report presents the findings of a technical review of analytical data from the United States Army Center for Health Promotion and Preventive Medicine (USACHPPM) Directorate of Laboratory Sciences (DLS), as well as Lancaster Laboratories, Inc. of Lancaster Pennsylvania, and Microbac Laboratories, Inc. of Baltimore, Maryland, under contract to DLS. The project entailed the collection of soil and groundwater samples, plus samples of Investigation Derived Waste (IDW). Field quality control samples including field blanks, equipment rinsates, and field duplicates are also included in this review. The samples were collected over the period January 13 through 16, 2009 from Camp Moscrip, Puerto Rico. Samples were analyzed for one or more of the following parameters: polycyclic aromatic hydrocarbons (PAHs), pesticides, and metals. The analytical methods were taken from the United States Environmental Protection Agency (USEPA) SW-846 methods manual. The intended use of the data is in comparison to various threshold values.

The data have been provided in six separate reports, which contain one or more sample delivery groups (SDGs) or, for purposes of this report, are considered separate sample preparation/sample analysis batches. A listing of the reports, the responsible laboratory, and their contents follows:

Report ID	Laboratory	Analyses
09A0420	Microbac	Metals
09A0424	Microbac	Metals
PUJ97	Lancaster	Pesticides
PUJ99	Lancaster	Pesticides
PUJ98	Lancaster	PAHs
PUK02	Lancaster	PAHs

Data verification and limited data validation has been performed as part of this review. Data verification is defined as a comparison of the data and its documentation to pre-established contractual and project quality control specifications (Method Quality Objectives --- MQOs) for purposes of identifying data that is broadly unfit for use, and in particular indications of potential false negative data points. It is also intended to identify data that are biased or variable to a greater degree than is normal for the methods of analysis employed and data that are affected by background contamination to the extent that they are not considered representative of site conditions.

In this case, data validation includes an overview of the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) of the data and assessment of the field QC results in relationship to the field sample results.

Verification procedures are based largely on USEPA National Functional Guidelines (NFGs) modified to reflect the specifications of the actual methods employed. In some cases, the detailed specifications of the USEPA Region 2 modifications to the NFGs have been referenced

to resolve differences between the acceptance criteria used by the laboratory and the Functional Guidelines or method specifications.

The report consists of three sections describing methods of work, data verification findings, and data validation assessment. Two appendices support these two sections: Data Verification Checklists and Data Tables.

2.0 Methods of Work

2.1 Data Verification

The following sections describe the approach to data verification employed in the course of this work.

2.1.1 Finalize Project-specific Data Verification Checklists

The specifications of AE-Environmental's standard data verification worksheets have been modified to reflect certain agreed upon project/laboratory-specific acceptance criteria. Those finalized checklists were employed in the data verification process discussed below.

2.1.2 Data Verification

Analytical data packages were received from the laboratories after some initial consolidation and formatting at USACHPPM. Upon receipt, the data packages were logged in and a cursory completeness check on the hard copy deliverables was performed. The data packages are not formatted according to the USEPA Contract Laboratory Program (CLP) and as a result a number of usually employed QC Summary Forms have not been included. To the extent that affected QC criterion could be assessed directly from the raw data, every attempt has been made to do so. However, the absence of these summary forms has made accurate cross referencing of QC results to field samples extremely difficult and the reviewer can only be said to have provided his best effort in this regard. Multiple re-preparations, re-analyses, dilutions, etc, have been taken into account to the fullest degree possible, however, it has proven difficult to ensure that the value reported in the data tables and the applicable QC are from the same preparation and analysis batches.

Upon acceptance, the data packages were referred to the Project Chemist (PC) for review. The PC verified the contents of the data packages against the requirements summarized in the appropriate data verification checklist for the methods of analysis involved. Any deviations from the requirements were noted on the verification checklists and supporting documentation pertaining to any such deviation retained for inclusion in the project records. As necessary, the PC applied data qualifying flags to the analytical result report forms. Data qualifying flags were then transcribed onto spreadsheets derived from the USACHPPM supplied EDD.

2.2 Definitions and Qualifications

Definitions of Data Quality Indicators, data qualifying flags, and reason codes are presented in Tables 1 through 3, respectively.

Table 1
Data Quality Indicators

Data Quality Indicator	Definition
Precision	The degree of agreement between measurements of the same property under the same conditions; variability. Variously measured as the relative percent difference (RPD), variance, standard deviation, or percent relative standard deviation (%RSD). Duplicate (or replicate) samples are used to assess precision.
Accuracy	The degree to which a measurement agrees with a known or standard value for the measured condition. It is generally measured through the use of standards and spikes and is reported as the percent recovery or the percent difference.
Representativeness	The degree to which a measured value accurately and precisely represents the population from which it is drawn. Representativeness may be inferred to some extent by assessment of field duplicates and blanks. However, it is primarily controlled by the statistical validity of the sampling plan.
Comparability	The degree to which one data set may be compared to another. This is a qualitative assessment based on the degree to which the methods of work employed and the sampling design for the two (or more) data sets are the same.
Completeness	The degree to which the data set provides sufficient numbers of data points to perform the specified data analyses, under the actual conditions of sampling and analysis compared to the assumptions of the project planning process.
Sensitivity	The degree to which an analytical measurement can be reliably differentiated from zero and/or reported with planned precision and accuracy. Also, the ability to discriminate between orders of magnitude in the measured continuum.

Table 2
Data Qualifier Definitions

Code/Flag	Interpretation
J	The reported result is an estimate; associated QC results are outside the specified range
UJ	The reported detection/reporting limit is an estimate; associated QC results are outside the specified range
R	The result is rejected or unusable either qualitatively or quantitatively; a data gap is indicated
U	The analyte should be treated as a non-detect at the reported value or the reporting limit whichever is greater.
Q or X	Self defined note; see commentary in report
+/-	When used in conjunction with another flag, indicates direction of bias if the direction can be identified. Double use (i.e., ++ or --) indicates that a very strong bias is observed.

Table 3
Reason Codes

Code	Interpretation
a	Not presently used
b_1	Result is flagged due to **method blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
b_2	Result is flagged due to **calibration blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
b_3	Result is flagged due to **field, ambient, or trip blank** contamination; Reported value is raised to the reporting limit for values between MDL and RL and a positive bias is indicated; in the case of negative blank results a negative bias is indicated.
c_1	Result is flagged due to **initial calibration** anomalies related to linearity or response.
c_2	Result is flagged due to **initial calibration verification** anomalies
c_3	Result is flagged due to **continuing calibration** anomalies related to drift or response
c_4	MDL or RL **check standard** %R does not meet specifications
d	Result is flagged due to **duplicate imprecision**; RPD greater than specified
e	Not presently used
f	Not presently used
g	Not presently used
h	Result is flagged due to **holding time** failure; a low bias is indicated
i	Result is flagged due to **internal standard** (organic and ICP/LC MS) or **ICP interference check** failure (inorganic)
j	Not presently used
k	Not presently used
l	Result is flagged due to **LCS** anomalies
m	Result is flagged due to **matrix spike** recoveries outside the specified window
n	Not presently used
o	Not presently used
p_1	Result is flagged due to **preservation** or handling problems
p_2	Result is flagged due to **post-digestion spike** failure (inorganics)
q	Result is flagged due to a **quantitation** anomaly
r	Not presently used
s	Result is flagged due to **surrogate** recovery (organic) or **serial dilution** (inorganic) failures
t	Result is a **TIC** (organic); Result is flagged due to **tracer** recovery anomaly (radiological)
u	Not presently used
v	Not presently used
w	Not presently used
x,y,z	Self defined in report

3.0 Data Verification Findings

3.1 Metals (including mercury)

Major Anomalies:

No major anomalies were observed in either fraction.

Minor Anomalies:

In the aqueous fraction, chromium was flagged U, b3 for sample 73 IDW-04 due to field blank contamination. In addition, cadmium, copper, and lead were found in the method blank. Associated cadmium and lead results for 73 IDW-04 were flagged U,b1. Copper results, for both soil and water, were not flagged because results were greater than 5X the blank.

In the soil fraction, vanadium recovered greater than the upper QC limit in the LCS but lower than the lower QC limit in the matrix spike. Associated results were flagged "J,lm". Matrix spike results were greater than the upper control limits for copper, cobalt, lead, and nickel. Associated results were flagged J+.

Comments:

Barium displayed a recovery slightly higher than the upper QC limit in the linearity check sample. Since all associated sample results were well within the standard calibration curve, no flags were applied. Extensive dilution was performed on all metals samples elevating reporting limits.

In the soil fraction, the initial calibration verification was biased high for multiple analytes. However, The ICV was reanalyzed with acceptable results. No flags were applied, based on professional judgment. The method blank for copper displayed a positive result at 0.106 mg/Kg. All sample results were much greater than 5X the amount in the blank. No data flags were required. Selenium displayed a duplicate RPD greater than the upper QC limit. Since the associated sample result was ND no flags were required. The batch duplicate for cobalt was outside the control limit but had already been flagged for MS recovery. The laboratory has flagged almost all results with a "D" for dilution. Reporting limits were elevated accordingly.

One of the replicates for mercury failed to inject properly. The laboratory reported the result from the other two replicates. This is not an accepted practice; however, as it is difficult to predict the bias associated with this approach no data flags were applied. In addition, multiple mercury CCVs are identified in the raw data to be out of control; however, this appears to result from incorrectly programming the control limits in the method file. No flags were applied.

3.2 Pesticides

Major Anomalies:

No major anomalies were identified in the soil fraction. For the aqueous samples, the closing calibration verifications (both columns) displayed an evident lack of analytical control. Associated samples were flagged "R,c3".

Minor Anomalies:

In the soil samples DDT, DDD, and heptachlor epoxide displayed continuing calibration recoveries greater than the upper QC limit. Positive results were flagged "J,c3". In the aqueous fraction DDT was flagged "UJ,c3" in the associated samples due to slight to modest calibration anomalies.

Comments:

The sample shipping coolers arrived at the laboratory open and without custody seals.

3.3 PAHs

Major Anomalies:

In the aqueous fraction critically low recoveries were observed for numerous analytes in the matrix spike resulting in "R,m" qualifiers for non-detects and "J,m" flags for positive detections. There are no major anomalies in the soil samples.

Minor Anomalies:

Naphthalene, 1-methynapthalene, 2-methylnapthalene, and phenanthrene were identified as positive detections in one or more field blanks. Cross applying these values to the remaining field and equipment blanks resulted in the application of "U,b3" flags to a number of samples where the difference between the blank and affected sample result was less than 5X. If a sample flagged "U" for this reason was also affected by severe matrix spike anomalies the final flag for those samples is "UR,b3m". Sample FB-05 displayed a surrogate failure such that any previously un-flagged analytes were flagged "UJ,s".

In the soil samples, the recovery of pyrene was greater than the upper control limit in the matrix spike and the duplicate relative percent differences for pyrene and fluoranthene were greater than the control limit. Pyrene was flagged "J,m" and fluoranthene was flagged "J,d" in the associated samples.

Comments:

Matrix QC should not be applied to field QC samples and the abnormally severe indication of matrix effect in these spikes is difficult to understand. Preservation temperatures were slightly lower than the specification; however, based on professional judgment no flags were applied. FB-06A and its reanalysis displayed internal standard area counts less than the lower QC limit. However, since the sample displayed acceptable surrogate recoveries no flags were applied on this basis.

4.0 Data Validation Findings

4.1 Field QA/QC Samples

There appear to be many more field blanks than seem necessary in this set of reports. The blanks did not display an unusual number of positive detections but were strongly affected by calibration anomalies and matrix spike failure in the pesticide and PAH fractions, respectively, resulting in large number of data points flagged "R". Thus it is difficult to assess performance of field blanks. Fortunately almost all of these issues are restricted to the blanks and soil samples performed much better. Field duplicates generally displayed good correlation.

4.2 PARCCS

In this section anomalies observed in terms of precision, accuracy, representativeness, completeness, comparability, and/or sensitivity will be highlighted and guidance provided regarding any limitation of use.

4.2.1 Precision

Only one analyte, fluoranthene, was flagged for duplicate imprecision. Overall the precision on these data are acceptable.

4.2.2 Accuracy

Aqueous samples for pesticides and PAHs display large numbers of "R" flags. Soil accuracy results appear to be generally acceptable. The one exception to this observation is in the metals fraction where significant numbers of results were affected by positive biases.

4.2.3 Representativeness

Representativeness as displayed in field duplicates is acceptable. Representativeness as displayed in field blanks cannot be properly assessed.

4.2.4 Comparability

Comparability for soil sample results is largely acceptable but this is not the case for the aqueous field samples.

4.2.5 Completeness

Completeness for field and equipment blanks is less than 95% for the pesticides and PAHs. Other fractions display acceptable completeness.

4.2.6 Sensitivity

Reporting limits were elevated in a significant number of instances either due to irresolvable matrix interferences or as a result of dilutions required to accommodate high analyte concentration in the samples. The data user is encouraged to ensure that reporting limits given are lower than the comparison criteria. If not, the comparison of non-detects to the threshold value is invalid.

PUERTO RICO CHEMIST CERTIFICATION

On May 28, 2008 I received the analytical data for Project NAPR- Camp Moscrip.
The data was generated by the following laboratories:

Microbac Laboratories, Inc.- Baltimore Division
USACHPPM- Directorate of Laboratory Services
Lancaster Laboratories

The data packages received and reviewed included reports, case narratives, quality control data, raw data, chain of custody records and othe pertinent information.
The reports received and reviewed are listed in the following table:

Report Number	Sample Numbers	Analyzed by
804145	29709001- 29709014	Microbac Laboratories
804258	29768001-29768027	Microbac Laboratories
804407	29805001-29805007	Microbac Laboratories
804485	29847007	Microbac Laboratories
418225	73 ER 03- ER 01	USACHPPM
417557	73 ER 04- 73 SB 3600	USACHPPM
417817	73 ER 06-73 SB27A-01	USACHPPM
SDG# PUG 19	5329030-5329035	Lancaster Laboratories
SDG# PUG 02	5322336-5322352	Lancaster Laboratories
SDG# PUG 05	5322589-5322600	Lancaster Laboratories
SDG# PUG 09	5323941-5323943	Lancaster Laboratories
SDG# PUG 03	5322482-5322498	Lancaster Laboratories
SDG# PUG 06	5322609-5322620	Lancaster Laboratories
SDG# PUG 08	5323938-5323940	Lancaster Laboratories
SDG# PUG 21	5329159-5329164	Lancaster Laboratories
SDG# PUG 24	5333070-5333072	Lancaster Laboratories
SDG# PUG 04	5322555-5322572	Lancaster Laboratories
SDG# PUG 07	5322627-5322639	Lancaster Laboratories
SDG# PUG 10	5323944-5323947	Lancaster Laboratories
SDG# PUG 20	5329085-5329091	Lancaster Laboratories
SDG# PUG 25	5333073-5333078	Lancaster Laboratories

I hereby certify that I have reviewed the data included in the previous table and, to the best of my knowledge, the results are correct and reliable.

PUERTO RICO CHEMIST CERTIFICATION

Related to Project NAPR- Camp Moscrip, I received the following reports:

1. Report Number: 426893

   Samples: 73MW01 to 73 IDW-02 MSD

   Generated by: USACHPPM

2. Report Number: 0805540

   Samples: 0805540-001A to 0805540-007A

   Generated by: Microbac Laboratories, Inc.

The data packages received and reviewed included reports, case narratives, quality control data, raw data, chain of custody records and othe pertinent information.

I hereby certify that I have reviewed the data included in the reports and, to the best of my knowledge, the results are correct and reliable.

PUERTO RICO CHEMIST CERTIFICATION

Recently, I received the analytical data for Project NAPR- Camp Moscrip. The data was generated by the following laboratories:

Microbac Laboratories, Inc.- Baltimore Division
Lancaster Laboratories- Lancaster, PA

The data packages received and reviewed included reports, case narratives, quality control data, raw data, chain of custody records and other pertinent information.

The reports received and reviewed are listed in the following table:

Report Number	Sample Numbers	Analyzed by
09A0420	09A0420-01 to 31	Microbac Laboratories
09A0424	09A0424-01 to 09	Microbac Laboratories
SDG# PUJ 98	5579594- 5579603	Lancaster Laboratories
SDG# PUK 02	5580631- 5580636	Lancaster Laboratories
SDG# PUJ 97	5579590- 5579592	Lancaster Laboratories
SDG# PUJ 99	5580627- 5580630	Lancaster Laboratories

I hereby certify that I have reviewed the data included in the previous table and, to the best of my knowledge, the results are correct and reliable.

APPENDIX E
ANALYTICAL LABORATORY NARRATIVE
(PROVIDED ON CD-ROM ONLY)

APRIL 2008

VOC DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jon DIVISION/TEAM: GCMS

INSTALLATION: NAPR-CP MOSERP CONTRACT LAB: LLV

PROJECT NO: 38-0995 LIMS W.O. NO: 29717

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

_____ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

__X__ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____ OTHER.

COMMENTS/ NARRATIVE: Please see Contractor case narrative

REVIEWED BY: Rosemary J Gaffney
DATE: 1 May 08

LIDS 2.0 Feb 06

Case Narrative Conformance/Nonconformance Summary

0079

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG#: PUG04

LANCASTER LABORATORIES
VOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5322555	00401	X		
5322556	02004	X		
5322557	00403	X		
5322557	00403RE	X		Reinjection
5322558	00404	X		
5322559	00405	X		
5322559	00405RE	X		Reinjection
5322560	00406	X		
5322561	00407	X		
5322561	00407RE	X		Reinjection
5322562	00708		X	
5322563	00409		X	Client Blank
5322564	00410	X		
5322565	00411	X		
5322565	00411RE	X		Reinjection
5322566	00412	X		
5322567	00413	X		
5322568	00414	X		
5322569	00415	X		
5322570	00416		X	
5322571	00417		X	
5322572	00418		X	

6888

LABORATORY SUBMITTED QC:

VBLKC73	VBLKC73		X	Method Blank
VBLKX45	VBLKX45	X		Method Blank
VBLKX46	VBLKX46	X		Method Blank
LCSX45	LCSX45	X		Lab Control Sample
LCDX45	LCDX45	X		Lab Control Sample Dup
LCS145	LCS1X45	X		Lab Control Sample
LCD145	LCD1X45	X		Lab Control Sample Dup
LCSX46	LCSX46	X		Lab Control Sample
LCDX46	LCDX46	X		Lab Control Sample Dup
LCS1X46	LCS1X46	X		Lab Control Sample
LCD1X46	LCD1X46	X		Lab Control Sample Dup
LCSC73	LCSC73		X	Lab Control Sample
LCDC73	LCDC73		X	Lab Control Sample Dup
LCS1C73	LCS1C73		X	Lab Control Sample
LCD1C73	LCD1C73		X	Lab Control Sample Dup

SAMPLE PREPARATION:

The following samples are outside the weight requirement: 5322555, 5322556, 5322564, and 5322567.

No other problems were encountered during the sample preparation for the VOA fraction.

ANALYSIS:

Sample preservation was checked at the time of analysis and was determined to be approximately pH <2. According to Method 8260B, samples are to be acidified to a pH of 2 or less at the time of collection. The pH result indicates that the method preservation requirements were met.

Because the peaks for carbon disulfide could not be properly resolved in the soil initial calibration, the result reported for samples 5322555, 5322557, 5322557RE, 5322558, 5322559, 5322559RE, 5322560, 5322561, 5322561RE, 5322565, 5322565RE, and 5322569 may be biased low.

Because the peaks for carbon disulfide could not be properly resolved in the soil initial calibration, the result reported for samples 5322556, 5322564, and 5322566 may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL in these samples.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

The internal standard peak area is outside the QC limits for the initial analysis and/or the reanalysis of multiple samples, indicating a matrix effect. Please see the internal standard area summary forms in the QC summary section for specific information.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Date 4-22-08

Dana M. Kauffman
Manager, Data Deliverables

0002

QC Summary

0003

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUG04

Level: (low/med) LOW

	LL #'s	EPA SAMPLE NO.	S1 (DBF)#	S2 (DCA)#	S3 (TOL)#	S4 (BFB)#	TOT OUT
01	5322555	00401	91	82	90	86	0
02	5322556	02004	88	79	92	77	0
03	5322557	00403	92	82	81	89	0
04	5322557	00403RE	91	83	83	92	0
05	5322558	00404	90	80	91	83	0
06	5322559	00405	91	79	85	91	0
07	5322559	00405RE	90	77	84	89	0
08	5322560	00406	92	80	88	86	0
09	5322561	00407	92	83	85	92	0
10	5322561	00407RE	90	83	84	90	0
11	5322564	00410	90	82	88	85	0
12	5322565	00411	91	80	90	83	0
13	5322565	00411RE	89	80	87	89	0
14	5322566	00412	87	79	92	78	0
15	5322567	00413	89	81	90	81	0
16	5322568	00414	88	81	90	82	0
17	5322569	00415	92	83	83	91	0
18	VBLKX46	VBLKX46	86	79	91	79	0
19	VBLKX45	VBLKX45	86	76	92	80	0
20	LCD1X46	LCD1X46	85	77	91	83	0
21	LCDX46	LCDX46	87	82	92	84	0
22	LCS1X46	LCS1X46	86	80	90	85	0
23	LCSX46	LCSX46	87	82	91	84	0
24	LCD145	LCD1X45	85	77	91	82	0
25	LCDX45	LCDX45	87	80	92	84	0
26	LCS145	LCS1X45	85	78	92	82	0
27	LCSX45	LCSX45	87	81	91	85	0

	QC LIMITS
S1 (DBF) = Dibromofluoromethane	(71-114)
S2 (DCA) = 1,2-Dichloroethane-d4	(70-109)
S3 (TOL) = Toluene-d8	(70-123)
S4 (BFB) = 4-Bromofluorobenzene	(70-111)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

page 1 of 1

2B

SOIL VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUG04

Level: (low/med) LOW

	LL #'s	EPA SAMPLE NO.	S1 (DBF)#	S2 (DCA)#	S3 (TOL)#	S4 (BFB)#	TOT OUT
27	LCD145	LCD1X45	85	77	91	82	0
28	LCDX45	LCDX45	87	80	92	84	0
29	LCS145	LCS1X45	85	78	92	82	0
30	LCSX45	LCSX45	87	81	91	85	0

		QC LIMITS
S1 (DBF)	= Dibromofluoromethane	(71-114)
S2 (DCA)	= 1,2-Dichloroethane-d4	(70-109)
S3 (TOL)	= Toluene-d8	(70-123)
S4 (BFB)	= 4-Bromofluorobenzene	(70-111)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

page 2 of 2

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2A

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUG04

	LL #'s	EPA SAMPLE NO.	S1 (DBF) #	S2 (DCA) #	S3 (TOL) #	S4 (BFB) #	TOT OUT
01	5322562	00708	101	91	88	85	0
02	5322563	00409	102	93	88	84	0
03	5322570	00416	101	95	88	85	0
04	5322571	00417	103	95	87	84	0
05	5322572	00418	103	92	88	84	0
06	VBLKC73	VBLKC73	101	94	88	84	0
07	LCD1C73	LCD1C73	100	93	89	84	0
08	LCDC73	LCDC73	101	91	90	86	0
09	LCS1C73	LCS1C73	100	93	89	84	0
10	LCSC73	LCSC73	102	97	90	91	0

		QC LIMITS
S1 (DBF)	= Dibromofluoromethane	(77-114)
S2 (DCA)	= 1,2-Dichloroethane-d4	(74-113)
S3 (TOL)	= Toluene-d8	(77-110)
S4 (BFB)	= 4-Bromofluorobenzene	(78-110)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

page 1 of 1

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Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa13l01.d
Client ID: LCSX45
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa13l02.d
Client ID: LCDX45
Matrix/Level: SL.
Dilution Factor: 1.0

Batch: XD81041AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Dichlorodifluoromethane	20.00	19.08	18.64	95	93	33-146	2	30	YES
Chloromethane	20.00	15.96	15.99	80	80	43-131	0	30	YES
Vinyl Chloride	20.00	15.16	15.11	76	76	53-123	0	30	YES
Bromomethane	20.00	12.63	12.43	63	62	47-136	2	30	YES
Chloroethane	20.00	14.67	14.38	73	72	56-124	2	30	YES
Trichlorofluoromethane	20.00	18.85	17.83	94	89	58-137	6	30	YES
Acrolein	150.00	146.51	150.04	98	100	44-134	2	30	YES
1,1-Dichloroethene	20.00	22.26	21.54	111	108	83-121	3	30	YES
Freon 113	20.00	20.29	19.27	101	96	68-121	5	30	YES
Acetone	150.00	112.04	108.19	75	72	18-200	3	30	YES
Methyl Iodide	20.00	20.11	20.05	101	100	67-119	0	30	YES
2-Propanol	150.00	156.12	164.66	104	110	66-128	5	30	YES
Carbon Disulfide	20.00	20.29	19.65	101	98	66-123	3	30	YES
Allyl Chloride	20.00	20.50	20.07	103	100	64-131	2	30	YES
Methyl Acetate	20.00	17.39	17.64	87	88	59-150	1	30	YES
Methylene Chloride	20.00	21.75	20.91	109	105	75-120	4	30	YES
t-Butyl Alcohol	200.00	205.45	205.70	103	103	66-146	0	30	YES
Acrylonitrile	100.00	84.01	81.80	84	82	58-122	3	30	YES
trans-1,2-Dichloroethene	20.00	22.00	21.43	110	107	84-116	3	30	YES
Methyl Tertiary Butyl Ether	20.00	19.03	18.71	95	94	72-117	2	30	YES
n-Hexane	20.00	20.75	18.50	104	93	46-130	11	30	YES
1,1-Dichloroethane	20.00	21.53	21.23	108	106	82-116	1	30	YES
2-Chloro-1,3-Butadiene	20.00	18.77	17.89	94	89	71-121	5	30	YES
di-Isopropyl Ether	20.00	19.56	19.21	98	96	72-120	2	30	YES
Ethyl t-Butyl Ether	20.00	21.22	20.91	106	105	67-124	1	30	YES
cis-1,2-Dichloroethene	20.00	21.13	20.81	106	104	84-113	2	30	YES
1,2-Dichloroethene (total)	40.00	43.13	42.24	108	106	79-113	2	30	YES
2,2-Dichloropropane	20.00	19.26	18.64	96	93	72-123	3	30	YES
2-Butanone	150.00	121.93	116.88	81	78	38-181	4	30	YES
Propionitrile	150.00	180.69	183.56	120	122	69-126	2	30	YES
Methacrylonitrile	150.00	139.93	134.95	93	90	70-131	4	30	YES
Bromochloromethane	20.00	21.21	20.90	106	104	83-119	1	30	YES
Tetrahydrofuran	100.00	115.65	115.69	116	116	74-121	0	30	YES
Chloroform	20.00	21.18	20.74	106	104	81-117	2	30	YES
1,1,1-Trichloroethane	20.00	20.04	19.20	100	96	74-127	4	30	YES
Cyclohexane	20.00	19.89	18.25	99	91	60-123	9	30	YES
1,1-Dichloropropene	20.00	20.76	19.65	104	98	75-121	5	30	YES
Carbon Tetrachloride	20.00	19.75	18.66	99	93	75-129	6	30	YES
Benzene	20.00	21.18	20.47	106	102	84-115	3	30	YES
Isobutyl Alcohol	500.00	526.01	519.39	105	104	72-121	1	30	YES
1,2-Dichloroethane	20.00	20.51	20.29	103	101	76-135	1	30	YES
t-Amyl Methyl Ether	20.00	23.50	22.72	117	114	73-116	3	30	NO
n-Heptane	20.00	16.08	13.58	80	68	23-133	17	30	YES
n-Butanol	1000.00	972.09	964.13	97	96	66-113	1	30	YES
Trichloroethene	20.00	21.40	20.37	107	102	81-114	5	30	YES
Methylcyclohexane	20.00	19.92	18.54	100	93	50-127	7	30	YES
1,2-Dichloropropane	20.00	21.12	20.69	106	103	78-119	2	30	YES
Dibromomethane	20.00	20.16	19.72	101	99	79-118	2	30	YES
1,4-Dioxane	500.00	557.54	573.85	112	115	60-121	3	30	YES
Methyl Methacrylate	20.00	18.08	17.18	90	86	61-121	5	30	YES
Bromodichloromethane	20.00	21.24	20.76	106	104	77-116	2	30	YES
2-Nitropropane	20.00	10.96	10.18	55	51	54-127	7	30	NO
cis-1,3-Dichloropropene	20.00	20.38	19.90	102	99	80-111	2	30	YES
4-Methyl-2-Pentanone	100.00	84.48	78.42	84	78	51-141	7	30	YES
Toluene	20.00	21.08	20.53	105	103	81-116	3	30	YES
trans-1,3-Dichloropropene	20.00	20.04	19.81	100	99	79-112	1	30	YES
Ethyl Methacrylate	20.00	19.64	18.82	98	94	59-131	4	30	YES
1,1,2-Trichloroethane	20.00	20.59	20.17	103	101	81-112	2	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by 8887

_____ Ver. by _____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa13l01.d
Client ID: LCSX45
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa13l02.d
Client ID: LCDX45
Matrix/Level: SL
Dilution Factor: 1.0

Batch: X081041AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Tetrachloroethane	20.00	21.66	20.39	108	102	77-120	6	30	YES
1,3-Dichloropropane	20.00	20.44	19.89	102	99	80-115	3	30	YES
2-Hexanone	100.00	85.19	80.35	85	80	39-166	6	30	YES
Dibromochloromethane	20.00	22.11	21.54	111	108	82-121	3	30	YES
1,2-Dibromoethane	20.00	20.33	19.59	102	98	77-114	4	30	YES
Chlorobenzene	20.00	21.64	20.93	108	105	81-112	3	30	YES
1,1,1,2-Tetrachloroethane	20.00	20.41	19.83	102	99	78-115	3	30	YES
Ethylbenzene	20.00	21.11	20.05	106	100	82-115	5	30	YES
m+p-Xylene	40.00	43.66	41.22	109	103	82-117	6	30	YES
Xylene (Total)	60.00	65.12	61.70	109	103	82-117	5	30	YES
o-Xylene	20.00	21.45	20.48	107	102	82-117	5	30	YES
Styrene	20.00	21.39	20.48	107	102	79-108	4	30	YES
Bromoform	20.00	20.04	19.02	100	95	71-118	5	30	YES
Isopropylbenzene	20.00	20.25	18.74	101	94	82-110	8	30	YES
Bromobenzene	20.00	21.72	21.26	109	106	84-109	2	30	YES
1,1,2,2-Tetrachloroethane	20.00	18.87	18.31	94	92	67-131	3	30	YES
1,2,3-Trichloropropane	20.00	19.61	19.03	98	95	71-133	3	30	YES
trans-1,4-Dichloro-2-Butene	100.00	94.95	92.77	95	93	55-137	2	30	YES
n-Propylbenzene	20.00	20.68	19.44	103	97	76-122	6	30	YES
2-Chlorotoluene	20.00	21.05	20.17	105	101	73-114	4	30	YES
1,3,5-Trimethylbenzene	20.00	19.97	18.67	100	93	74-112	7	30	YES
4-Chlorotoluene	20.00	21.29	20.61	106	103	75-110	3	30	YES
tert-Butylbenzene	20.00	20.19	18.76	101	94	72-113	7	30	YES
Pentachloroethane	20.00	19.43	19.14	97	96	77-110	2	30	YES
1,2,4-Trimethylbenzene	20.00	20.19	19.02	101	95	74-117	6	30	YES
sec-Butylbenzene	20.00	18.91	17.18	95	86	66-120	10	30	YES
1,3-Dichlorobenzene	20.00	21.23	20.38	106	102	76-112	4	30	YES
p-Isopropyltoluene	20.00	19.29	17.41	96	87	63-119	10	30	YES
1,4-Dichlorobenzene	20.00	20.80	20.07	104	100	78-108	4	30	YES
1,2,3-Trimethylbenzene	20.00	19.36	18.47	97	92	73-116	5	30	YES
Benzyl Chloride	20.00	17.34	16.41	87	82	57-123	6	30	YES
1,2-Dichlorobenzene	20.00	20.23	19.51	101	98	81-109	4	30	YES
n-Butylbenzene	20.00	17.44	15.48	87	77	59-120	12	30	YES
1,3-Diethylbenzene	20.00	18.52	16.62	93	83	61-115	11	30	YES
1,4-Diethylbenzene	20.00	18.35	16.47	92	82	59-117	11	30	YES
1,2-Diethylbenzene	20.00	18.71	17.02	94	85	71-117	9	30	YES
1,2-Dibromo-3-Chloropropane	20.00	15.57	14.92	78	75	54-139	4	30	YES
1,2,4-Trichlorobenzene	20.00	16.85	15.62	84	78	60-116	8	30	YES
Hexachlorobutadiene	20.00	11.77	10.51	59	53	11-142	11	30	YES
Naphthalene	20.00	15.30	14.50	77	73	62-116	5	30	YES
1,2,3-Trichlorobenzene	20.00	16.62	15.38	83	77	54-119	8	30	YES
Diethylbenzene (total)	60.00	55.57	50.10	93	84	61-116	10	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by _____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa13l03.d
Client ID: LCS145
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa13l04.d
Client ID: LCD145
Matrix/Level: SL
Dilution Factor: 1.0

Batch: X081041AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Chlorotrifluoroethene	20.00	14.12	14.36	71	72	70-130	2	30	YES
Freon 133a	20.00	16.97	16.77	85	84	70-130	1	30	YES
Acetonitrile	150.00	181.94	182.98	121	122	27-154	1	30	YES
Vinyl Acetate	100.00	85.39	83.30	85	83	40-184	2	30	YES
Ethyl Acetate	20.00	16.11	14.81	81	74	46-136	8	30	YES
Isopropyl Acetate	20.00	16.13	15.89	81	79	46-127	2	30	YES
n-Propyl Acetate	20.00	16.13	15.83	81	79	48-126	2	30	YES
Butyl Acetate	20.00	18.09	17.80	90	89	42-135	2	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by 0889

_____ Ver. by _____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa14101.d
Client ID: LCSX46
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa14102.d
Client ID: LCDX46
Matrix/Level: SL
Dilution Factor: 1.0

Batch: X081051AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Dichlorodifluoromethane	20.00	18.47	18.76	92	94	33-146	2	30	YES
Chloromethane	20.00	17.70	17.65	88	88	43-131	0	30	YES
Vinyl Chloride	20.00	16.88	16.21	84	81	53-123	4	30	YES
Bromomethane	20.00	12.82	12.41	64	62	47-136	3	30	YES
Chloroethane	20.00	15.48	15.11	77	76	56-124	2	30	YES
Trichlorofluoromethane	20.00	17.77	17.81	89	89	58-137	0	30	YES
Acrolein	150.00	164.09	153.16	109	102	44-134	7	30	YES
1,1-Dichloroethene	20.00	21.80	22.13	109	111	83-121	2	30	YES
Freon 113	20.00	17.70	17.73	88	89	68-121	0	30	YES
Acetone	150.00	128.07	125.25	85	84	18-200	2	30	YES
Methyl Iodide	20.00	19.75	20.03	99	100	67-119	1	30	YES
2-Propanol	150.00	153.89	157.67	103	105	66-128	2	30	YES
Carbon Disulfide	20.00	20.44	20.65	102	103	66-123	1	30	YES
Allyl Chloride	20.00	21.63	22.15	108	111	64-131	2	30	YES
Methyl Acetate	20.00	20.86	21.52	104	108	59-150	3	30	YES
Methylene Chloride	20.00	22.73	23.24	114	116	75-120	2	30	YES
t-Butyl Alcohol	200.00	207.01	198.81	104	99	66-146	4	30	YES
Acrylonitrile	100.00	94.30	91.83	94	92	58-122	3	30	YES
trans-1,2-Dichloroethene	20.00	21.85	21.89	109	109	84-116	0	30	YES
Methyl Tertiary Butyl Ether	20.00	18.81	19.31	94	97	72-117	3	30	YES
n-Hexane	20.00	16.53	16.80	83	84	46-130	2	30	YES
1,1-Dichloroethane	20.00	21.28	21.44	106	107	82-116	1	30	YES
2-Chloro-1,3-Butadiene	20.00	18.17	18.21	91	91	71-121	0	30	YES
di-Isopropyl Ether	20.00	19.14	19.58	96	98	72-120	2	30	YES
Ethyl t-Butyl Ether	20.00	19.76	20.16	99	101	67-124	2	30	YES
cis-1,2-Dichloroethene	20.00	20.99	20.92	105	105	84-113	0	30	YES
1,2-Dichloroethene (total)	40.00	42.84	42.82	107	107	79-113	0	30	YES
2,2-Dichloropropane	20.00	18.51	18.78	93	94	72-123	1	30	YES
2-Butanone	150.00	139.47	135.20	93	90	38-181	3	30	YES
Propionitrile	150.00	173.39	165.35	116	110	69-126	5	30	YES
Methacrylonitrile	150.00	152.83	148.75	102	99	70-131	3	30	YES
Bromochloromethane	20.00	21.95	22.15	110	111	83-119	1	30	YES
Tetrahydrofuran	100.00	111.06	106.65	111	107	74-121	4	30	YES
Chloroform	20.00	21.07	20.87	105	104	81-117	1	30	YES
1,1,1-Trichloroethane	20.00	19.72	20.03	99	100	74-127	2	30	YES
Cyclohexane	20.00	16.93	17.30	85	87	60-123	2	30	YES
1,1-Dichloropropene	20.00	20.16	20.10	101	100	75-121	0	30	YES
Carbon Tetrachloride	20.00	19.16	19.36	96	97	75-129	1	30	YES
Benzene	20.00	21.08	20.97	105	105	84-115	0	30	YES
Isobutyl Alcohol	500.00	528.26	512.68	106	103	72-121	3	30	YES
1,2-Dichloroethane	20.00	20.80	20.79	104	104	76-135	0	30	YES
t-Amyl Methyl Ether	20.00	21.57	21.78	108	109	73-116	1	30	YES
n-Heptane	20.00	12.35	12.90	62	64	23-133	4	30	YES
n-Butanol	1000.00	979.05	967.36	98	97	66-113	1	30	YES
Trichloroethene	20.00	21.08	21.07	105	105	81-114	0	30	YES
Methylcyclohexane	20.00	17.40	17.74	87	89	50-127	2	30	YES
1,2-Dichloropropane	20.00	21.07	21.07	105	105	78-119	0	30	YES
Dibromomethane	20.00	20.67	20.45	103	102	79-118	1	30	YES
1,4-Dioxane	500.00	514.67	522.50	103	105	60-121	2	30	YES
Methyl Methacrylate	20.00	18.93	18.71	95	94	61-121	1	30	YES
Bromodichloromethane	20.00	21.23	21.08	106	105	77-116	1	30	YES
2-Nitropropane	20.00	12.89	12.06	64	60	54-127	7	30	YES
cis-1,3-Dichloropropene	20.00	20.05	20.13	100	101	80-111	0	30	YES
4-Methyl-2-Pentanone	100.00	93.32	92.86	93	93	51-141	0	30	YES
Toluene	20.00	20.63	20.97	103	105	81-116	2	30	YES
trans-1,3-Dichloropropene	20.00	19.87	19.90	99	99	79-112	0	30	YES
Ethyl Methacrylate	20.00	19.67	20.01	98	100	59-131	2	30	YES
1,1,2-Trichloroethane	20.00	20.62	20.76	103	104	81-112	1	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by ____

_____ Ver. by ____ 0898

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa14101.d
Client ID: LCSX46
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa14102.d
Client ID: LCDX46
Matrix/Level: SL
Dilution Factor: 1.0

Batch: X081051AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Tetrachloroethene	20.00	20.90	21.15	105	106	77-120	1	30	YES
1,3-Dichloropropane	20.00	20.39	20.59	102	103	80-115	1	30	YES
2-Hexanone	100.00	96.33	97.16	96	97	39-166	1	30	YES
Dibromochloromethane	20.00	22.13	22.28	111	111	82-121	1	30	YES
1,2-Dibromoethane	20.00	20.34	20.54	102	103	77-114	1	30	YES
Chlorobenzene	20.00	21.05	21.31	105	107	81-112	1	30	YES
1,1,1,2-Tetrachloroethane	20.00	19.98	20.38	100	102	78-115	2	30	YES
Ethylbenzene	20.00	20.30	20.56	102	103	82-115	1	30	YES
m+p-Xylene	40.00	41.70	42.53	104	106	82-117	2	30	YES
Xylene (Total)	60.00	62.28	63.64	104	106	82-117	2	30	YES
o-Xylene	20.00	20.58	21.10	103	106	82-117	2	30	YES
Styrene	20.00	20.54	20.73	103	104	79-108	1	30	YES
Bromoform	20.00	20.49	20.35	102	102	71-118	1	30	YES
Isopropylbenzene	20.00	19.39	19.63	97	98	82-110	1	30	YES
Bromobenzene	20.00	20.96	21.38	105	107	84-109	2	30	YES
1,1,2,2-Tetrachloroethane	20.00	19.61	19.65	98	98	67-131	0	30	YES
1,2,3-Trichloropropane	20.00	20.74	20.90	104	105	71-133	1	30	YES
trans-1,4-Dichloro-2-Butene	100.00	104.81	102.07	105	102	55-137	3	30	YES
n-Propylbenzene	20.00	19.85	19.99	99	100	76-122	1	30	YES
2-Chlorotoluene	20.00	20.22	20.38	101	102	73-114	1	30	YES
1,3,5-Trimethylbenzene	20.00	19.18	19.48	96	97	74-112	2	30	YES
4-Chlorotoluene	20.00	20.64	20.78	103	104	75-110	1	30	YES
tert-Butylbenzene	20.00	19.03	19.19	95	96	72-113	1	30	YES
Pentachloroethane	20.00	19.31	19.50	97	98	77-110	1	30	YES
1,2,4-Trimethylbenzene	20.00	19.49	19.82	97	99	74-117	2	30	YES
sec-Butylbenzene	20.00	17.82	18.04	89	90	66-120	1	30	YES
1,3-Dichlorobenzene	20.00	20.47	20.75	102	104	76-112	1	30	YES
p-Isopropyltoluene	20.00	18.24	18.37	91	92	63-119	1	30	YES
1,4-Dichlorobenzene	20.00	20.07	20.33	100	102	78-108	1	30	YES
1,2,3-Trimethylbenzene	20.00	19.28	19.65	96	98	73-116	2	30	YES
Benzyl Chloride	20.00	17.09	17.33	85	87	57-123	1	30	YES
1,2-Dichlorobenzene	20.00	19.71	20.08	99	100	81-109	2	30	YES
n-Butylbenzene	20.00	16.53	16.76	83	84	59-120	1	30	YES
1,3-Diethylbenzene	20.00	17.81	17.85	89	89	61-115	0	30	YES
1,4-Diethylbenzene	20.00	17.76	17.86	89	89	59-117	1	30	YES
1,2-Diethylbenzene	20.00	18.16	18.39	91	92	71-117	1	30	YES
1,2-Dibromo-3-Chloropropane	20.00	17.50	17.59	88	88	54-139	1	30	YES
1,2,4-Trichlorobenzene	20.00	16.64	16.76	83	84	60-116	1	30	YES
Hexachlorobutadiene	20.00	10.95	11.40	55	57	11-142	4	30	YES
Naphthalene	20.00	15.68	15.97	78	80	62-116	2	30	YES
1,2,3-Trichlorobenzene	20.00	16.49	16.61	82	83	54-119	1	30	YES
Diethylbenzene (total)	60.00	53.73	54.10	90	90	61-116	1	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

Ver. by _____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: xa14103.d
Client ID: LCS1X46
Method: SW-846 8260B
Instrument: HP09193

LCS Duplicate: xa14104.d
Client ID: LCD1X46
Matrix/Level: SL
Dilution Factor: 1.0

Batch: X081051AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	LCSD CONC UG/Kg	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Acetonitrile	150.00	164.78	195.26	110	130	27-154	17	30	YES
Vinyl Acetate	100.00	91.95	82.78	92	83	40-184	10	30	YES
Ethyl Acetate	20.00	18.95	15.55	95	78	46-136	20	30	YES
Isopropyl Acetate	20.00	18.01	15.53	90	78	46-127	15	30	YES
n-Propyl Acetate	20.00	18.59	15.52	93	78	48-126	18	30	YES
Butyl Acetate	20.00	21.24	18.37	106	92	42-135	14	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by ____

_____ Var. by ____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: ca09101.d
Client ID: LCSC73
Method: SW-846 8260B (25ML)
Instrument: HP10193

LCS Duplicate: ca09102.d
Client ID: LCDC73
Matrix/Level: WL
Dilution Factor: 1.0

Batch: C081001AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	LCSD CONC UG/L	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Dichlorodifluoromethane	5.00	5.92	5.70	118	114	47-160	4	30	YES
Chloromethane	5.00	3.84	3.65	77	73	64-136	5	30	YES
Vinyl Chloride	5.00	4.20	4.27	84	85	63-133	2	30	YES
Bromomethane	5.00	4.92	4.80	98	96	67-136	2	30	YES
Chloroethane	5.00	4.25	4.15	85	83	65-135	3	30	YES
Dichlorofluoromethane	5.00	5.38	5.25	108	105	77-133	2	30	YES
Trichlorofluoromethane	5.00	6.56	6.47	131	129	71-140	1	30	YES
Ethyl Ether	5.00	4.18	4.38	84	88	50-137	5	30	YES
Freon 123a	5.00	5.23	5.17	105	103	70-130	1	30	YES
Acrolein	37.50	32.98	32.57	88	87	15-140	1	30	YES
1,1-Dichloroethene	5.00	5.39	5.22	108	104	84-117	3	30	YES
Freon 113	5.00	5.69	5.50	114	110	76-123	3	30	YES
Acetone	37.50	37.50	36.78	100	98	73-133	2	30	YES
Methyl Iodide	5.00	5.13	5.09	103	102	72-125	1	30	YES
Carbon Disulfide	5.00	4.20	4.37	84	87	67-137	4	30	YES
Allyl Chloride	5.00	3.95	3.97	79	79	60-132	1	30	YES
Methyl Acetate	5.00	3.79	3.47	76	69	62-139	9	30	YES
Methylene Chloride	5.00	5.01	4.88	100	98	83-111	3	30	YES
t-Butyl Alcohol	50.00	44.79	55.10	90	110	68-132	21	30	YES
Acrylonitrile	25.00	23.83	23.54	95	94	72-138	1	30	YES
trans-1,2-Dichloroethene	5.00	5.18	5.06	104	101	86-111	2	30	YES
1,2-Dichloroethene (Total)	10.00	10.24	10.06	102	101	90-109	2	30	YES
Methyl Tertiary Butyl Ether	5.00	4.80	4.81	96	96	77-115	0	30	YES
n-Hexane	5.00	4.62	4.49	92	90	73-121	3	30	YES
1,1-Dichloroethane	5.00	4.71	4.71	94	94	84-116	0	30	YES
di-Isopropyl Ether	5.00	3.78	3.78	76	76	74-126	0	30	YES
2-Chloro-1,3-Butadiene	5.00	4.44	4.30	89	86	70-140	3	30	YES
Ethyl t-Butyl Ether	5.00	4.33	4.34	87	87	74-117	0	30	YES
2,2-Dichloropropane	5.00	5.58	5.49	112	110	78-121	2	30	YES
cis-1,2-Dichloroethene	5.00	5.06	5.01	101	100	86-113	1	30	YES
2-Butanone	37.50	33.61	33.46	90	89	70-145	0	30	YES
Propionitrile	37.50	33.24	33.42	89	89	77-135	1	30	YES
Methacrylonitrile	37.50	37.64	36.77	100	98	78-134	2	30	YES
Bromochloromethane	5.00	5.25	5.16	105	103	83-115	2	30	YES
Tetrahydrofuran	25.00	25.30	25.41	101	102	71-133	0	30	YES
Chloroform	5.00	5.37	5.24	107	105	83-121	3	30	YES
1,1,1-Trichloroethane	5.00	5.91	5.82	118	116	79-131	2	30	YES
Cyclohexane	5.00	4.38	4.29	88	86	78-121	2	30	YES
1,1-Dichloropropene	5.00	5.17	5.06	103	101	87-114	2	30	YES
Carbon Tetrachloride	5.00	6.40	6.23	128	125	76-134	3	30	YES
Isobutyl Alcohol	125.00	107.79	107.97	86	86	66-139	0	30	YES
Benzene	5.00	4.82	4.72	96	94	87-111	2	30	YES
1,2-Dichloroethane	5.00	5.49	5.31	110	106	83-130	3	30	YES
t-Amyl Methyl Ether	5.00	4.69	4.71	94	94	77-114	0	30	YES
n-Heptane	5.00	4.10	4.00	82	80	73-128	2	30	YES
n-Butanol	250.00	212.48	216.23	85	86	63-121	2	30	YES
Trichloroethene	5.00	5.32	5.19	106	104	87-116	2	30	YES
Methylcyclohexane	5.00	5.20	5.08	104	102	86-116	2	30	YES
1,2-Dichloropropane	5.00	4.40	4.32	88	86	85-115	2	30	YES
Dibromomethane	5.00	5.30	5.19	106	104	90-116	2	30	YES
1,4-Dioxane	125.00	159.01	158.03	127	126	59-161	1	30	YES
Methyl Methacrylate	5.00	4.58	4.61	92	92	50-134	1	30	YES
Bromodichloromethane	5.00	5.41	5.28	108	106	85-123	3	30	YES
2-Nitropropane	5.00	6.30	6.44	126	129	56-149	2	30	YES
cis-1,3-Dichloropropene	5.00	4.79	4.77	96	95	79-114	0	30	YES
4-Methyl-2-Pentanone	25.00	20.24	19.84	81	79	71-130	2	30	YES
Toluene	5.00	4.86	4.75	97	95	89-113	2	30	YES
trans-1,3-Dichloropropene	5.00	4.89	4.79	98	96	77-122	2	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by 8893

_____ Ver. by _____

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: ca09l01.d
Client ID: LCSC73
Method: SW-846 8260B (25ML)
Instrument: HP10193

LCS Duplicate: ca09l02.d
Client ID: LCDC73
Matrix/Level: WL
Dilution Factor: 1.0

Batch: C081001AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	LCSD CONC UG/L	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Ethyl Methacrylate	5.00	4.25	4.26	85	85	21-188	0	30	YES
1,1,2-Trichloroethane	5.00	4.87	4.78	97	96	87-115	2	30	YES
Tetrachloroethene	5.00	5.50	5.37	110	107	81-116	2	30	YES
1,3-Dichloropropane	5.00	4.61	4.56	92	91	88-114	1	30	YES
2-Hexanone	25.00	19.53	19.44	78	78	69-135	0	30	YES
Dibromochloromethane	5.00	5.47	5.52	109	110	84-127	1	30	YES
1,2-Dibromoethane	5.00	4.95	4.92	99	98	86-116	1	30	YES
Chlorobenzene	5.00	5.01	4.94	100	99	88-112	1	30	YES
1,1,1,2-Tetrachloroethane	5.00	5.43	5.40	109	108	86-119	1	30	YES
Ethylbenzene	5.00	4.88	4.80	98	96	88-114	2	30	YES
m+p-Xylene	10.00	10.01	9.86	100	99	88-115	1	30	YES
Xylene (Total)	15.00	14.95	14.72	100	98	88-115	2	30	YES
o-Xylene	5.00	4.94	4.86	99	97	88-115	2	30	YES
Styrene	5.00	4.93	4.90	99	98	87-111	1	30	YES
Bromoform	5.00	5.34	5.33	107	107	66-131	0	30	YES
Isopropylbenzene	5.00	5.11	5.01	102	100	87-115	2	30	YES
1,1,2,2-Tetrachloroethane	5.00	4.41	4.40	88	88	83-119	0	30	YES
Bromobenzene	5.00	5.01	4.91	100	98	84-112	2	30	YES
trans-1,4-Dichloro-2-Butene	25.00	26.11	25.93	104	104	14-172	1	30	YES
1,2,3-Trichloropropane	5.00	5.04	5.05	101	101	80-120	0	30	YES
n-Propylbenzene	5.00	4.77	4.69	95	94	88-116	2	30	YES
2-Chlorotoluene	5.00	4.84	4.85	97	97	90-112	0	30	YES
4-Chlorotoluene	5.00	4.89	4.88	98	98	90-113	0	30	YES
1,3,5-Trimethylbenzene	5.00	4.90	4.81	98	96	86-113	2	30	YES
Pentachloroethane	5.00	5.17	5.01	103	100	78-125	3	30	YES
tert-Butylbenzene	5.00	5.03	4.98	101	100	90-114	1	30	YES
1,2,4-Trimethylbenzene	5.00	4.89	4.81	98	96	86-114	2	30	YES
sec-Butylbenzene	5.00	5.02	4.93	100	99	83-115	2	30	YES
1,3-Dichlorobenzene	5.00	4.97	4.93	99	99	85-109	1	30	YES
p-Isopropyltoluene	5.00	5.07	4.98	101	100	85-115	2	30	YES
1,4-Dichlorobenzene	5.00	4.97	4.93	99	99	85-112	1	30	YES
Benzyl Chloride	5.00	4.78	4.62	96	92	67-129	3	30	YES
n-Butylbenzene	5.00	4.88	4.78	98	96	84-123	2	30	YES
1,2-Dichlorobenzene	5.00	5.00	4.97	100	99	89-114	1	30	YES
1,2-Dibromo-3-Chloropropane	5.00	5.79	5.93	116	119	65-129	2	30	YES
1,2,4-Trichlorobenzene	5.00	4.77	4.76	95	95	78-117	0	30	YES
Hexachlorobutadiene	5.00	5.23	5.18	105	104	68-126	1	30	YES
Naphthalene	5.00	4.74	4.76	95	95	69-123	1	30	YES
1,2,3-Trichlorobenzene	5.00	4.73	4.80	95	96	76-117	1	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by 0894

Lancaster Laboratories, Inc.
Volatiles Laboratory Control Sample Recoveries

LCS: ca09L03.d
Client ID: LCS1C73
Method: SW-846 8260B (25ML)
Instrument: HP10193

LCS Duplicate: ca09L04.d
Client ID: LCD1C73
Matrix/Level: WL
Dilution Factor: 1.0

Batch: C081001AA

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	LCSD CONC UG/L	LCS REC %	LCSD REC %	Range LOWER-UPPER	RPD %	RPD MAX	INSPEC
Acetonitrile	37.50	37.48	37.88	100	101	55-170	1	30	YES
Vinyl Acetate	12.50	7.68	7.66	61	61	58-126	0	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by 0895

_____ Ver. by _____

Page 1 of 1

Volatiles by GC/MS Data

0028

Analysis Report

Lancaster Laboratories

REVISED

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084751. Samples arrived at the laboratory on Wednesday, April 02, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322555
29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322556
29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322557
29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322558
29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322559
29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322560
29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322561
29717008 NAPR-Cp Moscrip #35208-0995 Jones Water	5322562
29717009 NAPR-Cp Moscrip #35208-0995 Jones Water	5322563
29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322564
29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322565
29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322566
29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322567
29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322568
29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322569
29717016 NAPR-Cp Moscrip #35208-0995 Jones Water	5322570
29717017 NAPR-Cp Moscrip #35208-0995 Jones Water	5322571
29717018 NAPR-Cp Moscrip #35208-0995 Jones Water	5322572

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0824

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

REVISED

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

8825

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Lancaster Laboratories Sample No. 5322555 SW Group No. 1084751

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00401 SDG#: PUG04-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	4.6		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.9
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.9
05445	Vinyl Chloride	75-01-4	N.D.		5.	0.9	ug/kg	0.9
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.9
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.9
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.9
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	0.9	ug/kg	0.9
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.9
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	0.9	ug/kg	0.9
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	0.9	ug/kg	0.9
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	0.9	ug/kg	0.9
05455	Chloroform	67-66-3	N.D.		5.	0.9	ug/kg	0.9
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	0.9	ug/kg	0.9
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	0.9	ug/kg	0.9
05460	Benzene	71-43-2	0.8	J	5.	0.5	ug/kg	0.9
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	0.9	ug/kg	0.9
05462	Trichloroethene	79-01-6	N.D.		5.	0.9	ug/kg	0.9
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	0.9	ug/kg	0.9
05464	Dibromomethane	74-95-3	N.D.		5.	0.9	ug/kg	0.9
05465	Bromodichloromethane	75-27-4	N.D.		5.	0.9	ug/kg	0.9
05466	Toluene	108-88-3	N.D.		5.	0.9	ug/kg	0.9
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	0.9	ug/kg	0.9
05468	Tetrachloroethene	127-18-4	N.D.		5.	0.9	ug/kg	0.9
05470	Dibromochloromethane	124-48-1	N.D.		5.	0.9	ug/kg	0.9
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	0.9	ug/kg	0.9
05472	Chlorobenzene	108-90-7	N.D.		5.	0.9	ug/kg	0.9
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	0.9	ug/kg	0.9
05474	Ethylbenzene	100-41-4	N.D.		5.	0.9	ug/kg	0.9
05477	Styrene	100-42-5	N.D.		5.	0.9	ug/kg	0.9
05478	Bromoform	75-25-2	N.D.		5.	0.9	ug/kg	0.9
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	0.9	ug/kg	0.9
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	0.9	ug/kg	0.9
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.9
06293	Acetone	67-64-1	62.		19.	7.	ug/kg	0.9
06294	Carbon Disulfide	75-15-0	5.		5.	0.9	ug/kg	0.9

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322555 SW Group No. 1084751

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00401 SDG#: PUG04-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	11.	9.	4.	ug/kg	0.9
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	0.9	ug/kg	0.9
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	0.9	ug/kg	0.9
06299	4-Methyl-2-pentanone	108-10-1	N.D.	9.	3.	ug/kg	0.9
06300	2-Hexanone	591-78-6	N.D.	9.	3.	ug/kg	0.9
06301	Xylene (Total)	1330-20-7	N.D.	5.	0.9	ug/kg	0.9
07586	Acrolein	107-02-8	N.D.	94.	19.	ug/kg	0.9
07587	Acrylonitrile	107-13-1	N.D.	19.	4.	ug/kg	0.9
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	0.9
07705	Acetonitrile	75-05-8	N.D.	94.	23.	ug/kg	0.9
07706	Allyl Chloride	107-05-1	N.D.	5.	0.9	ug/kg	0.9
07707	Vinyl Acetate	108-05-4	N.D.	9.	2.	ug/kg	0.9
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	0.9	ug/kg	0.9
07709	Propionitrile	107-12-0	N.D.	94.	28.	ug/kg	0.9
07710	Methacrylonitrile	126-98-7	N.D.	47.	5.	ug/kg	0.9
07711	Isobutyl Alcohol	78-83-1	N.D.	230.	94.	ug/kg	0.9
07712	Methyl Methacrylate	80-62-6	N.D.	5.	0.9	ug/kg	0.9
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	0.9	ug/kg	0.9
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	47.	9.	ug/kg	0.9
07716	Pentachloroethane	76-01-7	N.D.	5.	0.9	ug/kg	0.9

The GC/MS volatile analysis was performed using the 193B bottle code.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 16:47	Sara E Wolf	0.9
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:39	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:38	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:38	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322555 SW Group No. 1084751

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00401 SDG#: PUG04-01

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0028

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322556 SW Group No. 1084751

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

02004 SDG#: PUG04-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	6.0	0.50	0.50	%	1
07720	Appendix IX by 8260 - soil						
05443	Dichlorodifluoromethane	75-71-8	N.D.	5.	2.	ug/kg	0.88
05444	Chloromethane	74-87-3	N.D.	5.	2.	ug/kg	0.88
05445	Vinyl Chloride	75-01-4	N.D.	5.	0.9	ug/kg	0.88
05446	Bromomethane	74-83-9	N.D.	5.	2.	ug/kg	0.88
05447	Chloroethane	75-00-3	N.D.	5.	2.	ug/kg	0.88
05448	Trichlorofluoromethane	75-69-4	N.D.	5.	2.	ug/kg	0.88
05449	1,1-Dichloroethene	75-35-4	N.D.	5.	0.9	ug/kg	0.88
05450	Methylene Chloride	75-09-2	N.D.	5.	2.	ug/kg	0.88
05451	trans-1,2-Dichloroethene	156-60-5	N.D.	5.	0.9	ug/kg	0.88
05452	1,1-Dichloroethane	75-34-3	N.D.	5.	0.9	ug/kg	0.88
05454	cis-1,2-Dichloroethene	156-59-2	N.D.	5.	0.9	ug/kg	0.88
05455	Chloroform	67-66-3	N.D.	5.	0.9	ug/kg	0.88
05457	1,1,1-Trichloroethane	71-55-6	N.D.	5.	0.9	ug/kg	0.88
05458	Carbon Tetrachloride	56-23-5	N.D.	5.	0.9	ug/kg	0.88
05460	Benzene	71-43-2	N.D.	5.	0.5	ug/kg	0.88
05461	1,2-Dichloroethane	107-06-2	N.D.	5.	0.9	ug/kg	0.88
05462	Trichloroethene	79-01-6	N.D.	5.	0.9	ug/kg	0.88
05463	1,2-Dichloropropane	78-87-5	N.D.	5.	0.9	ug/kg	0.88
05464	Dibromomethane	74-95-3	N.D.	5.	0.9	ug/kg	0.88
05465	Bromodichloromethane	75-27-4	N.D.	5.	0.9	ug/kg	0.88
05466	Toluene	108-88-3	N.D.	5.	0.9	ug/kg	0.88
05467	1,1,2-Trichloroethane	79-00-5	N.D.	5.	0.9	ug/kg	0.88
05468	Tetrachloroethene	127-18-4	N.D.	5.	0.9	ug/kg	0.88
05470	Dibromochloromethane	124-48-1	N.D.	5.	0.9	ug/kg	0.88
05471	1,2-Dibromoethane	106-93-4	N.D.	5.	0.9	ug/kg	0.88
05472	Chlorobenzene	108-90-7	N.D.	5.	0.9	ug/kg	0.88
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	5.	0.9	ug/kg	0.88
05474	Ethylbenzene	100-41-4	N.D.	5.	0.9	ug/kg	0.88
05477	Styrene	100-42-5	N.D.	5.	0.9	ug/kg	0.88
05478	Bromoform	75-25-2	N.D.	5.	0.9	ug/kg	0.88
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	5.	0.9	ug/kg	0.88
05482	1,2,3-Trichloropropane	96-18-4	N.D.	5.	0.9	ug/kg	0.88
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	5.	2.	ug/kg	0.88
06293	Acetone	67-64-1	66.	19.	7.	ug/kg	0.88
06294	Carbon Disulfide	75-15-0	N.D.	5.	0.9	ug/kg	0.88

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322556 SW Group No. 1084751

29717002 NAFR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

02004 SDG#: PUG04-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	9.	4.	ug/kg	0.88
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	0.9	ug/kg	0.88
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	0.9	ug/kg	0.88
06299	4-Methyl-2-pentanone	108-10-1	N.D.		9.	3.	ug/kg	0.88
06300	2-Hexanone	591-78-6	N.D.		9.	3.	ug/kg	0.88
06301	Xylene (Total)	1330-20-7	N.D.		5.	0.9	ug/kg	0.88
07586	Acrolein	107-02-8	N.D.		94.	19.	ug/kg	0.88
07587	Acrylonitrile	107-13-1	N.D.		19.	4.	ug/kg	0.88
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.88
07705	Acetonitrile	75-05-8	N.D.		94.	23.	ug/kg	0.88
07706	Allyl Chloride	107-05-1	N.D.		5.	0.9	ug/kg	0.88
07707	Vinyl Acetate	108-05-4	N.D.		9.	2.	ug/kg	0.88
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	0.9	ug/kg	0.88
07709	Propionitrile	107-12-0	N.D.		94.	28.	ug/kg	0.88
07710	Methacrylonitrile	126-98-7	N.D.		47.	5.	ug/kg	0.88
07711	Isobutyl Alcohol	78-83-1	N.D.		230.	94.	ug/kg	0.88
07712	Methyl Methacrylate	80-62-6	N.D.		5.	0.9	ug/kg	0.88
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	0.9	ug/kg	0.88
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		47.	9.	ug/kg	0.88
07716	Pentachloroethane	76-01-7	N.D.		5.	0.9	ug/kg	0.88

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193a bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freieber	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 10:52	Holly Berry	0.88
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:37	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:37	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322556 SW Group No. 1084751

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

02004 SDG#: PUG04-02

08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:36	Larry E Bevins	n.a.

0031

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322557 SW Group No. 1084751

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00403 SDG#: PUG04-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	5.7		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	1.02
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	1.02
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	1.02
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	1.02
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	1.02
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	1.02
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	1.02
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	1.02
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	1.02
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	1.02
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	1.02
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	1.02
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	1.02
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	1.02
05460	Benzene	71-43-2	2.	J	5.	0.5	ug/kg	1.02
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	1.02
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	1.02
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	1.02
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	1.02
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	1.02
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	1.02
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	1.02
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	1.02
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	1.02
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	1.02
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	1.02
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	1.02
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	1.02
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	1.02
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	1.02
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	1.02
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	1.02
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	1.02
06293	Acetone	67-64-1	31.		22.	8.	ug/kg	1.02
06294	Carbon Disulfide	75-15-0	5.	J	5.	1.	ug/kg	1.02

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322557 SW Group No. 1084751

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00403 SDG#: PUG04-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	11.	4.	ug/kg	1.02
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	1.	ug/kg	1.02
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	1.	ug/kg	1.02
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	1.02
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	1.02
06301	Xylene (Total)	1330-20-7	N.D.	5.	1.	ug/kg	1.02
07586	Acrolein	107-02-8	N.D.	110.	22.	ug/kg	1.02
07587	Acrylonitrile	107-13-1	N.D.	22.	4.	ug/kg	1.02
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	1.02
07705	Acetonitrile	75-05-8	N.D.	110.	27.	ug/kg	1.02
07706	Allyl Chloride	107-05-1	N.D.	5.	1.	ug/kg	1.02
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	1.02
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	1.	ug/kg	1.02
07709	Propionitrile	107-12-0	N.D.	110.	33.	ug/kg	1.02
07710	Methacrylonitrile	126-98-7	N.D.	54.	5.	ug/kg	1.02
07711	Isobutyl Alcohol	78-83-1	N.D.	270.	110.	ug/kg	1.02
07712	Methyl Methacrylate	80-62-6	N.D.	5.	1.	ug/kg	1.02
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	1.	ug/kg	1.02
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	54.	11.	ug/kg	1.02
07716	Pentachloroethane	76-01-7	N.D.	5.	1.	ug/kg	1.02

The GC/MS volatile analysis was performed using the 193b bottle code.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freishar	1

0833

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 Newport Road
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322557 SW Group No. 1084751

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00403 SDG#: PUG04-03

07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 11:15	Holly Berry	1.02
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:35	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:35	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:34	Larry E Bevins	n.a.

0834

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322558 SW Group No. 1084751

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00404 SDG#: PUG04-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	4.0		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.93
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.93
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	0.93
05446	Bromomethane	74-83-9	4.	J	5.	2.	ug/kg	0.93
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.93
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.93
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	0.93
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.93
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	0.93
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	0.93
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	0.93
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	0.93
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	0.93
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	0.93
05460	Benzene	71-43-2	N.D.		5.	0.5	ug/kg	0.93
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	0.93
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	0.93
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	0.93
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	0.93
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	0.93
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	0.93
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	0.93
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	0.93
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	0.93
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	0.93
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	0.93
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	0.93
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	0.93
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	0.93
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	0.93
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	0.93
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	0.93
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.93
06293	Acetone	67-64-1	72.		19.	7.	ug/kg	0.93
06294	Carbon Disulfide	75-15-0	4.	J	5.	1.	ug/kg	0.93

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322558 SW Group No. 1084751

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00404 SDG#: PUG04-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	10.	4.	ug/kg	0.93
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	0.93
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	0.93
06299	4-Methyl-2-pentanone	108-10-1	N.D.		10.	3.	ug/kg	0.93
06300	2-Hexanone	591-78-6	N.D.		10.	3.	ug/kg	0.93
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	0.93
07586	Acrolein	107-02-8	N.D.		97.	19.	ug/kg	0.93
07587	Acrylonitrile	107-13-1	N.D.		19.	4.	ug/kg	0.93
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.93
07705	Acetonitrile	75-05-8	N.D.		97.	24.	ug/kg	0.93
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	0.93
07707	Vinyl Acetate	108-05-4	N.D.		10.	2.	ug/kg	0.93
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	0.93
07709	Propionitrile	107-12-0	N.D.		97.	29.	ug/kg	0.93
07710	Methacrylonitrile	126-98-7	N.D.		48.	5.	ug/kg	0.93
07711	Isobutyl Alcohol	78-83-1	N.D.		240.	97.	ug/kg	0.93
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	0.93
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	0.93
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		48.	10.	ug/kg	0.93
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	0.93

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

The GC/MS volatile analysis was performed using the 193b bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Fraisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 05:56	Holly Berry	0.93
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:33	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:33	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:33	Larry E Bevins	n.a.

8036

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322558 SW Group No. 1084751

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00404 SDG#: PUG04-04

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0837

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 Lloyd Hollow Rd.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322559 SW Group No. 1084751

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00405 SDG#: PUG04-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	12.7		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.96
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.96
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	0.96
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.96
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.96
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.96
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	0.96
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.96
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	0.96
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	0.96
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	0.96
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	0.96
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	0.96
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	0.96
05460	Benzene	71-43-2	3.	J	5.	0.5	ug/kg	0.96
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	0.96
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	0.96
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	0.96
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	0.96
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	0.96
05466	Toluene	108-88-3	2.	J	5.	1.	ug/kg	0.96
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	0.96
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	0.96
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	0.96
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	0.96
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	0.96
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	0.96
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	0.96
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	0.96
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	0.96
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	0.96
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	0.96
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.96
06293	Acetone	67-64-1	45.		22.	8.	ug/kg	0.96
06294	Carbon Disulfide	75-15-0	5.	J	5.	1.	ug/kg	0.96

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322559 SW Group No. 1084751

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00405 SDG#: PUG04-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	11.	4.	ug/kg	0.96
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	0.96
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	0.96
06299	4-Methyl-2-pentanone	108-10-1	N.D.		11.	3.	ug/kg	0.96
06300	2-Hexanone	591-78-6	N.D.		11.	3.	ug/kg	0.96
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	0.96
07586	Acrolein	107-02-8	N.D.		110.	22.	ug/kg	0.96
07587	Acrylonitrile	107-13-1	N.D.		22.	4.	ug/kg	0.96
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.96
07705	Acetonitrile	75-05-8	N.D.		110.	27.	ug/kg	0.96
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	0.96
07707	Vinyl Acetate	108-05-4	N.D.		11.	2.	ug/kg	0.96
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	0.96
07709	Propionitrile	107-12-0	N.D.		110.	33.	ug/kg	0.96
07710	Methacrylonitrile	126-98-7	N.D.		55.	5.	ug/kg	0.96
07711	Isobutyl Alcohol	78-83-1	N.D.		270.	110.	ug/kg	0.96
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	0.96
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	0.96
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		55.	11.	ug/kg	0.96
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	0.96

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

The GC/MS volatile analysis was performed using the 193B bottle code.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1

8839

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322559 SW Group No. 1084751

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00405 SDG#: PUG04-05

07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 06:18	Holly Berry	0.96
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:32	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:31	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:31	Larry E Bevins	n.a.

0040

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322560 SW Group No. 1084751

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00406 SDG#: PUG04-06

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	5.7		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.97
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.97
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	0.97
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.97
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.97
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.97
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	0.97
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.97
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	0.97
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	0.97
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	0.97
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	0.97
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	0.97
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	0.97
05460	Benzene	71-43-2	0.7	J	5.	0.5	ug/kg	0.97
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	0.97
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	0.97
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	0.97
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	0.97
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	0.97
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	0.97
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	0.97
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	0.97
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	0.97
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	0.97
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	0.97
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	0.97
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	0.97
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	0.97
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	0.97
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	0.97
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	0.97
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.97
06293	Acetone	67-64-1	37.		21.	7.	ug/kg	0.97
06294	Carbon Disulfide	75-15-0	6.		5.	1.	ug/kg	0.97

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322560 SW Group No. 1084751

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00406 SDG#: PUG04-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	6.	J	10.	4.	ug/kg	0.97
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	0.97
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	0.97
06299	4-Methyl-2-pentanone	108-10-1	N.D.		10.	3.	ug/kg	0.97
06300	2-Hexanone	591-78-6	N.D.		10.	3.	ug/kg	0.97
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	0.97
07586	Acrolein	107-02-8	N.D.		100.	21.	ug/kg	0.97
07587	Acrylonitrile	107-13-1	N.D.		21.	4.	ug/kg	0.97
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.97
07705	Acetonitrile	75-05-8	N.D.		100.	26.	ug/kg	0.97
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	0.97
07707	Vinyl Acetate	108-05-4	N.D.		10.	2.	ug/kg	0.97
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	0.97
07709	Propionitrile	107-12-0	N.D.		100.	31.	ug/kg	0.97
07710	Methacrylonitrile	126-98-7	N.D.		51.	5.	ug/kg	0.97
07711	Isobutyl Alcohol	78-83-1	N.D.		260.	100.	ug/kg	0.97
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	0.97
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	0.97
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		51.	10.	ug/kg	0.97
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	0.97

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

The GC/MS volatile analysis was performed using the 193a bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 06:41	Holly Berry	0.97
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:30	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:30	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:29	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 Newport Road, Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322560 SW Group No. 1084751

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00406 SDG#: PUG04-06

Account Number: 04694

U.S. Army CHPPM
ATTN: DPAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0043

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322561 SW Group No. 1084751

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00407 SDG#: PUG04-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	4.5		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	1.04
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	1.04
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	1.04
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	1.04
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	1.04
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	1.04
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	1.04
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	1.04
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	1.04
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	1.04
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	1.04
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	1.04
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	1.04
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	1.04
05460	Benzene	71-43-2	1.	J	5.	0.5	ug/kg	1.04
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	1.04
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	1.04
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	1.04
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	1.04
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	1.04
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	1.04
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	1.04
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	1.04
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	1.04
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	1.04
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	1.04
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	1.04
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	1.04
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	1.04
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	1.04
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	1.04
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	1.04
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	1.04
06293	Acetone	67-64-1	50.		22.	8.	ug/kg	1.04
06294	Carbon Disulfide	75-15-0	3.	J	5.	1.	ug/kg	1.04

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322561 SW Group No. 1084751

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00407 SDG#: PUG04-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	6.	J	11.	4.	ug/kg	1.04
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	1.04
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	1.04
06299	4-Methyl-2-pentanone	108-10-1	N.D.		11.	3.	ug/kg	1.04
06300	2-Hexanone	591-78-6	N.D.		11.	3.	ug/kg	1.04
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	1.04
07586	Acrolein	107-02-8	N.D.		110.	22.	ug/kg	1.04
07587	Acrylonitrile	107-13-1	N.D.		22.	4.	ug/kg	1.04
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	1.04
07705	Acetonitrile	75-05-8	N.D.		110.	27.	ug/kg	1.04
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	1.04
07707	Vinyl Acetate	108-05-4	N.D.		11.	2.	ug/kg	1.04
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	1.04
07709	Propionitrile	107-12-0	N.D.		110.	33.	ug/kg	1.04
07710	Methacrylonitrile	126-98-7	N.D.		54.	5.	ug/kg	1.04
07711	Isobutyl Alcohol	78-83-1	N.D.		270.	110.	ug/kg	1.04
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	1.04
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	1.04
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		54.	11.	ug/kg	1.04
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	1.04

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

The GC/MS volatile analysis was performed using the 193a bottle code.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1

0045

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322561 SW Group No. 1084751

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-F-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00407 SDG#: PUG04-07

07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 07:04	Holly Berry	1.04
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/02/2008 10:28	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/02/2008 10:28	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/02/2008 10:27	Larry E Bevins	n.a.

6846

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Lancaster Laboratories Sample No. 5322562 WW Group No. 1084751

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00708 SDG#: PUG04-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethane	75-35-4	0.3	J	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Dieulfide	75-15-0	N.D.		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322562 WW Group No. 1084751

29717008 NAPR-Cp Mosorip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00708 SDG#: PUG04-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	0.1 J	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 15:32	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 15:32	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 15:32	Angela D Sneeringer	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322562 WW Group No. 1084751

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00708 SDG#: PUG04-08

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0849

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322563 WW Group No. 1084751

29717009 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00409 SDG#: PUG04-09TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg						
02901	Dichlorodifluoromethane	75-71-8	N.D.	0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.	0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.	0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.	0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.	0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.	0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.	25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.	0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.	20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.	0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.	5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.	0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.	0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.	0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.	5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.	10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.	5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.	0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.	0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.	0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.	0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.	25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.	0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.	0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.	0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.	0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.	0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.	5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322563 WW Group No. 1084751

29717009 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00409 SDG#: PUG04-09TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 15:54	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 15:54	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 15:54	Angela D Sneeringer	1

0051

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322563 WW Group No. 1084751

29717009 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected: n.a.

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:07
Discard: 05/08/2008

00409 SDG#: PUG04-09TB

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0052

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322564 SW Group No. 1084751

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00410 SDG#: PUG04-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	3.5		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.15
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.15
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.15
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.15
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.15
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.15
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.15
05450	Methylene Chloride	75-09-2	3.	J	6.	2.	ug/kg	1.15
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.15
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.15
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.15
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.15
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.15
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.15
05460	Benzene	71-43-2	N.D.		6.	0.6	ug/kg	1.15
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.15
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.15
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.15
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.15
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.15
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.15
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.15
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.15
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.15
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.15
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.15
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.15
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.15
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.15
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.15
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.15
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.15
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.15
06293	Acetone	67-64-1	67.		24.	8.	ug/kg	1.15
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.15

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322564 SW Group No. 1084751

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00410 SDG#: PUG04-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	12.	5.	ug/kg	1.15
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		6.	1.	ug/kg	1.15
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		6.	1.	ug/kg	1.15
06299	4-Methyl-2-pentanone	108-10-1	N.D.		12.	4.	ug/kg	1.15
06300	2-Hexanone	591-78-6	N.D.		12.	4.	ug/kg	1.15
06301	Xylene (Total)	1330-20-7	N.D.		6.	1.	ug/kg	1.15
07586	Acrolein	107-02-8	N.D.		120.	24.	ug/kg	1.15
07587	Acrylonitrile	107-13-1	N.D.		24.	5.	ug/kg	1.15
07704	Methyl Iodide	74-88-4	N.D.		6.	4.	ug/kg	1.15
07705	Acetonitrile	75-05-8	N.D.		120.	30.	ug/kg	1.15
07706	Allyl Chloride	107-05-1	N.D.		6.	1.	ug/kg	1.15
07707	Vinyl Acetate	108-05-4	N.D.		12.	2.	ug/kg	1.15
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		6.	1.	ug/kg	1.15
07709	Propionitrile	107-12-0	N.D.		120.	36.	ug/kg	1.15
07710	Methacrylonitrile	126-98-7	N.D.		60.	6.	ug/kg	1.15
07711	Isobutyl Alcohol	78-83-1	N.D.		300.	120.	ug/kg	1.15
07712	Methyl Methacrylate	80-62-6	N.D.		6.	1.	ug/kg	1.15
07714	Ethyl Methacrylate	97-63-2	N.D.		6.	1.	ug/kg	1.15
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		60.	12.	ug/kg	1.15
07716	Pentachloroethane	76-01-7	N.D.		6.	1.	ug/kg	1.15

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193b bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 07:26	Holly Berry	1.15
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:51	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:50	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322564 SW Group No. 1084751

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00410 SDG#: PUG04-10

08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:51	Larry E Bevins	n.a.

0855

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322565 SW Group No. 1084751

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00411 SDG#: PUG04-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	4.0		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.06
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.06
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.06
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.06
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.06
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.06
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.06
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.06
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.06
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.06
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.06
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.06
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.06
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.06
05460	Benzene	71-43-2	2.	J	6.	0.6	ug/kg	1.06
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.06
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.06
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.06
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.06
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.06
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.06
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.06
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.06
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.06
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.06
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.06
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.06
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.06
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.06
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.06
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.06
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.06
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.06
06293	Acetone	67-64-1	160.		22.	8.	ug/kg	1.06
06294	Carbon Disulfide	75-15-0	5.	J	6.	1.	ug/kg	1.06

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322565 SW Group No. 1084751

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00411 SDG#: PUG04-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	12.	11.	4.	ug/kg	1.06
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.06
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.06
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	1.06
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	1.06
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.06
07586	Acrolein	107-02-8	N.D.	110.	22.	ug/kg	1.06
07587	Acrylonitrile	107-13-1	N.D.	22.	4.	ug/kg	1.06
07704	Methyl Iodide	74-88-4	N.D.	6.	3.	ug/kg	1.06
07705	Acetonitrile	75-05-8	N.D.	110.	28.	ug/kg	1.06
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.06
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	1.06
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.06
07709	Propionitrile	107-12-0	N.D.	110.	33.	ug/kg	1.06
07710	Methacrylonitrile	126-98-7	N.D.	55.	6.	ug/kg	1.06
07711	Isobutyl Alcohol	78-83-1	N.D.	280.	110.	ug/kg	1.06
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.06
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.06
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	55.	11.	ug/kg	1.06
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.06

The GC/MS volatile analysis was performed using the 193b bottle code.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Preisher	1

0857

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322565 SW Group No. 1084751

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00411 SDG#: PUG04-11

07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 08:35	Holly Berry	1.06
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:53	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:52	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:52	Larry E Bevins	n.a.

0050

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322566 SW Group No. 1084751

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00412 SDG#: PUG04-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	5.3		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.08
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.08
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.08
05446	Bromomethane	74-83-9	4.	J	6.	2.	ug/kg	1.08
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.08
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.08
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.08
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.08
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.08
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.08
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.08
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.08
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.08
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.08
05460	Benzene	71-43-2	1.	J	6.	0.6	ug/kg	1.08
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.08
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.08
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.08
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.08
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.08
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.08
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.08
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.08
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.08
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.08
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.08
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.08
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.08
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.08
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.08
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.08
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.08
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.08
06293	Acetone	67-64-1	140.		23.	8.	ug/kg	1.08
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.08

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322566 SW Group No. 1084751

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00412 SDG#: PUG04-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	41.		11.	5.	ug/kg	1.08
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		6.	1.	ug/kg	1.08
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		6.	1.	ug/kg	1.08
06299	4-Methyl-2-pentanone	108-10-1	N.D.		11.	3.	ug/kg	1.08
06300	2-Hexanone	591-78-6	6.	J	11.	3.	ug/kg	1.08
06301	Xylene (Total)	1330-20-7	N.D.		6.	1.	ug/kg	1.08
07586	Acrolein	107-02-8	N.D.		110.	23.	ug/kg	1.08
07587	Acrylonitrile	107-13-1	N.D.		23.	5.	ug/kg	1.08
07704	Methyl Iodide	74-88-4	22.		6.	3.	ug/kg	1.08
07705	Acetonitrile	75-05-8	N.D.		110.	28.	ug/kg	1.08
07706	Allyl Chloride	107-05-1	N.D.		6.	1.	ug/kg	1.08
07707	Vinyl Acetate	108-05-4	N.D.		11.	2.	ug/kg	1.08
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		6.	1.	ug/kg	1.08
07709	Propionitrile	107-12-0	N.D.		110.	34.	ug/kg	1.08
07710	Methacrylonitrile	126-98-7	N.D.		57.	6.	ug/kg	1.08
07711	Isobutyl Alcohol	78-83-1	N.D.		280.	110.	ug/kg	1.08
07712	Methyl Methacrylate	80-62-6	N.D.		6.	1.	ug/kg	1.08
07714	Ethyl Methacrylate	97-63-2	N.D.		6.	1.	ug/kg	1.08
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		57.	11.	ug/kg	1.08
07716	Pentachloroethane	76-01-7	N.D.		6.	1.	ug/kg	1.08

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193a bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 08:58	Holly Berry	1.08
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:47	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:46	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322566 SW Group No. 1084751

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00412 SDG#: PUG04-12

08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:47	Larry E Bevins	n.a.

6061

*=This limit was used in the evaluation of the final result

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2425 Newport Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Lancaster Laboratories Sample No. 5322567 SW Group No. 1084751

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00413 SDG#: PUG04-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	3.8		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.89
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.89
05445	Vinyl Chloride	75-01-4	N.D.		5.	0.9	ug/kg	0.89
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.89
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.89
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.89
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	0.9	ug/kg	0.89
05450	Methylene Chloride	75-09-2	3.	J	5.	2.	ug/kg	0.89
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	0.9	ug/kg	0.89
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	0.9	ug/kg	0.89
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	0.9	ug/kg	0.89
05455	Chloroform	67-66-3	N.D.		5.	0.9	ug/kg	0.89
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	0.9	ug/kg	0.89
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	0.9	ug/kg	0.89
05460	Benzene	71-43-2	N.D.		5.	0.5	ug/kg	0.89
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	0.9	ug/kg	0.89
05462	Trichloroethene	79-01-6	N.D.		5.	0.9	ug/kg	0.89
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	0.9	ug/kg	0.89
05464	Dibromomethane	74-95-3	N.D.		5.	0.9	ug/kg	0.89
05465	Bromodichloromethane	75-27-4	N.D.		5.	0.9	ug/kg	0.89
05466	Toluene	108-88-3	N.D.		5.	0.9	ug/kg	0.89
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	0.9	ug/kg	0.89
05468	Tetrachloroethene	127-18-4	N.D.		5.	0.9	ug/kg	0.89
05470	Dibromochloromethane	124-48-1	N.D.		5.	0.9	ug/kg	0.89
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	0.9	ug/kg	0.89
05472	Chlorobenzene	108-90-7	N.D.		5.	0.9	ug/kg	0.89
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	0.9	ug/kg	0.89
05474	Ethylbenzene	100-41-4	N.D.		5.	0.9	ug/kg	0.89
05477	Styrene	100-42-5	N.D.		5.	0.9	ug/kg	0.89
05478	Bromoform	75-25-2	N.D.		5.	0.9	ug/kg	0.89
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	0.9	ug/kg	0.89
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	0.9	ug/kg	0.89
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.89
06293	Acetone	67-64-1	N.D.		19.	6.	ug/kg	0.89
06294	Carbon Disulfide	75-15-0	N.D.		5.	0.9	ug/kg	0.89

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322567 SW Group No. 1084751

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00413 SDG#: PUG04-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	9.	4.	ug/kg	0.89
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	0.9	ug/kg	0.89
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	0.9	ug/kg	0.89
06299	4-Methyl-2-pentanone	108-10-1	N.D.	9.	3.	ug/kg	0.89
06300	2-Hexanone	591-78-6	N.D.	9.	3.	ug/kg	0.89
06301	Xylene (Total)	1330-20-7	N.D.	5.	0.9	ug/kg	0.89
07586	Acrolein	107-02-8	N.D.	93.	19.	ug/kg	0.89
07587	Acrylonitrile	107-13-1	N.D.	19.	4.	ug/kg	0.89
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	0.89
07705	Acetonitrile	75-05-8	N.D.	93.	23.	ug/kg	0.89
07706	Allyl Chloride	107-05-1	N.D.	5.	0.9	ug/kg	0.89
07707	Vinyl Acetate	108-05-4	N.D.	9.	2.	ug/kg	0.89
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	0.9	ug/kg	0.89
07709	Propionitrile	107-12-0	N.D.	93.	28.	ug/kg	0.89
07710	Methacrylonitrile	126-98-7	N.D.	46.	5.	ug/kg	0.89
07711	Isobutyl Alcohol	78-83-1	N.D.	230.	93.	ug/kg	0.89
07712	Methyl Methacrylate	80-62-6	N.D.	5.	0.9	ug/kg	0.89
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	0.9	ug/kg	0.89
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	46.	9.	ug/kg	0.89
07716	Pentachloroethane	76-01-7	N.D.	5.	0.9	ug/kg	0.89

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 17:56	Sara E Wolf	0.89
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:49	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:48	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:49	Larry E Bevins	n.a.

0063

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322568 SW Group No. 1084751

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00414 SDG#: PUG04-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	5.1	0.50	0.50	%	1
07720	Appendix IX by 8260 - soil						
05443	Dichlorodifluoromethane	75-71-8	N.D.	6.	2.	ug/kg	1.11
05444	Chloromethane	74-87-3	N.D.	6.	2.	ug/kg	1.11
05445	Vinyl Chloride	75-01-4	N.D.	6.	1.	ug/kg	1.11
05446	Bromomethane	74-83-9	N.D.	6.	2.	ug/kg	1.11
05447	Chloroethane	75-00-3	N.D.	6.	2.	ug/kg	1.11
05448	Trichlorofluoromethane	75-69-4	N.D.	6.	2.	ug/kg	1.11
05449	1,1-Dichloroethene	75-35-4	N.D.	6.	1.	ug/kg	1.11
05450	Methylene Chloride	75-09-2	N.D.	6.	2.	ug/kg	1.11
05451	trans-1,2-Dichloroethane	156-60-5	N.D.	6.	1.	ug/kg	1.11
05452	1,1-Dichloroethane	75-34-3	N.D.	6.	1.	ug/kg	1.11
05454	cis-1,2-Dichloroethene	156-59-2	N.D.	6.	1.	ug/kg	1.11
05455	Chloroform	67-66-3	N.D.	6.	1.	ug/kg	1.11
05457	1,1,1-Trichloroethane	71-55-6	N.D.	6.	1.	ug/kg	1.11
05458	Carbon Tetrachloride	56-23-5	N.D.	6.	1.	ug/kg	1.11
05460	Benzene	71-43-2	N.D.	6.	0.6	ug/kg	1.11
05461	1,2-Dichloroethane	107-06-2	N.D.	6.	1.	ug/kg	1.11
05462	Trichloroethene	79-01-6	N.D.	6.	1.	ug/kg	1.11
05463	1,2-Dichloropropane	78-87-5	N.D.	6.	1.	ug/kg	1.11
05464	Dibromomethane	74-95-3	N.D.	6.	1.	ug/kg	1.11
05465	Bromodichloromethane	75-27-4	N.D.	6.	1.	ug/kg	1.11
05466	Toluene	108-88-3	N.D.	6.	1.	ug/kg	1.11
05467	1,1,2-Trichloroethane	79-00-5	N.D.	6.	1.	ug/kg	1.11
05468	Tetrachloroethene	127-18-4	N.D.	6.	1.	ug/kg	1.11
05470	Dibromochloromethane	124-48-1	N.D.	6.	1.	ug/kg	1.11
05471	1,2-Dibromoethane	106-93-4	N.D.	6.	1.	ug/kg	1.11
05472	Chlorobenzene	108-90-7	N.D.	6.	1.	ug/kg	1.11
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	6.	1.	ug/kg	1.11
05474	Ethylbenzene	100-41-4	N.D.	6.	1.	ug/kg	1.11
05477	Styrene	100-42-5	N.D.	6.	1.	ug/kg	1.11
05478	Bromoform	75-25-2	N.D.	6.	1.	ug/kg	1.11
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	6.	1.	ug/kg	1.11
05482	1,2,3-Trichloropropane	96-18-4	N.D.	6.	1.	ug/kg	1.11
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	6.	2.	ug/kg	1.11
06293	Acetone	67-64-1	76.	23.	8.	ug/kg	1.11
06294	Carbon Disulfide	75-15-0	N.D.	6.	1.	ug/kg	1.11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322568 SW Group No. 1084751

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00414 SDG#: PUG04-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	7.	J	12.	5.	ug/kg	1.11
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		6.	1.	ug/kg	1.11
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		6.	1.	ug/kg	1.11
06299	4-Methyl-2-pentanone	108-10-1	N.D.		12.	3.	ug/kg	1.11
06300	2-Hexanone	591-78-6	N.D.		12.	3.	ug/kg	1.11
06301	Xylene (Total)	1330-20-7	N.D.		6.	1.	ug/kg	1.11
07586	Acrolein	107-02-8	N.D.		120.	23.	ug/kg	1.11
07587	Acrylonitrile	107-13-1	N.D.		23.	5.	ug/kg	1.11
07704	Methyl Iodide	74-88-4	N.D.		6.	3.	ug/kg	1.11
07705	Acetonitrile	75-05-8	N.D.		120.	29.	ug/kg	1.11
07706	Allyl Chloride	107-05-1	N.D.		6.	1.	ug/kg	1.11
07707	Vinyl Acetate	108-05-4	N.D.		12.	2.	ug/kg	1.11
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		6.	1.	ug/kg	1.11
07709	Propionitrile	107-12-0	N.D.		120.	35.	ug/kg	1.11
07710	Methacrylonitrile	126-98-7	N.D.		58.	6.	ug/kg	1.11
07711	Isobutyl Alcohol	78-83-1	N.D.		290.	120.	ug/kg	1.11
07712	Methyl Methacrylate	80-62-6	N.D.		6.	1.	ug/kg	1.11
07714	Ethyl Methacrylate	97-63-2	N.D.		6.	1.	ug/kg	1.11
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		58.	12.	ug/kg	1.11
07716	Pentachloroethane	76-01-7	N.D.		6.	1.	ug/kg	1.11

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 18:18	Sara E Wolf	1.11
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:55	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:54	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:55	Larry E Bevins	n.a.

0065

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322569 SW Group No. 1084751

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00415 SDG#: PUG04-15

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00118	Moisture	n.a.	3.3		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	1.04
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	1.04
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	1.04
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	1.04
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	1.04
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	1.04
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	1.04
05450	Methylene Chloride	75-09-2	6.		5.	2.	ug/kg	1.04
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	1.04
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	1.04
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	1.04
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	1.04
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	1.04
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	1.04
05460	Benzene	71-43-2	0.9	J	5.	0.5	ug/kg	1.04
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	1.04
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	1.04
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	1.04
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	1.04
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	1.04
05466	Toluene	108-88-3	2.	J	5.	1.	ug/kg	1.04
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	1.04
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	1.04
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	1.04
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	1.04
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	1.04
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	1.04
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	1.04
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	1.04
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	1.04
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	1.04
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	1.04
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	1.04
06293	Acetone	67-64-1	75.		21.	8.	ug/kg	1.04
06294	Carbon Disulfide	75-15-0	2.	J	5.	1.	ug/kg	1.04

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322569 SW Group No. 1084751

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00415 SDG#: PUG04-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5. J	11.	4.	ug/kg	1.04
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	1.	ug/kg	1.04
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	1.	ug/kg	1.04
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	1.04
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	1.04
06301	Xylene (Total)	1330-20-7	N.D.	5.	1.	ug/kg	1.04
07586	Acrolein	107-02-8	N.D.	110.	21.	ug/kg	1.04
07587	Acrylonitrile	107-13-1	N.D.	21.	4.	ug/kg	1.04
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	1.04
07705	Acetonitrile	75-05-8	N.D.	110.	27.	ug/kg	1.04
07706	Allyl Chloride	107-05-1	N.D.	5.	1.	ug/kg	1.04
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	1.04
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	1.	ug/kg	1.04
07709	Propionitrile	107-12-0	N.D.	110.	32.	ug/kg	1.04
07710	Methacrylonitrile	126-98-7	N.D.	54.	5.	ug/kg	1.04
07711	Isobutyl Alcohol	78-83-1	N.D.	270.	110.	ug/kg	1.04
07712	Methyl Methacrylate	80-62-6	N.D.	5.	1.	ug/kg	1.04
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	1.	ug/kg	1.04
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	54.	11.	ug/kg	1.04
07716	Pentachloroethane	76-01-7	N.D.	5.	1.	ug/kg	1.04

The GC/MS volatile analysis was performed using the 193A bottle code.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM20 2540 G	1	04/07/2008 14:48	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 18:41	Sara E Wolf	1.04
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:57	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:56	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:56	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322569 SW Group No. 1084751

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

00415 SDG#: PUG04-15

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0068

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322570 WW Group No. 1084751

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00416 SDG#: PUG04-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	0.2	J	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 West Hollinger Drive
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322570 WW Group No. 1084751

29717016 NAFR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00416 SDG#: PUG04-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	0.2 J	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 16:15	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 16:15	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 16:15	Angela D Sneeringer	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322570 WW Group No. 1084751

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

00416 SDG#: PUG04-16

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

887-1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Lancaster Laboratories Sample No. 5322571 WW Group No. 1084751

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00417 SDG#: PUG04-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	3.7	J	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322571 WW Group No. 1084751

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00417 SDG#: FUG04-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	1.2		0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	0.1	J	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.		0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 16:37	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 16:37	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 16:37	Angela D Sneeringer	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322571 WW Group No. 1084751

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

00417 SDG#: PUG04-17

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

*=This limit was used in the evaluation of the final result

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322572 WW Group No. 1084751

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00418 SDG#: PUG04-18*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg						
02901	Dichlorodifluoromethane	75-71-8	N.D.	0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.	0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.	0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.	0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.	0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.	0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.	25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.	0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.	20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.	0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.	5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.	0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.	0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.	0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.	5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.	10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.	5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.	0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.	0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.	0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.	0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.	25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.	0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.	0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.	0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.	0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.	0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.	5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322572 WW Group No. 1084751

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00418 SDG#: PUG04-18*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	1.9		0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.		0.5	0.1	ug/l	1
02979	Styrene	100-42-5	0.1	J	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 16:59	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 16:59	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 16:59	Angela D Sneeringer	1

0076

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322572 WW Group No. 1084751

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #004 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Submitted: 04/02/2008 09:15
Reported: 04/23/2008 at 16:08
Discard: 05/08/2008

00418 SDG#: PUG04-18*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

8877

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Report ID: HRA0191C-ACodes
COC #: 410660

Run Date: 03-Apr-08 11:46
Generated By: HEIDI.TAYLOR

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

SAMPLES SHIPPED DIRECTLY TO CONTRACT LABORATORY

Chain Of Custody (COC)

004/1
1737

This Chain of Custody is an Addendum to the Original COC submitted on 4/3/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35208 - 0995
Workorder #: 29717
Queue: LLV
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-35208
Workorder ID: 099594
Customer: Program 38 POC: David Jones
Project Number: 38
Notes: Sample 73SB01A-00 SVOC soil cont. Recvd brkn but can be done in the PAH cont. Didn't recv ER-01 OP Pest cont. but can be done from PAH cont. No temp recvd from Lancaster. Samples direct shipped. H.Taylor 4/3/08

Total Samples: 18
Total Containers: 54

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp	Date/Time Received	Date/Time Collected	Sample Due Date
29717001	29717001-2	73SB01-00	SAMPLE	SO	Soil	Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~									
29717001	29717001-4	73SB01-00	SAMPLE	SO	Soil	~~ug/m3~~	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container									
29717001	29717001-5	73SB01-00	SAMPLE	SO	Soil	~~ug/m3~~	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container									
29717002	29717002-2	73SB01A-00	SAMPLE	SO	Soil	Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~									
29717002	29717002-4	73SB01A-00	SAMPLE	SO	Soil	~~ug/m3~~	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container									

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

29717002	29717002-5	73SB01A-00	SAMPLE	SO	Soil		~~mg/m3~~	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717003	29717003-2	73SB02-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717003	29717003-4	73SB02-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717003	29717003-5	73SB02-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717004	29717004-2	73SB03-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717004	29717004-4	73SB03-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717004	29717004-5	73SB03-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717005	29717005-2	73SB04-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717005	29717005-4	73SB04-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717005	29717005-5	73SB04-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717006	29717006-2	73SB05-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410660

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:46
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

ACodes:
LLV2418 : Volatiles Organics (App IX) LLVXCTNR : XTRACTNR, Additional Container

29717006	29717006-4	73SB05-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717006	29717006-5	73SB05-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717007	29717007-2	73SB06-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) LLVXCTNR : XTRACTNR, Additional Container

29717007	29717007-4	73SB06-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717007	29717007-5	73SB06-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717008	29717008-3	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29717008	29717008-4	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717008	29717008-6	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717009	29717009-1	TRIP BLANKS	TRPBLK	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR		30-Apr-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29717009	29717009-2	TRIP BLANKS	TRPBLK	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR		30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Chain Of Custody

NR=Not Reported.

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

29717009	29717009-3	TRIP BLANKS	TRPBLK	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR		30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717010	29717010-2	73SB07-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717010	29717010-4	73SB07-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717010	29717010-5	73SB07-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717011	29717011-2	73SB08-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717011	29717011-4	73SB08-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717011	29717011-6	73SB08-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717012	29717012-2	73SB09-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717012	29717012-4	73SB09-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717012	29717012-5	73SB09-00	SAMPLE	SO	Soil		~~ng/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717013	29717013-2	73SB10-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

Chain of Custody

Report ID: HRA0191C-Acodes
COC #: 410660

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:48
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717013	29717013-4	73SB10-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717013	29717013-5	73SB10-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717014	29717014-2	73SB11-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717014	29717014-4	73SB11-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717014	29717014-5	73SB11-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717015	29717015-2	73SB12-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLV2418 : Volatiles Organics (App IX) ~~LLVXCTNR : XTRACTNR, Additional Container~~

29717015	29717015-4	73SB12-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717015	29717015-5	73SB12-00	SAMPLE	SO	Soil		~~ug/m3~~	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717016	29717016-4	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29717016	29717016-5	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410660

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:46
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

29717016	29717016-6	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717017	29717017-4	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29717017	29717017-5	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717017	29717017-6	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717018	29717018-4	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29717018	29717018-5	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29717018	29717018-6	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Chain of Custody

Total Samples: 18	Total Containers: 54

Samples Received By: Kathy Binkley KB 4/1/08 — Date Received: 4/2/08 via FedEX KB 4/1/08
Document Reviewed By: Heidi Taylor — Initials: HT — Date Reviewed: 4/3/08
Document Quality Review By: [signature] — Date Reviewed:
Samples Approved For Distribution: Yes ✓ No ___ — Initials: DB — Date Approved: 3 April 2008

E-81

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410880

USACHPPM
Readiness Thru Health

Run Date: 03-Apr-08 11:46
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29717001	73SB01-00	29717001-4	SO
29717001	73SB01-00	29717001-2	SO
29717002	73SB01A-00	29717002-4	SO
29717003	73SB02-00	29717003-2	SO
29717003	73SB02-00	29717003-5	SO
29717004	73SB03-00	29717004-4	SO
29717005	73SB04-00	29717005-2	SO
29717005	73SB04-00	29717005-3	SO
29717006	73SB05-00	29717006-4	SO
29717007	73SB06-00	29717007-2	SO
29717007	73SB06-00	29717007-5	SO
29717008	ER-01	29717008-4	GW
29717009	TRIP BLANKS	29717009-2	GW
29717009	TRIP BLANKS	29717009-3	GW
29717010	73SB07-00	29717010-5	SO
29717011	73SB08-00	29717011-2	SO
29717011	73SB08-00	29717011-3	SO
29717012	73SB09-00	29717012-4	SO
29717013	73SB10-00	29717013-2	SO
29717013	73SB10-00	29717013-5	SO
29717014	73SB11-00	29717014-4	SO
29717015	73SB12-00	29717015-2	SO
29717015	73SB12-00	29717015-5	SO
29717016	73FB-01	29717016-5	GW
29717017	73FB-02	29717017-4	GW
29717017	73FB-02	29717017-6	GW
29717018	73ER-03	29717018-4	GW

HSN	Customer Sample Id	Container Id	Mx
29717001	73SB01-00	29717001-5	SO
29717002	73SB01A-00	29717002-2	SO
29717002	73SB01A-00	29717002-5	SO
29717003	73SB02-00	29717003-4	SO
29717004	73SB03-00	29717004-2	SO
29717004	73SB03-00	29717004-5	SO
29717005	73SB04-00	29717005-4	SO
29717006	73SB05-00	29717006-2	SO
29717006	73SB05-00	29717006-5	SO
29717007	73SB06-00	29717007-4	SO
29717008	ER-01	29717008-3	GW
29717008	ER-01	29717008-5	GW
29717009	TRIP BLANKS	29717009-1	GW
29717010	73SB07-00	29717010-4	SO
29717010	73SB07-00	29717010-2	SO
29717011	73SB08-00	29717011-4	SO
29717012	73SB09-00	29717012-2	SO
29717012	73SB09-00	29717012-5	SO
29717013	73SB10-00	29717013-4	SO
29717014	73SB11-00	29717014-2	SO
29717014	73SB11-00	29717014-5	SO
29717015	73SB12-00	29717015-4	SO
29717016	73FB-01	29717016-4	GW
29717016	73FB-01	29717016-6	GW
29717017	73FB-02	29717017-5	GW
29717018	73ER-03	29717018-6	GW
29717018	73ER-03	29717018-5	GW

Original Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLV	Customer: Program 38

Total Samples: 18	Total Containers: 54

Chain Of Custody

USACHPPM
Readiness through Health

CHAIN OF CUSTODY RECORD

(ANC.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C		4C	4C							

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals	+Mod SVOC	+Post LL PAH	Org Pest	Metals Tot	Metals Dis	RCRA	Benz	Organ Pest	Metals Tot
73SB01-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB01A-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB02-00	31 MAR 08	1200	✓		SO	5	3		1	1							
73SB03-00	31 MAR 08	1240	✓		SO	5	3		1	1							
73SB04-00	31 MAR 08	1300	✓		SO	5	3		1	1							
73SB05-00	31 MAR 08	1330	✓		SO	5	3		1	1							
73SB06-00	31 MAR 08	1400	✓		SO	5	3		1	1							
ER-01	31 MAR 08	1500	✓		W	8	3		2	2						1	
Trip Blanks					W	3	3										
Nothing Follows																	
						41	<- Total Number of Containers										

SHIPMENT METHOD - Fedex
Date Shipped-

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature]	31 MAR 08 / 1300			
		Kathy Blankenship	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify) Water VOCs have HCl preservative
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

CHAIN OF CUSTODY RECORD

Volc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low Level PAH	Org Pest	Mg Tot	Mg Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB 00-00		1030	✓		SO	5	3		1	1							
73SB 09-00		0900	✓		SO	5	3		1	1							
73SB 10-00		0930	✓		SO	5	3		1	1							
73SB 11-00		1130	✓		SO	5	3		1	1							
73SB 12-00		1100	✓		SO	5	3		1	1			Pb				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	
						62											

<- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1200			
		Kathy Binkley	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

Conc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low Level PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB08-00		1030	✓		SO	5											
73SB09-00		0900	✓		SO	5											
73SB10-00		0930	✓		SO	5											
73SB11-00		1130	✓		SO	5											
73SB12-00		1100	✓		SO	5							Pb				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1		✓				
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	

62 <- Total Number of Containers

SHIPMENT METHOD - Fedex

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1700			
		Kathy Binkley	4/2/08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: USA CHPPM (PR)

Date of Receipt: 4-2-08

Time of Receipt: 0915

Source Code: 50-1

Unpacker Emp. No.: 1255

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: Chilled / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	10559	Range 6.5°-7.3°	ST	WI	Y	B	(vials) (2) Bags of Ice
2	10559	Range 7.9°-13.°	ST	WI	Y	B	(2) bags of ice
3	10559	Range 7.5°-14.3°	ST	WI	Y	B	(vials sealed) (4) Bags of Ice
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: received (3) extra trip Blanks

High temps - called Kathy

Paperwork Discrepancy/Unpacking Problems:

received (1) broken jar - Cooler #1 73SB01A for SVOA + Pest

Encored - went to the lab @ 10:10

ER-01 (73ER-01) on label.

73SB12-00 - (11a) missing ID (1) jar - (SVOC + PAH)

73ER01 received (3) vials & (4) bottles instead of 3 as on coc missing (1) for Pests.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Birkley	4-2-08	1515	Unpacking
[illegible]	~~4-3-08~~ 4/3/08	2053	Place in Storage or Entry
			Entry
			Entry

Notified Heidi Taylor of temp and issues by VM message on 4/2/08 @ 1517. KAU1835

OK to proceed per call from Heidi Taylor on 4/2/08 @ 1534. KAU1835

2174.02

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* **DIVISION/TEAM:** *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip* **CONTRACT LAB:** *Lancaster (LLV)*

PROJECT NO: *38-0995* **LIMS W.O. NO:** *29721*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X **DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.**

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 28-30). The QC data are reported on pages 31-65.

There were no problems encountered analyzing these samples. QC outliers in the MS/MSD analyses were attributed to a matrix effect, as the comparable LCS/LCSD results had no outliers.

There were only minimal detections of target analytes in the samples.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 **Feb 06**

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084983. Samples arrived at the laboratory on Friday, April 04, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323944
29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323945
29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323946
29760004 NAPR-Cp Moscrip #35234-0995 Jones Water	5323947

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

0815.

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323944 SW Group No. 1084983

29750001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01001 SDG#: PUG10-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	12.3		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	0.97
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	0.97
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	0.97
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	0.97
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	0.97
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	0.97
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	0.97
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	0.97
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	0.97
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	0.97
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	0.97
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	0.97
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	0.97
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	0.97
05460	Benzene	71-43-2	1.	J	6.	0.6	ug/kg	0.97
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	0.97
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	0.97
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	0.97
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	0.97
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	0.97
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	0.97
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	0.97
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	0.97
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	0.97
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	0.97
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	0.97
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	0.97
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	0.97
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	0.97
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	0.97
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	0.97
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	0.97
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	0.97
06293	Acetone	67-64-1	24.		22.	8.	ug/kg	0.97
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	0.97

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323944 SW Group No. 1084983

29760001 NAFR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01001 SDG#: PUG10-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	11.	4.	ug/kg	0.97
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	0.97
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	0.97
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	0.97
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	0.97
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	0.97
07586	Acrolein	107-02-8	N.D.	110.	22.	ug/kg	0.97
07587	Acrylonitrile	107-13-1	N.D.	22.	4.	ug/kg	0.97
07704	Methyl Iodide	74-88-4	N.D.	6.	3.	ug/kg	0.97
07705	Acetonitrile	75-05-8	N.D.	110.	28.	ug/kg	0.97
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	0.97
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	0.97
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	0.97
07709	Propionitrile	107-12-0	N.D.	110.	33.	ug/kg	0.97
07710	Methacrylonitrile	126-98-7	N.D.	55.	6.	ug/kg	0.97
07711	Isobutyl Alcohol	78-83-1	N.D.	280.	110.	ug/kg	0.97
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	0.97
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	0.97
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	55.	11.	ug/kg	0.97
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	0.97

The GC/MS volatile internal standard peak areas were outside of the QC limits for the unspiked, matrix spike, and matrix spike duplicate analyses. This indicates a significant matrix effect.

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/08/2008 18:26	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 21:12	Kelly E Brickley	0.97
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/05/2008 14:15	Justin M Bowers	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	04/05/2008 14:15	Justin M Bowers	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323944 SW Group No. 1084983

29760001 NAPR-Cp Mosorip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01001 SDG#: PUG10-01BKG

08389	5035 Low-Level Prep	SW-846 5035	1	04/05/2008 14:13	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/05/2008 14:13	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	3	04/05/2008 14:14	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	4	04/05/2008 14:15	Justin M Bowers	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323945 SW Group No. 1084983

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01002 SDG#: PUG10-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	13.8		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.05
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.05
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.05
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.05
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.05
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.05
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.05
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.05
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.05
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.05
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.05
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.05
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.05
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.05
05460	Benzene	71-43-2	1.	J	6.	0.6	ug/kg	1.05
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.05
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.05
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.05
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.05
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.05
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.05
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.05
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.05
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.05
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.05
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.05
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.05
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.05
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.05
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.05
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.05
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.05
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.05
06293	Acetone	67-64-1	26.		24.	9.	ug/kg	1.05
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.05

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323945 SW Group No. 1084983

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01002 SDG#: PUG10-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.05
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.05
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.05
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.05
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.05
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.05
07586	Acrolein	107-02-8	N.D.	120.	24.	ug/kg	1.05
07587	Acrylonitrile	107-13-1	N.D.	24.	5.	ug/kg	1.05
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.05
07705	Acetonitrile	75-05-8	N.D.	120.	31.	ug/kg	1.05
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.05
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.05
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.05
07709	Propionitrile	107-12-0	N.D.	120.	37.	ug/kg	1.05
07710	Methacrylonitrile	126-98-7	N.D.	61.	6.	ug/kg	1.05
07711	Isobutyl Alcohol	78-83-1	N.D.	310.	120.	ug/kg	1.05
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.05
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.05
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	61.	12.	ug/kg	1.05
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.05

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323945 SW Group No. 1084983

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01002 SDG#: PUG10-02

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/17/2008 02:51	Kelly E Brickley	1.05
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/05/2008 14:18	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/05/2008 14:17	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/05/2008 14:18	Justin M Bowers	n.a.

6821

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323946 SW Group No. 1084983

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01003 SDG#: PUG10-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	8.1		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.02
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.02
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.02
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.02
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.02
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.02
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.02
05450	Methylene Chloride	75-09-2	3.	J	6.	2.	ug/kg	1.02
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.02
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.02
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.02
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.02
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.02
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.02
05460	Benzene	71-43-2	N.D.		6.	0.6	ug/kg	1.02
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.02
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.02
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.02
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.02
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.02
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.02
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.02
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.02
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.02
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.02
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.02
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.02
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.02
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.02
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.02
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.02
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.02
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.02
06293	Acetone	67-64-1	45.		22.	8.	ug/kg	1.02
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.02

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323946 SW Group No. 1084983

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01003 SDG#: PUG10-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	11.	4.	ug/kg	1.02
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.02
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.02
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	1.02
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	1.02
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.02
07586	Acrolein	107-02-8	N.D.	110.	22.	ug/kg	1.02
07587	Acrylonitrile	107-13-1	N.D.	22.	4.	ug/kg	1.02
07704	Methyl Iodide	74-88-4	N.D.	6.	3.	ug/kg	1.02
07705	Acetonitrile	75-05-8	N.D.	110.	28.	ug/kg	1.02
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.02
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	1.02
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.02
07709	Propionitrile	107-12-0	N.D.	110.	33.	ug/kg	1.02
07710	Methacrylonitrile	126-98-7	N.D.	56.	6.	ug/kg	1.02
07711	Isobutyl Alcohol	78-83-1	N.D.	280.	110.	ug/kg	1.02
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.02
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.02
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	56.	11.	ug/kg	1.02
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.02

The GC/MS volatile analysis was performed using the 193A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/14/2008 22:06	Sara E Wolf	1.02
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/05/2008 14:21	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/05/2008 14:20	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/05/2008 14:20	Justin M Bowers	n.a.

8823

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323947 WW Group No. 1084983

29760004 NAPR-Cp Moscrip #35234-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01004 SDG#: PUG10-04TB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	0.3	J	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323947 WW Group No. 1084983

29760004 NAPR-Cp Moscrip #35234-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01004 SDG#: PUG10-04TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 18:04	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 18:04	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 18:04	Angela D Sneeringer	1

0625.

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323947 WW Group No. 1084983

29760004 NAPR-Cp Moscrip #35234-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #010 Delivery Order# 01 Water

Collected: n.a.

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 16:13
Discard: 05/09/2008

01004 SDG#: PUG10-04TB*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0026

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Case Narrative Conformance/Nonconformance Summary

9828

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG#: PUG10

LANCASTER LABORATORIES
VOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5323944	01001	X		Unspiked
5323944	01001MS	X		Matrix Spike
5323944	01001MSD	X		Matrix Spike Dup
5323945	01002	X		
5323945	01002RE	X		Reinjection
5323946	01003	X		
5323947	01004		X	Client Blank

LABORATORY SUBMITTED QC:

VBLKX46	VBLKX46	X		Method Blank
VBLKX50	VBLKX50	X		Method Blank
VBLKC73	VBLKC73		X	Method Blank
LCSX46	LCSX46	X		Lab Control Sample
LCDX46	LCDX46	X		Lab Control Sample Dup
LCS1X46	LCS1X46	X		Lab Control Sample
LCD1X46	LCD1X46	X		Lab Control Sample Dup
LCSX50	LCSX50	X		Lab Control Sample
LCDX50	LCDX50	X		Lab Control Sample Dup
LCS1X50	LCS1X50	X		Lab Control Sample
LCD1X50	LCD1X50	X		Lab Control Sample Dup
LCSC73	LCSC73		X	Lab Control Sample
LCDC73	LCDC73		X	Lab Control Sample Dup
LCS1C73	LCS1C73		X	Lab Control Sample
LCD1C73	LCD1C73		X	Lab Control Sample Dup

0029

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♦ Phone: 717-656-2300 ♦ Fax: 717-656-2681 ♦ http:// www.LancasterLabs.com

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SAMPLE PREPARATION:

No problems were encountered during the sample preparation for the VOA fraction.

ANALYSIS:

All samples were analyzed within method holding times.

Sample preservation was checked at the time of analysis and was determined to be approximately pH <2. According to Method 8260B, samples are to be acidified to a pH of 2 or less at the time of collection. The pH result indicates that the method preservation requirements were met.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the results reported for sample 5323945 may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

The internal standard peak area is outside QC limits for unspiked sample 5323944. The internal standard peak area is also outside QC limits for the associated MS and MSD, indicating a matrix effect.

The internal standard peak area is outside QC limits for both the initial analysis and the reanalysis of sample 5323945, indicating a matrix effect.

The percent recovery is outside QC limits for multiple compounds in the MS and/or MSD. The associated LCS/LCSD meets recovery criteria, indicating a matrix effect. Please see the MS/MSD recovery form in the QC summary section for specific information.

The relative percent difference (RPD) is outside QC limits for 2-butanone and cis-1,3-dichloropropene between the MS and MSD. The RPD limits are laboratory advisory only for this method.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Grace Salm for Date 4-25-08
Dana M. Kauffman
Manager, Data Deliverables

Lancaster Laboratories ♦ 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
♦ Phone: 717-656-2300 ♦ Fax: 717-656-2681 ♦ http:// www.LancasterLabs.com

Report ID: HMA0022v1 4694
Sequence: 411090 1084983
5323944-47
PUG10

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 04-Apr-08 5:17:11 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 010/1
DLS WO#: 29760 Batch: 1733
Contractor Code: LLV HBN: 208066
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: CO
Priority: Standard
# of Samples: 4

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29760
DLS Profile#: 35234

Contractor Due Date
PDF
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's CCR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/4/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: Via FedEx 4/4/08 (Signature of laboratory courier) 4-7-08 (Date/Time of pickup)

Number of samples received intact: All (#/All)

Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Booth

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/25/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLV2417	LLV2418
29760001	73SB18-00 (MS/MSD)	SO		1
29760002	73SB18A-00	SO		1
29760003	73SB14-00	SO		1
29760004	TRIP BLANKS	GW	1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLV2418	Volatiles Organics (App IX)		3
	Procedure Description	EPA 8260B	
LLV2417	Volatiles Organics (App IX)		1
	Procedure Description	EPA 8260B	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	3
Water (Ground water)	GW	1

Report ID: HRA0191C-ACode
COC #: 411072

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

USACHPPM
Readiness Quality Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

1733

This Chain of Custody is an Addendum to the Original COC submitted on 4/4/08 *to SML. This is SML's internal Chain of Custody.*

Profile: 35234 - 0995
Workorder #: 29760
Queue: LLV
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~35234
Workorder ID: 099595
Customer: Program 38 POC: David Jones
Project Number: 38
Notes: Samples shipped already to contract lab from field. Collection information for trip blanks not provided for log in. JBrockmeyer 4-4-08

Total Samples: 4 Total Containers: 16

HSN	Container ID	Customer Sample ID	Sample Typ	Matrix		Temp		Date/Time Received	Date/Time Collecte	Sample Due Dat
29760001	29760001-2	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLV2418 : Volatiles Organics (App IX)										
29760001	29760001-3	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Contain										
29760001	29760001-4	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Contain										
29760001	29760001-5	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Contain										
29760001	29760001-6	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Contain										

NR=Not Reported.

Report ID: HRA0191C-Acode
COC #: 411072

USACHPPM
Readiness through Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip-35234
Workorder #: 29760	Workorder ID: 099596
Queue: LLV	Customer: Program 38

29760001	29760001-7	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760001	29760001-8	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760002	29760002-2	73SB18A-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29760002	29760002-3	73SB18A-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760002	29760002-4	73SB18A-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760003	29760003-2	73SB14-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:30 AM	02-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29760003	29760003-3	73SB14-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:30 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760003	29760003-4	73SB14-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:30 AM	02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760004	29760004-1	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	04-Apr-2008 01:20 PM		02-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29760004	29760004-2	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	04-Apr-2008 01:20 PM		02-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

29760004 (5)	29760004-3	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	04-Apr-2008 01:20 PM		02-May-2008

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acode
COC #: 411072

USACHPPM
Readiness thru Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLV	Customer: Program 38

ACodes:
LLVXCTNR : XTRACTNR, Additional Contain

Total Samples: 4	Total Containers: 16

Samples Received By:	Jessica Nguyen 4/7/08	Date Received:	4/4/08 via FedEX 4/7/08
Document Reviewed By:	Jessie Brockmeyer Initials: JB	Date Reviewed:	4 April 2008
Document Quality Review By:		Date Reviewed:	
Samples Approved For Distribution:	Yes No Initials:	Date Approved:	

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acode
COC #: 411072

USACHPPM
Readiness Thru Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLV	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29760001	73SB18-00 (MS/MSD)	29760001-8	SO
29760001	73SB18-00 (MS/MSD)	29760001-4	SO
29760001	73SB18-00 (MS/MSD)	29760001-6	SO
29760001	73SB18-00 (MS/MSD)	29760001-2	SO
29760002	73SB18A-00	29760002-4	SO
29760003	73SB14-00	29760003-2	SO
29760003	73SB14-00	29760003-[illegible]	SO
29760004	TRIP BLANKS	29760004-[illegible]	GW

HSN	Customer Sample Id	Container Id	Mx
29760001	73SB18-00 (MS/MSD)	29760001-3	SO
29760001	73SB18-00 (MS/MSD)	29760001-5	SO
29760001	73SB18-00 (MS/MSD)	29760001-7	SO
29760002	73SB18A-00	29760002-3	SO
29760002	73SB18A-00	29760002-2	SO
29760003	73SB14-00	29760003-3	SO
29760004	TRIP BLANKS	29760004-3	GW
29760004	TRIP BLANKS	29760004-2	GW

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness and Health

Profile: 35234 - 0996	Description: NAPR CMS-Cp Moscrip-35234
Workorder #: 29760	Workorder ID: 099596
Queue: LLV	Customer: Program 38

Total Samples: 4	Total Containers: 16

Chain Of Custody

Report ID: HRA0191C-Acode
COC #: 411072

USACHPPM
Readiness Force Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip-35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLV	Customer: Program 36

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29760001		7		
29760002		3		
29760003		3		
29760004		3		

Total Samples: 4 Total Containers: 16

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM Readiness from Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals Dis	SVOC	LL SVOC + PAH	O Pest + moist	Metal Total	Metal Dis	RCRA	Benz		
TRIP BLANKS					W	3	3										
73ER-05 (Hold)	3APR08	0930	✓		W	6	3		1	1	1						
73SB18-08 (MS/MSD)		1100	✓		SO	9	7			1	1						
73SB18A-08		1100	✓		SO	5	3			1	1						
73SB14-08		1130	✓		SO	5	3			1	1						
NOTHING FOLLOWS																	

28 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 3APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	3APR08/1500			
			4-4-08	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLV)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29841*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 042-044). The QC data are reported on pages 045-070.

Two samples (29841001 and 29841002) were outside the weight requirement. The contract lab noted that the Encore samplers were received (9 Apr 08) and prepped past hold time, but that the CHPPM COR authorized the analysis.

The project QC was good.

There were only minimal detections of target analytes in the samples.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 **Feb 06**

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1085931. Samples arrived at the laboratory on Wednesday, April 09, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329085
29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329086
29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329087
29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329088
29841006 NAPR-Cp Moscrip #35291-0995 Jones Water	5329089
29841007 NAPR-Cp Moscrip #35291-0995 Jones Water	5329090
29841010 NAPR-Cp Moscrip #35291-0995 Jones Water	5329091

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0018

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Christine Dulaney
Senior Specialist

0019

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329085 SW Group No. 1085931

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

01901 SDG#: PUG20-01

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	9.1		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.88
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.88
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	0.88
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.88
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.88
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.88
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	0.88
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.88
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	0.88
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	0.88
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	0.88
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	0.88
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	0.88
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	0.88
05460	Benzene	71-43-2	2.	J	5.	0.5	ug/kg	0.88
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	0.88
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	0.88
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	0.88
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	0.88
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	0.88
05466	Toluene	108-88-3	1.	J	5.	1.	ug/kg	0.88
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	0.88
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	0.88
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	0.88
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	0.88
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	0.88
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	0.88
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	0.88
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	0.88
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	0.88
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	0.88
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	0.88
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.88
06293	Acetone	67-64-1	36.		19.	7.	ug/kg	0.88
06294	Carbon Disulfide	75-15-0	2.	J	5.	1.	ug/kg	0.88

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329085 SW Group No. 1085931

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01901 SDG#: PUG20-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	10.	4.	ug/kg	0.88
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	0.88
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	0.88
06299	4-Methyl-2-pentanone	108-10-1	N.D.		10.	3.	ug/kg	0.88
06300	2-Hexanone	591-78-6	N.D.		10.	3.	ug/kg	0.88
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	0.88
07586	Acrolein	107-02-8	N.D.		97.	19.	ug/kg	0.88
07587	Acrylonitrile	107-13-1	N.D.		19.	4.	ug/kg	0.88
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.88
07705	Acetonitrile	75-05-8	N.D.		97.	24.	ug/kg	0.88
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	0.88
07707	Vinyl Acetate	108-05-4	N.D.		10.	2.	ug/kg	0.88
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	0.88
07709	Propionitrile	107-12-0	N.D.		97.	29.	ug/kg	0.88
07710	Methacrylonitrile	126-98-7	N.D.		48.	5.	ug/kg	0.88
07711	Isobutyl Alcohol	78-83-1	N.D.		240.	97.	ug/kg	0.88
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	0.88
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	0.88
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		48.	10.	ug/kg	0.88
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	0.88

The GC/MS volatile analysis was performed using the 193A bottle code.

The percent drift for vinyl chloride was -24% in the continuing calibration standard associated with this sample. The acceptable method criteria are +/- 20%.

The percent drift for acetone was 51% in the continuing calibration standard associated with this sample. The percent drift for 2-butanone was 64%. The acceptable in-house criteria for Lancaster Laboratories are +/- 50%.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329085 SW Group No. 1085931

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01901 SDG#: PUG20-01

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/21/2008 21:48	Kelly E Brickley	0.88
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/09/2008 19:01	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/09/2008 19:02	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/09/2008 19:03	Lois E Hiltz	n.a.

0022

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329086 SW Group No. 1085931

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732.
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01902 SDG#: PUG20-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	13.8		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.81
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.81
05445	Vinyl Chloride	75-01-4	N.D.		5.	0.9	ug/kg	0.81
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	0.81
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.81
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.81
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	0.9	ug/kg	0.81
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.81
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	0.9	ug/kg	0.81
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	0.9	ug/kg	0.81
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	0.9	ug/kg	0.81
05455	Chloroform	67-66-3	N.D.		5.	0.9	ug/kg	0.81
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	0.9	ug/kg	0.81
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	0.9	ug/kg	0.81
05460	Benzene	71-43-2	N.D.		5.	0.5	ug/kg	0.81
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	0.9	ug/kg	0.81
05462	Trichloroethene	79-01-6	N.D.		5.	0.9	ug/kg	0.81
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	0.9	ug/kg	0.81
05464	Dibromomethane	74-95-3	N.D.		5.	0.9	ug/kg	0.81
05465	Bromodichloromethane	75-27-4	N.D.		5.	0.9	ug/kg	0.81
05466	Toluene	108-88-3	N.D.		5.	0.9	ug/kg	0.81
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	0.9	ug/kg	0.81
05468	Tetrachloroethene	127-18-4	N.D.		5.	0.9	ug/kg	0.81
05470	Dibromochloromethane	124-48-1	N.D.		5.	0.9	ug/kg	0.81
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	0.9	ug/kg	0.81
05472	Chlorobenzene	108-90-7	N.D.		5.	0.9	ug/kg	0.81
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	0.9	ug/kg	0.81
05474	Ethylbenzene	100-41-4	N.D.		5.	0.9	ug/kg	0.81
05477	Styrene	100-42-5	N.D.		5.	0.9	ug/kg	0.81
05478	Bromoform	75-25-2	N.D.		5.	0.9	ug/kg	0.81
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	0.9	ug/kg	0.81
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	0.9	ug/kg	0.81
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.81
06293	Acetone	67-64-1	12.	J	19.	7.	ug/kg	0.81
06294	Carbon Disulfide	75-15-0	N.D.		5.	0.9	ug/kg	0.81

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329086 SW Group No. 1085931

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01902 SDG#: PUG20-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.		9.	4.	ug/kg	0.81
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	0.9	ug/kg	0.81
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	0.9	ug/kg	0.81
06299	4-Methyl-2-pentanone	108-10-1	N.D.		9.	3.	ug/kg	0.81
06300	2-Hexanone	591-78-6	N.D.		9.	3.	ug/kg	0.81
06301	Xylene (Total)	1330-20-7	N.D.		5.	0.9	ug/kg	0.81
07586	Acrolein	107-02-8	N.D.		94.	19.	ug/kg	0.81
07587	Acrylonitrile	107-13-1	N.D.		19.	4.	ug/kg	0.81
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	0.81
07705	Acetonitrile	75-05-8	N.D.		94.	24.	ug/kg	0.81
07706	Allyl Chloride	107-05-1	1.	J	5.	0.9	ug/kg	0.81
07707	Vinyl Acetate	108-05-4	N.D.		9.	2.	ug/kg	0.81
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	0.9	ug/kg	0.81
07709	Propionitrile	107-12-0	N.D.		94.	28.	ug/kg	0.81
07710	Methacrylonitrile	126-98-7	N.D.		47.	5.	ug/kg	0.81
07711	Isobutyl Alcohol	78-83-1	N.D.		240.	94.	ug/kg	0.81
07712	Methyl Methacrylate	80-62-6	N.D.		5.	0.9	ug/kg	0.81
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	0.9	ug/kg	0.81
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		47.	9.	ug/kg	0.81
07716	Pentachloroethane	76-01-7	N.D.		5.	0.9	ug/kg	0.81

The GC/MS volatile analysis was performed using the 193A bottle code.

The percent drift for vinyl chloride was -24% in the continuing calibration standard associated with this sample. The acceptable method criteria are +/- 20%.

The percent drift for acetone was 51% in the continuing calibration standard associated with this sample. The acceptable in-house criteria for Lancaster Laboratories are +/- 50%.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329086 SW Group No. 1085931

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:56
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01902 SDG#: PUG20-02

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/21/2008 22:11	Kelly E Brickley	0.81
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/09/2008 19:05	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/09/2008 19:06	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/09/2008 19:07	Lois E Hiltz	n.a.

0025

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329087 SW Group No. 1085931

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01903 SDG#: PUG20-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	8.5	0.50	0.50	%	1
07720	Appendix IX by 8260 - soil						
05443	Dichlorodifluoromethane	75-71-8	N.D.	5.	2.	ug/kg	0.95
05444	Chloromethane	74-87-3	N.D.	5.	2.	ug/kg	0.95
05445	Vinyl Chloride	75-01-4	N.D.	5.	1.	ug/kg	0.95
05446	Bromomethane	74-83-9	N.D.	5.	2.	ug/kg	0.95
05447	Chloroethane	75-00-3	N.D.	5.	2.	ug/kg	0.95
05448	Trichlorofluoromethane	75-69-4	N.D.	5.	2.	ug/kg	0.95
05449	1,1-Dichloroethene	75-35-4	N.D.	5.	1.	ug/kg	0.95
05450	Methylene Chloride	75-09-2	N.D.	5.	2.	ug/kg	0.95
05451	trans-1,2-Dichloroethene	156-60-5	N.D.	5.	1.	ug/kg	0.95
05452	1,1-Dichloroethane	75-34-3	N.D.	5.	1.	ug/kg	0.95
05454	cis-1,2-Dichloroethene	156-59-2	N.D.	5.	1.	ug/kg	0.95
05455	Chloroform	67-66-3	N.D.	5.	1.	ug/kg	0.95
05457	1,1,1-Trichloroethane	71-55-6	N.D.	5.	1.	ug/kg	0.95
05458	Carbon Tetrachloride	56-23-5	N.D.	5.	1.	ug/kg	0.95
05460	Benzene	71-43-2	N.D.	5.	0.5	ug/kg	0.95
05461	1,2-Dichloroethane	107-06-2	N.D.	5.	1.	ug/kg	0.95
05462	Trichloroethene	79-01-6	N.D.	5.	1.	ug/kg	0.95
05463	1,2-Dichloropropane	78-87-5	N.D.	5.	1.	ug/kg	0.95
05464	Dibromomethane	74-95-3	N.D.	5.	1.	ug/kg	0.95
05465	Bromodichloromethane	75-27-4	N.D.	5.	1.	ug/kg	0.95
05466	Toluene	108-88-3	N.D.	5.	1.	ug/kg	0.95
05467	1,1,2-Trichloroethane	79-00-5	N.D.	5.	1.	ug/kg	0.95
05468	Tetrachloroethene	127-18-4	N.D.	5.	1.	ug/kg	0.95
05470	Dibromochloromethane	124-48-1	N.D.	5.	1.	ug/kg	0.95
05471	1,2-Dibromoethane	106-93-4	N.D.	5.	1.	ug/kg	0.95
05472	Chlorobenzene	108-90-7	N.D.	5.	1.	ug/kg	0.95
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	5.	1.	ug/kg	0.95
05474	Ethylbenzene	100-41-4	N.D.	5.	1.	ug/kg	0.95
05477	Styrene	100-42-5	N.D.	5.	1.	ug/kg	0.95
05478	Bromoform	75-25-2	N.D.	5.	1.	ug/kg	0.95
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	5.	1.	ug/kg	0.95
05482	1,2,3-Trichloropropane	96-18-4	N.D.	5.	1.	ug/kg	0.95
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	5.	2.	ug/kg	0.95
06293	Acetone	67-64-1	37.	21.	7.	ug/kg	0.95
06294	Carbon Disulfide	75-15-0	N.D.	5.	1.	ug/kg	0.95

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329087 SW Group No. 1085931

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01903 SDG#: PUG20-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	10.	4.	ug/kg	0.95
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	1.	ug/kg	0.95
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	1.	ug/kg	0.95
06299	4-Methyl-2-pentanone	108-10-1	N.D.	10.	3.	ug/kg	0.95
06300	2-Hexanone	591-78-6	N.D.	10.	3.	ug/kg	0.95
06301	Xylene (Total)	1330-20-7	N.D.	5.	1.	ug/kg	0.95
07586	Acrolein	107-02-8	N.D.	100.	21.	ug/kg	0.95
07587	Acrylonitrile	107-13-1	N.D.	21.	4.	ug/kg	0.95
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	0.95
07705	Acetonitrile	75-05-8	N.D.	100.	26.	ug/kg	0.95
07706	Allyl Chloride	107-05-1	N.D.	5.	1.	ug/kg	0.95
07707	Vinyl Acetate	108-05-4	N.D.	10.	2.	ug/kg	0.95
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	1.	ug/kg	0.95
07709	Propionitrile	107-12-0	N.D.	100.	31.	ug/kg	0.95
07710	Methacrylonitrile	126-98-7	N.D.	52.	5.	ug/kg	0.95
07711	Isobutyl Alcohol	78-83-1	N.D.	260.	100.	ug/kg	0.95
07712	Methyl Methacrylate	80-62-6	N.D.	5.	1.	ug/kg	0.95
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	1.	ug/kg	0.95
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	52.	10.	ug/kg	0.95
07716	Pentachloroethane	76-01-7	N.D.	5.	1.	ug/kg	0.95

The GC/MS volatile analysis was performed using the 193A bottle code.

The percent drift for vinyl chloride was -24% in the continuing calibration standard associated with this sample. The acceptable method criteria are +/- 20%.

The percent drift for acetone was 51% in the continuing calibration standard associated with this sample. The acceptable in-house criteria for Lancaster Laboratories are +/- 50%.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329087 SW Group No. 1085931

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01903 SDG#: PUG20-03

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/21/2008 22:35	Kelly E Brickley	0.95
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/09/2008 19:12	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/09/2008 19:13	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/09/2008 19:13	Lois E Hiltz	n.a.

0028

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329088 SW Group No. 1085931

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

01904 SDG#: PUG20-04

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	16.9		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	0.97
05444	Chloromethane	74-87-3	3.	J	6.	2.	ug/kg	0.97
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	0.97
05446	Bromomethane	74-83-9	4.	J	6.	2.	ug/kg	0.97
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	0.97
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	0.97
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	0.97
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	0.97
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	0.97
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	0.97
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	0.97
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	0.97
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	0.97
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	0.97
05460	Benzene	71-43-2	N.D.		6.	0.6	ug/kg	0.97
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	0.97
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	0.97
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	0.97
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	0.97
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	0.97
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	0.97
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	0.97
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	0.97
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	0.97
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	0.97
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	0.97
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	0.97
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	0.97
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	0.97
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	0.97
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	0.97
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	0.97
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	0.97
06293	Acetone	67-64-1	120.		23.	8.	ug/kg	0.97
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	0.97

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329088 SW Group No. 1085931

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01904 SDG#: PUG20-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	5.	J	12.	5.	ug/kg	0.97
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		6.	1.	ug/kg	0.97
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		6.	1.	ug/kg	0.97
06299	4-Methyl-2-pentanone	108-10-1	N.D.		12.	4.	ug/kg	0.97
06300	2-Hexanone	591-78-6	N.D.		12.	4.	ug/kg	0.97
06301	Xylene (Total)	1330-20-7	N.D.		6.	1.	ug/kg	0.97
07586	Acrolein	107-02-8	N.D.		120.	23.	ug/kg	0.97
07587	Acrylonitrile	107-13-1	N.D.		23.	5.	ug/kg	0.97
07704	Methyl Iodide	74-88-4	N.D.		6.	4.	ug/kg	0.97
07705	Acetonitrile	75-05-8	N.D.		120.	29.	ug/kg	0.97
07706	Allyl Chloride	107-05-1	N.D.		6.	1.	ug/kg	0.97
07707	Vinyl Acetate	108-05-4	N.D.		12.	2.	ug/kg	0.97
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		6.	1.	ug/kg	0.97
07709	Propionitrile	107-12-0	N.D.		120.	35.	ug/kg	0.97
07710	Methacrylonitrile	126-98-7	N.D.		58.	6.	ug/kg	0.97
07711	Isobutyl Alcohol	78-83-1	N.D.		290.	120.	ug/kg	0.97
07712	Methyl Methacrylate	80-62-6	N.D.		6.	1.	ug/kg	0.97
07714	Ethyl Methacrylate	97-63-2	N.D.		6.	1.	ug/kg	0.97
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		58.	12.	ug/kg	0.97
07716	Pentachloroethane	76-01-7	N.D.		6.	1.	ug/kg	0.97

The GC/MS volatile analysis was performed using the 193A bottle code.

The percent drift for vinyl chloride was -24% in the continuing calibration standard associated with this sample. The acceptable method criteria are +/- 20%.

The percent drift for acetone was 51% in the continuing calibration standard associated with this sample. The percent drift for 2-butanone was 64%. The acceptable in-house criteria for Lancaster Laboratories are +/- 50%.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	[illegible]	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329088 SW Group No. 1085931

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01904 SDG#: PUG20-04

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/21/2008 22:58	Kelly E Brickley	0.97
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/09/2008 19:08	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/09/2008 19:09	Lois E Hiltz	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/09/2008 19:10	Lois E Hiltz	n.a.

0031

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329089 WW Group No. 1085931

29841006 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# Trip_Blanks # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01906 SDG#: PUG20-05TB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	0.3	J	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329089 WW Group No. 1085931

29841006 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# Trip_Blanks # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01906 SDG#: PUG20-05TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 20:22	Sara E Wolf	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 20:22	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 20:22	Sara E Wolf 0833	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329089 WW Group No. 1085931

29841006 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# Trip_Blanks # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected: n.a.

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

01906 SDG#: PUG20-05TB

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

5034

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329090 WW Group No. 1085931

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01907 SDG#: PUG20-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	3.1	J	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	0.3	J	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	38.		5.0	1.0	ug/l	10
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	12.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329090 WW Group No. 1085931

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01907 SDG#: PUG20-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	1.8	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 30A bottle code. The diulted analysis was performed using the 30B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 20:44	Sara E Wolf	1
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 21:05	Sara E Wolf	10

0036

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329090 WW Group No. 1085931

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01907 SDG#: PUG20-06BKG

02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 20:44	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 20:44	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	04/17/2008 21:05	Sara E Wolf	10

0037

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329091 WW Group No. 1085931

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01910 SDG#: PUG20-07*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	3.1	J	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	0.2	J	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	34.		2.5	0.5	ug/l	5
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	12.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329091 WW Group No. 1085931

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01910 SDG#: PUG20-07*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethane	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	2.1	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code. The diluted analysis was prepared using the 38B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 21:27	Sara E Wolf	1
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/18/2008 18:17	Sara E Wolf	5

8039

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329091 WW Group No. 1085931

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #019 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:57
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

01910 SDG#: PUG20-07*

02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 21:27	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 21:27	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	04/18/2008 18:17	Sara E Wolf	5

0040

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative Conformance/Nonconformance Summary

0042

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG#: PUG20

LANCASTER LABORATORIES
VOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Water	Comments
5329085	01901	X		
5329086	01902	X		
5329087	01903	X		
5329088	01904	X		
5329089	01906		X	Client Blank
5329090	01907		X	
5329090	01907DL		X	10 X Dilution
5329091	01910		X	
5329091	01910DL		X	5 X Dilution

LABORATORY SUBMITTED QC:

VBLKB16	VBLKB16	X		Method Blank
VBLKC78	VBLKC78		X	Method Blank
VBLKC79	VBLKC79		X	Method Blank
LCSB16	LCSB16	X		Lab Control Sample
LCDB16	LCDB16	X		Lab Control Sample Dup
LCS1B16	LCS1B16	X		Lab Control Sample
LCD1B16	LCD1B16	X		Lab Control Sample Dup
LCSC78	LCSC78		X	Lab Control Sample
LCS1C78	LCS1C78		X	Lab Control Sample
LCD1C78	LCD1C78		X	Lab Control Sample Dup
LCSC79	LCSC79		X	Lab Control Sample
LCDC79	LCDC79		X	Lab Control Sample Dup
LCS1C79	LCS1C79		X	Lab Control Sample
LCD1C79	LCD1C79		X	Lab Control Sample Dup

Lancaster Laboratories ♦ 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
♦ Phone: 717-656-2300 ♦ Fax: 717-656-2681 ♦ http:// www.LancasterLabs.com

SAMPLE PREPARATION:

The following samples are outside the weight requirement: 5329085 and 5329086.

No other problems were encountered during the sample preparation for the VOA fraction.

ANALYSIS:

Sample preservation was checked at the time of analysis and was determined to be approximately pH <2. According to Method 8260B, samples are to be acidified to a pH of 2 or less at the time of collection. The pH result indicates that the method preservation requirements were met.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All surrogate recoveries met method requirements. All internal standard area counts and retention times complied with method QC requirements.

The percent recovery exceeded the maximum recovery limit for trichlorofluoromethane in LCSC78. Since a positive bias is observed and the compound is not detected in the associated samples, no further action is needed.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Date 4-30-08

Dana M. Kauffman
Manager, Data Deliverables

4694

Report ID: HMA0022v1 ~~1089~~ 4/10/08 (3)
Sequence: 413202
1085931
~~53209~~ 4/10/08 (3)
5329085-91
PU620

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 10-Apr-08 4:05:38 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 019/1

DLS WO#: 29841 Batch: 1734
Contractor Code: LLV HBN: 208241
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: GCMS
Priority: Standard
# of Samples: 17 DMeier 4/11/08

Project Information

Project Site: NAPR-Cp Mosarip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0895
DLS WO#: 29841
DLS Profile#: 35291

Contractor Due Date
PDF
Hardcopy 1 MAY 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's OCR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/10/08 (Date/Time called)

CONTRACTOR'S ENTRY [signature] 4/10/08

Pick-up Order received by: FedEx 4/9/08 (Signature of laboratory courier) (Date/Time of pickup)

Direct Shipped.

Number of samples received intact: All (#/All) Number of samples received broken: None (#/None)

Date package received by at CHPPM: Sarah R. Boats Delivery Date: Email (Means of Delivery - UPS/FedEx) 5/1/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Report ID: HMA0022v1
Sequence: 413202

Date: 10-Apr-08 4:05:38 PM

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	Acodes Assigned: LLV2417	LLV2418
29841001	73SB02-01	SO		1
29841002	73SB02-04	SO		1
29841003	73SB14-01	SO		1
29841004	73SB14-04	SO		1
29841006	Trip Blanks	GW	1	
29841007	73FB-03 BKG	GW	1	
29841008	73FB-03 MS	GW	1	
29841009	73FB-03 MSD	GW	1	
29841010	73FB-03A	GW	1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLV2418	Volatiles Organics (App IX)		4
	Procedure Description	EPA 8260B	
LLV2417	Volatiles Organics (App IX)		~~4~~ 3
	Procedure Description	EPA 8260B	

③ [illegible] 4/11/08

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	4
Water (Ground water)	GW	5

Report ID: HRA0191C-ACodes
COC #: 413172

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Run Date: 10-Apr-08 15:10
Generated By: HEIDI.TAYLOR

Standard

SAMPLES SHIPPED DIRECTLY TO CONTRACT LABORATORY

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/9/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35291 - 0995
Workorder #: 29841
Queue: LLV
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~35291
Workorder ID: 0995101
Customer: Program38 POC: David Jones
Project Number: 38
Notes: 73FB-03 sample for SVOC and PAH and the 73FB-03A for SVOC and Pest were all rcvd broken. Per Lancaster, they can still analyze for these out of the remaining containers. Metals listed on the COC were not rcvd. H.Taylor 4/10/08

Total Samples: 9
Total Containers: 23

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29841001	29841001-2	73SB02-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:15 AM	07-May-2008
ACodes: LLV2418 : Volatiles Organics (App IX)										
29841001	29841001-3	73SB02-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:15 AM	07-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										
29841001	29841001-4	73SB02-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:15 AM	07-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										
29841002	29841002-2	73SB02-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:25 AM	07-May-2008
ACodes: LLV2418 : Volatiles Organics (App IX)										
29841002	29841002-3	73SB02-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:25 AM	07-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413172

USACHPPM
Readiness Thru Health

Run Date: 10-Apr-08 15:10
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLV	Customer: Program 38

29841002	29841002-4	73SB02-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:25 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841003	29841003-2	73SB14-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 11:05 AM	07-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29841003	29841003-3	73SB14-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 11:05 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841003	29841003-4	73SB14-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 11:05 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841004	29841004-2	73SB14-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 12:45 PM	07-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29841004	29841004-3	73SB14-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 12:45 PM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841004	29841004-4	73SB14-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 12:45 PM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841006	29841006-1	Trip Blanks	TRPBLK	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM		07-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29841006	29841006-2	Trip Blanks	TRPBLK	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM		07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841006	29841006-3	Trip Blanks	TRPBLK	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM		07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841007	29841007-1	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413172

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:10
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip~35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLV	Customer: Program 38

ACodes:
LLV2417 : Volatiles Organics (App IX)

29841007	29841007-2	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841007	29841007-3	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841008	29841008-1	73FB-03 MS	MS	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29841009	29841009-1	73FB-03 MSD	MSD	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29841010	29841010-1	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29841010	29841010-2	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29841010	29841010-3	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Chain Of Custody

Total Samples: 9	Total Containers: 23

Samples Received By:	Joshua Davenport 4/11/08	Date Received:	FedEx 4/9/08
Document Reviewed By:	Heidi Taylor	Initials: HT	Date Reviewed: 4/10/08
Document Quality Review By:	Alberta Brown		Date Reviewed:
Samples Approved For Distribution:	Yes ✓ No	Initials: AB	Date Approved:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLV	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29841001	73SB02-01	29841001-3	SO
29841001	73SB02-01	29841001-2	SO
29841002	73SB02-04	29841002-3	SO
29841003	73SB14-01	29841003-2	SO
29841003	73SB14-01	29841003-4	SO
29841004	73SB14-04	29841004-2	SO
29841006	Trip Blanks	29841006-2	GW
29841006	Trip Blanks	29841006-1	GW
29841007	73FB-03	29841007-2	GW
29841008	73FB-03 MS	29841008-1	GW
29841010	73FB-03A	29841010-3	GW
29841010	73FB-03A	29841010-2	GW

HSN	Customer Sample Id	Container Id	Mx
29841001	73SB02-01	29841001-4	SO
29841002	73SB02-04	29841002-2	SO
29841002	73SB02-04	29841002-4	SO
29841003	73SB14-01	29841003-3	SO
29841004	73SB14-04	29841004-4	SO
29841004	73SB14-04	29841004-3	SO
29841006	Trip Blanks	29841006-3	GW
29841007	73FB-03	29841007-1	GW
29841007	73FB-03	29841007-3	GW
29841009	73FB-03 MSD	29841009-1	GW
29841010	73FB-03A	29841010-1	GW

Chain of Custody

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip~35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLV	Customer: Program 38

Total Samples: 9	Total Containers: 23

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 413172

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:10
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLV	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29841001		3		
29841002		3		
29841003		3		
29841004		3		
29841006		3		
29841007		3		
29841008		3		
29841009		3		
29841010		3		

Total Samples: 9 | Total Containers: 23

Chain Of Custody

E-148

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Jane.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	BVOC	LL PAH +SVOC	O +Most Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB02-01	7APR08	1015	U		SO	5	3			1	1						
73SB02-04	7APR08	1025	U		SO	5	3			1	1						
73SB14-01	7APR08	1105	U		SO	5	3			1	1						
73SB14-04	7APR08	1215	U		SO	5	3			1	1		metals	for HHE			
73ER-06	7APR08	1525	U		W	8	3		1	1	1	X	(not need	CLP	Incl w/SS	4/9/08	
NOTHING FOLLOWS' DAY																	
TRIP BLANKS'					W	3	3										
NOTHING FOLLOWS'																	
						31											

31 <- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped- 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7APR08/1800			

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73 FB-03 (MS/MSD)	7 APR 08	0830	V		W	16*	5		4	4	3	~~2~~					
73 FB-03A	7 APR 08	0830	V		W	9	3		2	2	2	~~1~~					
NOTHING FOLLOWS																	

X <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7 APR/1605			
			4/8/08 0930	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLV)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29721*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 57-60). The QC data are reported on pages 61-95.

The contract lab reported significant problems analyzing these (soil) samples. Multiple samples are outside the weight requirement. The internal standard peak area was outside (low) the QC limits for the initial analysis and/or the reanalysis of multiple samples. The internal standard was outside the QC limits in sample 29721005, as well as its matrix spike/matrix spike duplicate, indicating a matrix effect in the samples. The associated laboratory control standards were within QC limits, indicating satisfactory method performance by the laboratory.

Because of the above issues, some qualification of results may be required. Note that there were only minimal detections of target analytes in the samples.

R. Valis

REVIEWED BY: *R. Valis*
DATE: *30 Apr 08*

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Reference List for SDG Number PUG07
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 007/DO# 01 NAPR-Cp Moscrip

Lab Sample Number	Lab Sample Code	Client Sample Description
5322627	00701	29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13-00 # 08-P-0732
5322628	07002	29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13A-00 # 08-P-0732
5322629	00703	29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB17-00 # 08-P-0732
5322630	00704	29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB21-00 # 08-P-0732
5322631	00705	29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB16-00 # 08-P-0732
5322632	00706	29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB20-00 # 08-P-0732
5322633	00707	29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB24-00 # 08-P-0732
5322634	07008	29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB15-00 # 08-P-0732
5322635	00709	29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB19-00 # 08-P-0732
5322636	00710	29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB22-00 # 08-P-0732
5322637	00711	29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB23-00 # 08-P-0732
5322638	00712	29707012 NAPR-Cp Moscrip #35215-0995 Jones Water Field# 73ER-04 # 08-P-0732
5322639	00713	29707013 NAPR-Cp Moscrip #35215-0995 Jones Water Field# TRIP_BLANKS # 08-P-0732

Report ID: HMA0022v1
Sequence: 410731

4694
1084761
5322627-39
PUG07

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 03-Apr-08 1:49:31 PM

Pick-Up / Work / Delivery Order
Generated by: JESSICA.BROCKMEYER

Section I - Contract/Project Information

Contract Information

Pickup Order: 007/1

DLS WO#: 29721 Batch: 1732
Contractor Code: LLV HBN: 208006
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefeller
Sent by Team: GCMS
Priority: Standard
# of Samples: 13

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29721
DLS Profile#: 36215

Contractor Due Date
PDF _____
Hardcopy 4/24/08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/3/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-Up Order received by: FedEx 4308 (Signature of laboratory courier) 1400 HRS (Date/Time of pick-up)

Number of samples received intact: All (#/All) Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Brat Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/28/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLV2417	LLV2418
29721001	73SB13-00	SO		1
29721002	73SB13A-00	SO		1
29721003	73SB17-00	SO		1
29721004	73SB21-00	SO		1
29721005	73SB16-00	SO		1
29721006	73SB20-00	SO		1
29721007	73SB24-00	SO		1
29721008	73SB15-00	SO		1
29721009	73SB19-00	SO		1
29721010	73SB22-00	SO		1
29721011	73SB23-00	SO		1
29721012	73ER-04	GW	1	
29721013	TRIP BLANKS	GW	1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLV2418	Volatiles Organics (App IX)		11
	Procedure Description	EPA 8260B	
LLV2417	Volatiles Organics (App IX)		2
	Procedure Description	EPA 8260B	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	11
Water (Ground water)	GW	2

Report ID: HRA0191C-ACodes
COC #: 410671

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

Direct ship

0031
1732

This Chain of Custody is an Addendum to the Original COC submitted on 4/3/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35215 - 0995
Workorder #: 29721
Queue: LLV
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-35215
Workorder ID: 099594
Customer: Program38 POC: David Jones
Project Number: 38
Notes: Trip blanks recvd not listed on the COC. Metals container listed on COC for Sample ID 73ER02 was not recvd w/ shipment. Collection date and time for trip blanks not provided to SML for log-in. H.Taylor 4/3/08

Total Samples: 13
Total Containers: 39

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29721001	29721001-2	73SB13-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLV2418 : Volatiles Organics (App IX)										
29721001	29721001-3	73SB13-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										
29721001	29721001-4	73SB13-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										
29721002	29721002-2	73SB13A-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLV2418 : Volatiles Organics (App IX)										
29721002	29721002-3	73SB13A-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLVXCTNR : XTRACTNR, Additional Container										

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35216 - 0995	Description: NAPR CMS-Cp Moscrip~35216
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

29721002	29721002-4	73SB13A-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721003	29721003-2	73SB17-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:00 AM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721003	29721003-3	73SB17-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:00 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721003	29721003-4	73SB17-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:00 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721004	29721004-2	73SB21-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:45 AM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721004	29721004-3	73SB21-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:45 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721004	29721004-4	73SB21-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:45 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721005	29721005-2	73SB16-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:15 AM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721005	29721005-3	73SB16-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:15 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721005	29721005-4	73SB16-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:15 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721006	29721006-2	73SB20-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:45 AM	01-May-2008

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410671

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721006	29721006-3	73SB20-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:45 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721006	29721006-4	73SB20-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:45 AM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721007	29721007-2	73SB24-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 12:00 PM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721007	29721007-3	73SB24-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 12:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721007	29721007-4	73SB24-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 12:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721008	29721008-2	73SB15-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:00 PM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721008	29721008-3	73SB15-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721008	29721008-4	73SB15-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721009	29721009-2	73SB19-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:15 PM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721009	29721009-3	73SB19-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:15 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410871

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 098594
Queue: LLV	Customer: Program 38

29721009	29721009-4	73SB19-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:15 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721010	29721010-2	73SB22-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 02:00 PM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721010	29721010-3	73SB22-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 02:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721010	29721010-4	73SB22-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 02:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721011	29721011-2	73SB23-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:30 PM	01-May-2008

ACodes:
LLV2418 : Volatiles Organics (App IX)

29721011	29721011-3	73SB23-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:30 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721011	29721011-4	73SB23-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:30 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721012	29721012-3	73ER-04	SAMPLE	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 03:00 PM	01-May-2008

ACodes:
LLV2417 : Volatiles Organics (App IX)

29721012	29721012-4	73ER-04	SAMPLE	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 03:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721012	29721012-5	73ER-04	SAMPLE	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 03:00 PM	01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721013	29721013-1	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR		01-May-2008

Chain of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410671

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0895	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

ACodes:
LLV2417 : Volatiles Organics (App IX)

29721013	29721013-2	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR.		01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

29721013	29721013-3	TRIP BLANKS	TRPBLK	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR		01-May-2008

ACodes:
LLVXCTNR : XTRACTNR, Additional Container

Total Samples: 13 Total Containers: 39

Chain Of Custody

Samples Received By: Jessica Nguyen HN 4/8/08 Date Received: 4/3/08 via Fed Ex HN 4/8/08
Document Reviewed By: Heidi Taylor Initials: HT Date Reviewed: 4/3/08
Document Quality Review By: [signature] Date Reviewed: ↓
Samples Approved For Distribution: Yes No Initials: ZB Date Approved:

E-159

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29721001	73SB13-00	29721001-3	SO
29721001	73SB13-00	29721001-2	SO
29721002	73SB13A-00	29721002-3	SO
29721003	73SB17-00	29721003-4	SO
29721003	73SB17-00	29721003-3	SO
29721004	73SB21-00	29721004-2	SO
29721005	73SB16-00	29721005-2	SO
29721005	73SB16-00	29721005-1	SO
29721006	73SB20-00	29721006-3	SO
29721007	73SB24-00	29721007-4	SO
29721007	73SB24-00	29721007-3	SO
29721008	73SB15-00	29721008-3	SO
29721009	73SB19-00	29721009-2	SO
29721009	73SB19-00	29721009-4	SO
29721010	73SB22-00	29721010-4	SO
29721011	73SB23-00	29721011-3	SO
29721011	73SB23-00	29721011-2	SO
29721012	73ER-04	29721012-1	GW
29721013	TRIP BLANKS	29721013-3	GW
29721013	TRIP BLANKS	29721013-2	GW

HSN	Customer Sample Id	Container Id	Mx
29721001	73SB13-00	29721001-4	SO
29721002	73SB13A-00	29721002-2	SO
29721002	73SB13A-00	29721002-4	SO
29721003	73SB17-00	29721003-2	SO
29721004	73SB21-00	29721004-4	SO
29721004	73SB21-00	29721004-3	SO
29721005	73SB16-00	29721005-3	SO
29721006	73SB20-00	29721006-2	SO
29721006	73SB20-00	29721006-4	SO
29721007	73SB24-00	29721007-2	SO
29721008	73SB15-00	29721008-2	SO
29721008	73SB15-00	29721008-4	SO
29721009	73SB19-00	29721009-3	SO
29721010	73SB22-00	29721010-3	SO
29721010	73SB22-00	29721010-2	SO
29721011	73SB23-00	29721011-4	SO
29721012	73ER-04	29721012-3	GW
29721012	73ER-04	29721012-5	GW
29721013	TRIP BLANKS	29721013-1	GW

Chain of Custody

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip-35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

Total Samples: 13	Total Containers: 39

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410871

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLV	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29721001		3		
29721002		3		
29721003		3		
29721004		3		
29721005		3		
29721006		3		
29721007		3		
29721008		3		
29721009		3		
29721010		3		
29721011		3		
29721012		3		
29721013		3		

Total Samples: 13 Total Containers: 39

Chain of Custody

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

LANC

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	+SVOC LL PAH	+Pest O Pest	Metals Total	Metals Dis	RCRA M	Benz		
73SB13-00	2APR08	0930	✓		SO	5	3			1	1						
73SB13A-00		0930	✓		SO	5	3			1	1						
73SB17-00		1000	✓		SO	5	3			1	1						
73SB21-00		1045	✓		SO	5	3			1	1						
73SB16-00		1115	✓		SO	5	3			1	1						
73SB20-00		1145	✓		SO	5	3			1	1						
73SB24-00		1200	✓		SO	5	3			1	1						
73SB15-00		1300	✓		SO	5	3			1	1						
73SB19-00		1315	✓		SO	5	3			1	1						
73SB22-00		1400	✓		SO	5	3			1	1						
73SB23-00		1330	✓		SO	5	3			1	1						
73ER-04	✓	1500	✓		W	7	3		1	1	1	1	bottle form				
NOTHING FOLLOWS																	

Total Number of Containers: 62

SHIPMENT METHOD - FEDEX

Date Shipped - 2 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[illegible] to USAC	2APR08/1300	[illegible]	4 Apr 0945	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: USA OHPPM

Date of Receipt: 4-3-08

Time of Receipt: 0845

Source Code: 50-1

Unpacker Emp. No.: 2218

Shipping Container Sealed: Y / N

Custody Seal Present: Y / N

Custody Seal Intact: Y / N / NA

Package: Chilled / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	10559	9.6-11.1	ST	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: ~~0~~ 3 KAU/885, 4/3/08

Paperwork Discrepancy/Unpacking Problems:

Did not receive bottle for metals for 73ER-04. KAU/885, 4/3/08
Did receive 3 blank vials for VOCs, not on COC.
Notified Heidi Taylor by phone call + fax on 4/3/08. KAU/885

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	4-3-08	1039	Unpacking [signature]
[signature]	4-3-08	2053	Place in Storage or Entry
			Entry
			Entry

2174.02

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084761. Samples arrived at the laboratory on Thursday, April 03, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322627
29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322628
29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322629
29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322630
29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322631
29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322632
29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322633
29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322634
29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322635
29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322636
29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322637
29707012 NAPR-Cp Moscrip #35215-0995 Jones Water	5322638
29707013 NAPR-Cp Moscrip #35215-0995 Jones Water	5322639

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0018

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

0019

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322627 SW Group No. 1084761

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00701 SDG#: PUG07-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	2.9		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.13
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.13
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.13
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.13
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.13
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.13
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.13
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.13
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.13
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.13
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.13
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.13
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.13
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.13
05460	Benzene	71-43-2	3.	J	6.	0.6	ug/kg	1.13
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.13
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.13
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.13
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.13
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.13
05466	Toluene	108-88-3	2.	J	6.	1.	ug/kg	1.13
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.13
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.13
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.13
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.13
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.13
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.13
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.13
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.13
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.13
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.13
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.13
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.13
06293	Acetone	67-64-1	110.		23.	8.	ug/kg	1.13
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.13

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
Accredited by the PA DEP
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322627 SW Group No. 1084761

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00701 SDG#: PUG07-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	21.	12.	5.	ug/kg	1.13
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.13
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.13
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	3.	ug/kg	1.13
06300	2-Hexanone	591-78-6	N.D.	12.	3.	ug/kg	1.13
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.13
07586	Acrolein	107-02-8	N.D.	120.	23.	ug/kg	1.13
07587	Acrylonitrile	107-13-1	N.D.	23.	5.	ug/kg	1.13
07704	Methyl Iodide	74-88-4	N.D.	6.	3.	ug/kg	1.13
07705	Acetonitrile	75-05-8	N.D.	120.	29.	ug/kg	1.13
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.13
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.13
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.13
07709	Propionitrile	107-12-0	N.D.	120.	35.	ug/kg	1.13
07710	Methacrylonitrile	126-98-7	N.D.	58.	6.	ug/kg	1.13
07711	Isobutyl Alcohol	78-83-1	N.D.	290.	120.	ug/kg	1.13
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.13
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.13
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	58.	12.	ug/kg	1.13
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.13

The GC/MS volatile analysis was performed using the 193B bottle code.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322627 SW Group No. 1084761

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00701 SDG#: PUG07-01

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 07:50	Holly Berry	1.13
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 08:59	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 08:59	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 08:58	Larry E Bevins	n.a.

6022

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322628 SW Group No. 1084761

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

07002 SDG#: PUG07-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	5.2		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	1.02
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	1.02
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	1.02
05446	Bromomethane	74-83-9	N.D.		5.	2.	ug/kg	1.02
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	1.02
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	1.02
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	1.02
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	1.02
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	1.02
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	1.02
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	1.02
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	1.02
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	1.02
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	1.02
05460	Benzene	71-43-2	1.	J	5.	0.5	ug/kg	1.02
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	1.02
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	1.02
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	1.02
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	1.02
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	1.02
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	1.02
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	1.02
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	1.02
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	1.02
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	1.02
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	1.02
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	1.02
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	1.02
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	1.02
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	1.02
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	1.02
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	1.02
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	1.02
06293	Acetone	67-64-1	48.		22.	8.	ug/kg	1.02
06294	Carbon Disulfide	75-15-0	N.D.		5.	1.	ug/kg	1.02

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322628 SW Group No. 1084761

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

07002 SDG#: PUG07-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	7.	J	11.	4.	ug/kg	1.02
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.		5.	1.	ug/kg	1.02
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.		5.	1.	ug/kg	1.02
06299	4-Methyl-2-pentanone	108-10-1	N.D.		11.	3.	ug/kg	1.02
06300	2-Hexanone	591-78-6	N.D.		11.	3.	ug/kg	1.02
06301	Xylene (Total)	1330-20-7	N.D.		5.	1.	ug/kg	1.02
07586	Acrolein	107-02-8	N.D.		110.	22.	ug/kg	1.02
07587	Acrylonitrile	107-13-1	N.D.		22.	4.	ug/kg	1.02
07704	Methyl Iodide	74-88-4	N.D.		5.	3.	ug/kg	1.02
07705	Acetonitrile	75-05-8	N.D.		110.	27.	ug/kg	1.02
07706	Allyl Chloride	107-05-1	N.D.		5.	1.	ug/kg	1.02
07707	Vinyl Acetate	108-05-4	N.D.		11.	2.	ug/kg	1.02
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.		5.	1.	ug/kg	1.02
07709	Propionitrile	107-12-0	N.D.		110.	32.	ug/kg	1.02
07710	Methacrylonitrile	126-98-7	N.D.		54.	5.	ug/kg	1.02
07711	Isobutyl Alcohol	78-83-1	N.D.		270.	110.	ug/kg	1.02
07712	Methyl Methacrylate	80-62-6	N.D.		5.	1.	ug/kg	1.02
07714	Ethyl Methacrylate	97-63-2	N.D.		5.	1.	ug/kg	1.02
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		54.	11.	ug/kg	1.02
07716	Pentachloroethane	76-01-7	N.D.		5.	1.	ug/kg	1.02

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 08:13	Holly Berry	1.02
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:01	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:00	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:00	Larry E Bevins	n.a.

8824

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
7425 Newl Hall Drive
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322629 SW Group No. 1084761

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00703 SDG#: PUG07-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07601	Moisture (Re-Entry)	n.a.	4.4		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.14
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.14
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.14
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.14
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.14
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.14
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.14
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.14
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.14
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.14
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.14
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.14
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.14
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.14
05460	Benzene	71-43-2	2.	J	6.	0.6	ug/kg	1.14
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.14
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.14
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.14
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.14
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.14
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.14
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.14
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.14
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.14
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.14
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.14
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.14
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.14
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.14
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.14
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.14
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.14
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.14
06293	Acetone	67-64-1	67.		24.	8.	ug/kg	1.14
06294	Carbon Disulfide	75-15-0	4.	J	6.	1.	ug/kg	1.14

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322629 SW Group No. 1084761

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00703 SDG#: PUG07-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.14
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.14
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.14
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.14
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.14
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.14
07586	Acrolein	107-02-8	N.D.	120.	24.	ug/kg	1.14
07587	Acrylonitrile	107-13-1	N.D.	24.	5.	ug/kg	1.14
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.14
07705	Acetonitrile	75-05-8	N.D.	120.	30.	ug/kg	1.14
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.14
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.14
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.14
07709	Propionitrile	107-12-0	N.D.	120.	36.	ug/kg	1.14
07710	Methacrylonitrile	126-98-7	N.D.	60.	6.	ug/kg	1.14
07711	Isobutyl Alcohol	78-83-1	N.D.	300.	120.	ug/kg	1.14
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.14
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.14
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	60.	12.	ug/kg	1.14
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.14

The GC/MS volatile analysis was performed using the 193B bottle code.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322629 SW Group No. 1084761

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00703 SDG#: PUG07-03

07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 08:35	Holly Berry	1.14
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:03	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:03	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:02	Larry E Bevins	n.a.

00022

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322630 SW Group No. 1084761

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00704 SDG#: PUG07-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	4.8		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	3.	ug/kg	1.2
05444	Chloromethane	74-87-3	N.D.		6.	3.	ug/kg	1.2
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.2
05446	Bromomethane	74-83-9	N.D.		6.	3.	ug/kg	1.2
05447	Chloroethane	75-00-3	N.D.		6.	3.	ug/kg	1.2
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	3.	ug/kg	1.2
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.2
05450	Methylene Chloride	75-09-2	3.	J	6.	3.	ug/kg	1.2
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.2
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.2
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.2
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.2
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.2
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.2
05460	Benzene	71-43-2	1.	J	6.	0.6	ug/kg	1.2
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.2
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.2
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.2
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.2
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.2
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.2
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.2
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.2
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.2
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.2
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.2
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.2
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.2
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.2
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.2
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.2
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.2
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	3.	ug/kg	1.2
06293	Acetone	67-64-1	41.		25.	9.	ug/kg	1.2
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.2

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322630 SW Group No. 1084761

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00704 SDG#: PUG07-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	13.	5.	ug/kg	1.2
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.2
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.2
06299	4-Methyl-2-pentanone	108-10-1	N.D.	13.	4.	ug/kg	1.2
06300	2-Hexanone	591-78-6	N.D.	13.	4.	ug/kg	1.2
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.2
07586	Acrolein	107-02-8	N.D.	130.	25.	ug/kg	1.2
07587	Acrylonitrile	107-13-1	N.D.	25.	5.	ug/kg	1.2
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.2
07705	Acetonitrile	75-05-8	N.D.	130.	32.	ug/kg	1.2
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.2
07707	Vinyl Acetate	108-05-4	N.D.	13.	3.	ug/kg	1.2
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.2
07709	Propionitrile	107-12-0	N.D.	130.	38.	ug/kg	1.2
07710	Methacrylonitrile	126-98-7	N.D.	63.	6.	ug/kg	1.2
07711	Isobutyl Alcohol	78-83-1	N.D.	320.	130.	ug/kg	1.2
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.2
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.2
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	63.	13.	ug/kg	1.2
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.2

The GC/MS volatile analysis was performed using the 193A bottle code.

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 08:58	Holly Berry 0829	1.2
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:05	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322630 SW Group No. 1084761

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00704 SDG#: PUG07-04

08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:04	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:05	Larry E Bevins	n.a.

0030

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322631 SW Group No. 1084761

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00705 SDG#: PUG07-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	6.0		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.11
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.11
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.11
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.11
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.11
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.11
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.11
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.11
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.11
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.11
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.11
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.11
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.11
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.11
05460	Benzene	71-43-2	0.9	J	6.	0.6	ug/kg	1.11
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.11
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.11
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.11
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.11
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.11
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.11
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.11
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.11
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.11
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.11
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.11
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.11
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.11
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.11
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.11
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.11
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.11
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.11
06293	Acetone	67-64-1	30.		24.	8.	ug/kg	1.11
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.11

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322631 SW Group No. 1084761

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00705 SDG#: PUG07-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.11
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.11
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.11
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.11
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.11
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.11
07586	Acrolein	107-02-8	N.D.	120.	24.	ug/kg	1.11
07587	Acrylonitrile	107-13-1	N.D.	24.	5.	ug/kg	1.11
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.11
07705	Acetonitrile	75-05-8	N.D.	120.	29.	ug/kg	1.11
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.11
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.11
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.11
07709	Propionitrile	107-12-0	N.D.	120.	35.	ug/kg	1.11
07710	Methacrylonitrile	126-98-7	N.D.	59.	6.	ug/kg	1.11
07711	Isobutyl Alcohol	78-83-1	N.D.	290.	120.	ug/kg	1.11
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.11
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.11
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	59.	12.	ug/kg	1.11
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.11

The GC/MS volatile analysis was performed using the 193A bottle code.

The GC/MS volatile internal standard peak areas were outside of the QC limits for the unspiked, matrix spike, and matrix spike duplicate analyses. This indicates a significant matrix effect.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 09:21	Holly Berry	1.11
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:12	Larry E Bevins	n.a.
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	2	04/04/2008 09:13	Larry E Bevins	n.a.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322631 SW Group No. 1084761

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00705 SDG#: PUG07-05BKG

08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:09	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:10	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	3	04/04/2008 09:11	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	4	04/04/2008 09:11	Larry E Bevins	n.a.

0033

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322632 SW Group No. 1084761

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00706 SDG#: PUG07-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	6.5		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.1
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.1
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.1
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.1
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.1
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.1
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.1
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.1
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.1
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.1
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.1
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.1
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.1
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.1
05460	Benzene	71-43-2	1.	J	6.	0.6	ug/kg	1.1
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.1
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.1
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.1
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.1
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.1
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.1
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.1
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.1
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.1
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.1
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.1
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.1
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.1
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.1
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.1
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.1
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.1
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.1
06293	Acetone	67-64-1	19.	J	24.	8.	ug/kg	1.1
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322632 SW Group No. 1084761

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:45

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00706 SDG#: PUG07-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.1
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.1
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.1
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.1
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.1
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.1
07586	Acrolein	107-02-8	N.D.	120.	24.	ug/kg	1.1
07587	Acrylonitrile	107-13-1	N.D.	24.	5.	ug/kg	1.1
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.1
07705	Acetonitrile	75-05-8	N.D.	120.	29.	ug/kg	1.1
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.1
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.1
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.1
07709	Propionitrile	107-12-0	N.D.	120.	35.	ug/kg	1.1
07710	Methacrylonitrile	126-98-7	N.D.	59.	6.	ug/kg	1.1
07711	Isobutyl Alcohol	78-83-1	N.D.	290.	120.	ug/kg	1.1
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.1
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.1
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	59.	12.	ug/kg	1.1
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.1

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

8835

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322632 SW Group No. 1084761

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00706 SDG#: PUG07-06

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 10:29	Holly Berry	1.1
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:16	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:14	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:15	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	3	04/04/2008 09:15	Larry E Bevins	n.a.

0036

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
7415 Walnut Hill Lane
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322633 SW Group No. 1084761

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00707 SDG#: PUG07-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	6.5		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.12
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.12
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.12
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.12
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.12
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.12
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.12
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.12
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.12
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.12
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.12
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.12
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.12
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.12
05460	Benzene	71-43-2	2.	J	6.	0.6	ug/kg	1.12
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.12
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.12
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.12
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.12
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.12
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.12
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.12
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.12
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.12
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.12
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.12
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.12
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.12
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.12
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.12
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.12
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.12
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.12
06293	Acetone	67-64-1	67.		24.	8.	ug/kg	1.12
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.12

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322633 SW Group No. 1084761

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00707 SDG#: PUG07-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.12
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.12
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.12
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.12
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.12
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.12
07586	Acrolein	107-02-8	N.D.	120.	24.	ug/kg	1.12
07587	Acrylonitrile	107-13-1	N.D.	24.	5.	ug/kg	1.12
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.12
07705	Acetonitrile	75-05-8	N.D.	120.	30.	ug/kg	1.12
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.12
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.12
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.12
07709	Propionitrile	107-12-0	N.D.	120.	36.	ug/kg	1.12
07710	Methacrylonitrile	126-98-7	N.D.	60.	6.	ug/kg	1.12
07711	Isobutyl Alcohol	78-83-1	N.D.	300.	120.	ug/kg	1.12
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.12
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.12
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	60.	12.	ug/kg	1.12
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.12

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

0038

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322633 SW Group No. 1084761

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00707 SDG#: PUG07-07

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 10:52	Holly Berry	1.12
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:18	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:17	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:17	Larry E Bevins	n.a.

8639

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322634 SW Group No. 1084761

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

07008 SDG#: PUG07-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	6.1		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.09
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.09
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.09
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.09
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.09
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.09
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.09
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.09
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.09
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.09
05454	cis-1,2-Dichloroethane	156-59-2	N.D.		6.	1.	ug/kg	1.09
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.09
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.09
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.09
05460	Benzene	71-43-2	2.	J	6.	0.6	ug/kg	1.09
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.09
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.09
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.09
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.09
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.09
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.09
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.09
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.09
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.09
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.09
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.09
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.09
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.09
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.09
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.09
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.09
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.09
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.09
06293	Acetone	67-64-1	59.		23.	8.	ug/kg	1.09
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.09

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322634 SW Group No. 1084761

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

07008 SDG#: PUG07-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.09
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.09
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.09
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	3.	ug/kg	1.09
06300	2-Hexanone	591-78-6	N.D.	12.	3.	ug/kg	1.09
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.09
07586	Acrolein	107-02-8	N.D.	120.	23.	ug/kg	1.09
07587	Acrylonitrile	107-13-1	N.D.	23.	5.	ug/kg	1.09
07704	Methyl Iodide	74-88-4	N.D.	6.	3.	ug/kg	1.09
07705	Acetonitrile	75-05-8	N.D.	120.	29.	ug/kg	1.09
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.09
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.09
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.09
07709	Propionitrile	107-12-0	N.D.	120.	35.	ug/kg	1.09
07710	Methacrylonitrile	126-98-7	N.D.	58.	6.	ug/kg	1.09
07711	Isobutyl Alcohol	78-83-1	N.D.	290.	120.	ug/kg	1.09
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.09
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.09
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	58.	12.	ug/kg	1.09
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.09

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

0041

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322634 SW Group No. 1084761

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

07008 SDG#: PUG07-08

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 11:14	Holly Berry	1.09
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:20	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:19	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:19	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	3	04/04/2008 09:19	Larry E Bevins	n.a.

8842

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322635 SW Group No. 1084761

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00709 SDG#: PUG07-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	8.6		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		5.	2.	ug/kg	0.95
05444	Chloromethane	74-87-3	N.D.		5.	2.	ug/kg	0.95
05445	Vinyl Chloride	75-01-4	N.D.		5.	1.	ug/kg	0.95
05446	Bromomethane	74-83-9	4.	J	5.	2.	ug/kg	0.95
05447	Chloroethane	75-00-3	N.D.		5.	2.	ug/kg	0.95
05448	Trichlorofluoromethane	75-69-4	N.D.		5.	2.	ug/kg	0.95
05449	1,1-Dichloroethene	75-35-4	N.D.		5.	1.	ug/kg	0.95
05450	Methylene Chloride	75-09-2	N.D.		5.	2.	ug/kg	0.95
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		5.	1.	ug/kg	0.95
05452	1,1-Dichloroethane	75-34-3	N.D.		5.	1.	ug/kg	0.95
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		5.	1.	ug/kg	0.95
05455	Chloroform	67-66-3	N.D.		5.	1.	ug/kg	0.95
05457	1,1,1-Trichloroethane	71-55-6	N.D.		5.	1.	ug/kg	0.95
05458	Carbon Tetrachloride	56-23-5	N.D.		5.	1.	ug/kg	0.95
05460	Benzene	71-43-2	N.D.		5.	0.5	ug/kg	0.95
05461	1,2-Dichloroethane	107-06-2	N.D.		5.	1.	ug/kg	0.95
05462	Trichloroethene	79-01-6	N.D.		5.	1.	ug/kg	0.95
05463	1,2-Dichloropropane	78-87-5	N.D.		5.	1.	ug/kg	0.95
05464	Dibromomethane	74-95-3	N.D.		5.	1.	ug/kg	0.95
05465	Bromodichloromethane	75-27-4	N.D.		5.	1.	ug/kg	0.95
05466	Toluene	108-88-3	N.D.		5.	1.	ug/kg	0.95
05467	1,1,2-Trichloroethane	79-00-5	N.D.		5.	1.	ug/kg	0.95
05468	Tetrachloroethene	127-18-4	N.D.		5.	1.	ug/kg	0.95
05470	Dibromochloromethane	124-48-1	N.D.		5.	1.	ug/kg	0.95
05471	1,2-Dibromoethane	106-93-4	N.D.		5.	1.	ug/kg	0.95
05472	Chlorobenzene	108-90-7	N.D.		5.	1.	ug/kg	0.95
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		5.	1.	ug/kg	0.95
05474	Ethylbenzene	100-41-4	N.D.		5.	1.	ug/kg	0.95
05477	Styrene	100-42-5	N.D.		5.	1.	ug/kg	0.95
05478	Bromoform	75-25-2	N.D.		5.	1.	ug/kg	0.95
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		5.	1.	ug/kg	0.95
05482	1,2,3-Trichloropropane	96-18-4	N.D.		5.	1.	ug/kg	0.95
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		5.	2.	ug/kg	0.95
06293	Acetone	67-64-1	75.		21.	7.	ug/kg	0.95
06294	Carbon Disulfide	75-15-0	N.D.		5.	1.	ug/kg	0.95

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322635 SW Group No. 1084761

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00709 SDG#: PUG07-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	10.	4.	ug/kg	0.95
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	5.	1.	ug/kg	0.95
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	5.	1.	ug/kg	0.95
06299	4-Methyl-2-pentanone	108-10-1	N.D.	10.	3.	ug/kg	0.95
06300	2-Hexanone	591-78-6	N.D.	10.	3.	ug/kg	0.95
06301	Xylene (Total)	1330-20-7	N.D.	5.	1.	ug/kg	0.95
07586	Acrolein	107-02-8	N.D.	100.	21.	ug/kg	0.95
07587	Acrylonitrile	107-13-1	N.D.	21.	4.	ug/kg	0.95
07704	Methyl Iodide	74-88-4	N.D.	5.	3.	ug/kg	0.95
07705	Acetonitrile	75-05-8	N.D.	100.	26.	ug/kg	0.95
07706	Allyl Chloride	107-05-1	N.D.	5.	1.	ug/kg	0.95
07707	Vinyl Acetate	108-05-4	N.D.	10.	2.	ug/kg	0.95
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	5.	1.	ug/kg	0.95
07709	Propionitrile	107-12-0	N.D.	100.	31.	ug/kg	0.95
07710	Methacrylonitrile	126-98-7	N.D.	52.	5.	ug/kg	0.95
07711	Isobutyl Alcohol	78-83-1	N.D.	260.	100.	ug/kg	0.95
07712	Methyl Methacrylate	80-62-6	N.D.	5.	1.	ug/kg	0.95
07714	Ethyl Methacrylate	97-63-2	N.D.	5.	1.	ug/kg	0.95
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	52.	10.	ug/kg	0.95
07716	Pentachloroethane	76-01-7	N.D.	5.	1.	ug/kg	0.95

The GC/MS volatile analysis was performed using the 193A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 11:37	Holly Berry	0.95
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:22	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:21	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:21	Larry E Bevins	n.a.

0044

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322636 SW Group No. 1084761

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00710 SDG#: PUG07-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	4.7		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	1.17
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	1.17
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	1.17
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	1.17
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	1.17
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	1.17
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	1.17
05450	Methylene Chloride	75-09-2	N.D.		6.	2.	ug/kg	1.17
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	1.17
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	1.17
05454	cis-1,2-Dichloroethene	156-59-2	N.D.		6.	1.	ug/kg	1.17
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	1.17
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	1.17
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	1.17
05460	Benzene	71-43-2	0.9	J	6.	0.6	ug/kg	1.17
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	1.17
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	1.17
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	1.17
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	1.17
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	1.17
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	1.17
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	1.17
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	1.17
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	1.17
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	1.17
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	1.17
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	1.17
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	1.17
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	1.17
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	1.17
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	1.17
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	1.17
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	1.17
06293	Acetone	67-64-1	44.		25.	9.	ug/kg	1.17
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	1.17

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322636 SW Group No. 1084761

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00710 SDG#: PUG07-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	N.D.	12.	5.	ug/kg	1.17
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	1.17
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	1.17
06299	4-Methyl-2-pentanone	108-10-1	N.D.	12.	4.	ug/kg	1.17
06300	2-Hexanone	591-78-6	N.D.	12.	4.	ug/kg	1.17
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	1.17
07586	Acrolein	107-02-8	N.D.	120.	25.	ug/kg	1.17
07587	Acrylonitrile	107-13-1	N.D.	25.	5.	ug/kg	1.17
07704	Methyl Iodide	74-88-4	N.D.	6.	4.	ug/kg	1.17
07705	Acetonitrile	75-05-8	N.D.	120.	31.	ug/kg	1.17
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	1.17
07707	Vinyl Acetate	108-05-4	N.D.	12.	2.	ug/kg	1.17
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	1.17
07709	Propionitrile	107-12-0	N.D.	120.	37.	ug/kg	1.17
07710	Methacrylonitrile	126-98-7	N.D.	61.	6.	ug/kg	1.17
07711	Isobutyl Alcohol	78-83-1	N.D.	310.	120.	ug/kg	1.17
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	1.17
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	1.17
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	61.	12.	ug/kg	1.17
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	1.17

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low. This compound was detected at a concentration greater than 50% of the MDL but less than the MDL.

The GC/MS volatile analysis was performed using the 193A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322636 SW Group No. 1084761

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00710 SDG#: PUG07-10

07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 12:00	Holly Berry	1.17
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:24	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:23	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:23	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	3	04/04/2008 09:23	Larry E Bevins	n.a.

0847

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322637 SW Group No. 1084761

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00711 SDG#: PUG07-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	11.5		0.50	0.50	%	1
07720	Appendix IX by 8260 - soil							
05443	Dichlorodifluoromethane	75-71-8	N.D.		6.	2.	ug/kg	0.99
05444	Chloromethane	74-87-3	N.D.		6.	2.	ug/kg	0.99
05445	Vinyl Chloride	75-01-4	N.D.		6.	1.	ug/kg	0.99
05446	Bromomethane	74-83-9	N.D.		6.	2.	ug/kg	0.99
05447	Chloroethane	75-00-3	N.D.		6.	2.	ug/kg	0.99
05448	Trichlorofluoromethane	75-69-4	N.D.		6.	2.	ug/kg	0.99
05449	1,1-Dichloroethene	75-35-4	N.D.		6.	1.	ug/kg	0.99
05450	Methylene Chloride	75-09-2	4.	J	6.	2.	ug/kg	0.99
05451	trans-1,2-Dichloroethene	156-60-5	N.D.		6.	1.	ug/kg	0.99
05452	1,1-Dichloroethane	75-34-3	N.D.		6.	1.	ug/kg	0.99
05454	cis-1,2-Dichloroethane	156-59-2	N.D.		6.	1.	ug/kg	0.99
05455	Chloroform	67-66-3	N.D.		6.	1.	ug/kg	0.99
05457	1,1,1-Trichloroethane	71-55-6	N.D.		6.	1.	ug/kg	0.99
05458	Carbon Tetrachloride	56-23-5	N.D.		6.	1.	ug/kg	0.99
05460	Benzene	71-43-2	N.D.		6.	0.6	ug/kg	0.99
05461	1,2-Dichloroethane	107-06-2	N.D.		6.	1.	ug/kg	0.99
05462	Trichloroethene	79-01-6	N.D.		6.	1.	ug/kg	0.99
05463	1,2-Dichloropropane	78-87-5	N.D.		6.	1.	ug/kg	0.99
05464	Dibromomethane	74-95-3	N.D.		6.	1.	ug/kg	0.99
05465	Bromodichloromethane	75-27-4	N.D.		6.	1.	ug/kg	0.99
05466	Toluene	108-88-3	N.D.		6.	1.	ug/kg	0.99
05467	1,1,2-Trichloroethane	79-00-5	N.D.		6.	1.	ug/kg	0.99
05468	Tetrachloroethene	127-18-4	N.D.		6.	1.	ug/kg	0.99
05470	Dibromochloromethane	124-48-1	N.D.		6.	1.	ug/kg	0.99
05471	1,2-Dibromoethane	106-93-4	N.D.		6.	1.	ug/kg	0.99
05472	Chlorobenzene	108-90-7	N.D.		6.	1.	ug/kg	0.99
05473	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		6.	1.	ug/kg	0.99
05474	Ethylbenzene	100-41-4	N.D.		6.	1.	ug/kg	0.99
05477	Styrene	100-42-5	N.D.		6.	1.	ug/kg	0.99
05478	Bromoform	75-25-2	N.D.		6.	1.	ug/kg	0.99
05480	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		6.	1.	ug/kg	0.99
05482	1,2,3-Trichloropropane	96-18-4	N.D.		6.	1.	ug/kg	0.99
05495	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		6.	2.	ug/kg	0.99
06293	Acetone	67-64-1	140.		22.	8.	ug/kg	0.99
06294	Carbon Disulfide	75-15-0	N.D.		6.	1.	ug/kg	0.99

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322637 SW Group No. 1084761

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00711 SDG#: PUG07-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
06296	2-Butanone	78-93-3	12.	11.	4.	ug/kg	0.99
06297	trans-1,3-Dichloropropene	10061-02-6	N.D.	6.	1.	ug/kg	0.99
06298	cis-1,3-Dichloropropene	10061-01-5	N.D.	6.	1.	ug/kg	0.99
06299	4-Methyl-2-pentanone	108-10-1	N.D.	11.	3.	ug/kg	0.99
06300	2-Hexanone	591-78-6	N.D.	11.	3.	ug/kg	0.99
06301	Xylene (Total)	1330-20-7	N.D.	6.	1.	ug/kg	0.99
07586	Acrolein	107-02-8	N.D.	110.	22.	ug/kg	0.99
07587	Acrylonitrile	107-13-1	N.D.	22.	4.	ug/kg	0.99
07704	Methyl Iodide	74-88-4	11.	6.	3.	ug/kg	0.99
07705	Acetonitrile	75-05-8	N.D.	110.	28.	ug/kg	0.99
07706	Allyl Chloride	107-05-1	N.D.	6.	1.	ug/kg	0.99
07707	Vinyl Acetate	108-05-4	N.D.	11.	2.	ug/kg	0.99
07708	2-Chloro-1,3-butadiene	126-99-8	N.D.	6.	1.	ug/kg	0.99
07709	Propionitrile	107-12-0	N.D.	110.	34.	ug/kg	0.99
07710	Methacrylonitrile	126-98-7	N.D.	56.	6.	ug/kg	0.99
07711	Isobutyl Alcohol	78-83-1	N.D.	280.	110.	ug/kg	0.99
07712	Methyl Methacrylate	80-62-6	N.D.	6.	1.	ug/kg	0.99
07714	Ethyl Methacrylate	97-63-2	N.D.	6.	1.	ug/kg	0.99
07715	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	56.	11.	ug/kg	0.99
07716	Pentachloroethane	76-01-7	N.D.	6.	1.	ug/kg	0.99

The GC/MS volatile analysis was performed using the 193B bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/16/2008 12:22	Holly Berry	0.99
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/04/2008 09:26	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/04/2008 09:25	Larry E Bevins	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/04/2008 09:25	Larry E Bevins	n.a.

0049

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322638 WW Group No. 1084761

29707012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00712 SDG#: PUG07-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg						
02901	Dichlorodifluoromethane	75-71-8	N.D.	0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.	0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.	0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.	0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.	0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.	0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.	25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.	0.5	0.1	ug/l	1
02912	Carbon Dieulfide	75-15-0	N.D.	0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.	20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.	0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.	5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.	0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.	0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.	0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.	0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.	0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.	5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.	10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.	5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.	0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.	0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.	0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.	0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.	0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.	25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.	0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.	0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.	0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.	0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.	0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.	5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322638 WW Group No. 1084761

29707012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00712 SDG#: PUG07-12

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	0.4	J	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.		0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.		0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 17:20	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 17:20	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 17:20	Angela D Sneeringer	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322638 WW Group No. 1084761

29707012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:19
Discard: 05/09/2008

00712 SDG#: PUG07-12

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0852

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322639 WW Group No. 1084761

29707013 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:20
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00713 SDG#: PUG07-13TB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	0.3	J	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropane	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322639 WW Group No. 1084761

29707013 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# TRIP BLANKS # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected: n.a.

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:20
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00713 SDG#: PUG07-13TB*

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.		0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.		0.5	0.1	ug/l	1
02979	Styrene	100-42-5	0.1	J	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/09/2008 17:42	Angela D Sneeringer	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/09/2008 17:42	Angela D Sneeringer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/09/2008 17:42	Angela D Sneeringer	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322639 WW Group No. 1084761

29707013 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# TRIP_BLANKS # 08-P-0732
Pick-Up Order #007 Delivery Order# 01 Water

Collected: n.a.

Submitted: 04/03/2008 08:45
Reported: 04/24/2008 at 16:20
Discard: 05/09/2008

00713 SDG#: PUG07-13TB*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0055

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Volatiles by GC/MS Data

0056

Case Narrative Conformance/Nonconformance Summary

0857

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG#: PUG07

LANCASTER LABORATORIES
VOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Water	Comments
5322627	00701	X		
5322627	00701RE	X		Reinjection
5322628	07002	X		
5322629	00703	X		
5322629	00703RE	X		Reinjection
5322630	00704	X		
5322630	00704RE	X		Reinjection
5322631	00705	X		Unspiked
5322631	00705MS	X		Matrix Spike
5322631	00705MSD	X		Matrix Spike Dup
5322632	00706	X		
5322632	00706RE	X		Reinjection
5322633	00707	X		
5322633	00707RE	X		Reinjection
5322634	07008	X		
5322634	07008RE	X		Reinjection
5322635	00709	X		
5322636	00710	X		
5322636	00710RE	X		Reinjection
5322637	00711	X		
5322638	00712		X	
5322639	00713		X	Client Blank

LABORATORY SUBMITTED QC:

VBLKX49	VBLKX49	X		Method Blank
VBLKX50	VBLKX50	X		Method Blank
VBLKC73	VBLKC73		X	Method Blank

LABORATORY SUBMITTED QC (CONT):

LCSX49	LCSX49	X		Lab Control Sample
LCDX49	LCDX49	X		Lab Control Sample Dup
LCS1X49	LCS1X49	X		Lab Control Sample
LCD1X49	LCD1X49	X		Lab Control Sample Dup
LCSX50	LCSX50	X		Lab Control Sample
LCDX50	LCDX50	X		Lab Control Sample Dup
LCS1X50	LCS1X50	X		Lab Control Sample
LCD1X50	LCD1X50	X		Lab Control Sample Dup
LCSC73	LCSC73		X	Lab Control Sample
LCDC73	LCDC73		X	Lab Control Sample Dup
LCS1C73	LCS1C73		X	Lab Control Sample
LCD1C73	LCD1C73		X	Lab Control Sample Dup

SAMPLE PREPARATION:

Multiple samples are outside the weight requirement. Refer to the VOA Prep Summary form in the Preparation Log section for specific information.

No other problems were encountered during the sample preparation for the VOA fraction.

ANALYSIS:

Sample preservation was checked at the time of analysis and was determined to be approximately pH <2. According to Method 8260B, samples are to be acidified to a pH of 2 or less at the time of collection. The pH result indicates that the method preservation requirements were met.

Because the peaks for carbon disulfide could not be properly resolved in the initial calibration, the result reported may be biased low in samples 5322627, 29, 32, 33, 34, and 36. This compound was detected at a concentration greater than 50% of the MDL, but less than the MDL in samples 5322627, 32, 33, 34, and 36.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

The internal standard peak area is outside the QC limits for the initial analysis and/or the reanalysis of multiple samples, indicating a matrix effect. Please see the internal standard area summary forms in the QC summary section for specific information.

The internal standard peak area is outside QC limits for unspiked sample 5322631. The internal standard peak area is also outside QC limits for the associated MS and MSD, indicating a matrix effect.

0859

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The percent recovery is outside QC limits for multiple compounds in the MS and/or MSD. The associated LCS/LCSD meets recovery criteria, indicating a matrix effect. Please see the MS/MSD recovery form in the QC summary section for specific information.

The relative percent difference (RPD) is outside QC limits for isobutyl alcohol between the MS and MSD. The RPD limits are laboratory advisory only for this method.

All other QC is within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Dana M. Kauffman Date 4-25-08
Manager, Data Deliverables

0060

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLV)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29906*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 033-035). The QC data are reported on pages 036-065.

The reporting limits for 29906008 were raised due to sample foaming. This sample vial also contained headspace.

The QC outliers were judged to be the result of the sample matrix. These were minimal.

There were also only minimal detections of target analytes in the samples.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 Feb 06

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1086587. Samples arrived at the laboratory on Friday, April 11, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29906001 NAPR-Cp Moscrip #35310-0995 Jones Water	5333073
29906002 NAPR-Cp Moscrip #35310-0995 Jones Water	5333074
29906005 NAPR-Cp Moscrip #35310-0995 Jones Water	5333075
29906006 NAPR-Cp Moscrip #35310-0995 Jones Water	5333076
29906007 NAPR-Cp Moscrip #35310-0995 Jones Soil	5333077
29906008 NAPR-Cp Moscrip #35310-0995 Jones Water	5333078

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0016

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Christine Dulaney
Senior Specialist

0017

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333073 WW Group No. 1086587

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24001 SDG#: PUG25-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.2	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	4.4	J	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	1.4		0.5	0.4	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333073 WW Group No. 1086587

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24001 SDG#: PUG25-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	1.3		0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	0.1	J	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.		0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 18:55	Sara E Wolf	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 18:55	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 18:55	Sara E Wolf	1

0019

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333073 WW Group No. 1086587

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

24001 SDG#: PUG25-01BKG

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0020

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333074 WW Group No. 1086587

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

24002 SDG#: PUG25-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.1	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	3.8	J	5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	1.5		0.5	0.1	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333074 WW Group No. 1086587

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24002 SDG#: PUG25-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	1.3		0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.		0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.		0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.		0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.		0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.		5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.		0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.		0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.		0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.		0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	0.1	J	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.		0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.		0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.		1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.		5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.		0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3							
05308	Xylene (Total)	1330-20-7	N.D.		0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst		Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 19:38	Sara E Wolf		1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 19:38	Sara E Wolf		1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 19:38	Sara E Wolf	0822	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333074 WW Group No. 1086587

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

24002 SDG#: PUG25-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0023

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333075 WW Group No. 1086587

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

24005 SDG#: PUG25-03

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.2	ug/l	1
02903	Vinyl Chloride	75-01-4	0.3	J	0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	0.4	J	0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.4	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	N.D.		0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333075 WW Group No. 1086587

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24005 SDG#: PUG25-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	2.8	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile internal standard peak areas were outside the QC limits for both the initial analysis and the re-analysis. The values reported here are from the initial analysis of the sample. A surrogate recovery was also outside of QC limits for the re-analysis.

The GC/MS volatile analysis was performed using the 38A bottle code. The 38B bottle code was used for the re-analysis.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle 0025

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333075 WW Group No. 1086587

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24005 SDG#: PUG25-03

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/18/2008 00:04	Sara E Wolf	1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/18/2008 00:04	Sara E Wolf	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/18/2008 00:04	Sara E Wolf	1

0026

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
Lancaster Laboratories
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333076 WW Group No. 1086587

29906006 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# Trip_Blank # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:03/11/2008 13:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24006 SDG#: FUG25-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg							
02901	Dichlorodifluoromethane	75-71-8	N.D.		0.5	0.1	ug/l	1
02902	Chloromethane	74-87-3	N.D.		0.5	0.2	ug/l	1
02903	Vinyl Chloride	75-01-4	N.D.		0.5	0.1	ug/l	1
02904	Bromomethane	74-83-9	N.D.		0.5	0.1	ug/l	1
02905	Chloroethane	75-00-3	N.D.		0.5	0.1	ug/l	1
02906	Trichlorofluoromethane	75-69-4	N.D.		0.5	0.1	ug/l	1
02907	Acrolein	107-02-8	N.D.		25.	5.0	ug/l	1
02908	1,1-Dichloroethene	75-35-4	N.D.		0.5	0.1	ug/l	1
02910	Acetone	67-64-1	N.D.		5.0	3.0	ug/l	1
02911	Methyl Iodide	74-88-4	N.D.		0.5	0.1	ug/l	1
02912	Carbon Disulfide	75-15-0	N.D.		0.5	0.4	ug/l	1
02913	Acetonitrile	75-05-8	N.D.		20.	7.0	ug/l	1
02914	Allyl Chloride	107-05-1	N.D.		0.5	0.1	ug/l	1
02915	Methylene Chloride	75-09-2	0.2	J	0.5	0.2	ug/l	1
02917	Acrylonitrile	107-13-1	N.D.		5.0	1.0	ug/l	1
02918	trans-1,2-Dichloroethene	156-60-5	N.D.		0.5	0.1	ug/l	1
02921	1,1-Dichloroethane	75-34-3	N.D.		0.5	0.1	ug/l	1
02925	2-Chloro-1,3-Butadiene	126-99-8	N.D.		0.5	0.1	ug/l	1
02926	Vinyl Acetate	108-05-4	N.D.		0.5	0.2	ug/l	1
02930	cis-1,2-Dichloroethene	156-59-2	N.D.		0.5	0.1	ug/l	1
02931	2-Butanone	78-93-3	N.D.		5.0	1.0	ug/l	1
02932	Propionitrile	107-12-0	N.D.		10.	2.0	ug/l	1
02934	Methacrylonitrile	126-98-7	N.D.		5.0	1.0	ug/l	1
02936	Chloroform	67-66-3	N.D.		0.5	0.1	ug/l	1
02938	1,1,1-Trichloroethane	71-55-6	N.D.		0.5	0.1	ug/l	1
02940	Carbon Tetrachloride	56-23-5	N.D.		0.5	0.1	ug/l	1
02942	Benzene	71-43-2	N.D.		0.5	0.1	ug/l	1
02944	1,2-Dichloroethane	107-06-2	N.D.		0.5	0.1	ug/l	1
02945	Isobutyl Alcohol	78-83-1	N.D.		25.	10.	ug/l	1
02954	Trichloroethene	79-01-6	N.D.		0.5	0.1	ug/l	1
02956	1,2-Dichloropropane	78-87-5	N.D.		0.5	0.1	ug/l	1
02957	Dibromomethane	74-95-3	N.D.		0.5	0.1	ug/l	1
02958	Methyl Methacrylate	80-62-6	N.D.		0.5	0.1	ug/l	1
02960	Bromodichloromethane	75-27-4	N.D.		0.5	0.1	ug/l	1
02963	cis-1,3-Dichloropropene	10061-01-5	N.D.		0.5	0.1	ug/l	1
02964	4-Methyl-2-Pentanone	108-10-1	N.D.		5.0	1.0	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333076 WW Group No. 1086587

29906006 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# Trip_Blank # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:03/11/2008 13:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24006 SDG#: PUG25-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02965	Toluene	108-88-3	N.D.	0.5	0.1	ug/l	1
02966	1,1,2-Trichloroethane	79-00-5	N.D.	0.5	0.1	ug/l	1
02967	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.5	0.1	ug/l	1
02968	Ethyl Methacrylate	97-63-2	N.D.	0.5	0.1	ug/l	1
02969	Tetrachloroethene	127-18-4	N.D.	0.5	0.1	ug/l	1
02971	2-Hexanone	591-78-6	N.D.	5.0	1.0	ug/l	1
02972	Dibromochloromethane	124-48-1	N.D.	0.5	0.1	ug/l	1
02973	1,2-Dibromoethane	106-93-4	N.D.	0.5	0.1	ug/l	1
02974	Chlorobenzene	108-90-7	N.D.	0.5	0.1	ug/l	1
02975	1,1,1,2-Tetrachloroethane	630-20-6	N.D.	0.5	0.1	ug/l	1
02976	Ethylbenzene	100-41-4	N.D.	0.5	0.1	ug/l	1
02979	Styrene	100-42-5	N.D.	0.5	0.1	ug/l	1
02980	Bromoform	75-25-2	N.D.	0.5	0.1	ug/l	1
02982	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.5	0.1	ug/l	1
02984	1,2,3-Trichloropropane	96-18-4	N.D.	1.0	0.3	ug/l	1
02985	trans-1,4-Dichloro-2-butene	110-57-6	N.D.	5.0	1.0	ug/l	1
02991	Pentachloroethane	76-01-7	N.D.	0.5	0.2	ug/l	1
02999	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2.0	0.5	ug/l	1
02900	EPA SW846/8260 (water-25ml) #3						
05308	Xylene (Total)	1330-20-7	N.D.	0.5	0.1	ug/l	1

The GC/MS volatile analysis was performed using the 38A bottle code.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst		Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/17/2008 22:11	Sara E Wolf		1
02900	EPA SW846/8260 (water-25ml) #3	SW-846 8260B 25mL purge	1	04/17/2008 22:11	Sara E Wolf		1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/17/2008 22:11	Sara E Wolf	[illegible]	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
[illegible]
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333076 WW Group No. 1086587

29906006 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# Trip_Blank # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:03/11/2008 13:30

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

24006 SDG#: PUG25-04

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

0029

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333077 SW Group No. 1086587

29906007 NAPR-Cp Moscrip #35310-0995 Jones Soil
Field# 731DW-01 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Soil

Collected:04/10/2008 14:00

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

24007 SDG#: PUG25-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	25.6	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
07720	Appendix IX by 8260 - soil						
05460	Benzene	71-43-2	N.D.	7.	0.7	ug/kg	0.98
	The GC/MS volatile analysis was performed using the 193B bottle code.						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/16/2008 15:09	Scott W Freisher	1
07720	Appendix IX by 8260 - soil	SW-846 8260B	1	04/24/2008 04:26	Matthew S Woods	0.98
07578	GC/MS-HL Encore Prep-NC	SW-846 5035	1	04/11/2008 21:56	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	1	04/11/2008 21:56	Justin M Bowers	n.a.
08389	5035 Low-Level Prep	SW-846 5035	2	04/11/2008 21:55	Justin M Bowers	n.a.

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333078 WW Group No. 1086587

29906008 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 731DW-02 # 08-P-0732
Pick-Up Order #024 Delivery Order# 01 Water

Collected:04/10/2008 14:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 16:54
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

04008 SDG#: PUG25-06BKG*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02898	Appendix IX by 8260 25-ml purg						
02942	Benzene	71-43-2	N.D.	5.0	1.0	ug/l	10

The reporting limits for the GC/MS volatile compounds were raised due to sample foaming.

The GC/MS volatile analysis was performed from a vial with ~700 uL of headspace. Three vials were used for batch QC. However, the analyses could not be used due to sample foaming. The forth vial was used for prescreening.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02898	Appendix IX by 8260 25-ml purg	SW-846 8260B 25mL purge	1	04/18/2008 17:55	Sara E Wolf	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	04/18/2008 17:55	Sara E Wolf	10

0031

*=This limit was used in the evaluation of the final result

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Case Narrative Conformance/Nonconformance Summary

0833

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG#: PUG25

LANCASTER LABORATORIES
VOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5333073	24001		X	Unspiked
5333073	24001MS		X	Matrix Spike
5333073	24001MSD		X	Matrix Spike Dup
5333074	24002		X	
5333075	24005		X	
5333075	24005RE		X	Reinjection
5333076	24006		X	
5333077	24007	X		
5333078	04008		X	

LABORATORY SUBMITTED QC:

VBLKB19	VBLKB19	X		Method Blank
VBLKC78	VBLKC78		X	Method Blank
VBLKC79	VBLKC79		X	Method Blank
LCSB19	LCSB19	X		Lab Control Sample
LCDB19	LCDB19	X		Lab Control Sample Dup
LCS1B19	LCS1B19	X		Lab Control Sample
LCD1B19	LCD1B19	X		Lab Control Sample Dup
LCSC78	LCSC78		X	Lab Control Sample
LCS1C78	LCS1C78		X	Lab Control Sample
LCD1C78	LCD1C78		X	Lab Control Sample Dup
LCSC79	LCSC79		X	Lab Control Sample
LCDC79	LCDC79		X	Lab Control Sample Dup
LCS1C79	LCS1C79		X	Lab Control Sample
LCD1C79	LCD1C79		X	Lab Control Sample Dup

8034

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♦ Phone: 717-656-2300 ♦ Fax: 717-656-2681 ♦ http:// www.LancasterLabs.com

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SAMPLE PREPARATION:

No problems were encountered during the sample preparation for the VOA fraction.

ANALYSIS:

All samples were analyzed within method holding times.

Sample preservation was checked at the time of analysis and was determined to be approximately pH <2. According to Method 8260B, samples are to be acidified to a pH of 2 or less at the time of collection. The pH result indicates that the method preservation requirements were met.

The reporting limits for sample 5333078 are raised due to sample foaming. The analysis for sample 5333078 was performed from a vial with headspace. Three vials were used for batch QC. However, the analyses could not be used due to sample foaming. The fourth vial was used for prescreening.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL and NONCONFORMANCE SUMMARY:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

The internal standard peak area is outside QC limits for both the initial analysis and the reanalysis of sample 5333075, indicating a matrix effect.

A surrogate recovery was outside QC limits for sample 5333075RE.

The percent recovery is outside QC limits for multiple compounds in 5333073MS and/or 5333073MSD. The associated LCS meets recovery criteria, except for trichlorofluoromethane, indicating a matrix effect. Please see the MS/MSD recovery form in the QC summary section for specific information.

The relative percent difference (RPD) is outside QC limits for trans-1,4-dichloro-2-butene between 5333073MS and 5333073MSD. The RPD limits are laboratory advisory only for this method.

The percent recovery exceeded the maximum recovery limit for trichlorofluoromethane in LCSC78. Since a positive bias is observed and the compound is not detected in the associated samples, no further action is needed.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative reviewed and approved by:

Dana Kauffman Date 4-30-08
Dana M. Kauffman
Manager, Data Deliverables

0035

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: USACHPPM

Date of Receipt: 4-11-08

Time of Receipt: 0830 1110

Source Code: 58-2

Unpacker Emp. No.: 2218

Shipping Container Sealed: Y / N

Custody Seal Present: Y / N

Custody Seal Intact: Y / N / NA

Package: Chilled / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	10559 ~~10993~~	>10.0C 12.1-13.3	TB/ST	WI	Y	B	
2	✓	>10.0C 15.0-15.9	✓	✓	✓	✓	
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Notified Heidi Taylor + Jessie Brockmeyer by fax on 4/11/08.
OK to proceed per call to Heidi Taylor on 4/11/08. KAH

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	4-11-08	1339	Unpacking [signature]
[signature]	4/15/08	2300	Place in Storage or Entry
			Entry
			Entry 0815

2174.02

APRIL 2008

SVOC/PAH DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLS)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29717*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Values are reported for PAH compounds by both semivolatile and low-level PAH procedures, and LIMS values also exist for both procedures. The low level PAH values should be reported to the customer.

Please see the contractor case narratives for Appendix IX semivolatiles (report pages 0112-0114) and low-level PAHs (report pages 1117-1119).

As noted in the Appendix IX semivolatiles case narrative, a number of compounds were not recovered or their recoveries were outside of QC limits in 095WGLCS/D (the laboratory control standard duplicate). Also, water sample (29717008) was reextracted outside of the method required holding time, but comparable data was observed. Both sets of data are included in the raw data package. Other QC outliers were noted in the case narrative; these were attributed to the difficulty of analyzing some of the Appendix IX target compounds.

As noted in the low-level PAH case narrative, there were some QC outliers noted. These were not judged to significantly impact the data.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *30Apr 08*

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Reference List for SDG Number PUG03
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 003/DO# 01 NAPR-Cp Moscrip

Lab Sample Number	Lab Sample Code	Client Sample Description
5322482	00301	29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB01-00 # 08-P-0732
5322483	00302	29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB01A-00 # 08-P-0732
5322484	00303	29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB02-00 # 08-P-0732
5322485	00304	29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB03-00 # 08-P-0732
5322486	00305	29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB04-00 # 08-P-0732
5322487	00306	29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB05-00 # 08-P-0732
5322488	00307	29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB06-00 # 08-P-0732
5322489	00308	29717008 NAPR-Cp Moscrip #35208-0995 Jones Water Field# ER-01 # 08-P-0732
5322490	00310	29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB07-00 # 08-P-0732
5322491	00311	29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB08-00 # 08-P-0732
5322492	00312	29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB09-00 # 08-P-0732
5322493	00313	29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB10-00 # 08-P-0732
5322494	00314	29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB11-00 # 08-P-0732
5322495	00315	29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB12-00 # 08-P-0732
5322496	00316	29717016 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73FB-01 # 08-P-0732
5322497	00317	29717017 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73FB-02 # 08-P-0732
5322498	00318	29717018 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73ER-03 # 08-P-0732

4694
1084737
5 322482-98
PUG03

Report ID: HMA0022v1
Sequence: 410715

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 03-Apr-08 1:33:27 PM
Page: 1 of 3

Pick-Up / Work / Delivery Order
Generated by: JESSICA.BROCKMEYER

Section I - Contract/Project Information

Contract Information

Pickup Order: 003/1

DLS WO#: 29717 Batch: 1672
Contractor Code: LLS HBN: 208002
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: GCMS
Priority: Standard
# of Samples: 17

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29717
DLS Profile#: 38208

Contractor Due Date
PDF
Hardcopy 4/23/08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/3/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: Fed Ex 4/2/08 [signature] 4/8/08 (Signature of laboratory courier) (Date/Time pick-up)

Number of samples received intact: 16 (#/All) Number of samples received broken: 1 (#/Note) SVOC jar for 935801A-00 - labs able to subsample from PAH jar

Date package received by at CHPPM: Sandra K. Boots Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/24/08 (Date) 4/8/08

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLS1717	LLS2406	LLS2407	LLS2419	LLS2420
29717001	73SB01-00	SO	1		1		1
29717002	73SB01A-00	SO	1		1		1
29717003	73SB02-00	SO	1		1		1
29717004	73SB03-00	SO	1		1		1
29717005	73SB04-00	SO	1		1		1
29717006	73SB05-00	SO	1		1		1
29717007	73SB06-00	SO	1		1		1
29717008	ER-01	GW		1		1	
29717010	73SB07-00	SO	1		1		1
29717011	73SB08-00	SO	1		1		1
29717012	73SB09-00	SO	1		1		1
29717013	73SB10-00	SO	1		1		1
29717014	73SB11-00	SO	1		1		1
29717015	73SB12-00	SO	1		1		1
29717016	73FB-01	GW		1		1	
29717017	73FB-02	GW		1		1	
29717018	73ER-03	GW		1		1	

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLS2420	Semivolatile Organics (App IX)		13
	Procedure Description	EPA 8270C	
LLS2419	Semivolatile Organics (App IX)		4
	Procedure Description	EPA 8270C	
LLS2407	PAH in low level in Solids		13
	Procedure Description	EPA 8270C (SIM)	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	13
Water (Ground water)	GW	4

Report ID: HMA0022v1
Sequence: 410715

LLS2408	PAH in low level in Water	4
	Procedure Description	EPA 8270C (SIM)
LLS1717	%Moisture	13
	Procedure Description	EPA 160.3

Report ID: HRA0191C-ACodes
COC #: 410653

Run Date: 03-Apr-08 11:35
Generated By: HEIDLTAYLOR

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

SAMPLES DIRECT CONTRACT LABORATORY

Chain Of Custody (COC)

003/1
1672

This Chain of Custody is an Addendum to the Original COC submitted on 4/2/08 *to SML. This is SML's internal Chain of Custody.*

Profile: 35208 - 0995
Workorder #: 29717
Queue: LLS
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-35208
Workorder ID: 099594
Customer: Program-38 POC: David Jones
Project Number: 38
Notes: Sample 73SB01A-00 SVOC soil cont. Recvd brkn but can be done in the PAH cont. Didn't recv ER-01 OP Pest cont. but can be done from PAH cont. No temp recvd from Lancaster. Samples direct shipped. H.Taylor 4/3/08

Total Samples: 17
Total Containers: 42

DSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29717001	29717001-1	73SB01-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLS2407 : PAH in low level in Solids										
29717001	29717001-3	73SB01-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLS1717 : %Moisture; LLS2420 : Semivolatile Organics (App IX)										
29717002	29717002-1	73SB01A-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLS2407 : PAH in low level in Solids										
29717002	29717002-3	73SB01A-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLS1717 : %Moisture; LLS2420 : Semivolatile Organics (App IX)										
29717003	29717003-1	73SB02-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008
ACodes: LLS2407 : PAH in low level in Solids										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

29717003	29717003-3	73SB02-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717004	29717004-1	73SB03-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717004	29717004-3	73SB03-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717005	29717005-1	73SB04-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717005	29717005-3	73SB04-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717006	29717006-1	73SB05-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717006	29717006-3	73SB05-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717007	29717007-1	73SB06-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717007	29717007-3	73SB06-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717008	29717008-1	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29717008	29717008-2	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

Chain of Custody

Report ID: HRA0181C-Acodes
COC #: 410653

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717008	29717008-6	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLS2406 : PAH in low level in Water

29717008	29717008-7	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717010	29717010-1	73SB07-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717010	29717010-3	73SB07-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717011	29717011-1	73SB08-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717011	29717011-3	73SB08-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717012	29717012-1	73SB09-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717012	29717012-3	73SB09-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717013	29717013-1	73SB10-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717013	29717013-3	73SB10-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35208 - 0995	Description: NAPR CMS-Cp Mosorip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

29717014	29717014-1	73SB11-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717014	29717014-3	73SB11-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717015	29717015-1	73SB12-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLS2407 : PAH in low level in Solids

29717015	29717015-3	73SB12-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLS1717 : %Moisture LLS2420 : Semivolatile Organics (App IX)

29717016	29717016-2	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29717016	29717016-3	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717016	29717016-7	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLS2406 : PAH in low level in Water

29717016	29717016-8	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717017	29717017-2	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29717017	29717017-3	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717017	29717017-7	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410853

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 098594
Queue: LLS	Customer: Program 38

ACodes:
LLS2406 : PAH in low level in Water

29717017	29717017-8	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717018	29717018-2	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29717018	29717018-3	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29717018	29717018-7	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLS2406 : PAH in low level in Water

29717018	29717018-8	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

Chain Of Custody

Total Samples: 17 | Total Containers: 42

Samples Received By: Kathy Binkley MB 4/8/08 — Date Received: 4/2/08 via FedEx MB 4/8/08
Document Reviewed By: Heidi Taylor — Initials: HT — Date Reviewed: 4/3/08
Document Quality Review By: [illegible] — Date Reviewed: ✓
Samples Approved For Distribution: Yes ✓ No ___ — Initials: [illegible] — Date Approved: April 3, 2008

0845

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35208 - 0895	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29717001	73SB01-00	29717001-3	SO
29717002	73SB01A-00	29717002-1	SO
29717003	73SB02-00	29717003-1	SO
29717004	73SB03-00	29717004-1	SO
29717005	73SB04-00	29717005-3	SO
29717006	73SB05-00	29717006-4	SO
29717007	73SB06-00	29717007-1	SO
29717008	ER-01	29717008-1	GW
29717008	ER-01	29717008-6	GW
29717010	73SB07-00	29717010-1	SO
29717011	73SB08-00	29717011-3	SO
29717012	73SB09-00	29717012-1	SO
29717013	73SB10-00	29717013-1	SO
29717014	73SB11-00	29717014-1	SO
29717015	73SB12-00	29717015-1	SO
29717016	73FB-01	29717016-2	GW
29717016	73FB-01	29717016-3	GW
29717017	73FB-02	29717017-2	GW
29717017	73FB-02	29717017-7	GW
29717018	73ER-03	29717018-6	GW
29717018	73ER-03	29717018-3	GW

HSN	Customer Sample Id	Container Id	Mx
29717001	73SB01-00	29717001-1	SO
29717002	73SB01A-00	29717002-3	SO
29717003	73SB02-00	29717003-3	SO
29717004	73SB03-00	29717004-3	SO
29717005	73SB04-00	29717005-1	SO
29717006	73SB05-00	29717006-3	SO
29717007	73SB06-00	29717007-3	SO
29717008	ER-01	29717008-2	GW
29717008	ER-01	29717008-7	GW
29717010	73SB07-00	29717010-3	SO
29717011	73SB08-00	29717011-1	SO
29717012	73SB09-00	29717012-3	SO
29717013	73SB10-00	29717013-3	SO
29717014	73SB11-00	29717014-3	SO
29717015	73SB12-00	29717015-3	SO
29717016	73FB-01	29717016-8	GW
29717016	73FB-01	29717016-7	GW
29717017	73FB-02	29717017-3	GW
29717017	73FB-02	29717017-8	GW
29717018	73ER-03	29717018-2	GW
29717018	73ER-03	29717018-7	GW

Chain of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35208 - 0895	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 28717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

Total Samples: 17	Total Containers: 42

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410653

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29717001		2		
29717002		2		
29717003		2		
29717004		2		
29717005		2		
29717006		2		
29717007		2		
29717008		2		
29717010		2		
29717011		2		
29717012		2		
29717013		2		
29717014		2		
29717015		2		
29717016		2		
29717017		2		
29717018		2		

Chain of Custody

Total Samples: 17 | Total Containers: 42

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

(ANC.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals	+Metals SVOC	+Post LL PAH	Org. Pest	Metals Total	Metals Dis	RCRA M	Bonz	Org Pest	MC+Moi
							4C		4C	4C							
73SB01-00	31 MAR08	1125	✓		SO	5	3		1	1							
73SB01A-00	31 MAR08	1125	✓		SO	5	3		1	1							
73SB02-00	31 MAR08	1200	✓		SO	5	3		1	1							
73SB03-00	31 MAR08	1240	✓		SO	5	3		1	1							
73SB04-00	31 MAR08	1300	✓		SO	5	3		1	1							
73SB05-00	31 MAR08	1330	✓		SO	5	3		1	1							
73SB06-00	31 MAR08	1400	✓		SO	5	3		1	1							
ER-01	31 MAR08	1500	✓		W	8	3		2	2						1	
Trip Blanks					W	3	3										
Nothing Follows																	
						41											

<- Total Number of Containers

SHIPMENT METHOD - FedEx
Date Shipped-

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
	31 MAR 08 / 1300			
		Kathy Binkley	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify) water VOCs have HCl preservative
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

Lanc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low LL PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB 00-00		1030	✓		SO	5	3		1	1							
73SB 09-00		0900	✓		SO	5	3		1	1							
73SB 10-00		0930	✓		SO	5	3		1	1							
73SB 11-00		1130	✓		SO	5	3		1	1							
73SB 12-00		1100	✓		SO	5	3		1	1			Pb				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73PB-01		1330	✓		W	8	3		2	2	1						
73PB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	
						62	<- Total Number of Containers										

SHIPMENT METHOD - Fedex
Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1200			
		Kathy Binkley	4-2-08	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

Lanc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low PAH	Org Pest	Metal Total	Metal Dis	RCRA M	Benz		
73SB07-00	1 APR 08	0945	✓		SO	5	3		1	1							
73SB 00-00		1030	✓		SO	5											
73SB 09-00		0900	✓		SO	5											
73SB 10-00		0930	✓		SO	5											
73SB 11-00		1130	✓		SO	5											
73SB 12-00		1100	✓		SO	5											
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	

62 <- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1700			
		Kathy Binkley	4/2/08 - 0915	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: USA CHPPM (PR)

Date of Receipt: 4-2-08

Time of Receipt: 0915

Source Code: 50-1

Unpacker Emp. No.: 1255

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	10559	Range 6.5°-7.3°	ST	WI	Y	B	(vials) (2) Bags of Ice
2	10559	Range 7.9°-13.°	ST	WI	Y	B	(2) Bags of Ice
3	10559	Range 7.5°-14.3°	ST	WI	Y	B	(vials encored) (4) Bags of Ice
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: received (3) extra trip Blanks

High temps - called Kathy

Paperwork Discrepancy/Unpacking Problems:

received (1) broken jar - Cooler #1 73SB01A for SVOA + Pest

encored - went to the lab @ 10:10

ER-01 (73ER-01) on label.

73SB12-00 - (11) - missing ID (1) jar - (Sroc + PAH)

73ER01 received (3) vials & (4) bottles instead of 3 as on c.o.c. missing (1) for Pests.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	4-2-08	1515	Unpacking
[illegible]	~~4-3-08~~ 4/3/08	2053	Place in Storage or Entry
	4/3/08		Entry
			Entry

Notified Heidi Taylor of temp and issues by VM message on 4/2/08 @ 1517. KAU885

2174.02

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084737. Samples arrived at the laboratory on Wednesday, April 02, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322482
29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322483
29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322484
29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322485
29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322486
29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322487
29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322488
29717008 NAPR-Cp Moscrip #35208-0995 Jones Water	5322489
29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322490
29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322491
29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322492
29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322493
29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322494
29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322495
29717016 NAPR-Cp Moscrip #35208-0995 Jones Water	5322496
29717017 NAPR-Cp Moscrip #35208-0995 Jones Water	5322497
29717018 NAPR-Cp Moscrip #35208-0995 Jones Water	5322498

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

8823

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

0824

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322482 SW Group No. 1084737

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00301 SDG#: PUG03-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.6		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	3.2		1.7	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.4	J	1.7	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	0.92	J	1.7	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	0.63	J	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	1.6	J	1.7	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	8.0		1.7	0.70	ug/kg	1
02872	Anthracene	120-12-7	1.6	J	1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	20.		1.7	0.70	ug/kg	1
02875	Pyrene	129-00-0	15.		1.7	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	15.		1.7	0.70	ug/kg	1
02877	Chrysene	218-01-9	16.		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	30.		1.7	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	14.		1.7	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	18.		1.7	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	12.		1.7	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	3.7		1.7	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	15.		1.7	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322482 SW Group No. 1084737

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00301 SDG#: PUG03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322482 SW Group No. 1084737

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00301 SDG#: PUG03-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	83.	J	170.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	280.	J	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		170.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		170.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		170.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.		520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		170.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		170.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		170.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		170.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		170.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		170.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		170.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		170.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322482 SW Group No. 1084737

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00301 SDG#: PUG03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322482 SW Group No. 1084737

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00301 SDG#: PUG03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 04:50	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 12:00	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

8029

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322483 SW Group No. 1084737

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00302 SDG#: PUG03-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	5.3		1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	2.0		1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.2	J	1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	0.59	J	1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	7.1		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	1.3	J	1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	14.		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	10.		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	10.		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	12.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	26.		1.8	0.71	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	9.0		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	12.		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	7.3		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.2		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	8.2		1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322483 SW Group No. 1084737

29717002 NAFR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00302 SDG#: PUG03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322483 SW Group No. 1084737

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00302 SDG#: PUG03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	400.	350.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.	530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	890.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	180.	71.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322483 SW Group No. 1084737

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00302 SDG#: PUG03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0053

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322483 SW Group No. 1084737

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00302 SDG#: PUG03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 06:10	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 13:13	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0034

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322484 SW Group No. 1084737

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00303 SDG#: PUG03-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.7		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	2.4		1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.83	J	1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	16.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	1.3	J	1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	10.		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	41.		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	250.		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	270.		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	150.		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	220.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	360.		18.	7.1	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	200.		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	160.		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	69.		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	19.		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	66.		1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322484 SW Group No. 1084737

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00303 SDG#: PUG03-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	48.	J	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.		180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.		180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.		180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	39.	J	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322484 SW Group No. 1084737

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00303 SDG#: PUG03-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,200.	350.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.	530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	180.	71.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322484 SW Group No. 1084737

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00303 SDG#: PUG03-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

00030

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322484 SW Group No. 1084737

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00303 SDG#: PUG03-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 06:36	William T Parker	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 14:00	Timothy J Trees	10
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 13:37	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

00039

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322485 SW Group No. 1084737

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00304 SDG#: PUG03-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	5.9		1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	2.0		1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.4	J	1.7	0.69	ug/kg	1
02867	Acenaphthylene	208-96-8	0.69	J	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	8.0		1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	6.7		1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	100.		1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	21.		1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	170.		1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	97.		1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	77.		1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	74.		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	96.		1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	45.		1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	64.		1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	25.		1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	8.7		1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	23.		1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322485 SW Group No. 1084737

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00304 SDG#: PUG03-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322485 SW Group No. 1084737

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00304 SDG#: PUG03-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	890.	350.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	69.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322485 SW Group No. 1084737

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00304 SDG#: PUG03-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

6843

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322485 SW Group No. 1084737

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00304 SDG#: PUG03-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 07:02	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 14:01	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

~~SE-44~~.

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/05

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322486 SW Group No. 1084737

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00305 SDG#: PUG03-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	12.7		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	2.0		1.9	0.76	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.2	J	1.9	0.76	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.4	J	1.9	0.76	ug/kg	1
02867	Acenaphthylene	208-96-8	1.5	J	1.9	0.38	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.9	0.76	ug/kg	1
02870	Fluorene	86-73-7	0.83	J	1.9	0.76	ug/kg	1
02871	Phenanthrene	85-01-8	17.		1.9	0.76	ug/kg	1
02872	Anthracene	120-12-7	1.7	J	1.9	0.38	ug/kg	1
02874	Fluoranthene	206-44-0	21.		1.9	0.76	ug/kg	1
02875	Pyrene	129-00-0	16.		1.9	0.76	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	8.3		1.9	0.76	ug/kg	1
02877	Chrysene	218-01-9	12.		1.9	0.38	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	24.		1.9	0.76	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	11.		1.9	0.76	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	16.		1.9	0.76	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	7.4		1.9	0.76	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.1		1.9	0.76	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	7.7		1.9	0.76	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		380.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		190.	38.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		190.	38.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		190.	38.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		190.	38.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		190.	38.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		190.	76.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		190.	38.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		570.	190.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		190.	76.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		570.	190.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322486 SW Group No. 1084737

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00305 SDG#: PUG03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	190.	38.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	190.	76.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,900.	76.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	190.	38.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	190.	76.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	190.	38.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	190.	38.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,300.	760.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	570.	190.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	190.	76.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	190.	38.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	190.	38.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	190.	38.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	190.	38.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	190.	38.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	190.	38.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	190.	38.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	190.	38.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	190.	38.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	190.	76.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	570.	190.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	190.	38.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	190.	38.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	190.	76.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	190.	38.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	190.	38.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	190.	38.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	190.	76.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	190.	38.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	190.	38.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	190.	38.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	190.	38.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	190.	38.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	190.	76.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	190.	38.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322486 SW Group No. 1084737

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00305 SDG#: PUG03-05

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		190.	76.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		190.	38.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		190.	38.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		380.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	260.	J	380.	76.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		190.	76.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		190.	38.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		190.	38.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		190.	38.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		190.	38.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		190.	38.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		190.	38.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		190.	76.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		190.	76.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		570.	190.	ug/kg	1
04622	Aniline	62-53-3	N.D.		570.	190.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		570.	190.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		190.	38.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		190.	38.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		190.	76.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		570.	190.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		190.	76.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		190.	38.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	380.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,900.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		190.	76.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		190.	76.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		380.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		190.	38.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		190.	76.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,700.	1,900.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		190.	76.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		190.	38.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,800.	950.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		570.	190.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		570.	190.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	380.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		190.	76.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		190.	76.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322486 SW Group No. 1084737

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
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Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00305 SDG#: PUG03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	190.	76.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	190.	76.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	190.	76.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	190.	76.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	570.	190.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	190.	76.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	190.	76.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	190.	76.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	38,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	380.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	190.	38.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	190.	76.	ug/kg	1
04669	Safrole	94-59-7	N.D.	190.	76.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	190.	76.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	190.	76.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	190.	76.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	190.	76.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	760.	230.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	190.	76.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	570.	190.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	190.	76.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	190.	76.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	190.	38.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	190.	76.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	190.	38.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	190.	76.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	190.	38.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	190.	76.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322486 SW Group No. 1084737

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00305 SDG#: PUG03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Preisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 07:28	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 14:25	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0049

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322487 SW Group No. 1084737

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00306 SDG#: PUG03-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.7		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	3.9		1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.92	J	1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	4.7		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	0.64	J	1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	7.6		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	6.9		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	9.3		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	14.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	30.		1.8	0.71	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	13.		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	15.		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	8.1		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.4		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	8.1		1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322487 SW Group No. 1084737

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00306 SDG#: PUG03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322487 SW Group No. 1084737

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Submitted: 04/02/2008 09:15
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Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00306 SDG#: PUG03-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	330.	J	350.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	71.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322487 SW Group No. 1084737

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Account Number: 04694

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Rock Island Operating Location
Rock Island IL 61299-8401

00306 SDG#: PUG03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0053

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322487 SW Group No. 1084737

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

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ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00306 SDG#: PUG03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 07:55	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 14:49	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0054

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322488 SW Group No. 1084737

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00307 SDG#: PUG03-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	2.0		1.7	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.90	J	1.7	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.		1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	4.0		1.7	0.70	ug/kg	1
02872	Anthracene	120-12-7	0.60	J	1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	7.0		1.7	0.70	ug/kg	1
02875	Pyrene	129-00-0	7.1		1.7	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	5.0		1.7	0.70	ug/kg	1
02877	Chrysene	218-01-9	7.7		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	21.		1.7	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	6.9		1.7	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	9.0		1.7	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	8.9		1.7	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.4		1.7	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	12.		1.7	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322488 SW Group No. 1084737

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00307 SDG#: PUG03-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322488 SW Group No. 1084737

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00307 SDG#: PUG03-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	830.	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	70.	ug/kg	1

*=This limit was raised due to the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322488 SW Group No. 1084737

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00307 SDG#: PUG03-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0058

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322488 SW Group No. 1084737

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00307 SDG#: PUG03-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 11:22	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 15:14	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0859

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322489 WW Group No. 1084737

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00308 SDG#: PUG03-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	0.9	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	9.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	9.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	24.	9.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	0.9	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	0.9	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	28.	9.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	14.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	14.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	57.	19.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	240.	71.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	0.9	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Sample No. 5322489 WW Group No. 1084737

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00308 SDG#: PUG03-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	0.9	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	0.9	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	14.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	0.9	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	14.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	0.9	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	47.	14.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	47.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	0.9	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	0.9	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	0.9	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	0.9	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	0.9	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	0.9	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	0.9	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	0.9	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	0.9	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	0.9	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	9.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	0.9	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	0.9	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	0.9	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	57.	19.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	28.	9.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	14.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	14.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	0.9	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	0.9	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	0.9	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	0.9	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	0.9	ug/l	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322489 WW Group No. 1084737

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00308 SDG#: PUG03-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	0.9	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	0.9	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	0.9	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	0.9	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	0.9	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	0.9	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	0.9	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	0.9	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	14.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	0.9	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	0.9	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	0.9	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	0.9	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	0.9	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	0.9	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	0.9	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	0.9	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	0.9	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	0.9	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	0.9	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	0.9	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	0.9	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	3. J	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	0.9	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	0.9	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	0.9	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	0.9	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	0.9	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	0.9	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322489 WW Group No. 1084737

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00308 SDG#: PUG03-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.		5.	0.9	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.		14.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and comparable data was observed. The data reported here is from the initial extraction of the sample.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	0.014	J	0.048	0.0097	ug/l	1
08362	Naphthalene	91-20-3	0.075		0.048	0.0097	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.030	J	0.048	0.0097	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.		0.048	0.0097	ug/l	1
08366	Acenaphthene	83-32-9	0.012	J	0.048	0.0097	ug/l	1
08368	Fluorene	86-73-7	N.D.		0.048	0.0097	ug/l	1
08369	Phenanthrene	85-01-8	0.010	J	0.048	0.0097	ug/l	1
08370	Anthracene	120-12-7	N.D.		0.048	0.0097	ug/l	1
08372	Fluoranthene	206-44-0	N.D.		0.048	0.0097	ug/l	1
08373	Pyrene	129-00-0	N.D.		0.048	0.0097	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.		0.048	0.0097	ug/l	1
08375	Chrysene	218-01-9	N.D.		0.048	0.0097	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.		0.048	0.0097	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.		0.048	0.0097	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.		0.048	0.0097	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.048	0.0097	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.		0.048	0.0097	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.		0.048	0.0097	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0063

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322489 WW Group No. 1084737

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

00308 SDG#: PUG03-08

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/06/2008 16:46	Gregory J Drahovsky	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/11/2008 01:45	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/04/2008 15:20	Mitchell B Crawford	1
00813	BNA Water Extraction	SW-846 3510C	2	04/04/2008 15:30	Eric M Walker	1

0064

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322490 SW Group No. 1084737

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00310 SDG#: PUG03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	3.5	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	N.D.	1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.	1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.	1.7	0.69	ug/kg	1
02867	Acenaphthylene	208-96-8	2.1	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	N.D.	1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	8.1	1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	3.9	1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	41.	1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	26.	1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	8.4	1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	19.	1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	24.	1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	11.	1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	7.8	1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	6.8	1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.0	1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	7.8	1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.	170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322490 SW Group No. 1084737

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00310 SDG#: PUG03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02819	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322490 SW Group No. 1084737

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00310 SDG#: PUG03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	400.	350.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	860.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	69.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322490 SW Group No. 1084737

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00310 SDG#: PUG03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0068

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322490 SW Group No. 1084737

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:16
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00310 SDG#: PUG03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 10:56	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 15:38	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0069

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322491 SW Group No. 1084737

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00311 SDG#: PUG03-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	1.3	J	1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.69	ug/kg	1
02867	Acenaphthylene	208-96-8	20.		1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	1.3	J	1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	1.4	J	1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	20.		1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	27.		1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	140.		1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	100.		1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	56.		1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	100.		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	180.		1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	79.		1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	71.		1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	51.		1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	15.		1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	54.		1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322491 SW Group No. 1084737

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00311 SDG#: PUG03-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322491 SW Group No. 1084737

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00311 SDG#: PUG03-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	120.	J	350.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.		520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		170.	69.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322491 SW Group No. 1084737

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00311 SDG#: PUG03-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0873

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322491 SW Group No. 1084737

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00311 SDG#: PUG03-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soila by SIM	SW-846 8270C SIM	1	04/14/2008 11:48	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 16:02	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0874

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322492 SW Group No. 1084737

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00312 SDG#: PUG03-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	6.8		1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	24.		1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	14.		1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	1.2	J	1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	42.		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	5.3		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	47.		1.8	0.70	ug/kg	1
02875	Pyrene	129-00-0	31.		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	24.		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	24.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	32.		1.8	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	15.		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	20.		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	12.		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	4.0		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	13.		1.8	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322492 SW Group No. 1084737

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

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Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00312 SDG#: PUG03-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

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Lancaster Laboratories Sample No. 5322492 SW Group No. 1084737

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
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ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00312 SDG#: PUG03-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	540.	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	180.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	180.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	180.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.	530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	180.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	180.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	180.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	180.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	180.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	180.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	180.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	180.	70.	ug/kg	1

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00312 SDG#: PUG03-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

8878

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
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717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322492 SW Group No. 1084737

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00312 SDG#: PUG03-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 12:14	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 16:26	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0829

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322493 SW Group No. 1084737

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00313 SDG#: PUG03-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	3.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.69	ug/kg	1
02867	Acensphthylene	208-96-8	1.6	J	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	1.5	J	1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	2.1		1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	11.		1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	8.1		1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	5.1		1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	9.2		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	15.		1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	7.1		1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	5.5		1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	4.4		1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	1.2	J	1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	4.6		1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322493 SW Group No. 1084737

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00313 SDG#: PUG03-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
*03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322493 SW Group No. 1084737

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00313 SDG#: PUG03-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	480.	350.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	69.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322493 SW Group No. 1084737

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00313 SDG#: PUG03-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322493 SW Group No. 1084737

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00313 SDG#: PUG03-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 12:40	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 16:50	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0084

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322494 SW Group No. 1084737

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00314 SDG#: PUG03-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	1.1	J	1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.74	J	1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	12.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	0.79	J	1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	4.7		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	8.3		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	31.		1.8	0.70	ug/kg	1
02875	Pyrene	129-00-0	25.		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	17.		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	28.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	52.		1.8	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	17.		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	25.		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	19.		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	5.3		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	22.		1.8	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322494 SW Group No. 1084737

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00314 SDG#: PUG03-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322494 SW Group No. 1084737

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00314 SDG#: PUG03-13

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	190.	J	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322494 SW Group No. 1084737

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00314 SDG#: PUG03-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322494 SW Group No. 1084737

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00314 SDG#: PUG03-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 13:07	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 17:14	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

8089-

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322495 SW Group No. 1084737

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

00315 SDG#: PUG03-14

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	3.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	1.6	J	1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.84	J	1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.69	ug/kg	1
02867	Acenaphthylene	208-96-8	0.65	J	1.7	0.34	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	4.3		1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	0.99	J	1.7	0.34	ug/kg	1
02874	Fluoranthene	206-44-0	11.		1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	7.4		1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	8.2		1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	13.		1.7	0.34	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	21.		1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	8.8		1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	9.7		1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	7.4		1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.0		1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	8.7		1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		340.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	34.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	34.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	34.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	34.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	34.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	34.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322495 SW Group No. 1084737

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00315 SDG#: PUG03-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	34.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02819	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	34.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	34.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	34.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	34.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	34.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	34.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	34.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	34.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	34.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	34.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	34.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	34.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	34.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	34.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	34.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	34.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	34.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	34.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	34.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	34.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	34.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	34.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	34.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322495 SW Group No. 1084737

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00315 SDG#: PUG03-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	34.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	34.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	340.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	570.	340.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	34.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	34.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	34.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	34.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	34.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	34.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	34.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	34.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	34.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	340.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	340.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	34.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	34.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,400.	860.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	340.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	69.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322495 SW Group No. 1084737

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00315 SDG#: PUG03-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	34,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	340.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	34.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	34.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	34.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	34.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

8893

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322495 SW Group No. 1084737

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00315 SDG#: PUG03-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/07/2008 14:48	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 13:33	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/12/2008 17:38	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/11/2008 07:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/11/2008 23:30	Patricia L Foreman	1

0094

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322496 WW Group No. 1084737

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00316 SDG#: PUG03-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	25.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	30.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	15.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	15.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	60.	20.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	250.	75.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322496 WW Group No. 1084737

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00316 SDG#: PUG03-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	15.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	15.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	50.	15.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	50.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	60.	20.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	30.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	15.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	15.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322496 WW Group No. 1084737

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00316 SDG#: PUG03-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	15.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322496 WW Group No. 1084737

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-F-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00316 SDG#: PUG03-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	15.	5.	ug/l	1
	The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.						
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	0.012 J	0.051	0.010	ug/l	1
08362	Naphthalene	91-20-3	0.056	0.051	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.021 J	0.051	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.051	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.051	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.051	0.010	ug/l	1
08369	Phenanthrene	85-01-8	0.012 J	0.051	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.051	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.051	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.051	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.051	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.051	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.051	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.051	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.051	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.051	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.051	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.051	0.010	ug/l	1
	Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

0898

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322496 WW Group No. 1084737

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00316 SDG#: PUG03-15

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/07/2008 11:33	Joseph M Gambler	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/11/2008 02:12	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/04/2008 15:30	Eric M Walker	1
00813	BNA Water Extraction	SW-846 3510C	2	04/06/2008 09:30	Jessica Agosto	1

8899

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322497 WW Group No. 1084737

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00317 SDG#: PUG03-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	25.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	30.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	15.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	15.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	60.	20.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	250.	75.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322497 WW Group No. 1084737

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00317 SDG#: PUG03-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	15.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	15.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	50.	15.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	50.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	60.	20.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	30.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	15.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	15.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322497 WW Group No. 1084737

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00317 SDG#: PUG03-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	15.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322497 WW Group No. 1084737

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00317 SDG#: PUG03-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	15.	5.	ug/l	1
	The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.						
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.050	0.0099	ug/l	1
08362	Naphthalene	91-20-3	0.42	0.050	0.0099	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.050	0.0099	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.050	0.0099	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.050	0.0099	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.050	0.0099	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.050	0.0099	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.050	0.0099	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.050	0.0099	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.050	0.0099	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.050	0.0099	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.050	0.0099	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.050	0.0099	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.050	0.0099	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.050	0.0099	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.050	0.0099	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.050	0.0099	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.050	0.0099	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/07/2008 11:57	Joseph M Gambler	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322497 WW Group No. 1084737

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00317 SDG#: PUG03-16

08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/11/2008 02:38	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/04/2008 15:30	Eric M Walker	1
00813	BNA Water Extraction	SW-846 3510C	2	04/06/2008 09:30	Jessica Agosto	1

0104

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322498 WW Group No. 1084737

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00318 SDG#: PUG03-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	26.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	31.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	16.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	16.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	63.	21.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	260.	78.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322498 WW Group No. 1084737

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00318 SDG#: PUG03-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	16.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	16.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	52.	16.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	52.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	6.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	63.	21.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	31.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	16.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	16.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322498 WW Group No. 1084737

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00318 SDG#: PUG03-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	16.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	3. J	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322498 WW Group No. 1084737

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00318 SDG#: PUG03-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	16.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	N.D.	0.053	0.011	ug/l	1
08362	Naphthalene	91-20-3	0.062	0.053	0.011	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.015 J	0.053	0.011	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.053	0.011	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.053	0.011	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.053	0.011	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.053	0.011	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.053	0.011	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.053	0.011	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.053	0.011	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.053	0.011	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.053	0.011	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.053	0.011	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.053	0.011	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.053	0.011	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.053	0.011	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.053	0.011	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.053	0.011	ug/l	1

Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle 4188

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322498 WW Group No. 1084737

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #003 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Submitted: 04/02/2008 09:15
Reported: 04/21/2008 at 11:17
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00318 SDG#: PUG03-17*

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/07/2008 12:21	Joseph M Gambler	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/11/2008 03:04	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/04/2008 15:30	Eric M Walker	1
00813	BNA Water Extraction	SW-846 3510C	2	04/06/2008 09:30	Jessica Agosto	1

0189

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Case Narrative Conformance/Nonconformance Summary

8111

Lancaster Laboratories
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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG03

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5322482	00301	X		Unspiked
5322482	00301MS	X		Matrix Spike
5322482	00301MSD	X		Matrix Spike Dup
5322483	00302	X		
5322484	00303	X		
5322485	00304	X		
5322486	00305	X		
5322487	00306	X		
5322488	00307	X		
5322489	00308		X	
5322489RE	00308RE		X	Reextraction
5322490	00310	X		
5322491	00311	X		
5322492	00312	X		
5322493	00313	X		
5322494	00314	X		
5322495	00315	X		
5322496	00316		X	
5322497	00317		X	
5322498	00318		X	
LABORATORY SUBMITTED QC:				
SBLKWG095	SBLKWG0957		X	Method Blank
SBLKWB096	SBLKWB0967		X	Method Blank
SBLKLI101	SBLKLI1017	X		Method Blank
SBLKWC103	SBLKWC1037		X	Method Blank
095WGLCS	095WGLCS7		X	Lab Control Sample

Case Narrative (continued)
SDG: PUG03

LABORATORY SUBMITTED QC:

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
095WGLCSD	095WGLCSD7		X	Lab Control Sample Dup
096WBLCS	096WBLCS7		X	Lab Control Sample
101LILCS	101LILCS7	X		Lab Control Sample
103WCLCS	103WCLCS7		X	Lab Control Sample
103WCLCSD	103WCLCSD7		X	Lab Control Sample Dup

SAMPLE PREPARATION:

Due to insufficient sample, only 998 and 958 mls were used in the extraction of 5322497 and 5322498, respectively.

No other problems were encountered during the extraction of these samples.

ANALYSIS:

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

A number of compounds are not recovered or their recoveries are outside of QC limits in 095WGLCS/D. 5322489 was re-extracted outside of the method required holding time, and comparable data were observed. Both sets of data are included in this data package.

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Case Narrative (continued)
SDG: PUG03

The recoveries of 1,4-phenylenediamine and methapyrilene are outside of QC limits in 096WBLCS.

The recoveries of a number of compounds are outside QC limits in 101LILCS; 2-Naphthylamine was within QC limits in the MS/MSD. Per client request, no further action was taken.

A number of compounds are not recovered or their recoveries are outside of QC limits in 103WCLCS/D.

A number of compounds are not recovered or their recoveries are outside QC limits in the MS and MSD. A number of relative percent differences (RPD's) between the MS and MSD are greater than 30 percent or could not be recovered. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Audrey McClune for Date: 4-23-08
Dana M. Kauffman
Manager, Data Deliverables

0114

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Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones DIVISION/TEAM: _____

INSTALLATION: NAPR- Cp Moscrip CONTRACT LAB: Lancaster (LLS)

PROJECT NO: Program 38 LIMS W.O. NO: 29721

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

✓ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____ OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrows
DATE: 25 Apr 08

LIDS 2.0 Feb 06

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Type I Data Package
for
U.S. Army CHPPM

Contract Number 08-P-0732

SDG# PUG06

Project: PO# 006/DO# 01 NAPR-Cp Moscrip
Soil and Water Samples
Collected on 04/02/08

GROUP	SAMPLE NUMBERS
1084759	5322609-5322620

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521

Prepared by Karen R. Williams

Reviewed by

Date 4/23/08

Lancaster Laboratories
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Sample Reference List for SDG Number PUG06
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project PO# 006/DO# 01 NAPR-Cp Moscrip

Lab Sample Number	Lab Sample Code	Client Sample Description
5322609	00601	29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13-00 # 08-P-0732
5322610	00602	29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13A-00 # 08-P-0732
5322611	00603	29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB17-00 # 08-P-0732
5322612	00604	29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB21-00 # 08-P-0732
5322613	00605	29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB16-00 # 08-P-0732
5322614	00606	29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB20-00 # 08-P-0732
5322615	00607	29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB24-00 # 08-P-0732
5322616	00608	29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB15-00 # 08-P-0732
5322617	00609	29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB19-00 # 08-P-0732
5322618	00610	29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB22-00 # 08-P-0732
5322619	00611	29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB23-00 # 08-P-0732
5322620	00612	29721012 NAPR-Cp Moscrip #35215-0995 Jones Water Field# 73ER-04 # 08-P-0732

Lancaster Laboratories

Account:	04694 U.S. Army CHPPM
PO Number:	W91ZLK-08-P-0732
Invoice Number:	IV10149046
Invoice Date:	04/23/2008

CUSTOMER COPY

Please remit payment to: Lancaster Laboratories, Inc., 13865 Collections Center Drive, Chicago, IL 60693
Mail inquiries to: Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster PA, 17605-2425 (717) 656-2300.

DEFENSE FINANCE & ACCT SERVICE
U.S. ARMY CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
ROCK ISLAND OPERATING LOCATION
ROCK ISLAND IL 61299-8401

Release Number:	
Project:	PO# 006/DO# 01 NAPR-Cp
Quote Number:	208098 A
LLI Sample Group:	1084759
Reports Generated for:	

Summary of Charges	Charge
SW5322609-5322620	$6,660.00
PAYMENT DUE	$6,660.00

Detail by Sample

LLI No.	Sample Code/Description	Sample Total
SW5322609	29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 09:30 Analysis Numbers: 02858 04615	$555.00
SW5322610	29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13A-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 09:30 Analysis Numbers: 02858 04615	$555.00
SW5322611	29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB17-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 10:00 Analysis Numbers: 02858 04615	$555.00
SW5322612	29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB21-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 10:45 Analysis Numbers: 02858 04615	$555.00
SW5322613	29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB18-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 11:15 Analysis Numbers: 02858 04615	$555.00
SW5322614	29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB20-00 # 08-P-0732 Pick-Up Order #006 Delivery Order# 01 Soil Collected on 04/02/08 at 11:45 Analysis Numbers: 02858 04615	$555.00
SW5322615	29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil	$555.00

Terms: Net 30 days. A finance charge of 1.5%, per month, which is an annual percentage rate of 18%, will be added to unpaid balance.

Tax ID# 41-1882923

Please refer to the reverse side for our standard terms and conditions.

2700 Rev. 9-23-05

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

LANC

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	+SVOC LL PAH	+Mon O Pest	Moist +Hg Tot	Metals	RCRAM	Benz		
73SB13-00	2APR08	0930	✓		SO	5	3			1	1						
73SB13A-00		0930	✓		SO	5	3			1	1						
73SB17-00		1000	✓		SO	5	3			1	1						
73SB21-00		1045	✓		SO	5	3			1	1						
73SB16-00		1115	✓		SO	5	3			1	1						
73SB20-00		1145	✓		SO	5	3			1	1						
73SB24-00		1200	✓		SO	5	3			1	1						
73SB15-00		1300	✓		SO	5	3			1	1						
73SB19-00		1315	✓		SO	5	3			1	1						
73SB22-00		1400	✓		SO	5	3			1	1						
73SB23-00		1330	✓		SO	5	3			1	1						
73ER-04	✓	1500	✓		W	7	3		1	1	1	1	Bottle form [illegible] @ LI.				
NOTHING FOLLOWS																	

12 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 2 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
VSAC	2APR08/1700	[illegible]	4 Apr 08 0945	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: USA CHPPM

Date of Receipt: 4·3·08

Time of Receipt: 0845

Source Code: 50-1

Unpacker Emp. No.: 2218

Shipping Container Sealed: Y / N

Custody Seal Present: Y / N

Custody Seal Intact: Y / N / NA

Package: Chilled / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Begged Ice (B) or NA	Comments
1	10559	9.6-11.1	ST	WI	Y	B	
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: ~~0~~ 3 KAU1885, 4/3/08

Paperwork Discrepancy/Unpacking Problems:

Did not receive bottle for metals for 73ER-04. KAU1885, 4/3/08
Did receive 3 blank vials for VOCs, not on COC.
Notified Heidi Taylor by phone call + fax on 4/3/08. KAU1885

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	4·3·08	1039	Unpacking
[illegible]	4-3-08	2053	Place in Storage or ~~Entry~~
			Entry
			Entry

2174.02

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084759. Samples arrived at the laboratory on Thursday, April 03, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322609
29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322610
29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322611
29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322612
29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322613
29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322614
29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322615
29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322616
29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322617
29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322618
29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322619
29721012 NAPR-Cp Moscrip #35215-0995 Jones Water	5322620

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad Moline

Chad A. Moline
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322609 SW Group No. 1084759

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00601 SDG#: PUG06-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	2.9		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.7	0.69	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.7	0.69	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.69	ug/kg	1
02867	Acenaphthylene	208-96-8	1.9		1.7	0.34	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.69	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.69	ug/kg	1
02871	Phenanthrene	85-01-8	0.78	J	1.7	0.69	ug/kg	1
02872	Anthracene	120-12-7	1.7		1.7	0.34	ug/kg	1
02874	Fluoranthene	206-44-0	4.5		1.7	0.69	ug/kg	1
02875	Pyrene	129-00-0	4.3		1.7	0.69	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	4.1		1.7	0.69	ug/kg	1
02877	Chrysene	218-01-9	6.1		1.7	0.34	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	14.		1.7	0.69	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	4.8		1.7	0.69	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	6.6		1.7	0.69	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	4.1		1.7	0.69	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	1.2	J	1.7	0.69	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	4.8		1.7	0.69	ug/kg	1
04615	Appendix IX Semivolatilae Soil							
00176	1,4-Dioxane	123-91-1	N.D.		340.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	34.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	34.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	34.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	34.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	34.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	69.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	34.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		510.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	69.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		510.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322609 SW Group No. 1084759

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00601 SDG#: PUG06-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	34.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	69.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	69.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	34.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	69.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	34.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	34.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	690.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	510.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	69.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	34.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	34.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	34.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	34.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	34.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	34.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	34.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	34.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	34.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	69.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	510.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	34.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	34.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	69.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	34.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	34.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	34.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	69.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	34.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	34.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	34.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	34.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	34.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	69.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	34.	ug/kg	1

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322609 SW Group No. 1084759

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00601 SDG#: FUG06-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	69.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	34.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	34.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	340.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,000.	340.	69.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	69.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	34.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	34.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	34.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	34.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	34.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	34.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	69.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	69.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	510.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	510.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	510.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	34.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	34.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	69.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	510.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	69.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	34.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	340.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	69.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	69.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	340.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	34.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	69.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,100.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	69.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	34.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,400.	860.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	510.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	510.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	340.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	69.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	69.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322609 SW Group No. 1084759

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00601 SDG#: PUG06-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	69.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	69.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	69.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	69.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	510.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	69.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	69.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	69.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	34,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	340.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	34.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	69.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	69.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	69.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	69.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	69.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	69.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	690.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	69.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	510.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	69.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	69.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	34.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	69.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	34.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	69.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	34.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	69.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0021

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322609 SW Group No. 1084759

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00601 SDG#: PUG06-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 00:46	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 01:29	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

6822

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322610 SW Group No. 1084759

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

06002 SDG#: PUG06-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.2		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	3.4		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	0.81	J	1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	6.3		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	4.4		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	20.		1.8	0.70	ug/kg	1
02875	Pyrene	129-00-0	15.		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	12.		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	10.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	33.		1.8	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	10.		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	16.		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	9.0		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	2.6		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	9.6		1.8	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

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2425 New Holland Pike
PO Box 12425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322610 SW Group No. 1084759

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

06002 SDG#: PUG06-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322610 SW Group No. 1084759

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

06002 SDG#: PUG06-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	850.	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	180.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	180.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	180.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.	530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	180.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	180.	70.	ug/kg	1
04634	7,12-Dimethylbenz(a)anthracene	57-97-6	N.D.	180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	180.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	180.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	180.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	180.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	180.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	180.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322610 SW Group No. 1084759

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

06002 SDG#: PUG06-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0026

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322610 SW Group No. 1084759

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

06002 SDG#: PUG06-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 01:13	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 01:53	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0027

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Lancaster Laboratories, Inc.
0125 Nevin Hollinger Fax
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322611 SW Group No. 1084759

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00603 SDG#: PUG06-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.4		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.7	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.7	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	1.6	J	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.		1.7	0.70	ug/kg	1
02872	Anthracene	120-12-7	1.1	J	1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	2.5		1.7	0.70	ug/kg	1
02875	Pyrene	129-00-0	2.9		1.7	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	2.8		1.7	0.70	ug/kg	1
02877	Chrysene	218-01-9	3.7		1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	7.3		1.7	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	3.8		1.7	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	4.1		1.7	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	2.6		1.7	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	0.78	J	1.7	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	2.8		1.7	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322611 SW Group No. 1084759

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00603 SDG#: PUG06-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	170.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322611 SW Group No. 1084759

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00603 SDG#: PUG06-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,900.	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322611 SW Group No. 1084759

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00603 SDG#: PUG06-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	170.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	170.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	170.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	520.	170.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	170.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	100.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	170.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	170.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0031

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322611 SW Group No. 1084759

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:04
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00603 SDG#: PUG06-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 01:39	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 02:17	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

5032

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322612 SW Group No. 1084759

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00604 SDG#: PUG06-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	1.2	J	1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	0.78	J	1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	29.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	0.99	J	1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	2.0		1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	12.		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	21.		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	49.		1.8	0.70	ug/kg	1
02875	Pyrene	129-00-0	44.		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	48.		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	66.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	130.		1.8	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	51.		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	74.		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	38.		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	12.		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	40.		1.8	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322612 SW Group No. 1084759

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00604 SDG#: PUG06-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322612 SW Group No. 1084759

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00604 SDG#: PUG06-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		180.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	720.		350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	45.	J	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	880.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322612 SW Group No. 1084759

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00604 SDG#: PUG06-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	70.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	70.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	70.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	70.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	70.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory dus to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0036

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322612 SW Group No. 1084759

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00604 SDG#: PUG06-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Preisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 02:05	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 02:41	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0037

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322613 SW Group No. 1084759

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 @ 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/05/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00605 SDG#: PUG06-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	14.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	1.2	J	1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	1.1	J	1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	9.7		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	12.		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	39.		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	34.		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	34.		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	49.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	110.		1.8	0.71	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	37.		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	53.		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	35.		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	11.		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	41.		1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322613 SW Group No. 1084759

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 735B16-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FFV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00605 SDG#: FUG06-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	65.	J	180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.		180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D		180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.		180.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.		180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	48.	J	180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5332613 SW Group No. 1084759

29721005 NAPR-Cp Mosarip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FFV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00605 SDG#: PUG06-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	88-68-7	N.D.		180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	47.	J	180.	35.	ug/kg	1
03782	Chrysene	218-01-9	59.	J	180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,800.		180.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	99.	J	180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	41.	J	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	59.	J	180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	38.	J	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	46.	J	180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	71.	ug/kg	1
04634	7,12-Dimethylbenz(a)anthracene	57-97-6	N.D.		180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	890.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	71.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322613 SW Group No. 1084759

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00605 SDG#: PUG06-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0041

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322613 SW Group No. 1084759

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00605 SDG#: PUG06-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/14/2008 23:27	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/14/2008 20:38	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

~~8842.~~

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322614 SW Group No. 1084759

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00606 SDG#: PUG06-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.5	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	42.	1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	10.	1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	6.5	1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	13.	1.8	0.36	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	0.77 J	1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	5.4	1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	11.	1.8	0.36	ug/kg	1
02874	Fluoranthene	206-44-0	28.	1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	25.	1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	22.	1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	37.	1.8	0.36	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	79.	1.8	0.71	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	29.	1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	36.	1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	20.	1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	5.5	1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	20.	1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	360.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.	180.	36.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	180.	36.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	180.	36.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	180.	36.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	180.	36.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	180.	36.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322614 SW Group No. 1084759

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00606 SDG#: PUG06-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	36.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	36.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	36.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	36.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	36.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	36.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	36.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	36.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	36.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	36.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	36.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	36.	ug/kg	1
03761	Naphthalene	91-20-3	320.	180.	36.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	36.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	36.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	36.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	36.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	36.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	36.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	36.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	36.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	36.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	36.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Sample No. 5322614 SW Group No. 1084759

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00606 SDG#: PUG06-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		180.	36.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		180.	36.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		360.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,400.		360.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		180.	36.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	36.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	36.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	36.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	36.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	36.	ug/kg	1
04619	Acetophenone	98-86-2	140.	J	180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	36.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	36.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	36.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	360.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		360.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	36.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	36.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,600.	890.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	360.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	71.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322614 SW Group No. 1084759

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00606 SDG#: PUG06-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.		180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.		180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.		180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.		180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.		530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.		180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.		180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.		180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.		36,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.		360.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.		180.	36.	ug/kg	1
04668	Pyridine	110-86-1	N.D.		180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.		180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.		180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.		180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.		180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.		180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.		710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.		180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.		530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.		180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.		180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	86.	J	180.	36.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.		180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.		180.	36.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.		180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.		180.	36.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.		180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0045.

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322614 SW Group No. 1084759

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00606 SDG#: PUG06-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 02:31	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 03:05	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0847

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322615 SW Group No. 1084759

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00607 SDG#: PUG06-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	14.	J	18.	7.1	ug/kg	10
02864	2-Methylnaphthalene	91-57-6	7.6	J	18.	7.1	ug/kg	10
02865	1-Methylnaphthalene	90-12-0	7.9	J	18.	7.1	ug/kg	10
02867	Acenaphthylene	208-96-8	320.		18.	3.6	ug/kg	10
02868	Acenaphthene	83-32-9	63.		18.	7.1	ug/kg	10
02870	Fluorene	86-73-7	41.		18.	7.1	ug/kg	10
02871	Phenanthrene	85-01-8	450.		18.	7.1	ug/kg	10
02872	Anthracene	120-12-7	320.		18.	3.6	ug/kg	10
02874	Fluoranthene	206-44-0	1,500.		18.	7.1	ug/kg	10
02875	Pyrene	129-00-0	1,400.		18.	7.1	ug/kg	10
02876	Benzo(a)anthracene	56-55-3	1,800.		18.	7.1	ug/kg	10
02877	Chrysene	218-01-9	1,800.		18.	3.6	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	3,100.		18.	7.1	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	1,200.		18.	7.1	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	1,800.		18.	7.1	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	950.		18.	7.1	ug/kg	10
02882	Dibenz(a,h)anthracene	53-70-3	350.		18.	7.1	ug/kg	10
02883	Benzo(g,h,i)perylene	191-24-2	1,000.		18.	7.1	ug/kg	10
	Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the GC/MS semivolatile compounds were raised.							
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		360.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	36.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	36.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	36.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	36.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	36.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322615 SW Group No. 1084759

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00607 SDG#: PUG06-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1
01195	Pyrene	129-00-0	3,100.		180.	36.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	36.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	36.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	36.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	36.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	36.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	36.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	36.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	36.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	36.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	36.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	36.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	36.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	36.	ug/kg	1
03765	Acenaphthylene	208-96-8	720.		180.	36.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	36.	ug/kg	1
03768	Fluorene	86-73-7	37.	J	180.	36.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	36.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	36.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		180.	36.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	36.	ug/kg	1
03775	Phenanthrene	85-01-8	85.	J	180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322615 SW Group No. 1084759

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00607 SDG#: PUG06-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03776	Anthracene	120-12-7	820.	180.	36.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	1,900.	180.	36.	ug/kg	1
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	4,000.	180.	36.	ug/kg	1
03782	Chrysene	218-01-9	4,200.	180.	36.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	360.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,800.	360.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	4,800.	360.	71.	ug/kg	2
03787	Benzo(k)fluoranthene	207-08-9	1,900.	180.	36.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	3,400.	180.	36.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	1,700.	180.	36.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	560.	180.	36.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	1,800.	180.	36.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.	530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	180.	36.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	180.	36.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	180.	36.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,100.	360.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	360.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	180.	36.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	180.	36.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,600.	890.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322615 SW Group No. 1084759

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00607 SDG#: PUG06-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,100.	360.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	180.	71.	ug/kg	1
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	36,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	360.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	36.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	36.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	36.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	36.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

0051

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322615 SW Group No. 1084759

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FFV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00607 SDG#: PUG06-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
butylbenzylphthalate
bis(2-ethylhexyl)phthalate

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 19:48	Ryan P Byrne	10
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 03:29	Gregory J Drahovsky	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 11:13	Joseph M Gambler	2
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0052

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322616 SW Group No. 1084759

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00608 SDG#: PUG06-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	2.1		1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.5	J	1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.4	J	1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	61.		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	4.3		1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	5.7		1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	46.		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	62.		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	190.		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	160.		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	130.		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	190.		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	230.		8.9	3.5	ug/kg	5
02879	Benzo(k)fluoranthene	207-08-9	200.		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	190.		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	83.		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	25.		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	81.		1.8	0.71	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	71.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		530.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	71.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		530.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322616 SW Group No. 1084759

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00608 SDG#: PUG06-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	340.		180.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	71.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	71.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	71.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,100.	710.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		530.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	71.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	35.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	71.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		530.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	83.	J	180.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	71.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		180.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	71.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		180.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	60.	J	180.	35.	ug/kg	1
03776	Anthracene	120-12-7	89.	J	180.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		180.	71.	ug/kg	1
03778	Fluoranthene	206-44-0	230.		180.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322616 SW Group No. 1084759

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00608 SDG#: PUG06-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	890.		180.	71.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	220.		180.	35.	ug/kg	1
03782	Chrysene	218-01-9	310.		180.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		350.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,600.		350.	71.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	71.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	450.		180.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	160.	J	180.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	250.		180.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	160.	J	180.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	47.	J	180.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	190.		180.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	71.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	71.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		530.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		530.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		530.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	71.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		530.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	71.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	71.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	71.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		350.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	71.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,300.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	71.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,500.	890.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		530.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		530.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	71.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	71.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322616 SW Group No. 1084759

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00608 SDG#: PUG06-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	71.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	71.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	71.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	71.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	530.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	71.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	71.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	71.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	350.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	35.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	71.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	71.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	71.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	71.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	71.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	71.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	710.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	71.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	530.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	71.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	71.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	71.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	71.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	71.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0056

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322616 SW Group No. 1084759

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00608 SDG#: PUG06-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 03:24	William T Parker	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 20:41	Ryan P Byrne	5
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 03:53	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

8857

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Lancaster Laboratories Sample No. 5322617 SW Group No. 1084759

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

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Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00609 SDG#: PUG06-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.6	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	N.D.	1.8	0.73	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.	1.8	0.73	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.	1.8	0.73	ug/kg	1
02867	Acenaphthylene	208-96-8	8.2	1.8	0.36	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	1.8	0.73	ug/kg	1
02870	Fluorene	86-73-7	N.D.	1.8	0.73	ug/kg	1
02871	Phenanthrene	85-01-8	4.4	1.8	0.73	ug/kg	1
02872	Anthracene	120-12-7	7.8	1.8	0.36	ug/kg	1
02874	Fluoranthene	206-44-0	24.	1.8	0.73	ug/kg	1
02875	Pyrene	129-00-0	20.	1.8	0.73	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	17.	1.8	0.73	ug/kg	1
02877	Chrysene	218-01-9	27.	1.8	0.36	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	64.	1.8	0.73	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	22.	1.8	0.73	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	28.	1.8	0.73	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	16.	1.8	0.73	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	4.2	1.8	0.73	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	15.	1.8	0.73	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	360.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.	180.	36.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	180.	36.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	180.	36.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	180.	36.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	180.	36.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	180.	73.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	180.	36.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	550.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	180.	73.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	550.	180.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322617 SW Group No. 1084759

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00609 SDG#: PUG06-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	180.	36.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	73.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	73.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	36.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	73.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	36.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	36.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,200.	730.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	550.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	73.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	36.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	36.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	36.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	36.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	36.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	36.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	36.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	36.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	36.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	73.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	550.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	36.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	36.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	73.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	36.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	36.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	36.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	73.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	36.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	36.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	36.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	36.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	36.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	73.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

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29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

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Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00609 SDG#: PUG06-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	73.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.		180.	36.	ug/kg	1
03782	Chrysene	218-01-9	N.D.		180.	36.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		360.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,900.		360.	73.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	73.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	46.	J	180.	36.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	36.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	36.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	36.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	36.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	36.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	73.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	73.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		550.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		550.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		550.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	36.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	36.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	73.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		550.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	73.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	36.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	360.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	73.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	73.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		360.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	36.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	73.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,500.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	73.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	36.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,600.	910.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		550.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		550.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	360.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	73.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	73.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322617 SW Group No. 1084759

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00609 SDG#: PUG06-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	73.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	73.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	73.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	73.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	550.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	73.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	73.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	73.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	36,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	360.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	36.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	73.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	73.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	73.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	73.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	73.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	73.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	730.	220.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	73.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	550.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	73.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	73.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	36.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	73.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	36.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	73.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	36.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	73.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322617 SW Group No. 1084759

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00609 SDG#: PUG06-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 03:50	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 04:17	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0862

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322618 SW Group No. 1084759

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00610 SDG#: PUG06-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.7		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.7	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.7	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.7	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	0.97	J	1.7	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.7	0.70	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.7	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.		1.7	0.70	ug/kg	1
02872	Anthracene	120-12-7	0.46	J	1.7	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	0.94	J	1.7	0.70	ug/kg	1
02875	Pyrene	129-00-0	0.91	J	1.7	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	0.81	J	1.7	0.70	ug/kg	1
02877	Chrysene	218-01-9	1.1	J	1.7	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	2.2		1.7	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	0.77	J	1.7	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	1.2	J	1.7	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	0.73	J	1.7	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	N.D.		1.7	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	0.84	J	1.7	0.70	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		350.	100.	ug/kg	1
01185	Phenol	108-95-2	N.D.		170.	35.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		170.	35.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		170.	35.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		170.	35.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		170.	35.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		170.	70.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		170.	35.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		520.	170.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		170.	70.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		520.	170.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322618 SW Group No. 1084759

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00610 SDG#: PUG06-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	N.D.	170.	35.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	170.	70.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,700.	70.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	170.	35.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	170.	70.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	170.	35.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	170.	35.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,100.	700.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	520.	170.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	170.	70.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	170.	35.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	170.	35.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	170.	35.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	170.	35.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	170.	35.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	170.	35.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	170.	35.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	170.	35.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	170.	35.	ug/kg	1
03762	Hexachlorobutediene	87-68-3	N.D.	170.	70.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	520.	170.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	170.	35.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	170.	35.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	170.	70.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	170.	35.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	170.	35.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	170.	35.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	170.	70.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	170.	35.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	170.	35.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	170.	35.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	170.	35.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	170.	35.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	170.	70.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	170.	35.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Sample No. 5322618 SW Group No. 1084759

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00610 SDG#: PUG06-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.	170.	70.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	170.	35.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	170.	35.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	350.	100.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,200.	350.	70.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	170.	70.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	170.	35.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	170.	35.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	170.	35.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	170.	35.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	170.	35.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	170.	35.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	170.	70.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	170.	70.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	520.	170.	ug/kg	1
04622	Aniline	62-53-3	N.D.	520.	170.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	520.	170.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	170.	35.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	170.	35.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	170.	70.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	520.	170.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	170.	70.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	170.	35.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,000.	350.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,700.	100.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	170.	70.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	170.	70.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	350.	100.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	170.	35.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	170.	70.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,200.	1,700.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	170.	70.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	170.	35.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,500.	870.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	520.	170.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	520.	170.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,000.	350.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	170.	70.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	170.	70.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322618 SW Group No. 1084759

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

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00610 SDG#: PUG06-10

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04660	N-Nitrosopyrrolidine	930-55-2	N.D.	170.	70.	ug/kg	1
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04663	Pentachloronitrobenzene	82-68-8	N.D.	170.	70.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	170.	70.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	35,000.	12,000.	ug/kg	1
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04668	Pyridine	110-86-1	N.D.	170.	70.	ug/kg	1
04669	Safrole	94-59-7	N.D.	170.	70.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	170.	70.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	170.	70.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	170.	70.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	170.	70.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	700.	210.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	170.	70.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	520.	170.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	170.	70.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	170.	70.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	170.	35.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	170.	70.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	170.	35.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	170.	70.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	170.	35.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	170.	70.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

8866

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Sample No. 5322618 SW Group No. 1084759

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00610 SDG#: PUG06-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 04:16	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 04:41	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

0067

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322619 SW Group No. 1084759

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00611 SDG#: PUG06-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	11.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.9	0.75	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.9	0.75	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.9	0.75	ug/kg	1
02867	Acenaphthylene	208-96-8	12.		1.9	0.38	ug/kg	1
02868	Acenaphthene	83-32-9	1.6	J	1.9	0.75	ug/kg	1
02870	Fluorene	86-73-7	1.2	J	1.9	0.75	ug/kg	1
02871	Phenanthrene	85-01-8	13.		1.9	0.75	ug/kg	1
02872	Anthracene	120-12-7	15.		1.9	0.38	ug/kg	1
02874	Fluoranthene	206-44-0	48.		1.9	0.75	ug/kg	1
02875	Pyrene	129-00-0	38.		1.9	0.75	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	30.		1.9	0.75	ug/kg	1
02877	Chrysene	218-01-9	43.		1.9	0.38	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	97.		1.9	0.75	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	40.		1.9	0.75	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	48.		1.9	0.75	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	27.		1.9	0.75	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	9.6		1.9	0.75	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	46.		1.9	0.75	ug/kg	1
04615	Appendix IX Semivolatilee Soil							
00176	1,4-Dioxane	123-91-1	N.D.		380.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		190.	38.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		190.	38.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		190.	38.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		190.	38.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		190.	38.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		190.	75.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		190.	38.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		560.	190.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		190.	75.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		560.	190.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322619 SW Group No. 1084759

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00611 SDG#: PUG06-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	120.	J	190.	38.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		190.	75.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represente the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,900.	75.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		190.	38.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		190.	75.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		190.	38.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		190.	38.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,300.	750.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		560.	190.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		190.	75.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		190.	38.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		190.	38.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		190.	38.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		190.	38.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		190.	38.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		190.	38.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		190.	38.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		190.	38.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		190.	38.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		190.	75.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		560.	190.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		190.	38.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.		190.	38.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		190.	75.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		190.	38.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		190.	38.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		190.	38.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		190.	75.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		190.	38.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		190.	38.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		190.	38.	ug/kg	1
03775	Phenanthrene	85-01-8	44.	J	190.	38.	ug/kg	1
03776	Anthracene	120-12-7	N.D.		190.	38.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		190.	75.	ug/kg	1
03778	Fluoranthene	206-44-0	98.	J	190.	38.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322619 SW Group No. 1084759

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00611 SDG#: PUG06-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		190.	75.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	65.	J	190.	38.	ug/kg	1
03782	Chrysene	218-01-9	71.	J	190.	38.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		380.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,900.		380.	75.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		190.	75.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	93.	J	190.	38.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		190.	38.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	60.	J	190.	38.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	41.	J	190.	38.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		190.	38.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	52.	J	190.	38.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		190.	75.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		190.	75.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		560.	190.	ug/kg	1
04622	Aniline	62-53-3	N.D.		560.	190.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		560.	190.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		190.	38.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		190.	38.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		190.	75.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		560.	190.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		190.	75.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		190.	38.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	380.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,900.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		190.	75.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		190.	75.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		380.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		190.	38.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		190.	75.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,600.	1,900.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		190.	75.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		190.	38.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,800.	940.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		560.	190.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		560.	190.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	380.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		190.	75.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		190.	75.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322619 SW Group No. 1084759

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00611 SDG#: PUG06-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	190.	75.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	190.	75.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	190.	75.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	190.	75.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	560.	190.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	190.	75.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	190.	75.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	190.	75.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	38,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	380.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	190.	38.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	190.	75.	ug/kg	1
04669	Safrole	94-59-7	N.D.	190.	75.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	190.	75.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	190.	75.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	190.	75.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	190.	75.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	750.	230.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	190.	75.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	560.	190.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	190.	75.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	190.	75.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	190.	38.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	190.	75.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	190.	38.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	190.	75.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	190.	38.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	190.	75.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0071

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322619 SW Group No. 1084759

29721011 NAFR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00611 SDG#: PUG06-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	butylbenzylphthalate						
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 16:40	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/15/2008 04:43	William T Parker	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 05:05	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 10:15	Olivia Arosemena	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/14/2008 08:50	Kerrie A Freeburn	1

8072

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322620 WW Group No. 1084759

29721012 NAPR-Cp Mosorip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00612 SDG#: PUG06-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	25.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	30.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	15.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	15.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	60.	20.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	250.	75.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322620 WW Group No. 1084759

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00612 SDG#: PUG06-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	15.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	15.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	50.	15.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	50.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	60.	20.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	30.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	15.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	15.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322620 WW Group No. 1084759

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00612 SDG#: PUG06-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	15.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322620 WW Group No. 1084759

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00612 SDG#: PUG06-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	15.	5.	ug/l	1
	The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.						
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	0.013 J	0.051	0.010	ug/l	1
08362	Naphthalene	91-20-3	0.045 J	0.051	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.022 J	0.051	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.051	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.051	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.051	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.051	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.051	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.051	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.051	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.051	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.051	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.051	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.051	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.051	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.051	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.051	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.051	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/09/2008 12:02	Joseph M Gambler	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322620 WW Group No. 1084759

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #006 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/21/2008 at 13:05
Discard: 05/06/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00612 SDG#: PUG06-12*

08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/11/2008 13:16	Timothy J Trees	1
00813	BNA Water Extraction	SW-846 3510C	1	04/08/2008 05:45	Tracy L Schickel	1
00813	BNA Water Extraction	SW-846 3510C	2	04/08/2008 11:00	Jessica Agosto	1

6677

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Semivolatiles by GC/MS (SIM) Data (A)

0078

Case Narrative Conformance/Nonconformance Summary

8879

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG06

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5322609	00601	X		
5322610	06002	X		
5322611	00603	X		
5322612	00604	X		
5322613	00605	X		Unspiked
5322613	00605MS	X		Matrix Spike
5322613	00605MSD	X		Matrix Spike Dup
5322614	00606	X		
5322615	00607	X		
5322615DL	00607DL	X		2X Dilution
5322616	00608	X		
5322617	00609	X		
5322618	00610	X		
5322619	00611	X		
5322620	00612		X	

LABORATORY SUBMITTED QC:

SBLKWI098	SBLKWI0987		X	Method Blank
SBLKLD103	SBLKLD1037	X		Method Blank
098WILCS	098WILCS7		X	Lab Control Sample
098WILCSD	098WILCSD7		X	Lab Control Sample Dup
103LDLCS	103LDLCS7	X		Lab Control Sample

Case Narrative (continued)
SDG: PUG06

SAMPLE PREPARATION:

No problems were encountered during the extraction of these samples.

ANALYSIS:

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: butylbenzylphthalate bis(2-ethylhexyl)phthalate.

2-Naphthylamine was not recovered in the 103LDLCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

A number of compounds were not recovered or their recoveries are outside QC limits in the MS/MSD. A number of relative percent differences (RPDs) between the MS and the MSD could not be calculated or are greater than 30 percent. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

The recoveries of 1,4-phenylenediamine and 1,4-naphthoquinone in 098WILCS/D are outside QC limits. The RPDs for o-toluidine and a,a-dimethylphenethylamine between 098WILCS and 098WILCSD are greater than 30 percent.

0001

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Case Narrative (continued)
SDG: PUG06

A number of compounds were not recovered or their recoveries are outside QC limits in 103LDLCS. Refer to LCS form.

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Dana M. Kaufman
Manager, Data Deliverables

Date: 4/23/6

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DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLS)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29760*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Values are reported for PAH compounds by both semivolatile and low-level PAH procedures, and LIMS values also exist for both procedures. The low-level PAH values should be reported to the customer.

Please see the contractor case narratives for Appendix IX semivolatiles (report pages 030-032) and low-level PAHs (report pages 0416-0417).

As noted in the Appendix IX case narrative, there were some QC outliers. QC outliers were noted in the case narrative; these were attributed to the difficulty of analyzing some of the Appendix IX target compounds. With one minor exception, the outliers were not with the PAH compounds – the major target compounds in these samples.

As noted in the low-level PAH case narrative, there were some QC outliers noted. These were not judged to significantly impact the data.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 Feb 06

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084981. Samples arrived at the laboratory on Friday, April 04, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323938
29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323939
29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323940

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0012

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323938 SW Group No. 1084981

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60001 SDG#: PUG08-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
08111	Moisture	n.a.	12.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	73.		1.9	0.76	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	19.		1.9	0.76	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	11.		1.9	0.76	ug/kg	1
02867	Acenaphthylene	208-96-8	110.		1.9	0.38	ug/kg	1
02868	Acenaphthene	83-32-9	1.5	J	1.9	0.76	ug/kg	1
02870	Fluorene	86-73-7	4.6		1.9	0.76	ug/kg	1
02871	Phenanthrene	85-01-8	13.		1.9	0.76	ug/kg	1
02872	Anthracene	120-12-7	100.		1.9	0.38	ug/kg	1
02874	Fluoranthene	206-44-0	180.		1.9	0.76	ug/kg	1
02875	Pyrene	129-00-0	170.		1.9	0.76	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	330.		1.9	0.76	ug/kg	1
02877	Chrysene	218-01-9	490.		19.	3.8	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	750.		19.	7.6	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	400.		19.	7.6	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	400.		19.	7.6	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	200.		1.9	0.76	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	73.		1.9	0.76	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	210.		1.9	0.76	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		380.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		190.	38.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		190.	38.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		190.	38.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		190.	38.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		190.	38.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		190.	76.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		190.	38.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		570.	190.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		190.	76.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		570.	190.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323938 SW Group No. 1084981

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60001 SDG#: PUG08-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	480.		190.	38.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		190.	76.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,900.	76.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		190.	38.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		190.	76.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		190.	38.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		190.	38.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,300.	760.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		570.	190.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		190.	76.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		190.	38.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		190.	38.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		190.	38.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		190.	38.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		190.	38.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		190.	38.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		190.	38.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		190.	38.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		190.	38.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		190.	76.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		570.	190.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		190.	38.	ug/kg	1
03765	Acenaphthylene	208-96-8	160.	J	190.	38.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		190.	76.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		190.	38.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		190.	38.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		190.	38.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		190.	76.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		190.	38.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		190.	38.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		190.	38.	ug/kg	1
03775	Phenanthrene	85-01-8	54.	J	190.	38.	ug/kg	1
03776	Anthracene	120-12-7	130.	J	190.	38.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		190.	76.	ug/kg	1
03778	Fluoranthene	206-44-0	270.		190.	38.	ug/kg	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323938 SW Group No. 1084981

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60001 SDG#: PUG08-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	130.	J	190.	76.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	600.		190.	38.	ug/kg	1
03782	Chrysene	218-01-9	800.		190.	38.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		380.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,900.		380.	76.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		190.	76.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	930.		190.	38.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	370.		190.	38.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	600.		190.	38.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	330.		190.	38.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	99.	J	190.	38.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	370.		190.	38.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		190.	76.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		190.	76.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		570.	190.	ug/kg	1
04622	Aniline	62-53-3	N.D.		570.	190.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		570.	190.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		190.	38.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		190.	38.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		190.	76.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		570.	190.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		190.	76.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		190.	38.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	380.	ug/kg	1
04636	a,a-Dimethylphenathylamine	122-09-8	N.D.		1,900.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		190.	76.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		190.	76.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		380.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		190.	38.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		190.	76.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,700.	1,900.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		190.	76.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		190.	38.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,800.	950.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		570.	190.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		570.	190.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	380.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		190.	76.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		190.	76.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323938 SW Group No. 1084981

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60001 SDG#: PUG08-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	190.	76.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	190.	76.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	190.	76.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	190.	76.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	570.	190.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	190.	76.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	190.	76.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	190.	76.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	38,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	380.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	190.	38.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	190.	76.	ug/kg	1
04669	Safrole	94-59-7	N.D.	190.	76.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	190.	76.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	190.	76.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	190.	76.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	190.	76.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	760.	230.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	190.	76.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	570.	190.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	190.	76.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	190.	76.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	190.	38.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	190.	76.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	190.	38.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	190.	76.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	190.	38.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	190.	76.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0817

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323938 SW Group No. 1084981

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60001 SDG#: PUG08-01BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	2	04/08/2008 18:26	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 08:51	Timothy J Trees	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 15:51	Timothy J Trees	10
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 22:33	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323939 SW Group No. 1084981

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60002 SDG#: PUG08-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	13.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	2.8		1.9	0.77	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.2	J	1.9	0.77	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.1	J	1.9	0.77	ug/kg	1
02867	Acenaphthylene	208-96-8	130.		1.9	0.39	ug/kg	1
02868	Acenaphthene	83-32-9	1.8	J	1.9	0.77	ug/kg	1
02870	Fluorene	86-73-7	6.3		1.9	0.77	ug/kg	1
02871	Phenanthrene	85-01-8	11.		1.9	0.77	ug/kg	1
02872	Anthracene	120-12-7	120.		1.9	0.39	ug/kg	1
02874	Fluoranthene	206-44-0	210.		1.9	0.77	ug/kg	1
02875	Pyrene	129-00-0	220.		1.9	0.77	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	440.		19.	7.7	ug/kg	10
02877	Chrysene	218-01-9	650.		19.	3.9	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	960.		19.	7.7	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	500.		19.	7.7	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	510.		19.	7.7	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	230.		1.9	0.77	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	73.		1.9	0.77	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	230.		1.9	0.77	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		390.	120.	ug/kg	1
01185	Phenol	108-95-2	N.D.		190.	39.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		190.	39.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		190.	39.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		190.	39.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		190.	39.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		190.	77.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		190.	39.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		580.	190.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		190.	77.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		580.	190.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323939 SW Group No. 1084981

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
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ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60002 SDG#: PUG08-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	440.		190.	39.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		190.	77.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,900.	77.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		190.	39.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		190.	77.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		190.	39.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		190.	39.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,300.	770.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		580.	190.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		190.	77.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		190.	39.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		190.	39.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		190.	39.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		190.	39.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		190.	39.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		190.	39.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		190.	39.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		190.	39.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		190.	39.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		190.	77.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		580.	190.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		190.	39.	ug/kg	1
03765	Acenaphthylene	208-96-8	180.	J	190.	39.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		190.	77.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		190.	39.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		190.	39.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		190.	39.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		190.	77.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		190.	39.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		190.	39.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		190.	39.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.		190.	39.	ug/kg	1
03776	Anthracene	120-12-7	160.	J	190.	39.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		190.	77.	ug/kg	1
03778	Fluoranthene	206-44-0	240.		190.	39.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323939 SW Group No. 1084981

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60002 SDG#: PUG08-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		190.	77.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	590.		190.	39.	ug/kg	1
03782	Chrysene	218-01-9	810.		190.	39.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		390.	120.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	2,800.		390.	77.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		190.	77.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	1,000.		190.	39.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	370.		190.	39.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	610.		190.	39.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	370.		190.	39.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	110.	J	190.	39.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	400.		190.	39.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		190.	77.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		190.	77.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		580.	190.	ug/kg	1
04622	Aniline	62-53-3	N.D.		580.	190.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		580.	190.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		190.	39.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		190.	39.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		190.	77.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		580.	190.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		190.	77.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		190.	39.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,200.	390.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,900.	120.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		190.	77.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		190.	77.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		390.	120.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		190.	39.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		190.	77.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,800.	1,900.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		190.	77.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		190.	39.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,900.	970.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		580.	190.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		580.	190.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,200.	390.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		190.	77.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		190.	77.	ug/kg	1

*=This limit was used in the evaluation of the final result

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PO Box 12425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323939 SW Group No. 1084981

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60002 SDG#: PUG08-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	190.	77.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	190.	77.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	190.	77.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	190.	77.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	580.	190.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	190.	77.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	190.	77.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	190.	77.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	39,000.	14,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	390.	120.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	190.	39.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	190.	77.	ug/kg	1
04669	Safrole	94-59-7	N.D.	190.	77.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	190.	77.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	190.	77.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	190.	77.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	190.	77.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	770.	230.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	190.	77.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	580.	190.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	190.	77.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	190.	77.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	190.	39.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	190.	77.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	190.	39.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	190.	77.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	190.	39.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	190.	77.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

0622

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323939 SW Group No. 1084981

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60002 SDG#: PUG08-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 10:10	Timothy J Trees	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 16:17	Timothy J Trees	10
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/15/2008 23:45	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

0023

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323940 SW Group No. 1084981

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60003 SDG#: PUG08-03*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	0.83	J	1.8	0.73	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.8	0.73	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.73	ug/kg	1
02867	Acenaphthylene	208-96-8	13.		1.8	0.36	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.73	ug/kg	1
02870	Fluorene	86-73-7	0.78	J	1.8	0.73	ug/kg	1
02871	Phenanthrene	85-01-8	2.9		1.8	0.73	ug/kg	1
02872	Anthracene	120-12-7	7.5		1.8	0.36	ug/kg	1
02874	Fluoranthene	206-44-0	17.		1.8	0.73	ug/kg	1
02875	Pyrene	129-00-0	22.		1.8	0.73	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	16.		1.8	0.73	ug/kg	1
02877	Chrysene	218-01-9	24.		1.8	0.36	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	51.		1.8	0.73	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	20.		1.8	0.73	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	28.		1.8	0.73	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	12.		1.8	0.73	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	3.9		1.8	0.73	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	13.		1.8	0.73	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		360.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	36.	ug/kg	1
01186	2-Chloropbenol	95-57-8	N.D.		180.	36.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	36.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	36.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	36.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	73.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	36.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		540.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	73.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		540.	180.	ug/kg	1

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323940 SW Group No. 1084981

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60003 SDG#: PUG08-03*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
01195	Pyrene	129-00-0	46.	J	180.	36.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	73.	ug/kg	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	73.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	36.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	73.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	36.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	36.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,200.	730.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		540.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	73.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	36.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	36.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	36.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	36.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	36.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	36.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	36.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	36.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	36.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	73.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		540.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	36.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.		180.	36.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	73.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	36.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		180.	36.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	36.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	73.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	36.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		180.	36.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	36.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.		180.	36.	ug/kg	1
03776	Anthracene	120-12-7	N.D.		180.	36.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		180.	73.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.		180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323940 SW Group No. 1084981

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60003 SDG#: PUG08-03*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	73.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	37.	J	180.	36.	ug/kg	1
03782	Chrysene	218-01-9	43.	J	180.	36.	ug/kg	1
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		360.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,900.		360.	73.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	73.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	60.	J	180.	36.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	36.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	41.	J	180.	36.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	36.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	36.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	36.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	73.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	73.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		540.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		540.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		540.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	36.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	36.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	73.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		540.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	73.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	36.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	360.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	73.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	73.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		360.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	36.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	73.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,400.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	73.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	36.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,600.	910.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		540.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		540.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	360.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	73.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	73.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323940 SW Group No. 1084981

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60003 SDG#: PUG08-03*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	180.	73.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	180.	73.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	180.	73.	ug/kg	1
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	73.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	540.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	73.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	73.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	73.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	36,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	360.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	36.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	73.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	73.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	73.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	73.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	73.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	73.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	730.	220.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	73.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	540.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	73.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	73.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	36.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	73.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	36.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	73.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	36.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	73.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:

8827

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5323940 SW Group No. 1084981

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #008 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Submitted: 04/04/2008 09:30
Reported: 04/24/2008 at 08:37
Discard: 05/09/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

60003 SDG#: PUG08-03*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	bis(2-ethylhexyl)phthalate						

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 10:36	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/16/2008 00:09	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

0828

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster, PA 17605-2425
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Case Narrative Conformance/Nonconformance Summary

0030

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG08

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Comments
5323938	60001	X	Unspiked
5323938	60001MS	X	Matrix Spike
5323938	60001MSD	X	Matrix Spike Dup
5323939	60002	X	
5323940	60003	X	
LABORATORY SUBMITTED QC:			
SBLKLM104	SBLKLM1047	X	Method Blank
104LMLCS	104LMLCS7	X	Lab Control Sample

SAMPLE PREPARATION:

No problems were encountered during the extraction of these samples.

ANALYSIS:

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated. 0031

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Case Narrative (continued)
SDG: PUG08

A number of compounds are outside QC limits in the LCS.

2-Naphthylamine is not recovered in the LCS but is within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: bis(2-ethylhexyl)phthalate.

A number of compounds are not recovered or their recoveries are outside QC limits in the MS and MSD. A number of relative percent differences (RPD's) between MS and MSD are greater than 30 percent or cannot be calculated. Refer to the matrix spike/matrix spike duplicate form for the outliers.

All other QC is within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Audrey McClure for Date: 4-24-08
Dana M. Kauffman
Manager, Data Deliverables

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG08

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Comments
5323938	60001	X	Unspiked
5323938DL	60001DL	X	10X Dilution
5323938	60001MS	X	Matrix Spike
5323938	60001MSD	X	Matrix Spike Dup
5323939	60002	X	
5323939DL	60002DL	X	10X Dilution
5323940	60003	X	
LABORATORY SUBMITTED QC:			
SBLKLB104	SBLKLB1049	X	Method Blank
104LBLCS	104LBLCS9	X	Lab Control Sample

SAMPLE PREPARATION:

No problems were encountered during the extraction of these samples.

ANALYSIS:

No problems were encountered during the analysis of these samples.

8416.

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Case Narrative (continued)
SDG: PUG08

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The surrogate recovery of terphenyl-d14 is outside QC limits in 5323938MS.

The recoveries of a number of compounds are outside QC limits in the MS and MSD. A number of relative percent differences (RPD's) between the MS and MSD are greater than 30 percent. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

All other QC is within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Audrey McClure for Date: 4-24-08
Dana M. Kauffman
Manager, Data Deliverables

6417

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Report ID: HMA0022v1
Sequence: 411088

4694
1084981
5323938-40
PUG08

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 04-Apr-08 5:16:14 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 008/1
DLS WO#: 29760 Batch: 1674
Contractor Code: LLS HBN: 208055
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: GCMS
Priority: Standard
# of Samples: 3

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29760
DLS Profile#: 35234

Contractor Due Date
PDF _____
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/4/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: Via FedEX 4/11/08 (Signature of laboratory courier) (Date/Time of pickup)

Number of samples received intact: All (#/All) Number of samples received broken: None (#/None)

Data package received by at CHPPM: [signature] Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/25/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLS1717	LLS2407	LLS2420
29760001	73SB18-00 (MS/MSD)	SO	1	1	1
29760002	73SB18A-00	SO	1	1	1
29760003	73SB14-00	SO	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLS2420	Semivolatile Organics (App IX)		3
	Procedure Description	EPA 8270C	
LLS2407	PAH in low level in Solids		3
	Procedure Description	EPA 8270C (SIM)	
LLS1717	%Moisture		3
	Procedure Description	EPA 160.3	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	3

Report ID: HRA0191C-Acode
COC #: 411071

USACHPPM
Readiness and Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip-35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLS	Customer: Program 38

Total Samples: 3 | Total Containers: 3

via FedEX

Samples Received By:	Jessica Nguyen 4/7/08	Date Received:	4/4/08 4/7/08
Document Reviewed By:	Jessie Brockmeyer Initials: JB	Date Reviewed:	4 April 08
Document Quality Review By:		Date Reviewed:	
Samples Approved For Distribution:	Yes ☒ No ____ Initials: HJS	Date Approved:	✓

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness from Health

Profile: 35234 - 0995	Description: NAPR CMS-Cp Mosorip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29760001	73SB18-00 (MS/MSD)	29760001-1	SO
29760002	73SB18A-00	29760002-1	SO
29760003	73SB14-00	29760003-1	SO

Total Samples: 3

Total Containers: 3

Chain Of Custody

Report ID: HRA0191C-Acode
COC #: 411071

USACHPPM
Readiness through Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Mosarip-35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29760001		1		
29760002		1		
29760003		1		

Total Samples: 3 | Total Containers: 3

Chain Of Custody

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM Readiness Above Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals	SVOC	LL PAH + SVOC	Org Pest + moist	Met Tot	Met Dis	RCRA	Benz		
TRIP BLANKS					W	3	3										
73ER-05 (Hold)	3APR08	0930	✓		W	6	3		1	1	1						
73SB18-08 (MS/MSD)		1100	✓		SO	9	7			1	1						
73SB18A-08		1100	✓		SO	5	3			1	1						
73SB14-08		1130	✓		SO	5	3			1	1						
NOTHING FOLLOWS																	

28 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 3APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[illegible] USACHPPM	3APR08/1300			
		[illegible]	4.4.08	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 06 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Report ID: HRA0191C-ACode
COC #: 411071

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

USACHPPM
Readiness Through Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

1674

This Chain of Custody is an Addendum to the Original COC submitted on 4/4/08 *to SML. This is SML's internal Chain of Custody.*

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLS	Customer: Program 38 POC: David Jones
Location: NAPR-Cp Moscrip	Project Number: 38
Jono: 77HRW	Notes: Samples shipped directly to contract lab from field. Collection information for trip blanks not provided for log in. JBrockmeyer 4-4-08
Subjono: 0995	
Turn Code: R028 28 Calendar day from receipt	

Chain of Custody

Total Samples: 3	Total Containers: 3

HSN	Container ID	Customer Sample ID	Sample Typ	Matrix		Temp		Date/Time Received	Date/Time Collecte	Sample Due Dat
29760001	29760001-1	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLS1717 : %Moisture		LLS2407 : PAH in low level in Solids				LLS2420 : Semivolatile Organics (App IX)				
29760002	29760002-1	73SB18A-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLS1717 : %Moisture		LLS2407 : PAH in low level in Solids				LLS2420 : Semivolatile Organics (App IX)				
29760003	29760003-1	73SB14-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:30 AM	02-May-2008
ACodes: LLS1717 : %Moisture		LLS2407 : PAH in low level in Solids				LLS2420 : Semivolatile Organics (App IX)				

NR=Not Reported.

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip* CONTRACT LAB: *Lancaster (LLS)*

PROJECT NO: *38-0995* LIMS W.O. NO: *29841*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Values are reported for PAH compounds by both semivolatile and low-level PAH procedures, and LIMS values also exist for both procedures. The low-level PAH values should be reported to the customer.

Please see the contractor case narratives for Appendix IX semivolatiles (report pages 050-053) and low-level PAHs (report pages 655-656).

As noted in the Appendix IX case narrative, due to insuffient sample, reduced volumes were used in the extraction of a number of samples. There were QC outliers noted in the MS/MSD data. These were attributed to the sample matrix, as the LCS/LCSD data were good. Since most target detections were PAH compounds, the low-level PAH QC should be prefentially used for evaluation (see below).

As noted in the low-level PAH case narrative, there were some QC outliers were noted in the MS/MSD data. Recoveries for acenaphthalyene, acenaphthene, anthracene, and benzo(a) pyrene were less than 4 percent, indicating a significant matrix effect for these target compounds. The reported values for these compounds will need to be qualified, and considered for rejection.

There were several broken amber bottles noted upon sample receipt.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 Feb 06

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1085937. Samples arrived at the laboratory on Wednesday, April 09, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329159
29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329160
29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329161
29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329162
29841007 NAPR-Cp Moscrip #35291-0995 Jones Water	5329163
29841010 NAPR-Cp Moscrip #35291-0995 Jones Water	5329164

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0817

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329159 SW Group No. 1085937

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00120 SDG#: PUG21-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	9.1		0.50	0.50	%	1
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		1.8	0.73	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.8	0.73	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.73	ug/kg	1
02867	Acensphthylene	208-96-8	1.5	J	1.8	0.37	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.73	ug/kg	1
02870	Fluorene	86-73-7	N.D.		1.8	0.73	ug/kg	1
02871	Phenanthrene	85-01-8	3.1		1.8	0.73	ug/kg	1
02872	Anthracene	120-12-7	1.1	J	1.8	0.37	ug/kg	1
02874	Fluoranthene	206-44-0	10.		1.8	0.73	ug/kg	1
02875	Pyrene	129-00-0	9.3		1.8	0.73	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	5.1		1.8	0.73	ug/kg	1
02877	Chrysene	218-01-9	6.5		1.8	0.37	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	12.		1.8	0.73	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	4.8		1.8	0.73	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	6.4		1.8	0.73	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	3.4		1.8	0.73	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	0.97	J	1.8	0.73	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	4.0		1.8	0.73	ug/kg	1
04615	Appendix IX Semivolatiles Soil							
00176	1,4-Dioxane	123-91-1	N.D.		370.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.		180.	37.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.		180.	37.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.		180.	37.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.		180.	37.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.		180.	37.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.		180.	73.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.		180.	37.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.		550.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.		180.	73.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.		550.	180.	ug/kg	1
01195	Pyrene	129-00-0	180.	J	180.	37.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.		180.	73.	ug/kg	1

3-Methylphenol and 4-methylphenol cannot be resolved under the

8219

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329159 SW Group No. 1085937

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00120 SDG#: PUG21-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.							
02519	Aramite	140-57-8	N.D.		1,800.	73.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.		180.	37.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.		180.	73.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.		180.	37.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.		180.	37.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.		2,200.	730.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		550.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.		180.	73.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.		180.	37.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.		180.	37.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.		180.	37.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.		180.	37.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.		180.	37.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.		180.	37.	ug/kg	1
03759	Isophorone	78-59-1	N.D.		180.	37.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.		180.	37.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.		180.	37.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.		180.	73.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.		550.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.		180.	37.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.		180.	37.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.		180.	73.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.		180.	37.	ug/kg	1
03768	Fluorene	86-73-7	N.D.		180.	37.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.		180.	37.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.		180.	73.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.		180.	37.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.							
03773	4-Bromophenyl-phenylether	101-55-3	N.D.		180.	37.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.		180.	37.	ug/kg	1
03775	Phenanthrene	85-01-8	56.	J	180.	37.	ug/kg	1
03776	Anthracene	120-12-7	N.D.		180.	37.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.		180.	73.	ug/kg	1
03778	Fluoranthene	206-44-0	170.	J	180.	37.	ug/kg	1
03780	Butylbenzylphthalate	85-68-7	N.D.		180.	73.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	82.	J	180.	37.	ug/kg	1
03782	Chrysene	218-01-9	120.	J	180.	37.	ug/kg	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329159 SW Group No. 1085937

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
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Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00120 SDG#: PUG21-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		370.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,500.		370.	73.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	73.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	110.	J	180.	37.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	50.	J	180.	37.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	69.	J	180.	37.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	40.	J	180.	37.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	37.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	43.	J	180.	37.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	73.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	73.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		550.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		550.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		550.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	37.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	37.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	73.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		550.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	73.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	37.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	370.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	73.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	73.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		370.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	37.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	73.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,500.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	73.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	37.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,700.	920.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		550.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		550.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	370.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	73.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	73.	ug/kg	1
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.		180.	73.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.		180.	73.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.		180.	73.	ug/kg	1

0021

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329159 SW Group No. 1085937

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00120 SDG#: PUG21-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	73.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	550.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	73.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	73.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	73.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	37,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	370.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	37.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	73.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	73.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	73.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	73.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	73.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	73.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	730.	220.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	73.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	550.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	73.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	73.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	37.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	73.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	37.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	73.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	37.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	73.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: bis(2-ethylhexyl)phthalate

8022

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329159 SW Group No. 1085937

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00120 SDG#: PUG21-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 11:02	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/16/2008 00:33	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen X Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

0023

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329160 SW Group No. 1085937

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00220 SDG#: PUG21-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	13.8	0.50	0.50	%	1
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	N.D.	1.9	0.77	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.	1.9	0.77	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.	1.9	0.77	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.	1.9	0.39	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	1.9	0.77	ug/kg	1
02870	Fluorene	86-73-7	N.D.	1.9	0.77	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.	1.9	0.77	ug/kg	1
02872	Anthracene	120-12-7	N.D.	1.9	0.39	ug/kg	1
02874	Fluoranthene	206-44-0	N.D.	1.9	0.77	ug/kg	1
02875	Pyrene	129-00-0	N.D.	1.9	0.77	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	N.D.	1.9	0.77	ug/kg	1
02877	Chrysene	218-01-9	N.D.	1.9	0.39	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	N.D.	1.9	0.77	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	N.D.	1.9	0.77	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	N.D.	1.9	0.77	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1.9	0.77	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	N.D.	1.9	0.77	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	N.D.	1.9	0.77	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	390.	120.	ug/kg	1
01185	Phenol	108-95-2	N.D.	190.	39.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	190.	39.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	190.	39.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	190.	39.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	190.	39.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	190.	77.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	190.	39.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	580.	190.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	190.	77.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	580.	190.	ug/kg	1
01195	Pyrene	129-00-0	N.D.	190.	39.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	190.	77.	ug/kg	1

3-Methylphenol and 4-methylphenol cannot be resolved under the

0024

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329160 SW Group No. 1085937

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00220 SDG#: PUG21-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,900.	77.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	190.	39.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	190.	77.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	190.	39.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	190.	39.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,300.	770.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	580.	190.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	190.	77.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	190.	39.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	190.	39.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	190.	39.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	190.	39.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	190.	39.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	190.	39.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	190.	39.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	190.	39.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	190.	39.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	190.	77.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	580.	190.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	190.	39.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	190.	39.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	190.	77.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	190.	39.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	190.	39.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	190.	39.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	190.	77.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	190.	39.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	190.	39.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	190.	39.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	190.	39.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	190.	39.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	190.	77.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	190.	39.	ug/kg	1
03780	Butylbenzylphthalate	85-68-7	N.D.	190.	77.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	190.	39.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	190.	39.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329160 SW Group No. 1085937

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00220 SDG#: PUG21-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	390.	120.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	390.	390.	77.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	190.	77.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	190.	39.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	190.	39.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	190.	39.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	190.	39.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	190.	39.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	190.	39.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	190.	77.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	190.	77.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	580.	190.	ug/kg	1
04622	Aniline	62-53-3	N.D.	580.	190.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	580.	190.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	190.	39.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	190.	39.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	190.	77.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	580.	190.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	190.	77.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	190.	39.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,200.	390.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	1,900.	120.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	190.	77.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	190.	77.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	390.	120.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	190.	39.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	190.	77.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	5,800.	1,900.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	190.	77.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	190.	39.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	3,900.	970.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	580.	190.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	580.	190.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,200.	390.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	190.	77.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	190.	77.	ug/kg	1
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	190.	77.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	190.	77.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	190.	77.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329160 SW Group No. 1085937

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00220 SDG#: PUG21-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	190.	77.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	580.	190.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	190.	77.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	190.	77.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	190.	77.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	39,000.	14,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	390.	120.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	190.	39.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	190.	77.	ug/kg	1
04669	Safrole	94-59-7	N.D.	190.	77.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	190.	77.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	190.	77.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	190.	77.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	190.	77.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	770.	230.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	190.	77.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	580.	190.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	190.	77.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	190.	77.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	190.	39.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	190.	77.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	190.	39.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	190.	77.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	190.	39.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	190.	77.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: bis(2-ethylhexyl)phthalate

0027

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329160 SW Group No. 1085937

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00220 SDG#: PUG21-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 11:28	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/16/2008 00:58	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

0028

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329161 SW Group No. 1085937

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00320 SDG#: PUG21-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	8.5	0.50	0.50	%	1
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	N.D.	1.8	0.73	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.	1.8	0.73	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.	1.8	0.73	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.	1.8	0.36	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	1.8	0.73	ug/kg	1
02870	Fluorene	86-73-7	N.D.	1.8	0.73	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.	1.8	0.73	ug/kg	1
02872	Anthracene	120-12-7	N.D.	1.8	0.36	ug/kg	1
02874	Fluoranthene	206-44-0	N.D.	1.8	0.73	ug/kg	1
02875	Pyrene	129-00-0	N.D.	1.8	0.73	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	N.D.	1.8	0.73	ug/kg	1
02877	Chrysene	218-01-9	N.D.	1.8	0.36	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	N.D.	1.8	0.73	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	N.D.	1.8	0.73	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	N.D.	1.8	0.73	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	1.8	0.73	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	N.D.	1.8	0.73	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	N.D.	1.8	0.73	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	360.	110.	ug/kg	1
01185	Phenol	108-95-2	N.D.	180.	36.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	180.	36.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	180.	36.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	180.	36.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	180.	36.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	180.	73.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	180.	36.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	550.	180.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	180.	73.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	550.	180.	ug/kg	1
01195	Pyrene	129-00-0	N.D.	180.	36.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	180.	73.	ug/kg	1

3-Methylphenol and 4-methylphenol cannot be resolved under the

0029

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329161 SW Group No. 1085937

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00320 SDG#: PUG21-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	1,800.	73.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	180.	36.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	180.	73.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	180.	36.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	180.	36.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,200.	730.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	550.	180.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	180.	73.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	180.	36.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	180.	36.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	180.	36.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	180.	36.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	180.	36.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	180.	36.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	180.	36.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	180.	36.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	180.	36.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	180.	73.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	550.	180.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	180.	36.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	180.	36.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	180.	73.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	180.	36.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	180.	36.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	180.	36.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	180.	73.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	180.	36.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. Ths result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	180.	36.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	180.	36.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	180.	36.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	180.	36.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	180.	73.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	180.	36.	ug/kg	1
03780	Butylbenzylphthalate	85-68-7	N.D.	180.	73.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	180.	36.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	180.	36.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. 5329161 SW Group No. 1085937

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00320 SDG#: PUG21-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.		360.	110.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	330.	J	360.	73.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.		180.	73.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.		180.	36.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.		180.	36.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.		180.	36.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		180.	36.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.		180.	36.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.		180.	36.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.		180.	73.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.		180.	73.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.		550.	180.	ug/kg	1
04622	Aniline	62-53-3	N.D.		550.	180.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.		550.	180.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.		180.	36.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.		180.	36.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.		180.	73.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.		550.	180.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.		180.	73.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.		180.	36.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.		1,100.	360.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.		1,800.	110.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.		180.	73.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.		180.	73.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.		360.	110.	ug/kg	1
04641	Isodrin	465-73-6	N.D.		180.	36.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.		180.	73.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.		5,500.	1,800.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.		180.	73.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.		180.	36.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.		3,600.	910.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.		550.	180.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.		550.	180.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.		1,100.	360.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.		180.	73.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.		180.	73.	ug/kg	1
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.		180.	73.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.		180.	73.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.		180.	73.	ug/kg	1

0031

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329161 SW Group No. 1085937

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Submitted: 04/09/2008 09:30
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Discard: 05/14/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00320 SDG#: PUG21-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	180.	73.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	550.	180.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	180.	73.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	180.	73.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	180.	73.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	36,000.	13,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	360.	110.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	180.	36.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	180.	73.	ug/kg	1
04669	Safrole	94-59-7	N.D.	180.	73.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	180.	73.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	180.	73.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	180.	73.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	180.	73.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	730.	220.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	180.	73.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	550.	180.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	180.	73.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	180.	73.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	180.	36.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	180.	73.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	180.	36.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	180.	73.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	180.	36.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	180.	73.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
bis(2-ethylhexyl)phthalate

0032

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Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329161 SW Group No. 1085937

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
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Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00320 SDG#: PUG21-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 11:54	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/16/2008 01:22	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

0033

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2425 New Holland Pike
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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329162 SW Group No. 1085937

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00420 SDG#: PUG21-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
07801	Moisture (Re-Entry)	n.a.	16.9	0.50	0.50	%	1
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	N.D.	2.0	0.80	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.	2.0	0.80	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.	2.0	0.80	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.	2.0	0.40	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.	2.0	0.80	ug/kg	1
02870	Fluorene	86-73-7	N.D.	2.0	0.80	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.	2.0	0.80	ug/kg	1
02872	Anthracene	120-12-7	N.D.	2.0	0.40	ug/kg	1
02874	Fluoranthene	206-44-0	N.D.	2.0	0.80	ug/kg	1
02875	Pyrene	129-00-0	N.D.	2.0	0.80	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	N.D.	2.0	0.80	ug/kg	1
02877	Chrysene	218-01-9	N.D.	2.0	0.40	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	N.D.	2.0	0.80	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	N.D.	2.0	0.80	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	N.D.	2.0	0.80	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	2.0	0.80	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	N.D.	2.0	0.80	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	N.D.	2.0	0.80	ug/kg	1
04615	Appendix IX Semivolatiles Soil						
00176	1,4-Dioxane	123-91-1	N.D.	400.	120.	ug/kg	1
01185	Phenol	108-95-2	N.D.	200.	40.	ug/kg	1
01186	2-Chlorophenol	95-57-8	N.D.	200.	40.	ug/kg	1
01187	1,4-Dichlorobenzene	106-46-7	N.D.	200.	40.	ug/kg	1
01188	N-Nitroso-di-n-propylamine	621-64-7	N.D.	200.	40.	ug/kg	1
01189	1,2,4-Trichlorobenzene	120-82-1	N.D.	200.	40.	ug/kg	1
01190	4-Chloro-3-methylphenol	59-50-7	N.D.	200.	80.	ug/kg	1
01191	Acenaphthene	83-32-9	N.D.	200.	40.	ug/kg	1
01192	4-Nitrophenol	100-02-7	N.D.	600.	200.	ug/kg	1
01193	2,4-Dinitrotoluene	121-14-2	N.D.	200.	80.	ug/kg	1
01194	Pentachlorophenol	87-86-5	N.D.	600.	200.	ug/kg	1
01195	Pyrene	129-00-0	N.D.	200.	40.	ug/kg	1
01463	4-Methylphenol	106-44-5	N.D.	200.	80.	ug/kg	1

3-Methylphenol and 4-methylphenol cannot be resolved under the

0834

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329162 SW Group No. 1085937

29841004 NAFR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00420 SDG#: PUG21-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
	chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02519	Aramite	140-57-8	N.D.	2,000.	80.	ug/kg	1
03746	2-Nitrophenol	88-75-5	N.D.	200.	40.	ug/kg	1
03747	2,4-Dimethylphenol	105-67-9	N.D.	200.	80.	ug/kg	1
03748	2,4-Dichlorophenol	120-83-2	N.D.	200.	40.	ug/kg	1
03749	2,4,6-Trichlorophenol	88-06-2	N.D.	200.	40.	ug/kg	1
03750	2,4-Dinitrophenol	51-28-5	N.D.	2,400.	800.	ug/kg	1
03751	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	600.	200.	ug/kg	1
03752	N-Nitrosodimethylamine	62-75-9	N.D.	200.	80.	ug/kg	1
03753	bis(2-Chloroethyl)ether	111-44-4	N.D.	200.	40.	ug/kg	1
03754	1,3-Dichlorobenzene	541-73-1	N.D.	200.	40.	ug/kg	1
03755	1,2-Dichlorobenzene	95-50-1	N.D.	200.	40.	ug/kg	1
03756	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	200.	40.	ug/kg	1
03757	Hexachloroethane	67-72-1	N.D.	200.	40.	ug/kg	1
03758	Nitrobenzene	98-95-3	N.D.	200.	40.	ug/kg	1
03759	Isophorone	78-59-1	N.D.	200.	40.	ug/kg	1
03760	bis(2-Chloroethoxy)methane	111-91-1	N.D.	200.	40.	ug/kg	1
03761	Naphthalene	91-20-3	N.D.	200.	40.	ug/kg	1
03762	Hexachlorobutadiene	87-68-3	N.D.	200.	80.	ug/kg	1
03763	Hexachlorocyclopentadiene	77-47-4	N.D.	600.	200.	ug/kg	1
03764	2-Chloronaphthalene	91-58-7	N.D.	200.	40.	ug/kg	1
03765	Acenaphthylene	208-96-8	N.D.	200.	40.	ug/kg	1
03766	Dimethylphthalate	131-11-3	N.D.	200.	80.	ug/kg	1
03767	2,6-Dinitrotoluene	606-20-2	N.D.	200.	40.	ug/kg	1
03768	Fluorene	86-73-7	N.D.	200.	40.	ug/kg	1
03769	4-Chlorophenyl-phenylether	7005-72-3	N.D.	200.	40.	ug/kg	1
03770	Diethylphthalate	84-66-2	N.D.	200.	80.	ug/kg	1
03772	N-Nitrosodiphenylamine	86-30-6	N.D.	200.	40.	ug/kg	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03773	4-Bromophenyl-phenylether	101-55-3	N.D.	200.	40.	ug/kg	1
03774	Hexachlorobenzene	118-74-1	N.D.	200.	40.	ug/kg	1
03775	Phenanthrene	85-01-8	N.D.	200.	40.	ug/kg	1
03776	Anthracene	120-12-7	N.D.	200.	40.	ug/kg	1
03777	Di-n-butylphthalate	84-74-2	N.D.	200.	80.	ug/kg	1
03778	Fluoranthene	206-44-0	N.D.	200.	40.	ug/kg	1
03780	Butylbenzylphthalate	85-68-7	N.D.	200.	80.	ug/kg	1
03781	Benzo(a)anthracene	56-55-3	N.D.	200.	40.	ug/kg	1
03782	Chrysene	218-01-9	N.D.	200.	40.	ug/kg	1

*=This limit was used in the evaluation of the final result

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29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
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Collected:04/07/2008 12:45

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Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00420 SDG#: PUG21-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
03783	3,3'-Dichlorobenzidine	91-94-1	N.D.	400.	120.	ug/kg	1
03784	bis(2-Ethylhexyl)phthalate	117-81-7	1,400.	400.	80.	ug/kg	1
03785	Di-n-octylphthalate	117-84-0	N.D.	200.	80.	ug/kg	1
03786	Benzo(b)fluoranthene	205-99-2	N.D.	200.	40.	ug/kg	1
03787	Benzo(k)fluoranthene	207-08-9	N.D.	200.	40.	ug/kg	1
03788	Benzo(a)pyrene	50-32-8	N.D.	200.	40.	ug/kg	1
03789	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	200.	40.	ug/kg	1
03790	Dibenz(a,h)anthracene	53-70-3	N.D.	200.	40.	ug/kg	1
03791	Benzo(g,h,i)perylene	191-24-2	N.D.	200.	40.	ug/kg	1
04619	Acetophenone	98-86-2	N.D.	200.	80.	ug/kg	1
04620	2-Acetylaminofluorene	53-96-3	N.D.	200.	80.	ug/kg	1
04621	4-Aminobiphenyl	92-67-1	N.D.	600.	200.	ug/kg	1
04622	Aniline	62-53-3	N.D.	600.	200.	ug/kg	1
04623	Benzyl alcohol	100-51-6	N.D.	600.	200.	ug/kg	1
04626	Chlorobenzilate	510-15-6	N.D.	200.	40.	ug/kg	1
04629	Diallate TRANS/CIS	2303-16-4	N.D.	200.	40.	ug/kg	1
04631	2,6-Dichlorophenol	87-65-0	N.D.	200.	80.	ug/kg	1
04632	Dimethoate	60-51-5	N.D.	600.	200.	ug/kg	1
04633	p-Dimethylaminoazobenzene	60-11-7	N.D.	200.	80.	ug/kg	1
04634	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	200.	40.	ug/kg	1
04635	3,3'-Dimethylbenzidine	119-93-7	N.D.	1,200.	400.	ug/kg	1
04636	a,a-Dimethylphenethylamine	122-09-8	N.D.	2,000.	120.	ug/kg	1
04637	1,3-Dinitrobenzene	99-65-0	N.D.	200.	80.	ug/kg	1
04639	Ethyl methanesulfonate	62-50-0	N.D.	200.	80.	ug/kg	1
04640	Hexachloropropene	1888-71-7	N.D.	400.	120.	ug/kg	1
04641	Isodrin	465-73-6	N.D.	200.	40.	ug/kg	1
04642	Isosafrole	120-58-1	N.D.	200.	80.	ug/kg	1
04643	Methapyrilene	91-80-5	N.D.	6,000.	2,000.	ug/kg	1
04644	3-Methylcholanthrene	56-49-5	N.D.	200.	80.	ug/kg	1
04645	Methyl methanesulfonate	66-27-3	N.D.	200.	40.	ug/kg	1
04647	1,4-Naphthoquinone	130-15-4	N.D.	4,000.	1,000.	ug/kg	1
04648	1-Naphthylamine	134-32-7	N.D.	600.	200.	ug/kg	1
04649	2-Naphthylamine	91-59-8	N.D.	600.	200.	ug/kg	1
04653	4-Nitroquinoline-1-oxide	56-57-5	N.D.	1,200.	400.	ug/kg	1
04654	N-Nitrosodi-n-butylamine	924-16-3	N.D.	200.	80.	ug/kg	1
04655	N-Nitrosodiethylamine	55-18-5	N.D.	200.	80.	ug/kg	1
04657	N-Nitrosomethylethylamine	10595-95-6	N.D.	200.	80.	ug/kg	1
04658	N-Nitrosomorpholine	59-89-2	N.D.	200.	80.	ug/kg	1
04659	N-Nitrosopiperidine	100-75-4	N.D.	200.	80.	ug/kg	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329162 SW Group No. 1085937

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00420 SDG#: PUG21-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
04660	N-Nitrosopyrrolidine	930-55-2	N.D.	200.	80.	ug/kg	1
04661	5-Nitro-o-toluidine	99-55-8	N.D.	600.	200.	ug/kg	1
04662	Pentachlorobenzene	608-93-5	N.D.	200.	80.	ug/kg	1
04663	Pentachloronitrobenzene	82-68-8	N.D.	200.	80.	ug/kg	1
04664	Phenacetin	62-44-2	N.D.	200.	80.	ug/kg	1
04665	1,4-Phenylenediamine	106-50-3	N.D.	40,000.	14,000.	ug/kg	1
04666	2-Picoline	109-06-8	N.D.	400.	120.	ug/kg	1
04667	Pronamide	23950-58-5	N.D.	200.	40.	ug/kg	1
04668	Pyridine	110-86-1	N.D.	200.	80.	ug/kg	1
04669	Safrole	94-59-7	N.D.	200.	80.	ug/kg	1
04670	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	200.	80.	ug/kg	1
04671	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	200.	80.	ug/kg	1
04672	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	200.	80.	ug/kg	1
04673	Thionazin	297-97-2	N.D.	200.	80.	ug/kg	1
04674	o-Toluidine	95-53-4	N.D.	800.	240.	ug/kg	1
04676	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	200.	80.	ug/kg	1
04677	1,3,5-Trinitrobenzene	99-35-4	N.D.	600.	200.	ug/kg	1
04690	2-Methylphenol	95-48-7	N.D.	200.	80.	ug/kg	1
04693	4-Chloroaniline	106-47-8	N.D.	200.	80.	ug/kg	1
04694	2-Methylnaphthalene	91-57-6	N.D.	200.	40.	ug/kg	1
04695	2,4,5-Trichlorophenol	95-95-4	N.D.	200.	80.	ug/kg	1
04696	2-Nitroaniline	88-74-4	N.D.	200.	40.	ug/kg	1
04697	3-Nitroaniline	99-09-2	N.D.	200.	80.	ug/kg	1
04698	Dibenzofuran	132-64-9	N.D.	200.	40.	ug/kg	1
04700	4-Nitroaniline	100-01-6	N.D.	200.	80.	ug/kg	1

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

2-Naphthylamine was not recovered in the LCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
bis(2-ethylhexyl)phthalate

0037

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329162 SW Group No. 1085937

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00420 SDG#: PUG21-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
07801	Moisture (Re-Entry)	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	04/16/2008 12:21	Timothy J Trees	1
04615	Appendix IX Semivolatiles Soil	SW-846 8270C	1	04/16/2008 01:46	Gregory J Drahovsky	1
00381	BNA Soil Extraction	SW-846 3550B	1	04/14/2008 13:30	Doreen K Robles	1
00381	BNA Soil Extraction	SW-846 3550B	2	04/15/2008 10:30	Olivia Arosemena	1

7638

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329163 WW Group No. 1085937

29841007 NAFR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00720 SDG#: PUG21-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	26.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	31.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	16.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	16.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	63.	21.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	260.	79.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329163 WW Group No. 1085937

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00720 SDG#: PUG21-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Tristhylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	16.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	16.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	52.	16.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	52.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	63.	21.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	31.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	16.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	16.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

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Rock Island IL 61299-8401

00720 SDG#: PUG21-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	16.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329163 WW Group No. 1085937

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00720 SDG#: PUG21-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	16.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The GC/MS semivolatile surrogate recoveries are outside of QC limits in this sample. Sufficient sample was unavailable to repeat the analysis.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	N.D.	0.051	0.010	ug/l	1
08362	Naphthalene	91-20-3	N.D.	0.051	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.051	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.051	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.051	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.051	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.051	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.051	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.051	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.051	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.051	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.051	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.051	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.051	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.051	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.051	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.051	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.051	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0042

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329163 WW Group No. 1085937

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00720 SDG#: PUG21-05BKG

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/12/2008 18:03	Josaph M Gambler	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/16/2008 13:51	Timothy J Trees	1
00813	BNA Water Extraction	SW-846 3510C	1	04/11/2008 15:20	Mitchell B Crawford	1

0043

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329164 WW Group No. 1085937

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

20010 SDG#: PUG21-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	25.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	30.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	15.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	15.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	60.	20.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	250.	75.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329164 WW Group No. 1085937

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/29/2008 at 16:26
Discard: 05/14/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

20010 SDG#: PUG21-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	15.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	15.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	50.	15.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	50.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	60.	20.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	30.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	15.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	15.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329164 WW Group No. 1085937

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

20010 SDG#: PUG21-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	15.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329164 WW Group No. 1085937

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

20010 SDG#: PUG21-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	15.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The GC/MS semivolatile surrogate recoveries are outside of QC limits in this sample. Sufficient sample was unavailable to repeat the analysis.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	N.D.	0.051	0.010	ug/l	1
08362	Naphthalene	91-20-3	N.D.	0.051	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.051	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.051	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.051	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.051	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.051	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.051	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.051	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.051	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.051	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.051	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.051	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.051	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.051	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.051	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.051	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.051	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

8847

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329164 WW Group No. 1085937

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #020 Delivery Order# 01 Water

Collected:04/07/2008 08:30

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U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

20010 SDG#: PUG21-06*

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/13/2008 18:07	Gregory J Drahovsky	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/16/2008 15:16	Timothy J Trees	1
00813	BNA Water Extraction	SW-846 3510C	1	04/11/2008 15:20	Mitchell B Crawford	1
00813	BNA Water Extraction	SW-846 3510C	2	04/11/2008 15:20	Mitchell B Crawford	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative Conformance/Nonconformance Summary

8050

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG21

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5329159	00120	X		
5329160	00220	X		
5329161	00320	X		
5329162	00420	X		
5329163	00720		X	Unspiked
5329163	00720MS		X	Matrix Spike
5329163	00720MSD		X	Matrix Spike Dup
5329164	20010		X	
LABORATORY SUBMITTED QC:				
SBLKWA102	SBLKWA1027		X	Method Blank
SBLKLM104	SBLKLM1047	X		Method Blank
5323938	60001	X		Unspiked
5323938	60001MS	X		Matrix Spike
5323938	60001MSD	X		Matrix Spike Dup
102WALCS	102WALCS7		X	Lab Control Sample
104LMLCS	104LMLCS7	X		Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of a number of samples. Refer to the organic extraction batchlog for the specific samples and amounts.

No other problems were encountered during the extraction of these samples.

0051

Case Narrative (continued)
SDG: PUG21

ANALYSIS:

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

5329163 and 5329164 had the surrogate recovery of phenol-d6 outside QC limits. Sufficient sample was unavailable to reextract these samples.

The QC windows for aramite, a,a-dimethylphenethylamine, 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of these compounds are estimated.

The LCS recovery is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: bis(2-ethylhexyl)phthalate

A number of compounds are not recovered or their recoveries are outside QC limits in 5329163MS/MSD. A number of relative percent differences (RPDs) between 5329163MS and 5329163MSD are greater than 30 percent or could not be recovered. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

A number of compounds are not recovered or their recoveries are outside QC limits in 5323938MS/MSD. A number of relative percent differences (RPDs) between 5323938MS and 5323938MSD are greater than 30 percent or could not be recovered. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

A number of recoveries are outside of QC limits in 102WALCS. Since 5-nitro-o-toluidine, 4-aminobiphenyl, and 3,3'-dimethylbenzidine were not detected in the associated samples, no further action was taken.

A number of recoveries are outside of QC limits in 104LMLCS. 2-Naphthylamine was not recovered in the 104LMLCS but was within QC limits in the MS/MSD. As per client request, no further action was taken.

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Case Narrative (continued)
SDG: PUG21

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Dana M. Kauffman
Manager, Data Deliverables

Date: 4/28/6

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Lancaster Laboratories
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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG21

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5329159	00120	X		
5329160	00220	X		
5329161	00320	X		
5329162	00420	X		
5329163	00720		X	Unspiked
5329163	00720MS		X	Matrix Spike
5329163	00720MSD		X	Matrix Spike Dup
5329164	20010		X	
LABORATORY SUBMITTED QC:				
SBLKWC102	SBLKWC1026		X	Method Blank
SBLKLB104	SBLKLB1049	X		Method Blank
5323938	60001	X		Unspiked
5323938	60001MS	X		Matrix Spike
5323938	60001MSD	X		Matrix Spike Dup
102WCLCS	102WCLCS6		X	Lab Control Sample
104LBLCS	104LBLCS9	X		Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of a number of samples. Refer to the organic extraction batchlog for the specific samples and amounts.

No other problems were encountered during the extraction of these samples.

0655

4694
1085937
5329159-64
PUGYX21
(3) AW-800
4/11/08

Report ID: HMA0022v1
Sequence: 413204

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 10-Apr-08 4:08:22 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIOLTAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 020/1
DLS WO#: 29841 Batch: 1676
Contractor Code: LLS HBN: 208242
Contract#: W91ZLK-08-F-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: GCMS
Priority: Standard
# of Samples: 6 (3) AW-800 4/11/08

Project Information

Project Site: NAPR-Cp Mosarip
Project #: Program 39-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29841
DLS Profile#: 35291

Contractor Due Date
PDF
Hardcopy 1 May 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/10/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: FedEX HIGX (Signature of contractor courier) (Date/Time of pick-up) D. Reed 4/11/08

Number of samples received intact: All except * (#/All)

Number of samples received broken: 3 (#/Name) 1 Semivolatile and 1 PAH bottle for 73FB-03 and 1 semivolatile bottle for 73FB-03A

Shipped (FFT)

Data package received by at CHPPM: Sarah R. Boots

Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLS2408	LLS2407	LLS2419	LLS2420
29841001	73SB02-01	SO		1		1
29841002	73SB02-04	SO		1		1
29841003	73SB14-01	SO		1		1
29841004	73SB14-04	SO		1		1
29841007	73FB-03 BKG	GW	1		1	
29841008	73FB-03 MS	GW	1		1	
29841009	73FB-03 MSD	GW	1		1	
29841010	73FB-03A	GW	1		1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description	Quantity
LLS2420	Semivolatile Organics (App IX)	4
	Procedure Description EPA 8270C	
LLS2419	Semivolatile Organics (App IX)	2
	Procedure Description EPA 8270C	
LLS2407	PAH in low level in Solids	4
	Procedure Description EPA 8270C (SIM)	
LLS2406	PAH in low level in Water	2
	Procedure Description EPA 8270C (SIM)	

4/11/08

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	4
Water (Ground water)	GW	4

Report ID: HRA0191C-ACodes
COC #: 413171

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-6403
http://chppm-www.apgea.army.mil/dls

Run Date: 10-Apr-08 15:09
Generated By: HEIDLTAYLOR

SAMPLES SHIPPED DIRECTLY TO CONTRACT LABORATORY

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/9/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip~35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLS	Customer: Program38 POC: David Jones
Location: NAPR-Cp Moscrip	Project Number: 38
Jono: 77HRW	Notes: 73FB-03 sample for SVOC and PAH and the 73FB-03A for SVOC and Pest was all recvd in can. Per Lancaster, they can still analyze for these out of the remaining containers. Metals listed on the COC were not recvd. H.Taylor 4/10/08
Subjono: 0995	
Turn Code: R028 28 Calendar day from receipt	

Total Samples: 8 | Total Containers: 16

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29841001	29841001-1	73SB02-01	SAMP	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:15 AM	07-May-2008
ACodes: LLS2407 : PAH in low level in Solids LLS2420 : Semivolatile Organics (App IX)										
29841002	29841002-1	73SB02-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:25 AM	07-May-2008
ACodes: LLS2407 : PAH in low level in Solids LLS2420 : Semivolatile Organics (App IX)										
29841003	29841003-1	73SB14-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 11:05 AM	07-May-2008
ACodes: LLS2407 : PAH in low level in Solids LLS2420 : Semivolatile Organics (App IX)										
29841004	29841004-1	73SB14-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 12:45 PM	07-May-2008
ACodes: LLS2407 : PAH in low level in Solids LLS2420 : Semivolatile Organics (App IX)										
29841007	29841007-4	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008
ACodes: LLS2438 : Semivolatile Organics (App IX)										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRAD191C-Acodes
COC #: 413171

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDLTAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLS	Customer: Program 38

29841007	29841007-6	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29841007	29841007-6	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2406 : PAH in low level in Water

29841007	29841007-7	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29841008	29841008-2	73FB-03 MS	MS	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29841008	29841008-3	73FB-03 MS	MS	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2406 : PAH in low level in Water

29841009	29841009-2	73FB-03 MSD	MSD	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29841009	29841009-3	73FB-03 MSD	MSD	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2406 : PAH in low level in Water

29841010	29841010-4	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2419 : Semivolatile Organics (App IX)

29841010	29841010-5	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

29841010	29841010-6	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLS2406 : PAH in low level in Water

29841010	29841010-7	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413171

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLS	Customer: Program 38

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

Total Samples: 8	Total Containers: 16

Samples Received By:	Joshua Davenport	Date Received:	FedEx 4/9/08
Document Reviewed By:	Heidi Taylor	Initials: HT 4/10/08	Date Reviewed: 4/10/08
Document Quality Review By:			Date Reviewed:
Samples Approved For Distribution:	Yes / No	Initials:	Date Approved:

Chain of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413171

USACHPPM
Readiness and Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

Profile:	35291 - 0995
Workorder #:	29841
Queue:	LLS

Description:	NAPR CMS-Cp Moscrip-35291
Workorder ID:	0995101
Customer:	Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29841001	73SB02-01	29841001-1	SO
29841003	73SB14-01	29841003-1	SO
29841007	73FB-03	29841007-7	GW
29841007	73FB-03	29841007-5	GW
29841008	73FB-03 MS	29841008-3	GW
29841008	73FB-03 MSD	29841008-2	GW
29841010	73FB-03A	29841010-[illegible]	GW
29841010	73FB-03A	29841010-[illegible]	GW

HSN	Customer Sample Id	Container Id	Mx
29841002	73SB02-04	29841002-1	SO
29841004	73SB14-04	29841004-1	SO
29841007	73FB-03	29841007-4	GW
29841007	73FB-03	29841007-6	GW
29841008	73FB-03 MS	29841008-2	GW
29841009	73FB-03 MSD	29841009-3	GW
29841010	73FB-03A	29841010-4	GW
29841010	73FB-03A	29841010-6	GW

Chain Of Custody

29841

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLS	Customer: Program 38

Total Samples: 8	Total Containers: 16

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 413171

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Mescrip~35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29841001		1		
29841002		1		
29841003		1		
29841004		1		
29841007		4		
29841008		2		
29841009		1		
29841010		1		

Total Samples: 8 | Total Containers: 16

Chain Of Custody

E-487

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Jane.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LLPAH +SVOC	OP Pest +Metals	Moist Tot	Moist Dis	RCRA M	Bens		
73SB02-01	7APR08	1015	✓		SO	5	3			1	1						
73SB02-04	7APR08	1025	✓		SO	5	3			1	1						
73SB14-01	7APR08	1145	✓		SO	5	3			1	1						
73SB14-04	7APR08	1215	✓		SO	5	3			1	1						
73ER-06	7APR08	1525	✓		W	8	3		1	1	1						
NOTHING FOLLOWS DJ																	
TRIP BLANKS					W	3	3										
NOTHING FOLLOWS																	

Metals bottle (not used) [illegible] 4/9/08

31 <- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped - 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7APR08/1800			

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log
(continuation page)

Client/Project: US Army CHPPM

Date of Receipt: ~~4/9/08~~ 4/9/08

Unpacker Emp. No.: 1454

Additional Paperwork Discrepancy/Unpacking Problems:

✓ 1 Broken Amber - 73 FB-03 (SVOC)
✓ 1 Broken Amber - 73 FB-03 (PAH)
✓ 1 Broken Amber - 73 FB-03 A (SVOC)
✓ 1 Broken Amber - 73 FB-03A (Pest)
✓ missing 2 (met 70591) bottles for 73-ER-06 → metals bottles go to another lab. KSW 885 4/9/08

0815

4692.01

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *ASD-GC/MS*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLS)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29906*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Values are reported for PAH compounds by both semivolatile and low-level PAH procedures, and LIMS values also exist for both procedures. The low-level PAH values should be reported to the customer.

Please see the contractor case narratives for Appendix IX semivolatiles (report pages 032-034) and low-level PAHs (report pages 425-426).

Project QC was satisfactory. The few QC outliers were judged to be difficult to analyze Appendiv IX compounds.

Sample 29906002 and 29906005 had somewhat reduced liquid volumes collected.

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 Feb 06

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1086586. Samples arrived at the laboratory on Friday, April 11, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29906001 NAPR-Cp Moscrip #35310-0995 Jones Water	5333070
29906002 NAPR-Cp Moscrip #35310-0995 Jones Water	5333071
29906005 NAPR-Cp Moscrip #35310-0995 Jones Water	5333072

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333070 WW Group No. 1086586

29906001 NAPR-Cp Mosorip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:56
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23001 SDG#: FUG24-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	25.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	30.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	15.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	15.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	60.	20.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	250.	75.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333070 WW Group No. 1086586

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:56
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23001 SDG#: PUG24-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	15.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	15.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	50.	15.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	50.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	60.	20.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	30.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	15.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	15.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333070 WW Group No. 1086586

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:56
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23001 SDG#: PUG24-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	15.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	55.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333070 WW Group No. 1086586

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:56
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23001 SDG#: PUG24-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	15.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The recovery of a,a-dimethylphenethylamine was outside of QC limits due to the erratic performance of the compound.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	N.D.	0.050	0.010	ug/l	1
08362	Naphthalene	91-20-3	0.033 J	0.050	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.015 J	0.050	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	0.011 J	0.050	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.050	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.050	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.050	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.050	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.050	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.050	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.050	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.050	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.050	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.050	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.050	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.050	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.050	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.050	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0019

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333070 WW Group No. 1086586

29906001 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:56
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23001 SDG#: PUG24-01BKG

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/17/2008 23:23	Gregory J Drahovsky	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/18/2008 03:14	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/16/2008 16:45	Kevin P Love	1
00813	BNA Water Extraction	SW-846 3510C	2	04/16/2008 16:45	Kevin P Love	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333071 WW Group No. 1086586

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

23002 SDG#: PUG24-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	26.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	31.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	16.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	16.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	63.	21.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	260.	78.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333071 WW Group No. 1086586

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23002 SDG#: PUG24-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	16.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	16.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	52.	16.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	52.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	63.	21.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	31.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	16.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	16.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333071 WW Group No. 1086586

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23002 SDG#: PUG24-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	16.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	110.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

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Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333071 WW Group No. 1086586

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23002 SDG#: PUG24-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.		5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.		16.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The recovery of a,a-dimethylphenethylamine was outside of QC limits due to the erratic performance of the compound.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	0.011	J	0.050	0.010	ug/l	1
08362	Naphthalene	91-20-3	0.038	J	0.050	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.017	J	0.050	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	0.013	J	0.050	0.010	ug/l	1
08366	Acenaphthene	83-32-9	0.021	J	0.050	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.		0.050	0.010	ug/l	1
08369	Phenanthrene	85-01-8	0.012	J	0.050	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.		0.050	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.		0.050	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.		0.050	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.		0.050	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.		0.050	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.		0.050	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.		0.050	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.		0.050	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.050	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.		0.050	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.		0.050	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0024

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Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333071 WW Group No. 1086586

29906002 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73MW01A # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 10:10

Submitted: 04/11/2008 11:10
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Discard: 05/10/2008

23002 SDG#: PUG24-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/18/2008 01:23	Gregory J Drahovsky	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/18/2008 05:25	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/16/2008 16:45	Kevin P Love	1
00813	BNA Water Extraction	SW-846 3510C	2	04/16/2008 16:45	Kevin P Love	1

0025

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333072 WW Group No. 1086586

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73KR-07 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

23005 SDG#: PUG24-03*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01309	Appendix IX Semi-volatiles						
00438	2,3,4,6-Tetrachlorophenol	58-90-2	N.D.	5.	2.	ug/l	1
00925	Aniline	62-53-3	N.D.	5.	1.	ug/l	1
01267	Acetophenone	98-86-2	N.D.	5.	2.	ug/l	1
01268	2-Acetylaminofluorene	53-96-3	N.D.	5.	2.	ug/l	1
01269	4-Aminobiphenyl	92-67-1	N.D.	5.	2.	ug/l	1
01272	Chlorobenzilate	510-15-6	N.D.	10.	3.	ug/l	1
01273	2,6-Dichlorophenol	87-65-0	N.D.	5.	2.	ug/l	1
01274	Dimethoate	60-51-5	N.D.	10.	3.	ug/l	1
01275	p-Dimethylaminoazobenzene	60-11-7	N.D.	5.	2.	ug/l	1
01276	7,12-Dimethylbenz[a]anthracene	57-97-6	N.D.	5.	2.	ug/l	1
01277	3,3'-Dimethylbenzidine	119-93-7	N.D.	26.	10.	ug/l	1
01278	1,3-Dinitrobenzene	99-65-0	N.D.	5.	2.	ug/l	1
01279	Ethyl methanesulfonate	62-50-0	N.D.	5.	2.	ug/l	1
01281	Hexachloropropene	1888-71-7	N.D.	5.	2.	ug/l	1
01282	Isodrin	465-73-6	N.D.	5.	1.	ug/l	1
01283	Isosafrole	120-58-1	N.D.	5.	2.	ug/l	1
01284	3-Methylcholanthrene	56-49-5	N.D.	5.	2.	ug/l	1
01285	Methyl methanesulfonate	66-27-3	N.D.	5.	1.	ug/l	1
01286	1,4-Naphthoquinone	130-15-4	N.D.	31.	10.	ug/l	1
01287	1-Naphthylamine	134-32-7	N.D.	16.	5.	ug/l	1
01288	2-Naphthylamine	91-59-8	N.D.	16.	5.	ug/l	1
01289	4-Nitroquinoline-1-oxide	56-57-5	N.D.	63.	21.	ug/l	1
01290	N-Nitrosodi-n-butylamine	924-16-3	N.D.	5.	2.	ug/l	1
01291	N-Nitrosodiethylamine	55-18-5	N.D.	5.	2.	ug/l	1
01292	N-Nitrosomethylethylamine	10595-95-6	N.D.	5.	2.	ug/l	1
01293	N-Nitrosomorpholine	59-89-2	N.D.	5.	2.	ug/l	1
01294	N-Nitrosopiperidine	100-75-4	N.D.	5.	2.	ug/l	1
01295	N-Nitrosopyrrolidine	930-55-2	N.D.	5.	2.	ug/l	1
01296	5-Nitro-o-toluidine	99-55-8	N.D.	5.	3.	ug/l	1
01297	Pentachlorobenzene	608-93-5	N.D.	5.	2.	ug/l	1
01298	Pentachloronitrobenzene	82-68-8	N.D.	5.	2.	ug/l	1
01299	Phenacetin	62-44-2	N.D.	5.	2.	ug/l	1
01300	1,4-Phenylenediamine	106-50-3	N.D.	260.	78.	ug/l	1
01301	2-Picoline	109-06-8	N.D.	5.	2.	ug/l	1
01302	Pronamide	23950-58-5	N.D.	5.	1.	ug/l	1
01303	Safrole	94-59-7	N.D.	5.	2.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5333072 WW Group No. 1086586

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 13:30 Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23005 SDG#: PUG24-03*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
01304	1,2,4,5-Tetrachlorobenzene	95-94-3	N.D.	5.	2.	ug/l	1
01305	Tetraethyldithiopyrophosphate	3689-24-5	N.D.	5.	1.	ug/l	1
01306	o-Toluidine	95-53-4	N.D.	5.	1.	ug/l	1
01307	O,O,O-Triethylphosphorothioate	126-68-1	N.D.	5.	2.	ug/l	1
01308	1,3,5-Trinitrobenzene	99-35-4	N.D.	16.	5.	ug/l	1
01313	Diallate trans/cis	2303-16-4	N.D.	5.	1.	ug/l	1
01453	4-Methylphenol	106-44-5	N.D.	5.	2.	ug/l	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
02514	Aramite	140-57-8	N.D.	16.	5.	ug/l	1
02591	1,4-Dioxane	123-91-1	N.D.	5.	1.	ug/l	1
03368	Methapyrilene	91-80-5	N.D.	52.	16.	ug/l	1
03369	a,a-Dimethylphenethylamine	122-09-8	N.D.	52.	5.	ug/l	1
03370	Thionazin	297-97-2	N.D.	5.	2.	ug/l	1
03871	4-Chloroaniline	106-47-8	N.D.	5.	1.	ug/l	1
03879	Dibenzofuran	132-64-9	N.D.	5.	1.	ug/l	1
03905	2-Methylnaphthalene	91-57-6	N.D.	5.	1.	ug/l	1
03907	2-Nitroaniline	88-74-4	N.D.	5.	1.	ug/l	1
03908	3-Nitroaniline	99-09-2	N.D.	5.	1.	ug/l	1
03909	4-Nitroaniline	100-01-6	N.D.	5.	1.	ug/l	1
03920	Pyridine	110-86-1	N.D.	5.	2.	ug/l	1
03922	2,4,5-Trichlorophenol	95-95-4	N.D.	5.	1.	ug/l	1
03924	2-Chlorophenol	95-57-8	N.D.	5.	1.	ug/l	1
03925	Phenol	108-95-2	N.D.	5.	1.	ug/l	1
03926	2-Nitrophenol	88-75-5	N.D.	5.	1.	ug/l	1
03927	2,4-Dimethylphenol	105-67-9	N.D.	10.	3.	ug/l	1
03928	2,4-Dichlorophenol	120-83-2	N.D.	5.	1.	ug/l	1
03929	4-Chloro-3-methylphenol	59-50-7	N.D.	5.	1.	ug/l	1
03930	2,4,6-Trichlorophenol	88-06-2	N.D.	5.	1.	ug/l	1
03931	2,4-Dinitrophenol	51-28-5	N.D.	63.	21.	ug/l	1
03932	4-Nitrophenol	100-02-7	N.D.	31.	10.	ug/l	1
03933	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	16.	5.	ug/l	1
03934	Pentachlorophenol	87-86-5	N.D.	16.	3.	ug/l	1
03935	N-Nitrosodimethylamine	62-75-9	N.D.	5.	2.	ug/l	1
03936	bis(2-Chloroethyl)ether	111-44-4	N.D.	5.	1.	ug/l	1
03937	1,3-Dichlorobenzene	541-73-1	N.D.	5.	1.	ug/l	1
03938	1,4-Dichlorobenzene	106-46-7	N.D.	5.	1.	ug/l	1
03939	1,2-Dichlorobenzene	95-50-1	N.D.	5.	1.	ug/l	1
03940	bis(2-Chloroisopropyl)ether	108-60-1	N.D.	5.	1.	ug/l	1

0027

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333072 WW Group No. 1086586

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23005 SDG#: PUG24-03*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
03941	Hexachloroethane	67-72-1	N.D.	5.	1.	ug/l	1
03942	N-Nitroso-di-n-propylamine	621-64-7	N.D.	5.	1.	ug/l	1
03943	Nitrobenzene	98-95-3	N.D.	5.	1.	ug/l	1
03944	Isophorone	78-59-1	N.D.	5.	1.	ug/l	1
03945	bis(2-Chloroethoxy)methane	111-91-1	N.D.	5.	1.	ug/l	1
03946	1,2,4-Trichlorobenzene	120-82-1	N.D.	5.	1.	ug/l	1
03947	Naphthalene	91-20-3	N.D.	5.	1.	ug/l	1
03948	Hexachlorobutadiene	87-68-3	N.D.	5.	1.	ug/l	1
03949	Hexachlorocyclopentadiene	77-47-4	N.D.	16.	5.	ug/l	1
03950	2-Chloronaphthalene	91-58-7	N.D.	5.	2.	ug/l	1
03951	Acenaphthylene	208-96-8	N.D.	5.	1.	ug/l	1
03952	Dimethylphthalate	131-11-3	N.D.	5.	2.	ug/l	1
03953	2,6-Dinitrotoluene	606-20-2	N.D.	5.	1.	ug/l	1
03954	Acenaphthene	83-32-9	N.D.	5.	1.	ug/l	1
03955	2,4-Dinitrotoluene	121-14-2	N.D.	5.	1.	ug/l	1
03956	Fluorene	86-73-7	N.D.	5.	1.	ug/l	1
03957	4-Chlorophenyl-phenylether	7005-72-3	N.D.	5.	2.	ug/l	1
03958	Diethylphthalate	84-66-2	N.D.	5.	2.	ug/l	1
03960	N-Nitrosodiphenylamine	86-30-6	N.D.	5.	2.	ug/l	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
03961	4-Bromophenyl-phenylether	101-55-3	N.D.	5.	1.	ug/l	1
03962	Hexachlorobenzene	118-74-1	N.D.	5.	1.	ug/l	1
03963	Phenanthrene	85-01-8	N.D.	5.	1.	ug/l	1
03964	Anthracene	120-12-7	N.D.	5.	1.	ug/l	1
03965	Di-n-butylphthalate	84-74-2	N.D.	5.	2.	ug/l	1
03966	Fluoranthene	206-44-0	N.D.	5.	1.	ug/l	1
03967	Pyrene	129-00-0	N.D.	5.	1.	ug/l	1
03969	Butylbenzylphthalate	85-68-7	N.D.	5.	2.	ug/l	1
03970	Benzo(a)anthracene	56-55-3	N.D.	5.	1.	ug/l	1
03971	Chrysene	218-01-9	N.D.	5.	1.	ug/l	1
03972	3,3'-Dichlorobenzidine	91-94-1	N.D.	5.	2.	ug/l	1
03973	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	5.	2.	ug/l	1
03974	Di-n-octylphthalate	117-84-0	N.D.	5.	2.	ug/l	1
03975	Benzo(b)fluoranthene	205-99-2	N.D.	5.	1.	ug/l	1
03976	Benzo(k)fluoranthene	207-08-9	N.D.	5.	1.	ug/l	1
03977	Benzo(a)pyrene	50-32-8	N.D.	5.	1.	ug/l	1
03978	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	5.	1.	ug/l	1
03979	Dibenz(a,h)anthracene	53-70-3	N.D.	5.	1.	ug/l	1
03980	Benzo(g,h,i)perylene	191-24-2	N.D.	5.	1.	ug/l	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333072 WW Group No. 1086586

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Account Number: 04694

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

23005 SDG#: PUG24-03*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
04680	2-Methylphenol	95-48-7	N.D.	5.	1.	ug/l	1
04712	Benzyl alcohol	100-51-6	N.D.	16.	5.	ug/l	1

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The recovery of a,a-dimethylphenethylamine was outside of QC limits due to the erratic performance of the compound.

08357 PAHs in waters by SIM

02884	1-Methylnaphthalene	90-12-0	0.011 J	0.048	0.0097	ug/l	1
08362	Naphthalene	91-20-3	0.057	0.048	0.0097	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.022 J	0.048	0.0097	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.048	0.0097	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.048	0.0097	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.048	0.0097	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.048	0.0097	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.048	0.0097	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.048	0.0097	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.048	0.0097	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.048	0.0097	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.048	0.0097	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.048	0.0097	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.048	0.0097	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.048	0.0097	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.048	0.0097	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.048	0.0097	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.048	0.0097	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0829

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5333072 WW Group No. 1086586

29906005 NAPR-Cp Moscrip #35310-0995 Jones Water
Field# 73ER-07 # 08-P-0732
Pick-Up Order #023 Delivery Order# 01 Water

Collected:04/10/2008 13:30

Submitted: 04/11/2008 11:10
Reported: 04/25/2008 at 10:57
Discard: 05/10/2008

23005 SDG#: PUG24-03*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01309	Appendix IX Semi-volatiles	SW-846 8270C	1	04/18/2008 01:47	Gregory J Drahovsky	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	04/18/2008 05:51	William T Parker	1
00813	BNA Water Extraction	SW-846 3510C	1	04/16/2008 16:45	Kevin P Love	1
00813	BNA Water Extraction	SW-846 3510C	2	04/16/2008 16:45	Kevin P Love	1

0038

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative Conformance/Nonconformance Summary

0032

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG24

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
5333070	23001	X	Unspiked
5333070	23001MS	X	Matrix Spike
5333070	23001MSD	X	Matrix Spike Dup
5333071	23002	X	
5333072	23005	X	

LABORATORY SUBMITTED QC:

SBLKWA107	SBLKWA1077	X	Method Blank
107WALCS	107WALCS7	X	Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, only 959 mls were used in the extraction of 5333071 and 5333072.

No other problems were encountered during the extraction of these samples.

ANALYSIS:

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The 4-methylphenol value is a combination of results from both compounds.

No problems were encountered during the analysis of these samples.

0033

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Where quality is a science.

Case Narrative (continued)
SDG: PUG24

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The QC windows for 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are advisory due to the erratic performance of the compounds. The quantitated values of 1,4-phenylenediamine, 1,4-naphthoquinone, and methapyrilene are estimated.

The recovery of a,a-dimethylphenethylamine was outside of QC limits due to the erratic performance of the compound.

A number of compounds were not recovered or their recoveries are outside QC limits in the MS/MSD. A number of relative percent differences (RPDs) between the MS and the MSD are greater than 30 percent or could not be calculated. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

A number of compounds were not recovered or their recoveries are outside QC limits in the LCS. Refer to the LCS form.

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Dana Kauffman for Date: 4-30-08
Dana M. Kauffman
Manager, Data Deliverables

0834

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUG24

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
5333070	23001	X	Unspiked
5333070	23001MS	X	Matrix Spike
5333070	23001MSD	X	Matrix Spike Dup
5333071	23002	X	
5333072	23005	X	

LABORATORY SUBMITTED QC:

SBLKWB107	SBLKWB1079	X	Method Blank
107WBLCS	107WBLCS9	X	Lab Control Sample

SAMPLE PREPARATION:

Due to insufficient sample, only 993 mls were used in the extraction of 5333071.

No other problems were encountered during the extraction of these samples.

ANALYSIS:

No problems were encountered during the analysis of these samples.

0425

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Case Narrative (continued)
SDG: PUG24

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The recovery of chrysene in the MS/MSD is outside QC limits.

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Dana M. Kauffman for Date: 4-30-08
Dana M. Kauffman
Manager, Data Deliverables

0426

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APRIL 2008

PESTICIDES DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* | **DIVISION/TEAM:** *CAD-PES*

INSTALLATION: *NAPR- Cp Moscrip* | **CONTRACT LAB:** *Lancaster (LLP)*

PROJECT NO: *38-0995* | **LIMS W.O. NO:** *29721*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 57-60). The QC data are reported on pages 61-71.

This was a difficult group of samples to analyze. There were some high level detections and some detections of more than one complex contaminant (such as chlordane, PCS 1254, PCB 1260) in a sample. Numerous dilutions were required in analysis of the sample set. Due to interfering peaks in the chromatogram, some values reported represent the lowest reporting limits attainable for various samples and/or compounds.

The 4,4'-DDE and 4,4'-DDT spike recoveries were outside the QC limits for the matrix spike/matrix spike duplicate sample. This sample (29717001) contained high levels of these target compounds, which affected the spike recovery results. The laboratory control standard and laboratory standard duplicate (LCS/LCSD) results for these compounds were satisfactory.

There were some other QC outliers, but these were judged to be minor.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *30 Apr 08*

Lancaster Laboratories
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Sample Reference List for SDG Number PUG02
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 002/DO# 01 NAPR-Cp Moscrip

Lab Sample Number	Lab Sample Code	Client Sample Description
5322336	00201	29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB01-00 # 08-P-0732
5322337	00202	29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB01A-00 # 08-P-0732
5322338	03002	29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB02-00 # 08-P-0732
5322339	00402	29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB03-00 # 08-P-0732
5322340	00502	29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB04-00 # 08-P-0732
5322341	00602	29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB05-00 # 08-P-0732
5322342	00702	29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB06-00 # 08-P-0732
5322343	02008	29717008 NAPR-Cp Moscrip #35208-0995 Jones Water Field# ER-01 # 08-P-0732
5322344	00210	29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB07-00 # 08-P-0732
5322345	00211	29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB08-00 # 08-P-0732
5322346	00212	29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB09-00 # 08-P-0732
5322347	00213	29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB10-00 # 08-P-0732
5322348	00214	29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB11-00 # 08-P-0732
5322349	15002	29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil Field# 73SB12-00 # 08-P-0732
5322350	00216	29717016 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73FB-01 # 08-P-0732
5322351	00217	29717017 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73FB-02 # 08-P-0732
5322352	00218	29717018 NAPR-Cp Moscrip #35208-0995 Jones Water Field# 73ER-03 # 08-P-0732

4694
1084708
5 322336-52
PUE02

Report ID: HMA0022v1
Sequence: 410712

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 03-Apr-08 1:32:42 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: JESSICA.BROCKMEYER

Section 1 - Contract/Project Information

Contract Information

Pickup Order: 002/1
DLS WO#: 29717 Batch: 1515
Contractor Code: LLP HBN: 208003
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: PES
Priority: Standard
# of Samples: 17

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29717
DLS Profile#: 36208

Contractor Due Date
PDF
Hardcopy 4/23/08

Pick-Up/Work/Delivery Order Approved by: [signature]
(Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] 4/3/08
(Caller's Name) (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: FedEx 4/2/08 1400 1400
(Signature of laboratory courier) (Date/Time of pick-up)

Number of samples received intact: All (#/All)
Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Boats
Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/29/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLP2421	LLP2422
29717001	73SB01-00	SO		1
29717002	73SB01A-00	SO		1
29717003	73SB02-00	SO		1
29717004	73SB03-00	SO		1
29717005	73SB04-00	SO		1
29717006	73SB05-00	SO		1
29717007	73SB06-00	SO		1
29717008	ER-01	GW	1	
29717010	73SB07-00	SO		1
29717011	73SB08-00	SO		1
29717012	73SB09-00	SO		1
29717013	73SB10-00	SO		1
29717014	73SB11-00	SO		1
29717015	73SB12-00	SO		1
29717016	73FB-01	GW	1	
29717017	73FB-02	GW	1	
29717018	73ER-03	GW	1	

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLP2422	Pesticides (OC) (App IX)		13
	Procedure Description	EPA 8081A	
LLP2421	Pesticides (OC) (App IX)		4
	Procedure Description	EPA 8081A	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	13
Water (Ground water)	GW	4

Report ID: HRA0191C-ACodes
COC #: 410652

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Standard

Chain Of Custody (COC)

SAMPLE RECEIVED CONTROL LABORATORY
0821
1515

This Chain of Custody is an Addendum to the Original COC submitted on 4/2/08 to SML. This is SML's internal Chain of Custody.

Profile: 35208 - 0995
Workorder #: 29717
Queue: LLP
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~35208
Workorder ID: 099594
Customer: Program38 POC: David Jones
Project Number: 38
Notes: Sample 73SB01A-00 SVOC soil cont. Recvd brkn but can be done in the PAH cont. Direct recv ER-01 OP Pest cont. but can be done from PAH cont. No temp recvd from Lancaster. Samples direct shipped. H.Taylor 4/3/08

Total Samples: 17
Total Containers: 17

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29717001	29717001-1	73SB01-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29717002	29717002-1	73SB01A-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 11:25 AM	30-Apr-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29717003	29717003-1	73SB02-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:00 PM	30-Apr-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29717004	29717004-1	73SB03-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 12:40 PM	30-Apr-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29717005	29717005-1	73SB04-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:00 PM	30-Apr-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410652

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLP	Customer: Program 38

29717006	29717006-1	73SB05-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717007	29717007-1	73SB06-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717008	29717008-6	ER-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	31-Mar-2008 03:00 PM	30-Apr-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29717010	29717010-1	73SB07-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717011	29717011-1	73SB08-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717012	29717012-1	73SB09-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717013	29717013-1	73SB10-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717014	29717014-1	73SB11-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717015	29717015-1	73SB12-00	SAMPLE	SO	Soil		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29717016	29717016-1	73FB-01	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 01:30 PM	30-Apr-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29717017	29717017-1	73FB-02	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:00 PM	30-Apr-2008

Chain of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410652

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0895	Description: NAPR CMS-Cp Moscrip~35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLP	Customer: Program 38

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29717018	29717018-1	73ER-03	SAMPLE	GW	Water (Ground		Not Recorded	02-Apr-2008 /NR	01-Apr-2008 02:30 PM	30-Apr-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

Total Samples: 17	Total Containers: 17

Chain Of Custody

Samples Received By: Kelly Pinnick Date Received: 4/2/08 via FedEx
Document Reviewed By: Heidi Taylor Initials: Date Reviewed: 4/3/08
Document Quality Review By: Date Reviewed:
Samples Approved For Distribution: Yes X No ____ Initials: Date Approved: April 3, 2008

23182

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410652

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDI.TAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLP	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29717001	73SB01-00	29717001-1	SO
29717003	73SB02-00	29717003-1	SO
29717005	73SB04-00	29717005-1	SO
29717007	73SB06-00	29717007-1	SO
29717010	73SB07-00	29717010-1	SO
29717012	73SB09-00	29717012-1	SO
29717014	73SB11-00	29717014-1	SO
29717016	73FB-01	29717016-1	GW
29717018	73ER-03	29717018-1	GW

HSN	Customer Sample Id	Container Id	Mx
29717002	73SB01A-00	29717002-1	SO
29717004	73SB03-00	29717004-1	SO
29717006	73SB05-00	29717006-1	SO
29717008	ER-01	29717008-6	GW
29717011	73SB08-00	29717011-1	SO
29717013	73SB10-00	29717013-1	SO
29717015	73SB12-00	29717015-1	SO
29717017	73FB-02	29717017-1	GW

Chain Of Custody

E-521

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLP	Customer: Program 38

Total Samples: 17	Total Containers: 17

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410852

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 11:35
Generated By: HEIDLTAYLOR

Profile: 35208 - 0995	Description: NAPR CMS-Cp Moscrip-35208
Workorder #: 29717	Workorder ID: 099594
Queue: LLP	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29717001		1		
29717002		1		
29717003		1		
29717004		1		
29717005		1		
29717006		1		
29717007				
29717008				
29717010				
29717011		1		
29717012		1		
29717013		1		
29717014		1		
29717015		1		
29717016				
29717017				
29717018				

Chain of Custody

Total Samples: 17 | Total Containers: 17

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

(ANC.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

4C		4C	4C							

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Metals	+Mod SVOC	+Pest PAH	Pest	Metals Tot	Metals Dis	RCRA	Benz	Pest	Metals
73SB01-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB01A-00	31 MAR 08	1125	✓		SO	5	3		1	1							
73SB02-00	31 MAR 08	1200	✓		SO	5	3		1	1							
73SB03-00	31 MAR 08	1240	✓		SO	5	3		1	1							
73SB04-00	31 MAR 08	1300	✓		SO	5	3		1	1							
73SB05-00	31 MAR 08	1330	✓		SO	5	3		1	1							
73SB06-00	31 MAR 08	1400	✓		SO	5	3		1	1							
ER-01	31 MAR 08	1500	✓		W	8	3		2	2						1	
TRIP BLANKS					W	3	3										
Nothing follows																	

41 <- Total Number of Containers

SHIPMENT METHOD - Fedex

Date Shipped-

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature]	31 MAR 08 / 1400			
		Kathy Bishop	4-2-08 /	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+Ice O - Other (specify)
Water VOCs have HCl preservative
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

Vanc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	TAL + SVOC	LL PAH	Org Pest	Met Test	Met Dis	RCRA M	Benz		
73SB07-00	1 APR08	0945	✓		SO	5	3		1	1							
73SB08-00		1030	✓		SO	5	3		1	1							
73SB09-00		0900	✓		SO	5	3		1	1							
73SB10-00		0930	✓		SO	5	3		1	1							
73SB11-00		1130	✓		SO	5	3		1	1							
73SB12-00		1100	✓		SO	5	3		1	1			Pb				
73ER-02 (Hold)		1340	✓		W	8	3		2	2	1						
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	

62 <- Total Number of Containers

SHIPMENT METHOD - Fedex

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/700			
		Kathy Binkley	4 2008	0915

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

USACHPPM Readiness thru Health

CHAIN OF CUSTODY RECORD

Vanc.

PAGE 1 OF 1

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	Moist + SVOC	Low PAH	Org Pest	Met Tot	Met Dis	RCRA M	Benz		
73SB07-00	1 APR08	0945	✓		SO	5	3		1	1							
73SB00-00		1030	✓		SO	5											
73SB05-00		0900	✓		SO	5											
73SB10-00		0930	✓		SO	5											
73SB11-00		1130	✓		SO	5											
73SB12-00		1100	✓		SO	5							Pb				
73ER-02 (Hold)		1310	✓		W	8	3		2	2	1		X				
73FB-01		1330	✓		W	8	3		2	2	1						
73FB-02		1400	✓		W	8	3		2	2	1						
73ER-03		1430	✓		W	8	3		2	2	1						
NOTHING FOLLOWS																	

62 <- Total Number of Containers

SHIPMENT METHOD - FedEx

Date Shipped- 1 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	1 APR 08/1700			
		Kelly Binkley	4/2/08 - 0915	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID) Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: USA CHPPM (PR)

Date of Receipt: 4-2-08

Time of Receipt: 0915

Source Code: 50-1

Unpacker Emp. No.: 1255

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	10559	Range 6.5°-7.3°	ST	WI	Y	B	(vials) (2) Bags of Ice
2	10559	Range 7.9°-13.°	ST	WI	Y	B	(2) Bags of Ice
3	10559	Range 7.5°-14.3°	ST	WI	Y	B	(vials encored) (4) Bags of Ice
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: received (3) extra trip Blanks

high temps - called Kathy

Paperwork Discrepancy/Unpacking Problems:

received (1) broken jar - Cooler #1 73SB01A for SVOA + Pest

encored - went to the lab @ 10:10

ER-01 (73ER-01) on label.

73SB12-00 - (1) - missing ID (1) jar - (Sroc + PAH)

73ER01 received (3) vials & (4) bottles instead of 3 as noted. missing (1) for Pests.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	4-2-08	1515	Unpacking
	~~4-3-08~~ 4/3/08	2053	Place in Storage or Entry
	4/3/08		Entry
			Entry

Notified Heidi Taylor of temp and issues by VM message on 4/2/08 @1517. KAW1885

Lancaster Laboratories

REVISED

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084705. Samples arrived at the laboratory on Wednesday, April 02, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322336
29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322337
29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322338
29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322339
29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322340
29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322341
29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322342
29717008 NAPR-Cp Moscrip #35208-0995 Jones Water	5322343
29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322344
29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322345
29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322346
29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322347
29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322348
29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil	5322349
29717016 NAPR-Cp Moscrip #35208-0995 Jones Water	5322350
29717017 NAPR-Cp Moscrip #35208-0995 Jones Water	5322351
29717018 NAPR-Cp Moscrip #35208-0995 Jones Water	5322352

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Adrienne Kuhl

Adrienne Kuhl
Specialist Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322336 SW Group No. 1084705

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00201 SDG#: PUG02-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	7.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.3	3.55	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		45.2	15.1	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.3	5.71	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.8	8.29	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.3	6.03	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.3	5.81	ug/kg	1
01999	PCB-1260	11096-82-5	22.5		18.3	6.78	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	25.		7.5	2.5	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.36	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.2	0.66	ug/kg	1
03661	Delta BHC	319-86-8	0.48	J	0.89	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.89	0.18	ug/kg	1
03663	Heptachlor	76-44-8	0.36	J	0.89	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	2.3		0.89	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.89	0.24	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.36	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.36	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.36	ug/kg	1
03669	p,p-DDE	72-55-9	75.		18.	3.6	ug/kg	10
03670	p,p-DDD	72-54-8	N.D.		1.8	0.36	ug/kg	1
03671	p,p-DDT	50-29-3	71.		18.	3.6	ug/kg	10
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.36	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.36	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.9	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		36.	12.	ug/kg	1
03676	Chlordane	57-74-9	390.		180.	43.	ug/kg	10
03677	Aldrin	309-00-2	N.D.		0.89	0.36	ug/kg	1

The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.

0022

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322336 SW Group No. 1084705

29717001 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00201 SDG#: PUG02-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Due to interfering peaks on the chromatogram, the value reported for Endosulfan I represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.
Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture .	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 17:49	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 02:34	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 02:45	Candice M Hibberd	10
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0023

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322337 SW Group No. 1084705

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00202 SDG#: PUG02-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.2		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		17.9	3.48	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.3	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		17.9	5.59	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.3	8.12	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		17.9	5.91	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		17.9	5.70	ug/kg	1
01999	PCB-1260	11096-82-5	33.1		17.9	6.65	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	0.81	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	3.0		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		3.0	3.0	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	0.52	J	1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	150.		36.	7.0	ug/kg	20
03670	p,p-DDD	72-54-8	N.D.		6.3	6.3	ug/kg	1
03671	p,p-DDT	50-29-3	160.		36.	7.0	ug/kg	20
03672	Endosulfan Sulfate	1031-07-8	1.7	J	1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	480.		360.	84.	ug/kg	20
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

BA24

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322337 SW Group No. 1084705

29717002 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB01A-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 11:25

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00202 SDG#: PUG02-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Due to interfering peaks on the chromatogram, the values reported for Endosulfan I and 4,4'-DDD represent the lowest reporting limits attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.
Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/11/2008 19:29	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 03:18	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 03:29	Candice M Hibberd	20
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0825

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322338 SW Group No. 1084705

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

03002 SDG#: PUG02-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	13.4	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	3,930.	762.	ug/kg	200
01994	PCB-1221	11104-28-2	N.D.	9,700.	3,230.	ug/kg	200
01995	PCB-1232	11141-16-5	N.D.	3,930.	1,220.	ug/kg	200
01996	PCB-1242	53469-21-9	N.D.	5,310.	1,780.	ug/kg	200
01997	PCB-1248	12672-29-6	N.D.	3,930.	1,290.	ug/kg	200
01998	PCB-1254	11097-69-1	N.D.	3,930.	1,250.	ug/kg	200
01999	PCB-1260	11096-82-5	N.D.	3,930.	1,450.	ug/kg	200
	Due to the nature of the sample extract matrix, a dilution was used for the analysis. The reporting limits were raised accordingly.						
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	4,000.	1,300.	ug/kg	500
03659	Alpha BHC	319-84-6	N.D.	580.	190.	ug/kg	500
03660	Beta BHC	319-85-7	N.D.	1,200.	350.	ug/kg	500
03661	Delta BHC	319-86-8	N.D.	480.	98.	ug/kg	500
03662	Gamma BHC - Lindane	58-89-9	N.D.	480.	98.	ug/kg	500
03663	Heptachlor	76-44-8	N.D.	480.	98.	ug/kg	500
03664	Heptachlor Epoxide	1024-57-3	N.D.	480.	98.	ug/kg	500
03665	Endosulfan I	959-98-8	N.D.	480.	330.	ug/kg	500
03666	Endosulfan II	33213-65-9	N.D.	980.	190.	ug/kg	500
03667	Dieldrin	60-57-1	N.D.	980.	190.	ug/kg	500
03668	Endrin	72-20-8	N.D.	980.	190.	ug/kg	500
03669	p,p-DDE	72-55-9	9,600.	4,900.	950.	ug/kg	2500
03670	p,p-DDD	72-54-8	5,500.	980.	190.	ug/kg	500
03671	p,p-DDT	50-29-3	77,000.	25,000.	4,800.	ug/kg	12500
03672	Endosulfan Sulfate	1031-07-8	N.D.	980.	190.	ug/kg	500
03673	Endrin Aldehyde	7421-93-4	N.D.	980.	190.	ug/kg	500
03674	Methoxychlor	72-43-5	N.D.	4,800.	980.	ug/kg	500
03675	Toxaphene	8001-35-2	N.D.	19,000.	6,400.	ug/kg	500
03676	Chlordane	57-74-9	N.D.	9,800.	2,300.	ug/kg	500
03677	Aldrin	309-00-2	N.D.	480.	190.	ug/kg	500

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322338 SW Group No. 1084705

29717003 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB02-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 12:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

03002 SDG#: PUG02-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.
Due to interfering peaks on the chromatogram, the value reported for Endosulfan I represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not sttained.
Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/11/2008 19:43	Jamie L Brillhart	200
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 03:51	Candice M Hibberd	500
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 23:18	Candice M Hibberd	2500
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 22:43	Candice M Hibberd	12500
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

DRAFT

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322339 SW Group No. 1084705

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00402 SDG#: PUG02-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	3.4		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		176.	34.2	ug/kg	10
01994	PCB-1221	11104-28-2	N.D.		435.	145.	ug/kg	10
01995	PCB-1232	11141-16-5	N.D.		176.	54.9	ug/kg	10
01996	PCB-1242	53469-21-9	N.D.		238.	79.7	ug/kg	10
01997	PCB-1248	12672-29-6	N.D.		176.	58.0	ug/kg	10
01998	PCB-1254	11097-69-1	N.D.		176.	55.9	ug/kg	10
01999	PCB-1260	11096-82-5	312.		176.	65.2	ug/kg	10
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	14.		7.2	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.0	0.34	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.63	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.86	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.86	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.86	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.86	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.86	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.34	ug/kg	1
03667	Dieldrin	60-57-1	0.73	J	1.8	0.34	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.34	ug/kg	1
03669	p,p-DDE	72-55-9	7.2		1.8	0.34	ug/kg	1
03670	p,p-DDD	72-54-8	2.2		1.8	0.34	ug/kg	1
03671	p,p-DDT	50-29-3	34.		8.8	1.7	ug/kg	5
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.34	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.34	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.6	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		34.	11.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.1	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.86	0.34	ug/kg	1

The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.

0828

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322339 SW Group No. 1084705

29717004 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB03-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 12:40

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00402 SDG#: PUG02-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Repone has variable recovery in sample extracts treated wtih florieil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 19:45	Jamie L Brillhart	10
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:02	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:13	Candice M Hibberd	5
06006	PFL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Applegyard	1
06006	PFL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0029

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322340 SW Group No. 1084705

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00502 SDG#: PUG02-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
D0111	Moisture	n.a.	7.4	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	18.4	3.56	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	45.4	15.1	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	18.4	5.72	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	24.8	8.32	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	18.4	6.05	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.	18.4	5.83	ug/kg	1
01999	PCB-1260	11096-82-5	20.7	18.4	6.80	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	38.	12.	ug/kg	5
03659	Alpha BHC	319-84-6	N.D.	5.4	1.8	ug/kg	5
03660	Beta BHC	319-85-7	N.D.	11.	3.3	ug/kg	5
03661	Delta BHC	319-86-8	N.D.	4.5	0.92	ug/kg	5
03662	Gamma BHC - Lindane	58-89-9	N.D.	4.5	0.92	ug/kg	5
03663	Heptachlor	76-44-8	N.D.	4.5	0.92	ug/kg	5
03664	Heptachlor Epoxide	1024-57-3	N.D.	4.5	0.92	ug/kg	5
03665	Endosulfan I	959-98-8	N.D.	4.5	1.7	ug/kg	5
03666	Endosulfan II	33213-65-9	N.D.	9.2	1.8	ug/kg	5
03667	Dieldrin	60-57-1	N.D.	9.2	1.8	ug/kg	5
03668	Endrin	72-20-8	N.D.	9.2	1.8	ug/kg	5
03669	p,p-DDE	72-55-9	360.	180.	36.	ug/kg	100
03670	p,p-DDD	72-54-8	13.	9.2	1.8	ug/kg	5
03671	p,p-DDT	50-29-3	120. J	180.	36.	ug/kg	100
03672	Endosulfan Sulfate	1031-07-8	N.D.	9.2	1.8	ug/kg	5
03673	Endrin Aldehyde	7421-93-4	N.D.	9.2	1.8	ug/kg	5
03674	Methoxychlor	72-43-5	N.D.	45.	9.2	ug/kg	5
03675	Toxaphene	8001-35-2	N.D.	180.	59.	ug/kg	5
03676	Chlordane	57-74-9	N.D.	92.	22.	ug/kg	5
03677	Aldrin	309-00-2	N.D.	4.5	1.8	ug/kg	5
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.						

0030

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322340 SW Group No. 1084705

29717005 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB04-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 13:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00502 SDG#: PUG02-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Due to interfering peaks on the chromatogram, the value reported for Endosulfan I represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.
Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/11/2008 19:58	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:24	Candice M Hibberd	5
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:35	Candice M Hibberd	100
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

8831

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322341 SW Group No. 1084705

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00602 SDG#: PUG02-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		89.3	17.3	ug/kg	5
01994	PCB-1221	11104-28-2	N.D.		221.	73.5	ug/kg	5
01995	PCB-1232	11141-16-5	N.D.		89.3	27.8	ug/kg	5
01996	PCB-1242	53469-21-9	N.D.		121.	40.4	ug/kg	5
01997	PCB-1248	12672-29-6	N.D.		89.3	29.4	ug/kg	5
01998	PCB-1254	11097-69-1	N.D.		89.3	28.4	ug/kg	5
01999	PCB-1260	11096-82-5	345.		89.3	33.1	ug/kg	5
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	66.	J	74.	24.	ug/kg	10
03659	Alpha BHC	319-84-6	N.D.		11.	3.5	ug/kg	10
03660	Beta BHC	319-85-7	N.D.		21.	6.4	ug/kg	10
03661	Delta BHC	319-86-8	N.D.		8.7	1.8	ug/kg	10
03662	Gamma BHC - Lindane	58-89-9	N.D.		8.7	1.8	ug/kg	10
03663	Heptachlor	76-44-8	N.D.		8.7	1.8	ug/kg	10
03664	Heptachlor Epoxide	1024-57-3	N.D.		8.7	1.8	ug/kg	10
03665	Endosulfan I	959-98-8	N.D.		8.7	2.3	ug/kg	10
03666	Endosulfan II	33213-65-9	N.D.		18.	3.5	ug/kg	10
03667	Dieldrin	60-57-1	13.	J	18.	3.5	ug/kg	10
03668	Endrin	72-20-8	N.D.		18.	3.5	ug/kg	10
03669	p,p-DDE	72-55-9	36.		18.	3.5	ug/kg	10
03670	p,p-DDD	72-54-8	N.D.		18.	3.5	ug/kg	10
03671	p,p-DDT	50-29-3	N.D.		18.	3.5	ug/kg	10
03672	Endosulfan Sulfate	1031-07-8	N.D.		18.	3.5	ug/kg	10
03673	Endrin Aldehyde	7421-93-4	N.D.		18.	3.5	ug/kg	10
03674	Methoxychlor	72-43-5	N.D.		87.	18.	ug/kg	10
03675	Toxaphene	8001-35-2	N.D.		350.	120.	ug/kg	10
03676	Chlordane	57-74-9	N.D.		180.	42.	ug/kg	10
03677	Aldrin	309-00-2	N.D.		8.7	3.5	ug/kg	10
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

0832

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322341 SW Group No. 1084705

29717006 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB05-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00602 SDG#: PUG02-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/11/2008 20:12	Jamie L Brillhart	5
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:46	Candice M Hibberd	10
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0033

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322342 SW Group No. 1084705

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00702 SDG#: PUG02-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.2	3.54	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		45.1	15.0	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.2	5.69	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.7	8.26	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.2	6.01	ug/kg	1
01998	PCB-1254	11097-69-1	103.		18.2	5.79	ug/kg	1
01999	PCB-1260	11096-82-5	59.4		18.2	6.76	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		75.	25.	ug/kg	10
03659	Alpha BHC	319-84-6	N.D.		11.	3.5	ug/kg	10
03660	Beta BHC	319-85-7	N.D.		21.	6.5	ug/kg	10
03661	Delta BHC	319-86-8	N.D.		8.9	1.8	ug/kg	10
03662	Gamma BHC - Lindane	58-89-9	N.D.		8.9	1.8	ug/kg	10
03663	Heptachlor	76-44-8	N.D.		8.9	1.8	ug/kg	10
03664	Heptachlor Epoxide	1024-57-3	2.8	J	8.9	1.8	ug/kg	10
03665	Endosulfan I	959-98-8	N.D.		8.9	2.4	ug/kg	10
03666	Endosulfan II	33213-65-9	N.D.		18.	3.5	ug/kg	10
03667	Dieldrin	60-57-1	9.1	J	18.	3.5	ug/kg	10
03668	Endrin	72-20-8	N.D.		18.	3.5	ug/kg	10
03669	p,p-DDE	72-55-9	29.		18.	3.5	ug/kg	10
03670	p,p-DDD	72-54-8	N.D.		18.	5.0	ug/kg	10
03671	p,p-DDT	50-29-3	27.		18.	3.5	ug/kg	10
03672	Endosulfan Sulfate	1031-07-8	N.D.		18.	3.5	ug/kg	10
03673	Endrin Aldehyde	7421-93-4	N.D.		18.	3.5	ug/kg	10
03674	Methoxychlor	72-43-5	N.D.		89.	18.	ug/kg	10
03675	Toxaphene	8001-35-2	N.D.		350.	120.	ug/kg	10
03676	Chlordane	57-74-9	N.D.		180.	43.	ug/kg	10
03677	Aldrin	309-00-2	N.D.		8.9	3.5	ug/kg	10

The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.

0834

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322342 SW Group No. 1084705

29717007 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB06-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:03/31/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00702 SDG#: PUG02-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to interfering peaks on the chromatogram, the value reported for 4,4'-DDD represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 20:28	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 04:57	Candice M Hibberd	10
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0035

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322343 WW Group No. 1084705

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

02008 SDG#: PUG02-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.50	0.10	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.50	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.50	0.10	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.50	0.10	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.50	0.10	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.50	0.10	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.50	0.10	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.50	0.20	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.50	0.10	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.070	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0030	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.020	0.0040	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.020	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0020	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0030	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0050	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.070	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.020	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

8836

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322343 WW Group No. 1084705

29717008 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# ER-01 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:03/31/2008 15:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

02008 SDG#: PUG02-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/07/2008 17:30	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/07/2008 01:10	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/05/2008 00:15	Roman Kuropatkin	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/05/2008 00:15	Roman Kuropatkin	1

0032

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322344 SW Group No. 1084705

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00210 SDG#: PUG02-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	2.7	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	17.5	3.39	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	43.2	14.4	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	17.5	5.45	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	23.6	7.91	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	17.5	5.76	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.	17.5	5.55	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.	17.5	6.47	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	7.2	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.	1.0	0.34	ug/kg	1
03660	Beta BHC	319-85-7	N.D.	2.1	0.63	ug/kg	1
03661	Delta BHC	319-86-8	N.D.	0.85	0.17	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.	0.85	0.17	ug/kg	1
03663	Heptachlor	76-44-8	N.D.	0.85	0.17	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.	0.85	0.17	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.	0.85	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.	1.7	0.34	ug/kg	1
03667	Dieldrin	60-57-1	N.D.	1.7	0.34	ug/kg	1
03668	Endrin	72-20-8	N.D.	1.7	0.34	ug/kg	1
03669	p,p-DDE	72-55-9	6.0	1.7	0.34	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.	1.7	0.34	ug/kg	1
03671	p,p-DDT	50-29-3	2.8	1.7	0.34	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.	1.7	0.34	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.	1.7	0.34	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.	8.5	1.7	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.	34.	11.	ug/kg	1
03676	Chlordane	57-74-9	N.D.	17.	4.1	ug/kg	1
03677	Aldrin	309-00-2	N.D.	0.85	0.34	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.						

6658

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322344 SW Group No. 1084705

29717010 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB07-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:45

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00210 SDG#: PUG02-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 20:42	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Solid	SW-846 8081A	1	04/23/2008 05:08	Candice M Hibberd	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0039

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322345 SW Group No. 1084705

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00211 SDG#: PUG02-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	3.6		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		17.6	3.42	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		43.6	14.5	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		17.6	5.50	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		23.9	7.99	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		17.6	5.81	ug/kg	1
01998	PCB-1254	11097-69-1	48.0		17.6	5.60	ug/kg	1
01999	PCB-1260	11096-82-5	27.3		17.6	6.54	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	11.		7.3	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.0	0.34	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.63	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.86	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.86	0.18	ug/kg	1
03663	Heptachlor	76-44-8	0.37	J	0.86	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	0.79	J	0.86	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.86	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.34	ug/kg	1
03667	Dieldrin	60-57-1	3.3		1.8	0.34	ug/kg	1
03668	Endrin	72-20-8	1.0	J	1.8	0.34	ug/kg	1
03669	p,p-DDE	72-55-9	5.7		1.8	0.34	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.34	ug/kg	1
03671	p,p-DDT	50-29-3	N.D.		1.8	0.34	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.34	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.34	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.6	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		34.	11.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.1	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.86	0.34	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

0848

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322345 SW Group No. 1084705

29717011 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB08-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 10:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00211 SDG#: PUG02-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 21:25	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Solid	SW-846 8081A	1	04/23/2008 05:19	Candice M Hibberd	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

00-41

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

REVISED

Lancaster Laboratories Sample No. 5322346 SW Group No. 1084705

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00212 SDG#: PUG02-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.5	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	18.2	3.53	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	44.9	15.0	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	18.2	5.67	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	24.6	8.24	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	18.2	5.99	ug/kg	1
01998	PCB-1254	11097-69-1	96.2	18.2	5.78	ug/kg	1
01999	PCB-1260	11096-82-5	71.4	18.2	6.74	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	11.	7.5	2.5	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.	1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.	2.1	0.65	ug/kg	1
03661	Delta BHC	319-86-8	N.D.	0.89	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.	0.89	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.	0.89	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	1.7	0.89	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.	0.89	0.24	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.	1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	4.5	1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.	1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	10.	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.	2.9	2.9	ug/kg	1
03671	p,p-DDT	50-29-3	37.	9.1	1.8	ug/kg	5
03672	Endosulfan Sulfate	1031-07-8	N.D.	1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.	1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.	8.9	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.	35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.	18.	4.3	ug/kg	1
03677	Aldrin	309-00-2	N.D.	0.89	0.35	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside tha QC limits. The client was notified, and the data is reported.						

8842

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322346 SW Group No. 1084705

29717012 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB09-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00212 SDG#: PUG02-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to interfering peaks on the chromatogram, the value reported for 4,4'-DDD represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 21:40	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 05:30	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 23:29	Candice M Hibberd	5
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

8843

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322347 SW Group No. 1084705

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00213 SDG#: PUG02-12

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.9		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		17.9	3.47	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.2	14.7	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		17.9	5.57	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.2	8.10	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		17.9	5.89	ug/kg	1
01998	PCB-1254	11097-69-1	146.		17.9	5.68	ug/kg	1
01999	PCB-1260	11096-82-5	53.8		17.9	6.62	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	18.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.87	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.87	0.18	ug/kg	1
03663	Heptachlor	76-44-8	16.		8.7	1.8	ug/kg	10
03664	Heptachlor Epoxide	1024-57-3	6.2		0.87	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.87	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	6.7		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	25.		18.	3.5	ug/kg	10
03670	p,p-DDD	72-54-8	N.D.		7.6	7.6	ug/kg	1
03671	p,p-DDT	50-29-3	38.		18.	3.5	ug/kg	10
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.7	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	94.	J	180.	42.	ug/kg	10
03677	Aldrin	309-00-2	N.D.		0.87	0.35	ug/kg	1

The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.

0044

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322347 SW Group No. 1084705

29717013 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB10-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 09:30

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00213 SDG#: PUG02-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to interfering peaks on the chromatogram, the value reported for 4,4'-DDD represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 21:54	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 05:41	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 06:36	Candice M Hibberd	10
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

8845

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322348 SW Group No. 1084705

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00214 SDG#: PUG02-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.2	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	17.9	3.48	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	44.3	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	17.9	5.59	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	24.3	8.12	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	17.9	5.91	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.	17.9	5.70	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.	17.9	6.65	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.	1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.	2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	N.D.	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.	0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.	0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.	0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.	0.88	0.35	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.	1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.	1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.	1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	8.0	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	3.9	1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	53.	9.0	1.7	ug/kg	5
03672	Endosulfan Sulfate	1031-07-8	N.D.	1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.	1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.	8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.	35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.	18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.	0.88	0.35	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.						

0046

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322348 SW Group No. 1084705

29717014 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB11-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 11:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00214 SDG#: PUG02-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracta treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to interfering peaks on the chromatogram, the value reported for Endosulfan I represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 22:09	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 06:47	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/23/2008 06:58	Candice M Hibberd	5
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

0047

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322349 SW Group No. 1084705

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

15002 SDG#: PUG02-14

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	2.9		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		17.5	3.40	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		43.3	14.4	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		17.5	5.46	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		23.7	7.93	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		17.5	5.77	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		17.5	5.56	ug/kg	1
01999	PCB-1260	11096-82-5	10.6	J	17.5	6.49	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.2	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.0	0.34	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.63	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.85	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.85	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.85	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.85	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.85	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.34	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.34	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.34	ug/kg	1
03669	p,p-DDE	72-55-9	1.3	J	1.8	0.34	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.34	ug/kg	1
03671	p,p-DDT	50-29-3	2.0		1.8	0.34	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.34	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.34	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.5	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		34.	11.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.1	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.85	0.34	ug/kg	1
	The LCS recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

0848

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322349 SW Group No. 1084705

29717015 NAPR-Cp Moscrip #35208-0995 Jones Soil
Field# 73SB12-00 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Soil

Collected:04/01/2008 11:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

15002 SDG#: PUG02-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated wtih florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 15:09	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/10/2008 22:23	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Solid	SW-846 8081A	1	04/23/2008 07:09	Candice M Hibberd	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/09/2008 18:30	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/11/2008 15:00	Wanda F Oswald	1

8849

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322350 WW Group No. 1084705

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00216 SDG#: PUG02-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.50	0.10	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.50	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.50	0.10	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.50	0.10	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.50	0.10	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.50	0.10	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.50	0.10	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.50	0.20	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.50	0.10	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.070	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0030	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.020	0.0040	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.020	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0020	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0030	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0050	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.070	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.020	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322350 WW Group No. 1084705

29717016 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-01 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 13:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00216 SDG#: PUG02-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/08/2008 10:00	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/07/2008 01:21	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/05/2008 00:15	Roman Kuropatkin	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/05/2008 00:15	Roman Kuropatkin	1

0051

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322351 WW Group No. 1084705

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

00217 SDG#: PUG02-16

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.50	0.099	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.50	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.50	0.099	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.50	0.099	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.50	0.099	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.50	0.099	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.50	0.099	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.50	0.20	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.50	0.099	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.070	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.0099	0.0030	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.020	0.0040	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.0099	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.020	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.0099	0.0020	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.0099	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.0099	0.0030	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0050	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.099	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.070	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	0.99	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.0099	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.099	0.020	ug/l	1

0852

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322351 WW Group No. 1084705

29717017 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73FB-02 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 14:00

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00217 SDG#: PUG02-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/08/2008 10:15	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/07/2008 01:32	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/05/2008 00:15	Roman Kuropatkin	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/05/2008 00:15	Roman Kuropatkin	1

0853

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322352 WW Group No. 1084705

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Account Number: 04694

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00218 SDG#: PUG02-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.55	0.11	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.55	0.18	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.55	0.11	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.55	0.11	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.55	0.11	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.55	0.11	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.55	0.11	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.55	0.22	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.55	0.11	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.22	0.077	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.011	0.0033	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.022	0.0044	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.022	0.0044	ug/l	1
03032	Endrin	72-20-8	N.D.	0.022	0.0044	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.022	0.0044	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.011	0.0030	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.022	0.0044	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.011	0.0022	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.011	0.0033	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.011	0.0033	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.022	0.0055	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.022	0.0044	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.11	0.033	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.55	0.077	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.3	1.1	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.011	0.0033	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.022	0.0044	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.022	0.0044	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.11	0.022	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0054

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322352 WW Group No. 1084705

29717018 NAPR-Cp Moscrip #35208-0995 Jones Water
Field# 73ER-03 # 08-P-0732
Pick-Up Order #002 Delivery Order# 01 Water

Collected:04/01/2008 14:30

Submitted: 04/02/2008 09:15
Reported: 04/28/2008 at 15:02
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00218 SDG#: PUG02-17*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/08/2008 10:29	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/07/2008 01:43	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/05/2008 00:15	Roman Kuropatkin	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/05/2008 00:15	Roman Kuropatkin	1

0055

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Organochlorine Pesticides Data

8056

Case Narrative Conformance/Nonconformance Summary

0057

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUG02

LANCASTER LABORATORIES

App. IX OC Pesticides

		MATRIX		
LLI SAMPLE #	**SAMPLE CODE**	**WATER**	**SOLID**	**COMMENT**
BLANKA 4/5/08	PBLKHA	X		Method Blank
LCSA	LCS12	X		Lab Control Spike
LCSDA	LCSDVY	X		Lab Control Spike Dup
5322343	02008	X		
5322350	00216	X		
5322351	00217	X		
5322352	00218	X		
BLANKA 4/11/08	PBLKQN		X	Method Blank
LCSA	LCSAB		X	Lab Control Spike
5322336	00201		X	Unspiked DF1, DF10
5322337	00202		X	DF1, DF20
5322338	03002		X	DF500, DF2500, DF12500
5322339	00402		X	DF1, DF5
5322340	00502		X	DF5, DF100
5322341	00602		X	DF10
5322342	00702		X	DF10
5322344	00210		X	
5322345	00211		X	
5322346	00212		X	DF1, DF5
5322347	00213		X	DF1, DF10
5322348	00214		X	DF1, DF5
5322349	15002		X	
LAB SUBMITTED QC:				
5322336MS	00201MS		X	Matrix Spike
5322336MSD	00201MSD		X	Matrix Spike Dup

A. Sample Preparation:

Kepone has variable recovery in sample extracts treated with a florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

No other problems were encountered with the preparation of the samples.

B. Analysis:

Various compounds and the average %Ds are outside the 15% criteria for continuing calibration standards 3D10113.05R, 3D10113.06R, 3D10113.19R, and 3D10113.20R on Column A. The only compound reported from the bracketed sample is 4,4-DDT which was reported from Column B.

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Lancaster Laboratories

The Toxaphene recovery in the Initial Calibration Verification standards are outside the 20% criteria for injections 1D10113.39, 1D10113B.39 and 1D10093B.22..

All other compounds in the Initial Calibration Verification standards are within the 20% criteria set by NELAC.

No other problems were encountered.

All other continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

Spike recoveries for alpha-BHC, beta-BHC, Heptachlor, and Aldrin are below QC limits for LCSAB. The client was contacted and approved reporting the data.

The 4,4-DDE and 4,4,DDT spike recoveries are outside QC limits for 5322336MS/5322336MSD.

All other QC data are within specifications.

D. Data Interpretation:

Due to interfering peaks on the chromatogram, the values reported represent the lowest reporting limits attainable for various samples and/or compounds.

No further interpretation is needed.

Data codes:

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

0059

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Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Narrative reviewed and approved by:

Dana Kauffman, Manager Data Deliverables **Date** 4/26/08

0060

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DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *CAD-PES*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLP)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29760*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 21-23). The QC data are reported on pages 24-29.

There were some QC outliers noted in the case narrative, but these were judged to be minor.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *30 Apr 08*

LIDS 2.0 Feb 06

4694
1084982
5323941-43
PUG09

Report ID: HMA0022v1
Sequence: 411088

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 04-Apr-08 5:16:41 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 009/1
DLS WO#: 29760 Batch: 1517
Contractor Code: LLP HBN: 208054
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: CO
Priority: Standard
# of Samples: 3

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29760
DLS Profile#: 35234

Contractor Due Date
PDF
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) 4/4/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: via FedEX 4/4/08 _____ (Signature of laboratory courier) 4/7/08 (Date/Time of pick-up)

Number of samples received intact: All (#/All)

Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Beck

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/29/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	Acodes Assigned → LLP2422
29760001	73SB18-00 (MS/MSD)	SO	1
29760002	73SB18A-00	SO	1
29760003	73SB14-00	SO	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLP2422	Pesticides (OC) (App IX)		3
	Procedure Description	EPA 8081A	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	3

Report ID: HRA0181C-ACode
COC #: 411070

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

USACHPPM
Readiness Thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/4/08 *to SML. This is SML's Internal Chain of Custody.* 157

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLP	Customer: Program 38 POC: David Jones
Location: NAPR-Cp Moscrip	Project Number: 38
Jono: 77HRW	Notes: Samples shipped directly to contract lab from field. Collection information for trip blanks not provided for log in. JBrockmeyer 4-4-08
Subjono: 0995	
Turn Code: R028 28 Calendar day Turn Receipt	

Chain Of Custody

Total Samples: 3 | Total Containers: 3

HSN	Container ID	Customer Sample ID	Sample Typ	Matrix		Temp		Date/Time Received	Date/Time Collecte	Sample Due Dat
29760001	29760001-8	73SB18-00 (MS/MSD)	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29760002	29760002-5	73SB18A-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:00 AM	02-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29760003	29760003-5	73SB14-00	SAMPLE	SO	Soil	10.0	degrees C	04-Apr-2008 01:20 PM	03-Apr-2008 11:30 AM	02-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acode
COC #: 411070

USACHPPM
Readiness thru Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLP	Customer: Program 38

Total Samples: 3	Total Containers: 3

Samples Received By: Jessica Nguyen	4/1/08	Date Received:	4/4/08 via Fed Ex
Document Reviewed By: Jessie Brockmeyer	Initials: JB	Date Reviewed:	4 April 08
Document Quality Review By:		Date Reviewed:	
Samples Approved For Distribution: Yes ✓ No ___	Initials: HJT	Date Approved:	

Chain Of Custody

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acode
COC #: 411070

USACHPPM
Readiness thru Health

Run Date: 04-Apr-08 15:57
Generated By: JESSICA.BROCKMEYE

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip~35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLP	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29760001	73SB18-00 (MS/MSD)	29760001-8	SO
29760003	73SB14-00	29760003-6	SO.

HSN	Customer Sample Id	Container Id	Mx
29760002	73SB18A-00	29760002-5	SO

Total Samples: 3

Total Containers: 3

Chain Of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness through Health

Profile: 35234 - 0995	Description: NAPR CMS-Cp Moscrip-35234
Workorder #: 29760	Workorder ID: 099595
Queue: LLP	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29760001		1		
29760002		1		
29760003		1		

Total Samples: 3 | Total Containers: 3

Chain Of Custody

NR=Not Reported.

CHAIN OF CUSTODY RECORD

USACHPPM Readiness then Health

PAGE 1 OF 1

Lanc.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL SVOC PAH	Pest + moist	Mgl Tot	Mgl Dis	RCRA M	Benz		
TRIP BLANKS					W	3	3										
73ER-05 (Hold)	3APR08	0930	✓		W	6	3		1	1	1						
73SB18-08 (MS/MSD)		1100	✓		SO	9	7			1	1						
73SB18A-08		1100	✓		SO	5	3			1	1						
73SB14-08		1130	✓		SO	5	3			1	1						
NOTHING FOLLOWS																	

28 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 3APR08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	3APR08/1300			
			4.4.08	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084982. Samples arrived at the laboratory on Friday, April 04, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323941
29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323942
29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil	5323943

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Valerie L. Tomayko
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323941 SW Group No. 1084982

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00901 SDG#: PUG09-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	13.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		19.5	3.79	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		48.3	16.1	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		19.5	6.09	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		26.4	8.85	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		19.5	6.44	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		19.5	6.21	ug/kg	1
01999	PCB-1260	11096-82-5	10.1	J	19.5	7.24	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	17.		8.0	2.6	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.38	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.3	0.70	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.95	0.20	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.95	0.20	ug/kg	1
03663	Heptachlor	76-44-8	0.28	J	0.95	0.20	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.95	0.20	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.95	0.25	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		2.0	0.38	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		2.0	0.38	ug/kg	1
03668	Endrin	72-20-8	N.D.		2.0	0.38	ug/kg	1
03669	p,p-DDE	72-55-9	6.6		2.0	0.38	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		2.0	0.38	ug/kg	1
03671	p,p-DDT	50-29-3	6.4		2.0	0.38	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		2.0	0.38	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	1.6	J	2.0	0.38	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.5	2.0	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		38.	13.	ug/kg	1
03676	Chlordane	57-74-9	100.		98.	23.	ug/kg	5
03677	Aldrin	309-00-2	N.D.		0.95	0.38	ug/kg	1
	The LCS recoveries for Heptachlor and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323941 SW Group No. 1084982

29760001 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00901 SDG#: PUG09-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/07/2008 18:54	Scott W Preisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 18:43	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 02:14	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 02:25	Candice M Hibberd	5
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/13/2008 15:00	Wanda F Oswald	1

0015

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323942 SW Group No. 1084982

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00902 SDG#: PUG09-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	16.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		20.4	3.95	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		50.3	16.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		20.4	6.35	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		27.5	9.22	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		20.4	6.71	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		20.4	6.47	ug/kg	1
01999	PCB-1260	11096-82-5	12.7	J	20.4	7.54	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	14.		8.4	2.8	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.2	0.40	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.4	0.73	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.99	0.20	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.99	0.20	ug/kg	1
03663	Heptachlor	76-44-8	0.23	J	0.99	0.20	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	1.3		0.99	0.20	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.99	0.26	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		2.0	0.40	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		2.0	0.40	ug/kg	1
03668	Endrin	72-20-8	N.D.		2.0	0.40	ug/kg	1
03669	p,p-DDE	72-55-9	6.3		2.0	0.40	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		2.0	0.40	ug/kg	1
03671	p,p-DDT	50-29-3	6.0		2.0	0.40	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		2.0	0.40	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	1.2	J	2.0	0.40	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.9	2.0	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		40.	13.	ug/kg	1
03676	Chlordane	57-74-9	93.	J	100.	24.	ug/kg	5
03677	Aldrin	309-00-2	N.D.		0.99	0.40	ug/kg	1
	The LCS recoveries for Heptachlor and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323942 SW Group No. 1084982

29760002 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB18A-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:00

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00902 SDG#: PUG09-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 19:26	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 03:42	Candice M Hibberd	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 03:53	Candice M Hibberd	5
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/13/2008 15:00	Wanda F Oswald	1

0017

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323943 SW Group No. 1084982

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00903 SDG#: PUG09-03*

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	10.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		19.1	3.70	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		47.1	15.7	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		19.1	5.94	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		25.8	8.63	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		19.1	6.28	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		19.1	6.05	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		19.1	7.06	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	2.8	J	7.8	2.6	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.37	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.2	0.68	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.93	0.19	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.93	0.19	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.93	0.19	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.93	0.19	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.93	0.25	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.9	0.37	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.9	0.37	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.9	0.37	ug/kg	1
03669	p,p-DDE	72-55-9	0.71	J	1.9	0.37	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.9	0.37	ug/kg	1
03671	p,p-DDT	50-29-3	0.69	J	1.9	0.37	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.9	0.37	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.9	0.37	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.3	1.9	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		37.	12.	ug/kg	1
03676	Chlordane	57-74-9	21.		19.	4.5	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.93	0.37	ug/kg	1
	The LCS recoveries for Heptachlor and Aldrin are outside the QC limits. The client was notified, and the data is reported.							

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5323943 SW Group No. 1084982

29760003 NAPR-Cp Moscrip #35234-0995 Jones Soil
Field# 73SB14-00 # 08-P-0732
Pick-Up Order #009 Delivery Order# 01 Soil

Collected:04/03/2008 11:30

Account Number: 04694

Submitted: 04/04/2008 09:30
Reported: 04/25/2008 at 13:47
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00903 SDG#: PUG09-03*

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/07/2008 18:54	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 19:40	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Solid	SW-846 8081A	1	04/24/2008 04:04	Candice M Hibberd	1
06006	PFL Pesticide Solid Extraction	SW-846 3550B	1	04/13/2008 15:00	Wanda F Oswald	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative Conformance/Nonconformance Summary

0021

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUG09

LANCASTER LABORATORIES

App. IX OC Pesticides

LLI SAMPLE #	SAMPLE CODE	MATRIX WATER	MATRIX SOLID	COMMENT
BLANKA 4/15/08	PBLKV3		X	Method Blank
LCSA	LCSEN		X	Lab Control Spike
5323941	00901		X	Unspiked DF1, DF5
5323942	00902		X	DF1, DF5
5323943	00903		X	
LAB SUBMITTED QC:				
5323941MS	00901MS		X	Matrix Spike
5323941MSD	00901MSD		X	Matrix Spike Dup

A. Sample Preparation:

Kepone has variable recovery in sample extracts treated with a florisil-clean-up. Since this clean-up wa needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

No other problems were encountered with the preparation of the samples.

B. Analysis:

The Toxaphene recoveries in the Initial Calibration Verification standard are outside the 20% criteria on both columns in ICAL 1D10113.

All other compounds in the Initial Calibration Verification standards are within the 20 % criteria set by NELAC.

No other problems were encountered.

All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

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Lancaster Laboratories

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

The DCB surrogate recovery in 5323942 is outside QC limits due to matrix interference.

The Heptachlor and Aldrin surrogate recoveries in LCSEN are outside QC limits. The client approved reporting the data.

All other QC data are within specifications.

D. Data Interpretation:

No further interpretation is needed.

Data codes:

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Narrative reviewed and approved by:

Dana Kauffman, Manager Data Deliverables **Date** 4/29/08

QC Summary

0824

2F
SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: PUG09

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

Batchnumber: 081060006A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5323941	00901	76	65	149	208 *	1
5323941 MS	00901MS	73	66	121	135	0
5323941 MSD	00901MSD	70	62	114	105	0
5323942	00902	85	74	166 *	329 *	2
5323943	00903	74	66	121	102	0
BLANKA	PBLKV3	64	62	93	87	0
LCSA	LCSEN	62	61	84	80	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION	
TCX	= Tetrachloro-m-xylene	(38 - 132)	9.98	ug/kg
DCB	= Decachlorobiphenyl	(41 - 160)	10	ug/kg

6825

Column to be used to flag recovery values

* Values outside of QC Limits

D Surrogate diluted out

3F
Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 00901

Compound	Spike Added (ug/kg)	Sample Concen (ug/kg)	MS Concen (ug/kg)	MSD Concen (ug/kg)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.92	0	3.01	2.87	77	73	(36 - 133)	5	50
gamma-BHC (Lindane)	3.92	0	2.99	2.87	76	73	(27 - 138)	4	50
beta-BHC	3.81	0	3.48	3.57	91	94	(25 - 142)	3	50
delta-BHC	3.81	0	3.21	3.29	84	86	(30 - 152)	2	50
Heptachlor	3.98	0.28	2.78	2.70	63	61	(35 - 132)	3	50
Aldrin	3.84	0	2.80	2.77	73	72	(34 - 134)	1	50
Heptachlor epoxide	3.83	0	3.91	3.83	102	100	(31 - 143)	2	50
gamma-Chlordane	3.83	7.53	12.45	11.74	128	110	(30 - 157)	6	50
alpha-Chlordane	3.83	28.61	29.32	26.69	19*	-50*	(24 - 148)	9	50
4,4'-DDE	7.65	6.63	13.98	12.37	96	75	(32 - 165)	12	50
Endosulfan I	3.93	0	2.82	2.89	72	74	(35 - 132)	2	50
Dieldrin	7.85	0	6.72	6.76	86	86	(28 - 153)	1	50
Endrin	8.05	0	4.92	7.64	61	95	(40 - 136)	43	50
4,4'-DDD	7.68	0	8.32	8.48	108	110	(30 - 163)	2	50
Endosulfan II	7.54	0	6.60	6.77	88	90	(34 - 154)	3	50
4,4'-DDT	7.97	6.36	11.51	11.02	65	58	(10 - 176)	4	50
Endrin aldehyde	7.58	1.64	5.89	6.24	56	61	(21 - 128)	6	35
Methoxychlor	38.06	0	34.80	37.14	91	98	(29 - 163)	7	50
Endosulfan sulfate	7.50	0	7.62	7.10	102	95	(11 - 170)	7	50
Endrin ketone	7.66	0	4.92	7.95	64	104	(27 - 163)	47	50

not reported

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 2 out of 40 outside limits

0826

Comments:

Sample No.: 5323941 Batch: 081060008A

FORM III-2

3F

Soil Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSEN

Compound	Spike Added (ug/kg)	LCS Concen (ug/kg)	LCSD Concen (ug/kg)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.41	2.23		65		(60 - 127)		50
gamma-BHC (Lindane)	3.41	2.32		68		(59 - 125)		50
beta-BHC	3.32	2.50		75		(68 - 137)		50
delta-BHC	3.32	2.37		71		(66 - 118)		50
Heptachlor	3.46	2.08		60*		(61 - 129)		50
Aldrin	3.34	2.12		63*		(74 - 137)		50
Heptachlor epoxide	3.33	2.49		75		(72 - 132)		50
gamma-Chlordane	3.33	2.36		71		(57 - 130)		50
alpha-Chlordane	3.33	2.46		74		(66 - 127)		50
4,4'-DDE	6.65	5.04		76		(52 - 159)		50
Endosulfan I	3.42	2.40		70		(65 - 121)		50
Dieldrin	6.83	4.99		73		(71 - 133)		50
Endrin	7.01	4.87		69		(65 - 134)		50
4,4'-DDD	6.68	5.64		84		(60 - 153)		50
Endosulfan II	6.56	5.62		86		(73 - 134)		50
4,4'-DDT	6.93	4.52		65		(57 - 124)		50
Endrin aldehyde	6.59	5.22		79		(40 - 119)		35
Methoxychlor	33.11	24.61		74		(49 - 148)		50
Endosulfan sulfate	6.53	5.66		87		(58 - 133)		50
Endrin ketone	6.67	5.91		89		(70 - 143)		50

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 2 out of 20 outside limits

0022

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 081060006A

FORM III-2

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKV3

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUG09

Lab Sample ID BLANKA Batch 081060006A Lab File ID: 2D10113.12R 2D10113B.12R

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 4/15/2008

Date Analyzed (1): 4/23/2008 Date Analyzed (2): 4/23/2008

Time Analyzed (1): 23:40:39 Time Analyzed (2): 23:40:39

Instrument ID (1): H9191A Instrument ID (2): H9191B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	00901	5323941	4/24/2008	4/24/2008
02	00901DL	5323941	4/24/2008	4/24/2008
03	00901MS	5323941MS	4/24/2008	4/24/2008
04	00901MSD	5323941MSD	4/24/2008	4/24/2008
05	00902DL	5323942	4/24/2008	4/24/2008
06	00902	5323942	4/24/2008	4/24/2008
07	00903	5323943	4/24/2008	4/24/2008
08	PBLKV3	BLANKA	4/23/2008	4/23/2008
09	LCSEN	LCSA	4/23/2008	4/23/2008

0826

COMMENTS:

1E

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKV3

Lab Name: Lancaster Laboratories **Contract:**

Lab Code: **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) SOIL **Lab Sample ID:** BLANKA

Sample wt/vol: 30 (g/ml) g **Lab File ID:** 2D10113.12R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) SONC **Date Extracted:** 4/15/2008

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 4/23/2008

Injection Volume: 1 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) Y **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/kg	Q
319-84-6	alpha-BHC	1.0	U
58-89-9	gamma-BHC (Lindane)	0.83	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.83	U
76-44-8	Heptachlor	0.83	U
309-00-2	Aldrin	0.83	U
1024-57-3	Heptachlor epoxide	0.83	U
72-55-9	4,4'-DDE	1.7	U
959-98-8	Endosulfan I	0.83	U
60-57-1	Dieldrin	1.7	U
72-20-8	Endrin	1.7	U
143-50-0	Kepone	7.0	U
72-54-8	4,4'-DDD	1.7	U
33213-65-9	Endosulfan II	1.7	U
50-29-3	4,4'-DDT	1.7	U
7421-93-4	Endrin aldehyde	1.7	U
72-43-5	Methoxychlor	8.3	U
1031-07-8	Endosulfan sulfate	1.7	U
57-74-9	Chlordane (Technical)	17	U
8001-35-2	Toxaphene	33	U

8829

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *CAD-PES*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLP)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29721*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 41-43). The QC data are reported on pages 44-54.

The soil method blank contained 0.43 ug/kg of delta-BHC. Detections of this compound in the sample set need to have blank qualifiers attached.

In samples 29721007 and 29721008, a dilution was required in the analysis because of the sample matrices.

There were some other QC outliers noted in the case narrative, but these were judged to be minor.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *30 Apr 08*

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Sample Reference List for SDG Number PUG05
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 005/DO# 01 NAPR-Cp Moscrip

Lab Sample Number	Lab Sample Code	Client Sample Description
5322589	00501	29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13-00 # 08-P-0732
5322590	05002	29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB13A-00 # 08-P-0732
5322591	00503	29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB17-00 # 08-P-0732
5322592	00504	29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB21-00 # 08-P-0732
5322593	00505	29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB16-00 # 08-P-0732
5322594	00506	29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB20-00 # 08-P-0732
5322595	00507	29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB24-00 # 08-P-0732
5322596	00508	29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB15-00 # 08-P-0732
5322597	05009	29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB19-00 # 08-P-0732
5322598	00510	29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB22-00 # 08-P-0732
5322599	05011	29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil Field# 73SB23-00 # 08-P-0732
5322600	05012	29721012 NAPR-Cp Moscrip #35215-0995 Jones Water Field# 73ER-04 # 08-P-0732

Report ID: HMA0022v1
Sequence: 410724

4694
10847558
5 322589-600
PUG05

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 03-Apr-08 1:46:16 PM

Pick-Up / Work / Delivery Order
Generated by: JESSICA.BROCKMEYER

Section I - Contract/Project Information

Contract Information

Pickup Order: 005/1

DLS WO#: 29721 Batch: 1518
Contractor Code: LLP HBN: 208004
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: PES
Priority: Standard
# of Samples: 12

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0998
DLS WO#: 29721
DLS Profile#: 35218

Contractor Due Date
PDF
Hardcopy 4/24/08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/3/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: Fed EX 4/3/08 (Signature of laboratory courier) 1:00 PM 4/8/08 (Date/Time of pick-up)

Number of samples received intact: All (#/All) Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Boots Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/29/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLP2421	LLP2422
29721001	73SB13-00	SO		1
29721002	73SB13A-00	SO		1
29721003	73SB17-00	SO		1
29721004	73SB21-00	SO		1
29721005	73SB16-00	SO		1
29721006	73SB20-00	SO		1
29721007	73SB24-00	SO		1
29721008	73SB15-00	SO		1
29721009	73SB19-00	SO		1
29721010	73SB22-00	SO		1
29721011	73SB23-00	SO		1
29721012	73ER-04	GW	1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLP2422	Pesticides (OC) (App IX)		11
	Procedure Description	EPA 8081A	
LLP2421	Pesticides (OC) (App IX)		1
	Procedure Description	EPA 8081A	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	11
Water (Ground water)	GW	1

Report ID: HRA0191C-ACodes
COC #: 410869

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Standard

Direct Ship
005/1
1516

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/3/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35215 - 0995
Workorder #: 29721
Queue: LLP
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~35215
Workorder ID: 099594
Customer: Program 38 POC: David Jones
Project Number: 38
Notes: Trip blanks recvd not listed on the COC. Metals container listed on COC for Sample ID: 3ER02 was not recvd w/ shipment. Collection date and time for trip blanks not provided to SML for log-in. H.Taylor 4/3/08

Total Samples: 12 | Total Containers: 12

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29721001	29721001-5	73SB13-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29721002	29721002-5	73SB13A-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 09:30 AM	01-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29721003	29721003-5	73SB17-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:00 AM	01-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29721004	29721004-5	73SB21-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 10:45 AM	01-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										
29721005	29721005-5	73SB16-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:15 AM	01-May-2008
ACodes: LLP2422 : Pesticides (OC) (App IX)										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0181C-Acodes
COC #: 410669

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~36215
Workorder #: 29721	Workorder ID: 099594
Queue: LLP	Customer: Program 38

29721006	29721006-5	73SB20-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 11:45 AM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721007	29721007-5	73SB24-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 12:00 PM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721008	29721008-5	73SB15-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:00 PM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721009	29721009-5	73SB19-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:15 PM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721010	29721010-5	73SB22-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 02:00 PM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721011	29721011-5	73SB23-00	SAMPLE	SO	Soil	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 01:30 PM	01-May-2008

ACodes:
LLP2422 : Pesticides (OC) (App IX)

29721012	29721012-1	73ER-04	SAMPLE	GW	Water (Ground	10.0	degrees C	03-Apr-2008 /NR	02-Apr-2008 03:00 PM	01-May-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

Chain Of Custody

Total Samples: 12	Total Containers: 12

Samples Received By: Jessica Nguyen 4/8/08 — Date Received: 4/3/08 via FedEx 4/8/08
Document Reviewed By: Heidi Taylor — Initials: HLT — Date Reviewed: 3 April 08
Document Quality Review By: [signature] — Date Reviewed: ↓
Samples Approved For Distribution: Yes ✓ No ____ — Initials: [signature] — Date Approved: ↓

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410669

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLP	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29721001	73SB13-00	29721001-5	SO
29721003	73SB17-00	29721003-5	SO
29721005	73SB16-00	29721005-5	SO
29721007	73SB24-00	29721007-5	SO
29721009	73SB19-00	29721009-5	SO
29721011	73SB23-00	29721011-5	SO

HSN	Customer Sample Id	Container Id	Mx
29721002	73SB13A-00	29721002-5	SO
29721004	73SB21-00	29721004-5	SO
29721006	73SB20-00	29721006-5	SO
29721008	73SB15-00	29721008-5	SO
29721010	73SB22-00	29721010-5	SO
29721012	73SB-04	29721012-1	GW

Total Samples: 12 Total Containers: 12

Chain Of Custody

E-600

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410669

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 12:25
Generated By: HEIDI.TAYLOR

Profile: 35215 - 0995	Description: NAPR CMS-Cp Moscrip~35215
Workorder #: 29721	Workorder ID: 099594
Queue: LLP	Customer: Program 38

SAMPLE DISPOSAL RECORD [redacted]

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29721001		1		
29721002		1		
29721003		1		
29721004		1		
29721005		1		
29721006		1		
29721007		1		
29721008		1		
29721009		1		
29721010		1		
29721011		1		
29721012		1		

Total Samples: 12 | Total Containers: 12

Chain of Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness Base Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

LANC

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Org Pest	Metal Total	Metal Dis	RCRA M	Benz		
73SB13-00	2APR08	0930	✓		SO	5	3			1	1						
73SB13A-00		0930	✓		SO	5	3			1	1						
73SB17-00		1000	✓		SO	5	3			1	1						
73SB21-00		1045	✓		SO	5	3			1	1						
73SB16-00		1115	✓		SO	5	3			1	1						
73SB20-00		1145	✓		SO	5	3			1	1						
73SB24-00		1200	✓		SO	5	3			1	1						
73SB15-00		1300	✓		SO	5	3			1	1						
73SB19-00		1315	✓		SO	5	3			1	1						
73SB22-00		1400	✓		SO	5	3			1	1						
73SB23-00		1330	✓		SO	5	3			1	1						
73ER-04	↓	1500	✓		W	7	3		1	1	1	✓	Bottle form [illegible] @ LI. 1400/8035 4/3/08				
NOTHING FOLLOWS																	

12 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped - 2 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
[signature] VSAC	2APR08/1700	[signature]	4 Apr 0845	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1084755. Samples arrived at the laboratory on Thursday, April 03, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322589
29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322590
29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322591
29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322592
29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322593
29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322594
29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322595
29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322596
29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322597
29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322598
29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil	5322599
29721012 NAPR-Cp Moscrip #35215-0995 Jones Water	5322600

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Susan M Gosheri

Susan M. Gosheri
Group Leader

6615

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322589 SW Group No. 1084755

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 738B13-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00501 SDG#: PUG05-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.0	3.50	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.6	14.9	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.0	5.63	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.4	8.17	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.0	5.94	ug/kg	1
01998	PCB-1254	11097-69-1	12.1	J	18.0	5.73	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.0	6.69	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.65	ug/kg	1
03661	Delta BHC	319-86-8	0.55	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.88	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	N.D.		1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	1.1	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1

The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322589 SW Group No. 1084755

29721001 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00501 SDG#: PUG05-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 12:14	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 21:41	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322590 SW Group No. 1084755

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05002 SDG#: PUG05-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.0	3.48	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.4	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.0	3.60	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.3	8.13	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.0	5.91	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.0	5.70	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.0	6.63	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	0.51	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.88	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	0.45	J	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	0.64	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322590 SW Group No. 1084755

29721002 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB13A-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 09:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05002 SDG#: PUG05-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 12:29	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 21:55	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322591 SW Group No. 1084755

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00503 SDG#: PUG05-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	4.9	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	17.9	3.47	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	44.2	14.7	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	17.9	5.57	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	24.2	8.10	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	17.9	5.89	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.	17.9	5.68	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.	17.9	6.62	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.	1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.	2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	0.27 J	0.87	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.	0.87	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.	0.87	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.	0.87	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.	0.87	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.	1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.	1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.	1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	N.D.	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.	1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	N.D.	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.	1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.	1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.	8.7	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.	35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.	18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.	0.87	0.35	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is						

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322591 SW Group No. 1084755

29721003 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB17-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 10:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00503 SDG#: PUG05-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 12:43	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 22:09	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322592 SW Group No. 1084755

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00504 SDG#: PUG05-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.7		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.0	3.50	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.5	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.0	5.62	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.4	8.17	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.0	5.94	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.0	5.73	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.0	6.68	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.65	ug/kg	1
03661	Delta BHC	319-86-8	0.40	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.88	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	0.47	J	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	0.92	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	18.	J	18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1

The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is

6822

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322592 SW Group No. 1084755

29721004 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB21-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 10:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00504 SDG#: PUG05-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 12:58	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 22:23	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

0023

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322593 SW Group No. 1084755

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00505 SDG#: PUG05-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.2		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.1	3.52	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.8	14.9	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.1	5.65	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.5	8.21	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.1	5.97	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.1	5.76	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.1	6.72	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.5	2.5	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.65	ug/kg	1
03661	Delta BHC	319-86-8	0.27	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.88	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	0.61	J	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	0.72	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.3	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

8824

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322593 SW Group No. 1084755

29721005 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB16-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 11:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00505 SDG#: PUG05-05BKG

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 13:12	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 22:37	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

0025

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322594 SW Group No. 1084755

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00506 SDG#: PUG05-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.1	3.51	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.7	14.9	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.1	5.64	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.5	8.19	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.1	5.96	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.1	5.74	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.1	6.70	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.65	ug/kg	1
03661	Delta BHC	319-86-8	0.39	J	0.88	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.88	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.88	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.88	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.88	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	0.49	J	1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	1.0	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.8	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	12.	J	18.	4.3	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.88	0.35	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

8826.

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322594 SW Group No. 1084755

29721006 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB20-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 11:45

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00506 SDG#: PUG05-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 13:55	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 23:18	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

6822

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322595 SW Group No. 1084755

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00507 SDG#: PUG05-07

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.0	3.49	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.4	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.0	5.61	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.3	8.15	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.0	5.93	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.0	5.71	ug/kg	1
01999	PCB-1260	11096-82-5	13.2	J	18.0	6.67	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		37.	12.	ug/kg	5
03659	Alpha BHC	319-84-6	N.D.		5.3	1.7	ug/kg	5
03660	Beta BHC	319-85-7	N.D.		11.	3.2	ug/kg	5
03661	Delta BHC	319-86-8	1.9	J	4.4	0.90	ug/kg	5
03662	Gamma BHC - Lindane	58-89-9	N.D.		4.4	0.90	ug/kg	5
03663	Heptachlor	76-44-8	N.D.		4.4	0.90	ug/kg	5
03664	Heptachlor Epoxide	1024-57-3	N.D.		4.4	0.90	ug/kg	5
03665	Endosulfan I	959-98-8	N.D.		4.4	1.2	ug/kg	5
03666	Endosulfan II	33213-65-9	N.D.		9.0	1.7	ug/kg	5
03667	Dieldrin	60-57-1	N.D.		9.0	1.7	ug/kg	5
03668	Endrin	72-20-8	N.D.		9.0	1.7	ug/kg	5
03669	p,p-DDE	72-55-9	6.7	J	9.0	1.7	ug/kg	5
03670	p,p-DDD	72-54-8	N.D.		9.0	1.7	ug/kg	5
03671	p,p-DDT	50-29-3	6.6	J	9.0	1.7	ug/kg	5
03672	Endosulfan Sulfate	1031-07-8	N.D.		9.0	1.7	ug/kg	5
03673	Endrin Aldehyde	7421-93-4	3.3	J	9.0	1.7	ug/kg	5
03674	Methoxychlor	72-43-5	N.D.		44.	9.0	ug/kg	5
03675	Toxaphene	8001-35-2	N.D.		170.	58.	ug/kg	5
03676	Chlordane	57-74-9	130.		90.	21.	ug/kg	5
03677	Aldrin	309-00-2	N.D.		4.4	1.7	ug/kg	5
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322595 SW Group No. 1084755

29721007 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB24-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 12:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00507 SDG#: PUG05-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to the nature of the sample extract matrix, a dilution was used for the analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 14:10	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 23:32	Lindsey K Lafferty	5
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

0829

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322596 SW Group No. 1084755

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00508 SDG#: PUG05-08

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.4		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.0	3.49	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.4	14.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.0	5.60	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.3	8.14	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.0	5.92	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.0	5.71	ug/kg	1
01999	PCB-1260	11096-82-5	11.5	J	18.0	6.66	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		15.	4.9	ug/kg	2
03659	Alpha BHC	319-84-6	N.D.		2.1	0.70	ug/kg	2
03660	Beta BHC	319-85-7	N.D.		4.2	1.3	ug/kg	2
03661	Delta BHC	319-86-8	N.D.		1.8	0.36	ug/kg	2
03662	Gamma BHC - Lindane	58-89-9	0.59	J	1.8	0.36	ug/kg	2
03663	Heptachlor	76-44-8	N.D.		1.8	0.36	ug/kg	2
03664	Heptachlor Epoxide	1024-57-3	N.D.		1.8	0.36	ug/kg	2
03665	Endosulfan I	959-98-8	N.D.		1.8	0.47	ug/kg	2
03666	Endosulfan II	33213-65-9	N.D.		3.6	0.70	ug/kg	2
03667	Dieldrin	60-57-1	N.D.		3.6	0.70	ug/kg	2
03668	Endrin	72-20-8	N.D.		3.6	0.70	ug/kg	2
03669	p,p-DDE	72-55-9	3.9		3.6	0.70	ug/kg	2
03670	p,p-DDD	72-54-8	N.D.		3.6	0.70	ug/kg	2
03671	p,p-DDT	50-29-3	3.6		3.6	0.70	ug/kg	2
03672	Endosulfan Sulfate	1031-07-8	N.D.		3.6	0.70	ug/kg	2
03673	Endrin Aldehyde	7421-93-4	N.D.		3.6	0.70	ug/kg	2
03674	Methoxychlor	72-43-5	11.	J	18.	3.6	ug/kg	2
03675	Toxaphene	8001-35-2	N.D.		70.	23.	ug/kg	2
03676	Chlordane	57-74-9	N.D.		41.	41.	ug/kg	2
03677	Aldrin	309-00-2	N.D.		1.8	0.70	ug/kg	2
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322596 SW Group No. 1084755

29721008 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB15-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00508 SDG#: PUG05-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.
Due to the nature of the sample extract matrix, a dilution was used for the analysis. The reporting limits were raised accordingly.
Due to interfering peaks on the chromatogram, the value reported for technical Chlordane represents the lowest reporting limit attainable. Despite numerous cleanup methods, our usual reporting limits were not attained.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 14:24	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 23:46	Lindsey K Lafferty	2
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322597 SW Group No. 1084755

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05009 SDG#: PUG05-09

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	9.6		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.8	3.65	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		46.5	15.5	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.8	5.86	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		25.4	8.52	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.8	6.19	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.8	5.97	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		18.8	6.97	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.7	2.5	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.37	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.2	0.67	ug/kg	1
03661	Delta BHC	319-86-8	0.47	J	0.92	0.19	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.92	0.19	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.92	0.19	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.92	0.19	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.92	0.24	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.9	0.37	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.9	0.37	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.9	0.37	ug/kg	1
03669	p,p-DDE	72-55-9	N.D.		1.9	0.37	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.9	0.37	ug/kg	1
03671	p,p-DDT	50-29-3	0.98	J	1.9	0.37	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	0.51	J	1.9	0.37	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.9	0.37	ug/kg	1
03674	Methoxychlor	72-43-5	3.2	J	9.2	1.9	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		37.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		19.	4.4	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.92	0.37	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322597 SW Group No. 1084755

29721009 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB19-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:15

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05009 SDG#: PUG05-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 14:39	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/25/2008 00:00	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

0033.

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322598 SW Group No. 1084755

29721010 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00510 SDG#: PUG05-10

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		17.9	3.47	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		44.2	14.7	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		17.9	5.58	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		24.2	8.11	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		17.9	5.89	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		17.9	5.68	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		17.9	6.63	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.4	2.4	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.35	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.1	0.64	ug/kg	1
03661	Delta BHC	319-86-8	0.44	J	0.87	0.18	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.87	0.18	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.87	0.18	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.87	0.18	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.87	0.23	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.8	0.35	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.8	0.35	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.8	0.35	ug/kg	1
03669	p,p-DDE	72-55-9	N.D.		1.8	0.35	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.8	0.35	ug/kg	1
03671	p,p-DDT	50-29-3	0.61	J	1.8	0.35	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.8	0.35	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.8	0.35	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		8.7	1.8	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		35.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		18.	4.2	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.87	0.35	ug/kg	1

The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is

0034

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322598 SW Group No. 1084755

29721010 NAFR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB22-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 14:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

00510 SDG#: PUG05-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 14:53	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/25/2008 00:14	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

~~8835~~

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322599 SW Group No. 1084755

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05011 SDG#: PUG05-11

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	10.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		18.9	3.67	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		46.7	15.6	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		18.9	5.89	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		25.6	8.56	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		18.9	6.22	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		18.9	6.00	ug/kg	1
01999	PCB-1260	11096-82-5	16.0	J	18.9	7.00	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		7.8	2.6	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.1	0.37	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.2	0.68	ug/kg	1
03661	Delta BHC	319-86-8	0.42	J	0.92	0.19	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.92	0.19	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.92	0.19	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		0.92	0.19	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.92	0.24	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.9	0.37	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.9	0.37	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.9	0.37	ug/kg	1
03669	p,p-DDE	72-55-9	1.4	J	1.9	0.37	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.9	0.37	ug/kg	1
03671	p,p-DDT	50-29-3	1.4	J	1.9	0.37	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.9	0.37	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.9	0.37	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.2	1.9	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		37.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		19.	4.4	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.92	0.37	ug/kg	1
	The method blank contains 0.43 ug/kg delta-BHC. The LCS recoveries for beta-BHC and Aldrin are outside the QC limits. The client was notified, and the data is							

0836

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5322599 SW Group No. 1084755

29721011 NAPR-Cp Moscrip #35215-0995 Jones Soil
Field# 73SB23-00 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Soil

Collected:04/02/2008 13:30

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05011 SDG#: PUG05-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

reported.
Kepone has variable recovery in sample extracts treated with florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/04/2008 17:46	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/14/2008 15:36	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/25/2008 00:30	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/12/2008 06:15	Joseph S Feister	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/15/2008 20:00	Sally L Appleyard	1

0037

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322600 WW Group No. 1084755

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Account Number: 04694

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05012 SDG#: PUG05-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.50	0.10	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.50	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.50	0.10	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.50	0.10	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.50	0.10	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.50	0.10	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.50	0.10	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.50	0.20	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.50	0.10	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.071	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0030	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.020	0.0040	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.020	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0020	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0030	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0050	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.071	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.020	ug/l	1

The LCS recovery for Heptachlor is outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as definsd in the NELAC Standards.

0030

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5322600 WW Group No. 1084755

29721012 NAPR-Cp Moscrip #35215-0995 Jones Water
Field# 73ER-04 # 08-P-0732
Pick-Up Order #005 Delivery Order# 01 Water

Collected:04/02/2008 15:00

Submitted: 04/03/2008 08:45
Reported: 04/28/2008 at 06:08
Discard: 05/13/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

05012 SDG#: PUG05-12*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/08/2008 16:00	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/09/2008 02:50	Lindsey K Lafferty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/08/2008 02:30	Sherry L Morrow	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/08/2008 02:30	Sherry L Morrow	1

0039

*=This limit was used in the evaluation of the final result

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2216 Rev. 3/27/06

Organochlorine Pesticides Data

Case Narrative Conformance/Nonconformance Summary

0941

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUG05

LANCASTER LABORATORIES

App. IX OC Pesticides

		MATRIX		
LLI SAMPLE #	**SAMPLE CODE**	**WATER**	**SOLID**	**COMMENT**
BLANKA 4/8/08	PBLKKN	X		Method Blank
LCSA	LCS4H	X		Lab Control Spike
5322600	05012	X		
LAB SUBMITTED QC:				
5322232	M-01-	X		Unspiked
5322233MS	M-01-MS	X		Matrix Spike
5322234MSD	M-01-MSD	X		Matrix Spike Dup
BLANKA 4/15/08	PBLKV2		X	Method Blank
LCSA	LCSEM		X	Lab Control Spike
5322589	00501		X	
5322590	05002		X	
5322591	00503		X	
5322592	00504		X	
5322593	00505		X	Unspiked
5322594	00506		X	
5322595	00507		X	DF5
5322596	00508		X	DF2
5322597	05009		X	
5322598	00510		X	
5322599	05011		X	
LAB SUBMITTED QC:				
5322593MS	00505MS		X	Matrix Spike
5322593MSD	00505MSD		X	Matrix Spike Dup

A. Sample Preparation:

Kepone has variable recovery in sample extracts treated with a florisil clean-up. Since this clean-up was needed to reduce the heavy matrix interference evident in the sample chromatograms, the florisiled fraction was used for reporting the data.

No other problems were encountered with the preparation of the samples.

B. Analysis:

All target compounds in the Initial Calibration Verification standards are within the 20% criteria set by NELAC.

No problems were encountered.

All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

Lancaster Laboratories

A retention time update was performed using calibration files CC13093.07R, CC13093.08R, and CC13093.09R. The name was changed to 5C13093.

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

The Heptachlor spike recovery in LCS4H is below QC limits. The recovery meets the requirements for marginal exceedance allowance of four standard deviations for this analyte.

The beta-BHC and Aldrin spike recoveries in LCSEM are below QC limits. The client approved reporting the data.

All other QC data are within specifications.

D. Data Interpretation:

Due to interfering peaks on the chromatogram, the value reported for technical chlordane represents the lowest reporting limits attainable. Despite numerous cleanup methods, our usual reporting limits were not attainable.
The method blank contains 0.43 ug/kg of delta-BHC for batch 081060005A.
No further interpretation is needed.

Data codes:
Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Narrative reviewed and approved by:

Dana Kauffman, Manager Data Deliverables **Date** 4/29/08

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DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones*

DIVISION/TEAM: *CAD-PES*

INSTALLATION: *NAPR- Cp Moscrip*

CONTRACT LAB: *Lancaster (LLP)*

PROJECT NO: *38-0995*

LIMS W.O. NO: *29841*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the contractor case narrative (report pages 31-34). The QC data are reported on pages 48-134.

The water matrix QC was satisfactory.

The soil matrix spike/matrix spike recovery data were not useable, likely the result of sample extract dilutions of 1:100 due to "high" levels of native pesticides in this particular sample. Also, p,p'-DDE and p,p'-DDT were detected in the method blank at 0.9 and 1.3 ug/kg, respectively. However, the native amounts of these two pesticides were well above those blank levels in two soil samples, and not detected in the other samples.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *2 May 08*

LIDS 2.0 **Feb 06**

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1085918. Samples arrived at the laboratory on Wednesday, April 09, 2008. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329030
29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329031
29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329032
29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil	5329033
29841007 NAPR-Cp Moscrip #35291-0995 Jones Water	5329034
29841010 NAPR-Cp Moscrip #35291-0995 Jones Water	5329035

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

0016.

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Valerie L. Tomayko
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329030 SW Group No. 1085918

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18001 SDG#: PUG19-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	9.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		1,870.	363.	ug/kg	100
01994	PCB-1221	11104-28-2	N.D.		4,620.	1,540.	ug/kg	100
01995	PCB-1232	11141-16-5	N.D.		1,870.	583.	ug/kg	100
01996	PCB-1242	53469-21-9	N.D.		2,530.	847.	ug/kg	100
01997	PCB-1248	12672-29-6	N.D.		1,870.	616.	ug/kg	100
01998	PCB-1254	11097-69-1	N.D.		1,870.	594.	ug/kg	100
01999	PCB-1260	11096-82-5	N.D.		1,870.	693.	ug/kg	100
	Dus to the nature of the sample extract matrix, a dilution was used for the analysis. The reporting limits were raised accordingly.							
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		770.	250.	ug/kg	100
03659	Alpha BHC	319-84-6	N.D.		110.	36.	ug/kg	100
03660	Beta BHC	319-85-7	N.D.		220.	67.	ug/kg	100
03661	Delta BHC	319-86-8	N.D.		91.	19.	ug/kg	100
03662	Gamma BHC - Lindane	58-89-9	N.D.		91.	19.	ug/kg	100
03663	Heptachlor	76-44-8	N.D.		91.	19.	ug/kg	100
03664	Heptachlor Epoxide	1024-57-3	N.D.		91.	19.	ug/kg	100
03665	Endosulfan I	959-98-8	N.D.		91.	24.	ug/kg	100
03666	Endosulfan II	33213-65-9	N.D.		190.	36.	ug/kg	100
03667	Dieldrin	60-57-1	N.D.		190.	36.	ug/kg	100
03668	Endrin	72-20-8	1,100.		940.	180.	ug/kg	500
03669	p,p-DDE	72-55-9	3,100.		940.	180.	ug/kg	500
03670	p,p-DDD	72-54-8	1,100.		190.	36.	ug/kg	100
03671	p,p-DDT	50-29-3	14,000.		4,700.	910.	ug/kg	2500
03672	Endosulfan Sulfate	1031-07-8	N.D.		190.	36.	ug/kg	100
03673	Endrin Aldehyde	7421-93-4	N.D.		190.	36.	ug/kg	100
03674	Methoxychlor	72-43-5	N.D.		910.	190.	ug/kg	100
03675	Toxaphene	8001-35-2	N.D.		3,600.	1,200.	ug/kg	100
03676	Chlordane	57-74-9	900.	J	1,900.	440.	ug/kg	100
03677	Aldrin	309-00-2	N.D.		91.	36.	ug/kg	100

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329030 SW Group No. 1085918

29841001 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-01 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 10:15

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18001 SDG#: PUG19-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

The LCS recoveries for aldrin and heptachlor are outside the QC limits. Delta-BHC, 4,4'-DDE and 4,4'-DDT were detected in the blank. The client was notified and approved reporting the results.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/11/2008 14:49	Scott W Frsisher	1
02033	PCBs in Soil	SW-846 8082	1	04/16/2008 15:59	Jamie L Brillhart	100
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/22/2008 04:11	Lindsey K Lafferty	100
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/22/2008 04:24	Lindsey K Lafferty	500
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/24/2008 22:54	Lindsey K Lafferty	2500
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/14/2008 17:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/16/2008 16:20	JoElla L Rice	1

0019

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329031 SW Group No. 1085918

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18002 SDG#: PUG19-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	13.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		19.7	3.83	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		48.7	16.2	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		19.7	6.15	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		26.7	8.93	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		19.7	6.50	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		19.7	6.26	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		19.7	7.31	ug/kg	1
06001	App. IX OC Pesticides in Soild							
03658	Kepone	143-50-0	N.D.		8.1	2.7	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.2	0.38	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.3	0.71	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.96	0.41	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.96	0.20	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.96	0.20	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	0.23	J	0.96	0.20	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.96	0.26	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		2.0	0.38	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		2.0	0.38	ug/kg	1
03668	Endrin	72-20-8	N.D.		2.0	0.38	ug/kg	1
03669	p,p-DDE	72-55-9	4.9		2.0	1.0	ug/kg	1
03670	p,p-DDD	72-54-8	0.58	J	2.0	0.38	ug/kg	1
03671	p,p-DDT	50-29-3	4.6		2.0	1.6	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		2.0	0.38	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		2.0	0.38	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.6	2.0	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		38.	13.	ug/kg	1
03676	Chlordane	57-74-9	12.	J	20.	4.6	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.96	0.38	ug/kg	1
	The LCS recoveries for aldrin and heptachlor are outside the QC limits. Delta-BHC, 4,4'-DDE and 4,4'-DDT were detected in the blank. The client was							

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329031 SW Group No. 1085918

29841002 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB02-04 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 10:25

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

18002 SDG#: PUG19-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

notified and approved reporting the results.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/16/2008 02:34	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/22/2008 05:05	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/14/2008 17:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/16/2008 16:20	JoElla L Rice	1

0021

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329032 SW Group No. 1085918

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18003 SDG#: PUG19-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.5	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02033	PCBs in Soil						
01993	PCB-1016	12674-11-2	N.D.	18.6	3.61	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.	45.9	15.3	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.	18.6	5.79	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.	25.1	8.42	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.	18.6	6.12	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.	18.6	5.90	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.	18.6	6.89	ug/kg	1
06001	App. IX OC Pesticides in Soild						
03658	Kepone	143-50-0	N.D.	7.7	2.5	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.	1.1	0.36	ug/kg	1
03660	Beta BHC	319-85-7	N.D.	2.2	0.67	ug/kg	1
03661	Delta BHC	319-86-8	N.D.	0.91	0.38	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.	0.91	0.19	ug/kg	1
03663	Heptachlor	76-44-8	N.D.	0.91	0.19	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.	0.91	0.19	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.	0.91	0.24	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.	1.9	0.36	ug/kg	1
03667	Dieldrin	60-57-1	N.D.	1.9	0.36	ug/kg	1
03668	Endrin	72-20-8	N.D.	1.9	0.36	ug/kg	1
03669	p,p-DDE	72-55-9	N.D.	1.9	0.98	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.	1.9	0.36	ug/kg	1
03671	p,p-DDT	50-29-3	N.D.	1.9	1.5	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.	1.9	0.36	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.	1.9	0.36	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.	9.1	1.9	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.	36.	12.	ug/kg	1
03676	Chlordane	57-74-9	N.D.	19.	4.4	ug/kg	1
03677	Aldrin	309-00-2	N.D.	0.91	0.36	ug/kg	1

The LCS recoveries for aldrin and heptachlor are outside the QC limits.
Delta-BHC, 4,4'-DDE and 4,4'-DDT were detected in the blank. The client was

8822

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329032 SW Group No. 1085918

29841003 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-01 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 11:05

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18003 SDG#: PUG19-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

notified and approved reporting the results.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/16/2008 02:49	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/22/2008 05:19	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/14/2008 17:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/16/2008 16:20	JoElla L Rice	1

0023

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329033 SW Group No. 1085918

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18004 SDG#: PUG19-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	16.9		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02033	PCBs in Soil							
01993	PCB-1016	12674-11-2	N.D.		20.5	3.97	ug/kg	1
01994	PCB-1221	11104-28-2	N.D.		50.5	16.8	ug/kg	1
01995	PCB-1232	11141-16-5	N.D.		20.5	6.38	ug/kg	1
01996	PCB-1242	53469-21-9	N.D.		27.7	9.27	ug/kg	1
01997	PCB-1248	12672-29-6	N.D.		20.5	6.74	ug/kg	1
01998	PCB-1254	11097-69-1	N.D.		20.5	6.50	ug/kg	1
01999	PCB-1260	11096-82-5	N.D.		20.5	7.58	ug/kg	1
06001	App. IX OC Pesticides in Solid							
03658	Kepone	143-50-0	N.D.		8.4	2.8	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		1.2	0.40	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		2.4	0.73	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		1.0	0.42	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		1.0	0.20	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		1.0	0.20	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	N.D.		1.0	0.20	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		1.0	0.26	ug/kg	1
03666	Endosulfan II	33213-65-9	0.51	J	2.0	0.40	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		2.0	0.40	ug/kg	1
03668	Endrin	72-20-8	N.D.		2.0	0.40	ug/kg	1
03669	p,p-DDE	72-55-9	2.1		2.0	1.1	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		2.0	0.40	ug/kg	1
03671	p,p-DDT	50-29-3	2.7		2.0	1.7	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		2.0	0.40	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		2.0	0.40	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		10.	2.0	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		40.	13.	ug/kg	1
03676	Chlordane	57-74-9	N.D.		20.	4.8	ug/kg	1
03677	Aldrin	309-00-2	N.D.		1.0	0.40	ug/kg	1

The LCS recoveries for aldrin and heptachlor are outside the QC limits.
Delta-BHC, 4,4'-DDE and 4,4'-DDT were detected in the blank. The client was

0024

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories

Lancaster Laboratories Sample No. 5329033 SW Group No. 1085918

29841004 NAPR-Cp Moscrip #35291-0995 Jones Soil
Field# 73SB14-04 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Soil

Collected:04/07/2008 12:45

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18004 SDG#: PUG19-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor

notified and approved reporting the results.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	04/11/2008 14:49	Scott W Freisher	1
02033	PCBs in Soil	SW-846 8082	1	04/16/2008 03:03	Jamie L Brillhart	1
06001	App. IX OC Pesticides in Soild	SW-846 8081A	1	04/22/2008 05:33	Lindsey K Lafferty	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	04/14/2008 17:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	04/16/2008 16:20	JoElla L Rice	1

0025

*=This limit was used in the evaluation of the final result

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329034 WW Group No. 1085918

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18007 SDG#: PUG19-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.51	0.10	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.51	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.51	0.10	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.51	0.10	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.51	0.10	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.51	0.10	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.51	0.10	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.51	0.21	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.51	0.10	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.21	0.072	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0031	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.021	0.0041	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.021	0.0041	ug/l	1
03032	Endrin	72-20-8	N.D.	0.021	0.0041	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.021	0.0041	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0028	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.021	0.0041	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0021	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0031	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0031	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.021	0.0051	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.021	0.0041	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.031	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.51	0.072	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.1	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0031	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.021	0.0041	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.021	0.0041	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.021	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0026

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329034 WW Group No. 1085918

29841007 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03 # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18007 SDG#: PUG19-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/12/2008 13:51	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/12/2008 16:35	Candice M Hibberd	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/11/2008 17:00	Karen L Beyer	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/11/2008 17:00	Karen L Beyer	1

8827

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329035 WW Group No. 1085918

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18010 SDG#: PUG19-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
02034	PCBs in Water						
01619	PCB-1016	12674-11-2	N.D.	0.50	0.099	ug/l	1
01620	PCB-1221	11104-28-2	N.D.	0.50	0.16	ug/l	1
01621	PCB-1232	11141-16-5	N.D.	0.50	0.099	ug/l	1
01622	PCB-1242	53469-21-9	N.D.	0.50	0.099	ug/l	1
01623	PCB-1248	12672-29-6	N.D.	0.50	0.099	ug/l	1
01624	PCB-1254	11097-69-1	N.D.	0.50	0.099	ug/l	1
01626	PCB-1260	11096-82-5	N.D.	0.50	0.099	ug/l	1
07405	PCB-1262	37324-23-5	N.D.	0.50	0.20	ug/l	1
07406	PCB-1268	11100-14-4	N.D.	0.50	0.099	ug/l	1
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.069	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.0099	0.0030	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.020	0.0040	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.0099	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.020	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.0099	0.0020	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.0099	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.0099	0.0030	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0050	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.099	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.069	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	0.99	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.0099	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.099	0.020	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

0028

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Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5329035 WW Group No. 1085918

29841010 NAPR-Cp Moscrip #35291-0995 Jones Water
Field# 73FB-03A # 08-P-0732
Pick-Up Order #018 Delivery Order# 01 Water

Collected:04/07/2008 08:30

Account Number: 04694

Submitted: 04/09/2008 09:30
Reported: 04/25/2008 at 12:33
Discard: 05/10/2008

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

18010 SDG#: PUG19-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02034	PCBs in Water	SW-846 8082	1	04/12/2008 14:05	Jamie L Brillhart	1
06020	Appendix IX Organochlorines	SW-846 8081A	1	04/12/2008 17:17	Candice M Hibberd	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	04/11/2008 17:00	Karen L Beyer	1
00817	Water Sample Pest. Extraction	SW-846 3510C	2	04/11/2008 17:00	Karen L Beyer	1

0029

*=This limit was used in the evaluation of the final result

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative Conformance/Nonconformance Summary

8631

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUG19

LANCASTER LABORATORIES

App. IX OC Pesticides

		MATRIX		
LLI SAMPLE #	**SAMPLE CODE**	**WATER**	**SOLID**	**COMMENT**
BLANKA 4/11/08	PBLKQV	X		Method Blank
LCSA	LCSAJ	X		Lab Control Spike
5329034	18007	X		Unspiked
5329035	18010	X		
LAB SUBMITTED QC:				
5329034MS	18007MS	X		Matrix Spike
5329034MSD	18007MSD	X		Matrix Spike Dup
BLANKA 4/16/08	PBLKWM		X	Method Blank
LCSA	LCSG4		X	Lab Control Spike
5329030	18001		X	Unspiked DF100, DF500, DF2500
5329031	18002		X	
5329032	18003		X	
5329033	18004		X	
LAB SUBMITTED QC:				
5329030MS	18001MS		X	Matrix Spike DF100
5329030MSD	18001MSD		X	Matrix Spike Dup DF100

A. Sample Preparation:

No problems were encountered with the preparation of the samples.

B. Analysis:

Various compounds and the average %Ds are outside the 15% criteria for continuing calibration standards 3D10113.05R, 3D10113.06R, 3D10113.19R, and 3D10113.20R on Column A. The only compound reported from the bracketed sample is 4,4-DDT which was reported from Column B.

The Toxaphene recovery in the Initial Calibration Verification standards if outside the 20% criteria on both columns in ICAL 1D10113.

All other compounds in the Initial Calibration Verification standards are within the 20% criteria set by NELAC.

No other problems were encountered.

All other continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

0032

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Lancaster Laboratories

A retention time update was performed using calibration files 2C13093.05R, 2C13093.06R, and 2C13093.07R. The name was changed to 2C13093.

A retention time update was performed using calibration files 5D16097.70R and 5D16097.71R. The name was changed to 3D16097.

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

Delta-BHC, 4,4-DDE, and 4,4-DDT were detected in Method Blank PBLKWM. The reporting limits were raised for the associated samples per client request.

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

The Aldrin and Heptachlor recoveries were below QC limits for LCSG4. No Aldrin or Heptachlor was detected in the associated samples, and the data was reported.

The Aldrin spike recoveries are below QC limits for 5329043MS/5329043MSD.

The spike recoveries for all compounds are outside QC limits for 5329030MS/5329030MD.

All other QC data are within specifications.

D. Data Interpretation:

No further interpretation is needed.

Data codes:

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Lancaster Laboratories

Narrative reviewed and approved by:

Dana Kauffman, Manager Data Deliverables **Date** 4/26/08

8834

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QC Summary

8035

2E
WATER SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: PUG19

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

Batchnumber: 081020008A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5329034	18007	88	90	108	109	0
5329034 MS	18007MS	74	77	89	91	0
5329034 MSD	18007MSD	91	92	107	108	0
5329035	18010	71	74	89	91	0
BLANKA	PBLKQV	82	75	91	91	0
LCSA	LCSAJ	88	79	99	98	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION	
TCX	= Tetrachloro-m-xylene	(55 - 130)	0.299	ug/l
DCB	= Decachlorobiphenyl	(44 - 146)	0.300	ug/l

8836

Column to be used to flag recovery values

* Values outside of QC Limits

D Surrogate diluted out

2F
SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: PUG19

GC Column (1): RTX-CLP ID: .32 GC Column (2): RTXCLPII ID: .32

Batchnumber: 081070012A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5329030	18001	57	42	103	127	0
5329030 MS	18001MS	63	43	130	130	0
5329030 MSD	18001MSD	58	41	134	129	0
5329031	18002	57	56	95	96	0
5329032	18003	56	54	94	95	0
5329033	18004	57	55	95	95	0
BLANKA	PBLKWM	63	61	93	94	0
LCSA	LCSG4	61	59	94	92	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION	
TCX	= Tetrachloro-m-xylene	(38 - 132)	9.98	ug/kg
DCB	= Decachlorobiphenyl	(41 - 160)	10	ug/kg

0037

Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

3E
Water Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 18007

Compound	Spike Added (ug/l)	Sample Concen (ug/l)	MS Concen (ug/l)	MSD Concen (ug/l)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	0.10	0	0.088	0.10	88	100	(66 - 123)	13	30
gamma-BHC (Lindane)	0.10	0	0.089	0.10	89	100	(59 - 130)	12	30
beta-BHC	0.100	0	0.090	0.11	90	110	(47 - 144)	20	30
delta-BHC	0.100	0	0.088	0.11	88	110	(39 - 152)	22	30
Heptachlor	0.10	0	0.085	0.10	85	100	(30 - 142)	16	30
Aldrin	0.10	0	0.034	0.036	34*	36*	(59 - 128)	6	30
Heptachlor epoxide	0.10	0	0.092	0.11	92	110	(33 - 150)	18	30
Endosulfan I	0.10	0	0.092	0.11	92	110	(45 - 132)	18	30
4,4'-DDE	0.20	0	0.18	0.21	90	105	(48 - 138)	15	30
Dieldrin	0.21	0	0.18	0.20	86	95	(69 - 121)	11	30
Endrin	0.21	0	0.18	0.21	86	100	(66 - 124)	15	30
4,4'-DDD	0.20	0	0.18	0.21	90	105	(55 - 142)	15	30
Endosulfan II	0.20	0	0.18	0.22	90	110	(53 - 136)	20	30
Endrin aldehyde	0.20	0	0.17	0.20	85	100	(40 - 142)	16	30
4,4'-DDT	0.21	0	0.18	0.21	86	100	(40 - 128)	15	30
Endosulfan sulfate	0.20	0	0.19	0.22	95	110	(58 - 141)	15	30
Methoxychlor	1.00	0	0.87	1.0	87	100	(55 - 131)	14	30

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 2 out of 34 outside limits

Comments: Results calculated on as-received basis.

Sample No.: 5329034 Batch: 081020008A

FORM III-1

3F

Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 18001

Compound	Spike Added (ug/kg)	Sample Concen (ug/kg)	MS Concen (ug/kg)	MSD Concen (ug/kg)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.75	0	0	0	0*	0*	(36 - 133)		50
gamma-BHC (Lindane)	3.75	0	0	0	0*	0*	(27 - 138)		50
beta-BHC	3.65	0	0	0	0*	0*	(25 - 142)		50
delta-BHC	3.65	0	0	0	0*	0*	(30 - 152)		50
Heptachlor	3.80	0	0	0	0*	0*	(35 - 132)		50
Aldrin	3.68	0	0	0	0*	0*	(34 - 134)		50
Heptachlor epoxide	3.67	0	0	0	0*	0*	(31 - 143)		50
gamma-Chlordane	3.67	0	0	0	0*	0*	(30 - 157)		50
alpha-Chlordane	3.67	89.43	95.63	76.22	169*	-360*	(24 - 148)	23	50
4,4'-DDE	7.32	4758.64	4763.98	4259.16	73	-6820*	(32 - 165)	11	50
Endosulfan I	3.76	0	0	0	0*	0*	(35 - 132)		50
Dieldrin	7.52	0	0	0	0*	0*	(28 - 153)		50
Endrin	7.71	1783.18	0	0	23100*	23100*	(40 - 136)		50
4,4'-DDD	7.35	1125.35	1306.19	1309.31	2460*	2500*	(30 - 163)	0	50
Endosulfan II	7.22	0	0	0	0*	0*	(34 - 154)		50
4,4'-DDT	7.63	12932.73	16071.38	13676.93	41100*	9750*	(10 - 176)	16	50
Endrin aldehyde	7.25	0	0	0	0*	0*	(21 - 128)		35
Methoxychlor	36.43	0	0	0	0*	0*	(29 - 163)		50
Endosulfan sulfate	7.18	0	0	0	0*	0*	(11 - 170)		50
Endrin ketone	7.33	0	0	0	0*	0*	(27 - 163)		50

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 39 out of 40 outside limits

0039

Comments:

Sample No.: 5329030 Batch: 081070012A

FORM III-2

3F
Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 18001

Compound	Spike Added (ug/kg)	Sample Concen (ug/kg)	MS Concen (ug/kg)	MSD Concen (ug/kg)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.75	0	0	0	0*	0*	(36 - 133)		50
gamma-BHC (Lindane)	3.75	0	0	0	0*	0*	(27 - 138)		50
beta-BHC	3.65	0	0	0	0*	0*	(25 - 142)		50
delta-BHC	3.65	0	0	0	0*	0*	(30 - 152)		50
Heptachlor	3.80	0	0	0	0*	0*	(35 - 132)		50
Aldrin	3.68	0	0	0	0*	0*	(34 - 134)		50
Heptachlor epoxide	3.67	0	0	0	0*	0*	(31 - 143)		50
gamma-Chlordane	3.67	0	0	0	0*	0*	(30 - 157)		50
alpha-Chlordane	3.67	0	0	0	0*	0*	(24 - 148)		50
(*) 4,4'-DDE	7.32	3094.01	4763.98	4259.16	22800*	15900*	(32 - 165)	11	50
Endosulfan I	3.76	0	0	0	0*	0*	(35 - 132)		50
Dieldrin	7.52	0	0	0	0*	0*	(28 - 153)		50
(*) Endrin	7.71	1071.36	1776.30	1639.72	9140*	7370*	(40 - 136)	8	50
4,4'-DDD	7.35	1027.00	1306.19	1309.31	3800*	3840*	(30 - 163)	0	50
Endosulfan II	7.22	0	0	0	0*	0*	(34 - 154)		50
4,4'-DDT	7.63	8328.50	16071.38	13676.93	01000*	70100*	(10 - 176)	16	50
Endrin aldehyde	7.25	0	0	0	0*	0*	(21 - 128)		35
Methoxychlor	36.43	0	0	0	0*	0*	(29 - 163)		50
Endosulfan sulfate	7.18	0	0	0	0*	0*	(11 - 170)		50
Endrin ketone	7.33	0	0	0	0*	0*	(27 - 163)		50

(*) report only 4.25.08

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 40 out of 40 outside limits

0048

Comments:

Sample No.: 5329030 Batch: 081070012A

FORM III-2

3F
Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 18001

Compound	Spike Added (ug/kg)	Sample Concen (ug/kg)	MS Concen (ug/kg)	MSD Concen (ug/kg)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.75	0	2.77	2.49	74	66	(36 - 133)	11	50
gamma-BHC (Lindane)	3.75	0	0	0	0*	0*	(27 - 138)		50
beta-BHC	3.65	0	0	0	0*	0*	(25 - 142)		50
delta-BHC	3.65	0	0	0	0*	0*	(30 - 152)		50
Heptachlor	3.80	0	0	0	0*	0*	(35 - 132)		50
Aldrin	3.68	0	0	0	0*	0*	(34 - 134)		50
Heptachlor epoxide	3.67	0	0	0	0*	0*	(31 - 143)		50
gamma-Chlordane	3.67	0	0	0	0*	0*	(30 - 157)		50
alpha-Chlordane	3.67	0	0	0	0*	0*	(24 - 148)		50
4,4'-DDE	7.32	6049.66	4763.98	4259.16	17600*	24500*	(32 - 165)	11	50
Endosulfan I	3.76	0	0	0	0*	0*	(35 - 132)		50
Dieldrin	7.52	0	0	0	0*	0*	(28 - 153)		50
Endrin	7.71	0	0	0	0*	0*	(40 - 136)		50
4,4'-DDD	7.35	0	0	0	0*	0*	(30 - 163)		50
Endosulfan II	7.22	0	0	0	0*	0*	(34 - 154)		50
(*) 4,4'-DDT	7.63	13677.74	16071.38	13676.93	31400*	-11*	(10 - 176)	16	50
Endrin aldehyde	7.25	0	0	0	0*	0*	(21 - 128)		35
Methoxychlor	36.43	0	0	0	0*	0*	(29 - 163)		50
Endosulfan sulfate	7.18	0	0	0	0*	0*	(11 - 170)		50
Endrin ketone	7.33	0	0	0	0*	0*	(27 - 163)		50

(*) report only 4.25.08

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 38 out of 40 outside limits

6641

Comments:

Sample No.: 5329030 Batch: 081070012A

FORM III-2

3E

Water Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSAJ

Compound	Spike Added (ug/l)	LCS Concen (ug/l)	LCSD Concen (ug/l)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	0.10	0.099		99		(71 - 123)		30
gamma-BHC (Lindane)	0.10	0.098		98		(71 - 124)		30
beta-BHC	0.099	0.10		101		(79 - 130)		30
delta-BHC	0.099	0.097		98		(72 - 132)		30
Heptachlor	0.10	0.093		93		(65 - 123)		30
Aldrin	0.10	0.073		73		(47 - 122)		30
Heptachlor epoxide	0.10	0.099		99		(73 - 141)		30
Endosulfan I	0.10	0.10		100		(77 - 120)		30
4,4'-DDE	0.20	0.19		95		(65 - 123)		30
Dieldrin	0.21	0.19		90		(71 - 129)		30
Endrin	0.21	0.18		86		(69 - 120)		30
4,4'-DDD	0.20	0.20		100		(65 - 125)		30
Endosulfan II	0.20	0.20		100		(75 - 124)		30
Endrin aldehyde	0.20	0.20		100		(61 - 131)		30
4,4'-DDT	0.21	0.18		86		(59 - 133)		30
Endosulfan sulfate	0.20	0.20		100		(69 - 130)		30
Methoxychlor	0.99	0.89		90		(49 - 155)		30

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 17 outside limits

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 081020008A

FORM III-1

3F

Soil Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSG4

Compound	Spike Added (ug/kg)	LCS Concen (ug/kg)	LCSD Concen (ug/kg)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.41	2.11		62		(60 - 127)		50
gamma-BHC (Lindane)	3.41	2.22		65		(59 - 125)		50
beta-BHC	3.32	2.33		70		(68 - 137)		50
delta-BHC	3.32	2.36		71		(66 - 118)		50
Heptachlor	3.46	2.05		59*		(61 - 129)		50
Aldrin	3.34	1.85		55*		(74 - 137)		50
Heptachlor epoxide	3.33	2.58		77		(72 - 132)		50
gamma-Chlordane	3.33	2.50		75		(57 - 130)		50
alpha-Chlordane	3.33	2.67		80		(66 - 127)		50
Endosulfan I	3.42	2.62		77		(65 - 121)		50
4,4'-DDE	6.65	7.69		116		(52 - 159)		50
Dieldrin	6.83	5.51		81		(71 - 133)		50
Endrin	7.01	5.56		79		(65 - 134)		50
4,4'-DDD	6.68	5.87		88		(60 - 153)		50
Endosulfan II	6.56	6.34		97		(73 - 134)		50
Endrin aldehyde	6.59	5.35		81		(40 - 119)		35
4,4'-DDT	6.93	8.33		120		(57 - 124)		50
Endosulfan sulfate	6.53	6.17		94		(58 - 133)		50
Methoxychlor	33.11	24.80		75		(49 - 148)		50
Endrin ketone	6.67	6.82		102		(70 - 143)		50

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits

Spike Recovery: 2 out of 20 outside limits

8843

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 081070012A

FORM III-2

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKQV

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUG19

Lab Sample ID BLANKA Batch 081020008A Lab File ID: 7D16097.18R 7D16097B.18R

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N Date Extracted: 4/11/2008

Date Analyzed (1): 4/12/2008 Date Analyzed (2): 4/12/2008

Time Analyzed (1): 16:08:02 Time Analyzed (2): 16:08:02

Instrument ID (1): H5262A Instrument ID (2): H5262B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	18007	5329034	4/12/2008	4/12/2008
02	18007MS	5329034MS	4/12/2008	4/12/2008
03	18007MSD	5329034MSD	4/12/2008	4/12/2008
04	18010	5329035	4/12/2008	4/12/2008
05	PBLKQV	BLANKA	4/12/2008	4/12/2008
06	LCSAJ	LCSA	4/12/2008	4/12/2008

COMMENTS:

1E

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKQV

Lab Name: Lancaster Laboratories **Contract:**

Lab Code: **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) WATER **Lab Sample ID:** BLANKA

Sample wt/vol: 1000 **(g/ml)** ML **Lab File ID:** 7D16097.18R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) SEPF **Date Extracted:** 4/11/2008

Concentrated Extract Volume: 10000 **(uL)** **Date Analyzed:** 4/12/2008

Injection Volume: 1 **(uL)** **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
319-84-6	alpha-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
319-85-7	beta-BHC	0.020	U
319-86-8	delta-BHC	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.020	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
72-55-9	4,4'-DDE	0.020	U
60-57-1	Dieldrin	0.020	U
72-20-8	Endrin	0.020	U
72-54-8	4,4'-DDD	0.020	U
33213-65-9	Endosulfan II	0.020	U
143-50-0	Kepone	0.20	U
7421-93-4	Endrin aldehyde	0.10	U
50-29-3	4,4'-DDT	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
72-43-5	Methoxychlor	0.10	U
57-74-9	Chlordane (Technical)	0.50	U
8001-35-2	Toxaphene	3.0	U

8845

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKWM

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUG19

Lab Sample ID BLANKA Batch 081070012A Lab File ID: AC13093.21R AC13093B.21R

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 4/16/2008

Date Analyzed (1): 4/22/2008 Date Analyzed (2): 4/22/2008

Time Analyzed (1): 02:36:11 Time Analyzed (2): 02:36:11

Instrument ID (1): H6722A Instrument ID (2): H6722B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	18001	5329030	4/22/2008	4/22/2008
02	18001DL	5329030	4/22/2008	4/22/2008
03	18001DL2	5329030	4/24/2008	4/24/2008
04	18001MS	5329030MS	4/22/2008	4/22/2008
05	18001MSD	5329030MSD	4/22/2008	4/22/2008
06	18002	5329031	4/22/2008	4/22/2008
07	18003	5329032	4/22/2008	4/22/2008
08	18004	5329033	4/22/2008	4/22/2008
09	PBLKWM	BLANKA	4/22/2008	4/22/2008
10	LCSG4	LCSA	4/22/2008	4/22/2008

0846

COMMENTS:

1E

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKWM

Lab Name: Lancaster Laboratories **Contract:**

Lab Code: **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) SOIL **Lab Sample ID:** BLANKA

Sample wt/vol: 30 (g/ml) g **Lab File ID:** AC13093.21R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) SONC **Date Extracted:** 4/16/2008

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 4/22/2008

Injection Volume: 2 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) Y **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/kg	Q
319-84-6	alpha-BHC	1.0	U
58-89-9	gamma-BHC (Lindane)	0.83	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	0.34	U
76-44-8	Heptachlor	0.83	U
309-00-2	Aldrin	0.83	U
1024-57-3	Heptachlor epoxide	0.83	U
959-98-8	Endosulfan I	0.83	U
72-55-9	4,4'-DDE	0.89	J
60-57-1	Dieldrin	1.7	U
72-20-8	Endrin	1.7	U
72-54-8	4,4'-DDD	1.7	U
33213-65-9	Endosulfan II	1.7	U
143-50-0	Kepone	7.0	U
7421-93-4	Endrin aldehyde	1.7	U
50-29-3	4,4'-DDT	1.3	J
1031-07-8	Endosulfan sulfate	1.7	U
72-43-5	Methoxychlor	8.3	U
57-74-9	Chlordane (Technical)	17	U
8001-35-2	Toxaphene	33	U

0847

Report ID: HMA0022v1
Sequence: 413200

4694
1085918
5329630-35
PUG19

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 10-Apr-08 4:05:07 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 018/1
DLS WO#: 29841 Batch: 1527
Contractor Code: LLP HBN: 208240
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: PES
Priority: Standard
# of Samples: 36 4/11/08

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29841
DLS Profile#: 38291

Contractor Due Date
PDF
Hardcopy 1 May 08

Pick-Up/Work/Delivery Order Approved by: (Signature of USACHPPM's COR)

USACHPPM called for pickup: (Caller's Name) 4/10/08 (Date/Time called)

CONTRACTOR'S ENTRY:

Pick-up Order received by: FedEx on 4/9/08 (Signature of laboratory courier) 4/11/08 (Date/Time of pick-up)

Direct shipped

Number of samples received intact: All except* (#/All)

Number of samples received broken: *1 bottle for pest class for H3F8-03A (#/None)

Data package received by at CHPPM: Sarah K. Roots

Delivery Date: Email (Means of Delivery - UPS/FedEx) 4/29/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLP1717	LLP2421	LLP2422
29841001	73SB02-01	SO	1		1
29841002	73SB02-04	SO	1		1
29841003	73SB14-01	SO	1		1
29841004	73SB14-04	SO	1		1
29841007	73FB-03 (BKG)	GW		1	
29841008	73FB-03 MS	GW		1	
29841009	73FB-03 MSD	GW		1	
29841010	73FB-03A	GW		1	

Section III - Acode Descriptions / Matrix Code Descriptions

Acodes on the Report

ACODE	ACODE Description		Quantity
LLP2422	Pesticides (OC) (App IX)		4
	Procedure Description	EPA 8081A	
LLP2421	Pesticides (OC) (App IX)		4
	Procedure Description	EPA 8081A	
LLP1717	%Moisture		4
	Procedure Description	EPA 160.3	

2 @ waters 4/11/08

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	4
Water (Ground water)	GW	4

Report ID: HRA0191C-ACodes
COC #: 413170

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

SAMPLES SHIPPED DIRECTLY TO CONTRACT LABORATORY

Standard

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/9/08 to SML. This is SML's Internal Chain of Custody.

Profile: 35291 - 0995
Workorder #: 29841
Queue: LLP
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-35291
Workorder ID: 0995101
Customer: Program 38 POC: David Jones
Project Number: 38
Notes: 73FB-03 sample for SVOC and PAH and the 73FB-03A for SVOC and Pest were all recvd broken. Per Lancaster, they can still analyze for these out of the remaining containers. Metals listed on the COC were not recvd. H.Taylor 4/10/08

Total Samples: 8 Total Containers: 9

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29841001	29841001-5	73SB02-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:15 AM	07-May-2008
ACodes: LLP1717 : %Moisture LLP2422 : Pesticides (OC) (App IX)										
29841002	29841002-5	73SB02-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 10:25 AM	07-May-2008
ACodes: LLP1717 : %Moisture LLP2422 : Pesticides (OC) (App IX)										
29841003	29841003-5	73SB14-01	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 11:05 AM	07-May-2008
ACodes: LLP1717 : %Moisture LLP2422 : Pesticides (OC) (App IX)										
29841004	29841004-5	73SB14-04	SAMPLE	SO	Soil	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 12:45 PM	07-May-2008
ACodes: LLP1717 : %Moisture LLP2422 : Pesticides (OC) (App IX)										
29841007	29841007-5	73FB-03	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008
ACodes: LLP2421 : Pesticides (OC) (App IX)										

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0181C-Acodes
COC #: 413170

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLP	Customer: Program 38

29841008	29841008-4	73FB-03 MS	MS	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29841009	29841009-4	73FB-03 MSD	MSD	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29841010	29841010-8	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLP2421 : Pesticides (OC) (App IX)

29841010	29841010-9	73FB-03A	SAMPLE	GW	Water (Ground	4.0	degrees C	09-Apr-2008 09:30 AM	07-Apr-2008 08:30 AM	07-May-2008

ACodes:
LLPXCTNR : XTRACTNR, Additional Container

Chain Of Custody

Total Samples: 8	Total Containers: 9

Samples Received By: Desiree Dawson		Date Received:	4/9/08 [illegible] 4/11/08
Document Reviewed By: Heidi Taylor	Initials: [illegible]	Date Reviewed:	4/10/08
Document Quality Review By: Alberta Brown		Date Reviewed:	
Samples Approved For Distribution: Yes ✓ No ____	Initials: AB	Date Approved:	

[illegible]

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413170

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDLTAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip~35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLP	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29841001	73SB02-01	29841001-5	SO
29841003	73SB14-01	29841003-5	SO
29841007	73FB-03	29841007-8	GW
29841009	73FB-03 MSD	29841009-4	GW
29841010	73FB-03A	29841010-8	GW

HSN	Customer Sample Id	Container Id	Mx
29841002	73SB02-04	29841002-5	SO
29841004	73SB14-04	29841004-5	SO
29841008	73FB-03 MS	29841008-4	GW
29841010	73FB-03A	29841010-9	GW

Total Samples: 8 Total Containers: 9

Chain Of Custody

E-669

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 413170

USACHPPM
Readiness thru Health

Run Date: 10-Apr-08 15:09
Generated By: HEIDI.TAYLOR

Profile: 35291 - 0995	Description: NAPR CMS-Cp Moscrip-35291
Workorder #: 29841	Workorder ID: 0995101
Queue: LLP	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29841001		1		
29841002		1		
29841003		1		
29841004		1		
29841007		1		
29841008		1		
29841009		1		
29841010		2		

Total Samples: 8 | Total Containers: 9

Chain Of Custody

NR=Not Reported.

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

Jane.

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH (+Sim)	Org Pest (+Mod)	Met Tot	Met Dis	RCRA M	Benz		
73SB02-01	7APR08	1015	✓		SO	5	3			1	1						
73SB02-04	7APR08	1025	✓		SO	5	3			1	1						
73SB14-01	7APR08	1145	✓		SO	5	3			1	1						
73SB14-04	7APR08	1245	✓		SO	5	3			1	1		metals bottle				
73ER-06	7APR08	1525	✓		W	8	3		1	1	1	2	not rec'd @ LL				J.Kaw 4/9/08
~~NOTHING FOLLOWS' Dej~~																	
TRIP BLANKS'					W	3	3										
NOTHING FOLLOWS'																	

31 <- Total Number of Containers

SHIPMENT METHOD - FEDEX

Date Shipped- 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7APR08/1800			

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - Ice only H - HCl+Ice N - HNO3+Ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

USACHPPM
Readiness thru Health

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Lanc,

INSTALLATION - CMS SWMU 73 Camp Moscrip NAPR
PROJECT NUMBER - 0995
PROJECT OFFICER - David Jones
TURN AROUND TIME - (PLEASE X ONE)
X STD (20 BUS DAYS) ____ HIGH (10 BUS DAYS) ____ TOP (5 BUS DAYS)

PRESERVATIVE (See Codes)

ANALYSIS REQUESTED

FIELD SAMPLE ID	DATE SAMPLED	TIME SAMPLED	Grab	Comp	Matrix (See codes)	No. of Containers	VOC	Moist	SVOC	LL PAH	Pest	Met Tot	Met Dis	RCRA M	Benz		
73 FB-03 (MS/MSD)	7 APR 08	0830	✓		W	16*	5		4	4	3	~~2~~					
73 FB-03A	7 APR 08	0830	✓		W	9	3		2	2	2	~~1~~					
NOTHING FOLLOWS																	

X <- Total Number of Containers

SHIPMENT METHOD - FEDEX
Date Shipped - 7 APR 08

Relinquished By:	Date & Time	Accepted By:	Date & Time	Comment/Remarks
USACHPPM	7 APR/1400			
			4/8/08 0930	

Matrix Codes: GW-Ground Water SO-Soil O-Other(specify)
Preservative Codes: 4C - ice only H - HCl+ice N - HNO3+ice O - Other (specify)
FOR SOILS ONLY: Please take Low Level PAH and moisture samples out of SVOC and Org. Pest. jars (2-8oz.). Please take mercury sample out of metals jar (1-4oz.).

LIDS 235-R-E, Oct 05 (MCHB-TS-LID)

Replaces CHPPM Form 235-R-E, Jan 05, which is obsolete

APRIL 2008

METALS DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* **DIVISION/TEAM:** *ASD-Metals*

INSTALLATION: *NAPR-Cp Moscrip* **CONTRACT LAB:** *Microbac*

PROJECT NO: *38-0995* **LIMS W.O. NO:** *29709*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the Contractor Case Narrative.

Note that due to high sample concentration of zinc, the analysis was switched from EPA 6020 to EPA 6010 analysis.

Note that due to matrix interference the analysis of beryllium was switched from EPA 6020 to EPA 6010 analysis.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *18 Apr 08*

Valis, Robert J Mr ORISE

From: Valis, Robert J Mr ORISE
Sent: Wednesday, May 07, 2008 4:51 PM
To: Stoner, Charles E JR (Chuck) Dr USACHPPM; Taylor, Heidi L Ms USACHPPM
Cc: Smelser, Barbara A Ms USACHPPM
Subject: Summary of Two GAS EDD Delays (NAPR-Cp Moscrip) - 7 May 1700 hrs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Heidi/Chuck,

Per Chuck Stoner, I will release the hardcopy reports for the following delinquent NAPR-Moscrip packages:

- WO 29709 (PO 902/DO 1) The hardcopy report is okay, but we still do not have the EDD for sample 29709001.

- WO 29805 (PO 918/DO 1) The hardcopy report lists EPA 6010 for Beryllium, but the EDD lists EPA 6020 for the six soil samples.

The problems above have not been corrected as of 7 May 08.

Bob Valis

-----Original Message-----
From: Valis, Robert J Mr ORISE
Sent: Friday, April 18, 2008 4:03 PM
To: Taylor, Heidi L Ms USACHPPM; Gaffney, Rosemary J Ms USACHPPM
Cc: CHPPM-LAOHELP; Morrow, David F Mr USACHPPM
Subject: Summary of EDD Delays - 18 Apr 1600 hrs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Heidi/Rosemary,

I have processed all WO's this week, except the following:

WO 29754	Gascoyne	Missing EDD - Total Halides values missing
WO 29800	Gascoyne	EDD missing Pb value - hardcopy OK
WO 29709	Gascoyne	Missing EDD - Also need to change Zn and Be Acode to 6010
WO 29724	GALM	Missing EDD

I plan to work Monday and Thursday next week. I could potentially work Wednesday if we get backed up.

Bob V
Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

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Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals
Contract #W91ZLK-05-C-0025
Bldg E2100, Rm 201
APG, MD 21010-5422
Attn: Heidi Taylor

Page 1

Report No. 0804145

This report of analysis contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 4/4/2008 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 15 Pages plus Attachment(s)

Final report reviewed by: Michael D. Arbaugh, Sr./Division Manager

4/15/2008
Report issue date

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce. President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com

Microbac Laboratories, Inc. Baltimore Division- laboratory accreditations: MD 109, VA 00152, PA 68-339, NY 11158, SC 86010, ISO 17025, NELAC, AIHA 100491. The data and information on this, and other accompanying documents, represents only the sample(s) analyzed and is not to be reproduced wholly or in part for advertising or other purposes without written approval from the laboratory. Organics Qualifiers: (U) analyzed for but not detected; (J) estimated value, below the reporting limit but above one-half the reporting limit; (B) detected in the associated method blank; (D) reanalyzed at a higher dilution factor. Inorganics Qualifiers: (U) analyzed for but not detected; (B) estimated value, below the reporting limit but above one-half the reporting limit. A copy of COC is attached.

Microbac
www.microbac.com

Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Sample Summary

Project: 35169-0995 (4/25)

Report No: 0804145

Date Received 4/4/2008

Client Sample ID	Lab Sample ID	Matrix	Collection Date	Collection Time
29709001 73 SB01-00	0804145-001A	Soil	3/31/2008	11:25
29709002 73 SB02-00	0804145-002A	Soil	3/31/2008	12:00
29709003 73 SB01A-00	0804145-003A	Soil	3/31/2008	11:25
29709004 73 SB03-00	0804145-004A	Soil	3/31/2008	12:40
29709005 73 SB04-00	0804145-005A	Soil	3/31/2008	13:00
29709006 73 SB05-00	0804145-006A	Soil	3/31/2008	13:30
29709007 73-SB06-00	0804145-007A	Soil	3/31/2008	14:00
29709009 73 SB07-00	0804145-008A	Soil	4/1/2008	9:45
29709010 73-SB08-00	0804145-009A	Soil	4/1/2008	10:30
29709011 73 SB09-00	0804145-010A	Soil	4/1/2008	9:00
29709012 73 SB-10-00	0804145-011A	Soil	4/1/2008	9:30
29709013 73-SB-11-00	0804145-012A	Soil	4/1/2008	11:30
297090014 73 SB-12-00	0804145-013A	Soil	4/1/2008	11:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-001			**Collection Date:** 3/31/2008 11:25:00 AM	
Client Sample ID: 29709001 73 SB01-00			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/8/2008 3:50:00 PM	Prep Analyst	BMC
Beryllium	< 1.5	1.5	mg/Kg-dry	4/8/2008 16:49
Tin	< 58	58	mg/Kg-dry	4/8/2008 16:49
Zinc	300	5.8	mg/Kg-dry	4/8/2008 16:49
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/8/2008 3:50:00 AM	Prep Analyst	BMC
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:19
Arsenic	2.3	2.0	mg/Kg-dry	4/8/2008 2:19
Barium	77	5.0	mg/Kg-dry	4/8/2008 2:19
Cadmium	0.68	0.50	mg/Kg-dry	4/8/2008 2:19
Chromium	24	2.5	mg/Kg-dry	4/8/2008 2:19
Cobalt	13	5.0	mg/Kg-dry	4/8/2008 2:19
Copper	82	2.0	mg/Kg-dry	4/8/2008 2:19
Lead	64	2.0	mg/Kg-dry	4/8/2008 2:19
Nickel	38	5.0	mg/Kg-dry	4/8/2008 2:19
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:19
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 2:19
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:19
Vanadium	77	5.0	mg/Kg-dry	4/8/2008 2:19
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date:	NA	Prep Analyst	NA

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
PMOIST	14	0.050	wt%	4/7/2008	15:00

Lab ID: 0804145-002 **Collection Date:** 3/31/2008 12:00:00 PM
Client Sample ID: 29709002 73 SB02-00 **Matrix:** SOIL

METALS, TOTAL (EPA 6010B) Analyst: APS
Prep. Method: SW846 3050B Prep. Date: 4/6/2008 3:50:00 PM Prep Analyst BMC

Beryllium	< 0.29	0.29	mg/Kg-dry	4/8/2008	16:01
Tin	< 12	12	mg/Kg-dry	4/8/2008	16:01
Zinc	65	1.2	mg/Kg-dry	4/8/2008	16:01

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/6/2008 3:50:00 AM Prep Analyst BMC

Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:16
Arsenic	2.8	2.0	mg/Kg-dry	4/8/2008	1:16
Barium	120	5.0	mg/Kg-dry	4/8/2008	1:16
Cadmium	19	0.50	mg/Kg-dry	4/8/2008	1:16
Chromium	27	2.5	mg/Kg-dry	4/8/2008	1:16
Cobalt	12	5.0	mg/Kg-dry	4/8/2008	1:16
Copper	110	2.0	mg/Kg-dry	4/8/2008	1:16
Lead	110	2.0	mg/Kg-dry	4/8/2008	1:16
Nickel	21	5.0	mg/Kg-dry	4/8/2008	1:16
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:16
Silver	< 0.99	0.99	mg/Kg-dry	4/8/2008	1:16
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008	1:16
Vanadium	82	5.0	mg/Kg-dry	4/8/2008	1:16

MOISTURE CONTENT (DRIED AT 105°C) Analyst: LCR
Prep. Method: NA Prep. Date: NA Prep Analyst NA

PMOIST	14	0.050	wt%	4/7/2008	15:00

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Baltimore Division

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Lab ID: 0804145-003			**Collection Date:** 3/31/2008 11:25:00 AM		
Client Sample ID: 29709003 73 SB01A-00			**Matrix:** SOIL		
METALS, TOTAL (EPA 6010B)					Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/8/2008 3:50:00 PM	Prep Analyst	BMC	
Beryllium	< 0.27	0.27	mg/Kg-dry	4/8/2008	16:05
Tin	< 11	11	mg/Kg-dry	4/8/2008	16:05
Zinc	90	1.1	mg/Kg-dry	4/8/2008	16:05
ICP/MS METALS, TOTAL (SW846 6020)					Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/8/2008 3:50:00 AM	Prep Analyst	BMC	
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:20
Arsenic	3.3	2.0	mg/Kg-dry	4/8/2008	1:20
Barium	90	5.0	mg/Kg-dry	4/8/2008	1:20
Cadmium	1.8	0.50	mg/Kg-dry	4/8/2008	1:20
Chromium	34	2.5	mg/Kg-dry	4/8/2008	1:20
Cobalt	16	5.0	mg/Kg-dry	4/8/2008	1:20
Copper	120	2.0	mg/Kg-dry	4/8/2008	1:20
Lead	73	2.0	mg/Kg-dry	4/8/2008	1:20
Nickel	63	5.0	mg/Kg-dry	4/8/2008	1:20
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:20
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008	1:20
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008	1:20
Vanadium	92	5.0	mg/Kg-dry	4/8/2008	1:20
MOISTURE CONTENT (DRIED AT 105°C)					Analyst: LCR
Prep. Method: NA	Prep. Date:	NA	Prep Analyst	NA	
PMOIST	7.9	0.050	wt%	4/7/2008	15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Lab ID: 0804145-004			**Collection Date:** 3/31/2008 12:40:00 PM		
Client Sample ID: 29709004 73 SB03-00			**Matrix:** SOIL		
METALS, TOTAL (EPA 6010B)					Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC		
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008	17:12
Tin	< 51	51	mg/Kg-dry	4/8/2008	17:12
Zinc	270	5.1	mg/Kg-dry	4/8/2008	17:12
ICP/MS METALS, TOTAL (SW846 6020)					Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/8/2008 3:50:00 AM		Prep Analyst BMC		
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:24
Arsenic	4.9	2.0	mg/Kg-dry	4/8/2008	1:24
Barium	58	5.0	mg/Kg-dry	4/8/2008	1:24
Cadmium	3.1	0.50	mg/Kg-dry	4/8/2008	1:24
Chromium	27	2.5	mg/Kg-dry	4/8/2008	1:24
Cobalt	13	5.0	mg/Kg-dry	4/8/2008	1:24
Copper	180	2.0	mg/Kg-dry	4/8/2008	1:24
Lead	110	2.0	mg/Kg-dry	4/8/2008	1:24
Nickel	39	5.0	mg/Kg-dry	4/8/2008	1:24
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:24
Silver	< 0.99	0.99	mg/Kg-dry	4/8/2008	1:24
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008	1:24
Vanadium	69	5.0	mg/Kg-dry	4/8/2008	1:24
MOISTURE CONTENT (DRIED AT 105°C)					Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA		
PMOIST	2.9	0.050	wt%	4/7/2008	15:00

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Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Lab ID: 0804145-005 **Collection Date:** 3/31/2008 1:00:00 PM
Client Sample ID: 29709005 73 SB04-00 **Matrix:** SOIL

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC	
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:16
Tin	< 54	54	mg/Kg-dry	4/8/2008 17:16
Zinc	88	5.4	mg/Kg-dry	4/8/2008 17:16
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 AM		Prep Analyst BMC	
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:28
Arsenic	< 2.0	2.0	mg/Kg-dry	4/8/2008 1:28
Barium	59	5.0	mg/Kg-dry	4/8/2008 1:28
Cadmium	< 0.50	0.50	mg/Kg-dry	4/8/2008 1:28
Chromium	19	2.5	mg/Kg-dry	4/8/2008 1:28
Cobalt	13	5.0	mg/Kg-dry	4/8/2008 1:28
Copper	83	2.0	mg/Kg-dry	4/8/2008 1:28
Lead	30	2.0	mg/Kg-dry	4/8/2008 1:28
Nickel	28	5.0	mg/Kg-dry	4/8/2008 1:28
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:28
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 1:28
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 1:28
Vanadium	83	5.0	mg/Kg-dry	4/8/2008 1:28
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	7.1	0.050	wt%	4/7/2008 15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Lab ID: 0804145-006 **Collection Date:** 3/31/2008 1:30:00 PM
Client Sample ID: 29709006 73 SB05-00 **Matrix:** SOIL

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
METALS, TOTAL (EPA 6010B)					Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC		
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008	17:23
Tin	< 52	52	mg/Kg-dry	4/8/2008	17:23
Zinc	140	5.2	mg/Kg-dry	4/8/2008	17:23
ICP/MS METALS, TOTAL (SW846 6020)					Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 AM		Prep Analyst BMC		
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:33
Arsenic	3.5	2.0	mg/Kg-dry	4/8/2008	1:33
Barium	65	5.0	mg/Kg-dry	4/8/2008	1:33
Cadmium	0.63	0.50	mg/Kg-dry	4/8/2008	1:33
Chromium	22	2.5	mg/Kg-dry	4/8/2008	1:33
Cobalt	15	5.0	mg/Kg-dry	4/8/2008	1:33
Copper	76	2.0	mg/Kg-dry	4/8/2008	1:33
Lead	60	2.0	mg/Kg-dry	4/8/2008	1:33
Nickel	37	5.0	mg/Kg-dry	4/8/2008	1:33
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008	1:33
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008	1:33
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008	1:33
Vanadium	100	5.0	mg/Kg-dry	4/8/2008	1:33
MOISTURE CONTENT (DRIED AT 105°C)					Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA		
PMOIST	4.5	0.050	wt%	4/7/2008	15:00

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Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-007			**Collection Date:** 3/31/2008 2:00:00 PM	
Client Sample ID: 29709007 73-SB06-00			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 PM	Prep Analyst	BMC
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:27
Tin	< 52	52	mg/Kg-dry	4/8/2008 17:27
Zinc	500	5.2	mg/Kg-dry	4/8/2008 17:27
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 AM	Prep Analyst	BMC
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:37
Arsenic	3.5	2.0	mg/Kg-dry	4/8/2008 1:37
Barium	86	5.0	mg/Kg-dry	4/8/2008 1:37
Cadmium	5.3	0.50	mg/Kg-dry	4/8/2008 1:37
Chromium	27	2.5	mg/Kg-dry	4/8/2008 1:37
Cobalt	15	5.0	mg/Kg-dry	4/8/2008 1:37
Copper	280	2.0	mg/Kg-dry	4/8/2008 1:37
Lead	200	2.0	mg/Kg-dry	4/8/2008 1:37
Nickel	48	5.0	mg/Kg-dry	4/8/2008 1:37
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:37
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 1:37
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 1:37
Vanadium	90	5.0	mg/Kg-dry	4/8/2008 1:37
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date:	NA	Prep Analyst	NA
PMOIST	3.5	0.050	wt%	4/7/2008 15:00

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Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-008		**Collection Date:** 4/1/2008 9:45:00 AM		
Client Sample ID: 29709009 73 SB07-00		**Matrix:** SOIL		
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 PM	Prep Analyst	BMC
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:31
Tin	< 51	51	mg/Kg-dry	4/8/2008 17:31
Zinc	77	5.1	mg/Kg-dry	4/8/2008 17:31
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 AM	Prep Analyst	BMC
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:54
Arsenic	4.2	2.0	mg/Kg-dry	4/8/2008 1:54
Barium	44	5.0	mg/Kg-dry	4/8/2008 1:54
Cadmium	< 0.50	0.50	mg/Kg-dry	4/8/2008 1:54
Chromium	75	2.5	mg/Kg-dry	4/8/2008 1:54
Cobalt	15	5.0	mg/Kg-dry	4/8/2008 1:54
Copper	85	2.0	mg/Kg-dry	4/8/2008 1:54
Lead	7.3	2.0	mg/Kg-dry	4/8/2008 1:54
Nickel	12	5.0	mg/Kg-dry	4/8/2008 1:54
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:54
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 1:54
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 1:54
Vanadium	110	5.0	mg/Kg-dry	4/8/2008 1:54
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date:	NA	Prep Analyst	NA
PMOIST	2.2	0.050	wt%	4/7/2008 15:00

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Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-009			**Collection Date:** 4/1/2008 10:30:00 AM	
Client Sample ID: 29709010 73-SB08-00			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 PM	Prep Analyst	BMC
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:43
Tin	< 51	51	mg/Kg-dry	4/8/2008 17:43
Zinc	200	5.1	mg/Kg-dry	4/8/2008 17:43
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/6/2008 3:50:00 AM	Prep Analyst	BMC
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:58
Arsenic	4.0	2.0	mg/Kg-dry	4/8/2008 1:58
Barium	66	5.0	mg/Kg-dry	4/8/2008 1:58
Cadmium	0.70	0.50	mg/Kg-dry	4/8/2008 1:58
Chromium	18	2.5	mg/Kg-dry	4/8/2008 1:58
Cobalt	14	5.0	mg/Kg-dry	4/8/2008 1:58
Copper	89	2.0	mg/Kg-dry	4/8/2008 1:58
Lead	43	2.0	mg/Kg-dry	4/8/2008 1:58
Nickel	11	5.0	mg/Kg-dry	4/8/2008 1:58
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 1:58
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 1:58
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 1:58
Vanadium	88	5.0	mg/Kg-dry	4/8/2008 1:58
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date:	NA	Prep Analyst	NA
PMOIST	2.3	0.050	wt%	4/7/2008 15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Lab ID: 0804145-010 **Collection Date:** 4/1/2008 9:00:00 AM
Client Sample ID: 29709011 73 SB09-00 **Matrix:** SOIL

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC	
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:47
Tin	< 52	52	mg/Kg-dry	4/8/2008 17:47
Zinc	82	5.2	mg/Kg-dry	4/8/2008 17:47
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 AM		Prep Analyst BMC	
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:02
Arsenic	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:02
Barium	63	5.0	mg/Kg-dry	4/8/2008 2:02
Cadmium	< 0.50	0.50	mg/Kg-dry	4/8/2008 2:02
Chromium	18	2.5	mg/Kg-dry	4/8/2008 2:02
Cobalt	16	5.0	mg/Kg-dry	4/8/2008 2:02
Copper	76	2.0	mg/Kg-dry	4/8/2008 2:02
Lead	29	2.0	mg/Kg-dry	4/8/2008 2:02
Nickel	36	5.0	mg/Kg-dry	4/8/2008 2:02
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:02
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 2:02
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:02
Vanadium	93	5.0	mg/Kg-dry	4/8/2008 2:02
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	4.0	0.050	wt%	4/7/2008 15:00

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Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Lab ID: 0804145-011			**Collection Date:** 4/1/2008 9:30:00 AM		
Client Sample ID: 29709012 73 SB-10-00			**Matrix:** SOIL		
METALS, TOTAL (EPA 6010B)					Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/8/2008 3:50:00 PM		Prep Analyst BMC		
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008	17:51
Tin	< 52	52	mg/Kg-dry	4/8/2008	17:51
Zinc	280	5.2	mg/Kg-dry	4/8/2008	17:51
ICP/MS METALS, TOTAL (SW846 6020)					Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/8/2008 3:50:00 AM		Prep Analyst BMC		
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008	2:06
Arsenic	2.0	2.0	mg/Kg-dry	4/8/2008	2:06
Barium	99	5.0	mg/Kg-dry	4/8/2008	2:06
Cadmium	1.2	0.50	mg/Kg-dry	4/8/2008	2:06
Chromium	18	2.5	mg/Kg-dry	4/8/2008	2:06
Cobalt	10	5.0	mg/Kg-dry	4/8/2008	2:06
Copper	74	2.0	mg/Kg-dry	4/8/2008	2:06
Lead	94	2.0	mg/Kg-dry	4/8/2008	2:06
Nickel	20	5.0	mg/Kg-dry	4/8/2008	2:06
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008	2:06
Silver	< 0.99	0.99	mg/Kg-dry	4/8/2008	2:06
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008	2:06
Vanadium	71	5.0	mg/Kg-dry	4/8/2008	2:06
MOISTURE CONTENT (DRIED AT 105°C)					Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA		
PMOIST	3.5	0.050	wt%	4/7/2008	15:00

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Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-012			**Collection Date:** 4/1/2008 11:30:00 AM	
Client Sample ID: 29709013 73-SB-11-00			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC	
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:55
Tin	< 52	52	mg/Kg-dry	4/8/2008 17:55
Zinc	87	5.2	mg/Kg-dry	4/8/2008 17:55
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 AM		Prep Analyst BMC	
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:11
Arsenic	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:11
Barium	28	5.0	mg/Kg-dry	4/8/2008 2:11
Cadmium	< 0.50	0.50	mg/Kg-dry	4/8/2008 2:11
Chromium	26	2.5	mg/Kg-dry	4/8/2008 2:11
Cobalt	22	5.0	mg/Kg-dry	4/8/2008 2:11
Copper	84	2.0	mg/Kg-dry	4/8/2008 2:11
Lead	3.1	2.0	mg/Kg-dry	4/8/2008 2:11
Nickel	15	5.0	mg/Kg-dry	4/8/2008 2:11
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:11
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 2:11
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:11
Vanadium	170	5.0	mg/Kg-dry	4/8/2008 2:11
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	3.8	0.050	wt%	4/7/2008 15:00

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Client: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804145-013			**Collection Date:** 4/1/2008 11:00:00 AM	
Client Sample ID: 297090014 73 SB-12-00			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 PM		Prep Analyst BMC	
Beryllium	< 1.3	1.3	mg/Kg-dry	4/8/2008 17:59
Tin	< 51	51	mg/Kg-dry	4/8/2008 17:59
Zinc	120	5.1	mg/Kg-dry	4/8/2008 17:59
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/6/2008 3:50:00 AM		Prep Analyst BMC	
Antimony	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:15
Arsenic	3.6	2.0	mg/Kg-dry	4/8/2008 2:15
Barium	29	5.0	mg/Kg-dry	4/8/2008 2:15
Cadmium	< 0.50	0.50	mg/Kg-dry	4/8/2008 2:15
Chromium	17	2.5	mg/Kg-dry	4/8/2008 2:15
Cobalt	6.4	5.0	mg/Kg-dry	4/8/2008 2:15
Copper	46	2.0	mg/Kg-dry	4/8/2008 2:15
Lead	21	2.0	mg/Kg-dry	4/8/2008 2:15
Nickel	5.1	5.0	mg/Kg-dry	4/8/2008 2:15
Selenium	< 5.0	5.0	mg/Kg-dry	4/8/2008 2:15
Silver	< 1.0	1.0	mg/Kg-dry	4/8/2008 2:15
Thallium	< 2.0	2.0	mg/Kg-dry	4/8/2008 2:15
Vanadium	40	5.0	mg/Kg-dry	4/8/2008 2:15
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	2.2	0.050	wt%	4/7/2008 15:00

Report ID: HMA0022v1
Sequence: 410872

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

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3BAnles

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

0804145

Section I - Contract/Project Information

Contract Information

Pickup Order: 902/1
DLS WO#: 29709 Batch: 2635
Contractor Code: GAS HBN: 208027
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 5

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29709
DLS Profile#: 35169

Contractor Due Date
PDF
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/4/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) Picked up 4/4/08

Number of samples received intact: _____ (#/All) Number of samples received broken: _____ (#/None)

Data package received by at CHPPM: Sarah R. Foots Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/16/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS214R	GAS2147	GAS214R	GAS2149	GAS215R	GAS2151	GAS2152	GAS2153	GAS2154	GAS2160	GAS2161	GAS2360	GAS2361	GAS2362	GAS241R	GAS276
29709001	73 SB01-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709002	73 SB02-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709003	73 SB01A-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709004	73 SB03-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709005	73 SB04-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2154	Silver (Ag)		5
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		5
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		5
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		5
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		5
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		5
	Procedure Description	EPA 6020	
GAS2161	Lead (Pb)		5
	Procedure Description	EPA 6020	
GAS1717	%Moisture		5
	Procedure Description	EPA 160.3	
GAS2153	Nickel (Ni)		5
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	5

GAS776	Copper (Cu)		5
	Procedure Description	EPA 6020	
GAS2180	Selenium (Se)		5
	Procedure Description	EPA 6020	
GAS2181	Zinc (Zn)		5
	Procedure Description	EPA 6020	
GAS2360	Beryllium (Be)		5
	Procedure Description	EPA 6020	
GAS2361	Cobalt (Co)		5
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		5
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 6010B (Soil)		5
	Procedure Description	SW-846/EPA 6010	
GAS2152	Thallium (Tl)		5
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 410874

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Aberdeen Proving Ground, MD 21010-5422

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3 BATHES

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 902/1
DLS WO#: 29709 Batch: 2636
Contractor Code: GAS HBN: 208028
Contract#: W91ZLK-05-C-0028
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 5

Project Information

Project Site: NAPR-Cp Mosarip
Project #: Program 38--36
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29709
DLS Profile#: 35169

Contractor Due Date
PDF
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM CoR)

USACHPPM called for pickup: _____ (Caller's Name) 4/4/08 (Date/Time Called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) Picked up 4/4/08

Number of samples received intact: _____ (#/All) Number of samples received broken: _____ (#/None)

Data package received by at CHPPM: Sarah R. Bartos Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/16/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2362	GAS2416	GAS2778
29709006	73 SB05-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709007	73 SB06-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709009	73 SB07-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709010	73 SB08-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709011	73 SB09-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2154	Silver (Ag)		5
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		5
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		5
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		5
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		5
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		5
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		5
	Procedure Description	EPA 6020	
GAS1717	%Moisture		5
	Procedure Description	EPA 160.3	
GAS2153	Nickel (Ni)		5
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	5

GAS776	Copper (Cu)		5
	Procedure Description	EPA 6020	
GAS2180	Selenium (Se)		5
	Procedure Description	EPA 6020	
GAS2181	Zinc (Zn)		5
	Procedure Description	EPA 6020	
GAS2360	Beryllium (Be)		5
	Procedure Description	EPA 6020	
GAS2361	Cobalt (Co)		5
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		5
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 6010B (Soil)		5
	Procedure Description	SW-846/EPA 6010	
GAS2152	Thallium (Tl)		5
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 410877

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Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

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3 Batches

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 902/1
DLS WO#: 29709 Batch: 2537
Contractor Code: GAS HBN: 208029
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 3

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29709
DLS Profile#: 35169

Contractor Due Date
PDF
Hardcopy 25 Apr 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) 4/4/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up)

Number of samples received intact: _____ (#/All) Number of samples received broken: _____ (#/None)

Data package received by at CHPPM: Sarah R. Boots Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/16/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2160	GAS2161	GAS2350	GAS2351	GAS2363	GAS2418	GAS776
29709012	73 SB-10-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709013	73 SB-11-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29709014	73 SB-12-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2154	Silver (Ag)		3
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		3
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		3
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		3
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		3
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		3
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		3
	Procedure Description	EPA 6020	
GAS1717	%Moisture		3
	Procedure Description	EPA 160.3	
GAS2153	Nickel (Ni)		3
	Procedure Description	EPA 6020	
GAS776	Copper (Cu)		3
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	3

GAS2160	Selenium (Se)		3
	Procedure Description	EPA 6020	
GAS2181	Zinc (Zn)		3
	Procedure Description	EPA 6020	
GAS2350	Beryllium (Be)		3
	Procedure Description	EPA 6020	
GAS2351	Cobalt (Co)		3
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		3
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 60108 (Soil)		3
	Procedure Description	SW-846/EPA 6010	
GAS2152	Thallium (Tl)		3
	Procedure Description	EPA 6020	

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/2/08 *to SML. This is SML's internal Chain of Custody.*

Profile: 35169 - 0995	**Description:** NAPR CMS-Cp Moscrip--35169
Workorder #: 29709	**Workorder ID:** 099593
Queue: GAS	**Customer:** Program 38 **POC:** David Jones
Location: NAPR-Cp Moscrip	**Project Number:** 38
Jono: 77HRW	**Notes:** Received sample 73 FR-02 marked hold per the PO. COC says (2) containers for that ID but only recvd (1). 73 FB-02 marked as (1) container on the COC, but SML recvd (2). One marked Metals and the other marked Mercury. H.Taylor 4/2/08
Subjono: 0995	
Turn Code: R028 28 Calendar day from receipt	

Total Samples: 13 **Total Containers:** 13

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29709001	29709001-2	73 SB01-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 11:25 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29709002	29709002-2	73 SB02-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29709003	29709003-2	73 SB01A-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 11:25 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709004	29709004-2	73 SB03-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709005	29709005-2	73 SB04-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709006	29709006-2	73 SB05-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709007	29709007-2	73 SB06-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709009	29709009-2	73 SB07-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2146 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)

Chain of Custody

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip-35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709010	29709010-2	73 SB08-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709011	29709011-2	73 SB09-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709012	29709012-2	73 SB-10-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709013	29709013-2	73 SB-11-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709014	29709014-2	73 SB-12-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)

NR=Not Reported.

Chain Of Custody

Report ID: HRA0191C-Acodes
COC #: 410751

USACHPPM

Run Date: 03-Apr-08 14:16
Generated By: HEIDI.TAYLOR

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip-35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

GAS2181 : Zinc (Zn)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS2380 : Beryllium (Be)
GAS776 : Copper (Cu)
GAS2381 : Cobalt (Co)
GAS2383 : (Vanadium (V)

Total Samples: 13	Total Containers: 13

Samples Received By:		Date Received:	4-4-08
Document Reviewed By: Heidi Taylor	Initials: HT	Date Reviewed:	4/3/08
Document Quality Review By:		Date Reviewed:	
Samples Approved For Distribution: Yes ✓ No	Initials:	Date Approved:	

Chain Of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410751

USACHPPM
Readiness thru Health

Page: 5 of 7
Run Date: 03-Apr-08 14:16
Generated By: HEIDI.TAYLOR

Profile: 35169 - 0995	Description: NAPR-CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29709001	73 SB01-00	29709001-2	SO
29709003	73 SB01A-00	29709003-2	SO
29709005	73 SB04-00	29709005-2	SO
29709007	73 SB06-00	29709007-2	SO
29709010	73 SB08-00	29709010-2	SO
29709012	73 SB-10-00	29709012-2	SO
29709014	73 SB-12-00	29709014-2	SO

HSN	Customer Sample Id	Container Id	Mx
29709002	73 SB02-00	29709002-2	SO
29709004	73 SB03-00	29709004-2	SO
29709006	73 SB05-00	29709006-2	SO
29709009	73 SB07-00	29709009-2	SO
29709011	73 SB09-00	29709011-2	SO
29709013	73 SB-11-00	29709013-2	SO

Chain Of Custody

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip-35169
Workorder #: 29709	Workorder ID: 099693
Queue: GAS	Customer: Program 38

Total Samples: 13 | Total Containers: 13

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
			See SML's Comments		Returned to holding refrigerator in room #0202. Completed % Moisture prep
	[signature]	4.4.08 @900	[signature]	4-4-08 0900	

Chain Of Custody

Remarks:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 410751

USACHPPM
Readiness and Health

Run Date: 03-Apr-08 14:16
Generated By: HEIDI.TAYLOR

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29709001		1		
29709002		1		
29709003		1		
29709004		1		
29709005		1		
29709006		1		
29709007				
29709009				
29709010				
29709011		1		
29709012		1		
29709013		1		
29709014		1		

Total Samples: Total Containers: 13

Chain of Custody

NR=Not Reported.

Report ID: HRA0191C-ACodes
COC #: 410751

USACHPPM
Readiness thru Health

Run Date: 03-Apr-08 14:16
Generated By: HEIDI.TAYLOR

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

0804145

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/2/08 *to SML. This is SML's internal Chain of Custody.*

Profile: 35169 - 0995
Workorder #: 29709
Queue: GAS
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar dey from receipt

Description: NAPR CMS-Cp Moscrip~35169
Workorder ID: 099593
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes: Received sample 73 ER-02 marked hold per the PO. COC says (2) containers for that ID, but only recvd (1). 73 FB-02 marked as (1) container on the COC, but SML recvd (2). One marked Metals and the other marked Mercury. H.Taylor 4/2/08

Total Samples: 13 **Total Containers:** 13

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29709001	29709001-2	73 SB01-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 11:25 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2161 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29709002	29709002-2	73 SB02-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 12:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29709003	29709003-2	73 SB01A-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 11:25 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)

NR=Not Reported.

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 089593
Queue: GAS	Customer: Program 38

GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709004	29709004-2	73 SB03-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 12:40 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709005	29709005-2	73 SB04-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 01:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709006	29709006-2	73 SB05-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 01:30 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709007	29709007-2	73 SB06-00	SAMPLE	SO	Soil	9.0	degrees C	02-Apr-2008 09:15 AM	31-Mar-2008 02:00 PM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709009	29709009-2	73 SB07-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:45 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)

Profile: 35169 - 0995
Workorder #: 29709
Queue: GAS

Description: NAPR CMS-Cp Moscrip-35169
Workorder ID: 099593
Customer: Program 38

GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709010	29709010-2	73 SB08-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 10:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709011	29709011-2	73 SB09-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:00 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709012	29709012-2	73 SB-10-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 09:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709013	29709013-2	73 SB-11-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 11:30 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29709014	29709014-2	73 SB-12-00	SAMPLE	SO	Soil	3.0	degrees C	02-Apr-2008 09:15 AM	01-Apr-2008 11:00 AM	30-Apr-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag) GAS2180 : Selenium (Se)

USACHPPM
Readiness thru Health

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

GAS2181 : Zinc (Zn)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS2360 : Beryllium (Be)
GAS776 : Copper (Cu)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)

Total Samples: 13	Total Containers: 13

Samples Received By:	[illegible]			Date Received:	4-4-08
Document Reviewed By:	Heidi Taylor	Initials:	HT	Date Reviewed:	4/3/08
Document Quality Review By:	[illegible]			Date Reviewed:	↓
Samples Approved For Distribution:	Yes ✓ No	Initials:	[illegible]	Date Approved:	↓

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29709001	73 SB01-00	29709001-2	SO
29709003	73 SB01A-00	29709003-2	SO
29709005	73 SB04-00	29709005-2	SO
29709007	73 SB06-00	29709007-2	SO
29709010	73 SB08-00	29709010-2	SO
29709012	73 SB-10-00	29709012-2	SO
29709014	73 SB-12-00	29709014-2	SO

HSN	Customer Sample Id	Container Id	Mx
29709002	73 SB02-00	29709002-2	SO
29709004	73 SB03-00	29709004-2	SO
29709006	73 SB05-00	29709006-2	SO
29709009	73 SB07-00	29709009-2	SO
29709011	73 SB09-00	29709011-2	SO
29709013	73 SB-11-00	29709013-2	SO

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35169 - 0995	Description: NAPR CMS-Cp Moscrip~35169
Workorder #: 29709	Workorder ID: 099593
Queue: GAS	Customer: Program 38

Total Samples: 13 | Total Containers: 13

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	[illegible]	4.3.08 1600	See SML's Comments	4.3.08 1600	Returned to holding refrigerator in room #0202. Completed % Moisture prep
	[illegible]	4.4.08 0900	[illegible]	09:00 4-4-08	
			[illegible]	4/4/08 1110	

Remarks:

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35169 - 0995
Workorder #: 29709
Queue: GAS

Description: NAPR CMS-Cp Moscrip~35169
Workorder ID: 099593
Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29709001		1		
29709002		1		
29709003		1		
29709004		1		
29709005		1		
29709006		1		
29709007		1		
29709009		1		
29709010		1		
29709011		1		
29709012		1		
29709013		1		
29709014		1		

Total Samples: 13 Total Containers: 13

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Microbac
www.microbac.com

Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0804145
Report To: U.S. Army Center for Health Promotion and
Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

April 15, 2008
page 1 of 1

Pick-Up Order: 902/1
Date Samples Received: 04/04/2008

Sample Numbers: 29709001-29709014 Matrix: Soil

Fourteen samples were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

- Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. The Matrix Spike recovery for Antimony, Selenium and Silver were out of acceptance limits. The Post Digestion Spike recoveries were acceptable.

Notes:
1. The Quality control data was from another sample in the analytical batch for ICPMS analyses.
2. Due to the High sample concentration of Zinc, the analysis was switched from EPA 6020 analysis to EPA 6010.
3. Due to matrix interference the analysis of Beryllium was switched from EPA 6020 to EPA 6010.

Microbac Laboratories, Inc., Baltimore Division

Peter B. Kelly
Technical Director

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

4/15/2008

Company: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Antimony	DUP	0.2	< 7.6	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	113	98.86	mg/Kg-dry	87.5			0.002	211	LCS2	16783	15124
	MBLK		< 5.0	mg/Kg-dry						MBLK2	16783	15124
	PDS	10	9.614	mg/Kg-dry	90.2			75	125	0804144-021A PDS	16783	
Arsenic	DUP	0.2	3.578	mg/Kg-dry		37.7	20			0804144-021A DUP	16783	16783
	LCS	151	133.8	mg/Kg-dry	88.6			76.8	123	LCS2	16783	15124
	MBLK		< 2.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	16.72	mg/Kg-dry	86.3			70	130	0804144-021A MS	16783	16783
	MSD	15.05	16.38	mg/Kg-dry	84.2	2.07	20	70	130	0804144-021A MS	16783	16783
Barium	DUP	0.2	31.73	mg/Kg-dry		39.2	20			0804144-021A DUP	16783	16783
	LCS	272	230.6	mg/Kg-dry	84.8			82	118	LCS2	16783	15124
	MBLK		< 5.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	44.74	mg/Kg-dry	82.3			70	130	0804144-021A MS	16783	16783
	MSD	15.05	46.57	mg/Kg-dry	94.5	3.99	20	70	130	0804144-021A MS	16783	16783
Beryllium	DUP		< 1.5	mg/Kg-dry		0	20			0804145-001A DUP	16785	16785
	LCS	102	99.38	mg/Kg	97.4			82.1	118.6	16785 LCS	16785	
	MBLK		< 0.25	mg/Kg						16785 MBLK	16785	
	MS	57.94	53.78	mg/Kg-dry	92.8			75	125	0804145-001A MS	16785	16785
	MSD	57.98	53.27	mg/Kg-dry	91.9	0.965	20	75	125	0804145-001A MS	16785	16785
	PDS	499.8	476.8	mg/Kg-dry	95.4			75	125	0804145-001A PDS	16785	
Cadmium	DUP	0.2	< 0.76	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	95.3	83.1	mg/Kg-dry	87.2			80.1	120	LCS2	16783	15124
	MBLK		< 0.50	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	11.24	mg/Kg-dry	74.6			70	130	0804144-021A MS	16783	16783
	MSD	15.05	11.36	mg/Kg-dry	75.5	1.05	20	70	130	0804144-021A MS	16783	16783
Chromium	DUP	0.2	14.1	mg/Kg-dry		29	20			0804144-021A DUP	16783	16783
	LCS	120	110.8	mg/Kg-dry	92.3			80.5	119	LCS2	16783	15124
	MBLK		< 2.5	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	29.39	mg/Kg-dry	89.1			70	130	0804144-021A MS	16783	16783
	MSD	15.05	30.34	mg/Kg-dry	95.5	3.18	20	70	130	0804144-021A MS	16783	16783
Cobalt	LCS	67.3	62.49	mg/Kg-dry	92.9			81.3	119	LCS2	16783	15124
	MBLK		< 5.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	15.39	mg/Kg-dry	88.3			70	130	0804144-021A MS	16783	16783
	MSD	15.05	15.9	mg/Kg-dry	91.8	3.25	20	70	130	0804144-021A MS	16783	16783
Copper	DUP	0.2	< 3.0	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	83	67.56	mg/Kg-dry	81.4			78.2	122	LCS2	16783	15124
	MBLK		< 2.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	14.87	mg/Kg-dry	98.6			70	130	0804144-021A MS	16783	16783
	MSD	15.05	16.36	mg/Kg-dry	109	9.52	20	70	130	0804144-021A MS	16783	16783
Lead	DUP		28.24	mg/Kg-dry		4.18	20			0804144-021A DUP	16783	
	LCS	120	104.9	mg/Kg-dry	87.4			78.4	121	LCS2	16783	15124
	MBLK		< 2.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	40.43	mg/Kg-dry	72.9			70	130	0804144-021A MS	16783	
	MSD	15.05	42.53	mg/Kg-dry	86.9	5.05	20	70	130	0804144-021A MS	16783	

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Lead	PDS	757.9	914.9	mg/Kg-dry	116			75	125	0804144-021A PDS	16783	
Nickel	DUP	0.2	5.982	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	102	93.62	mg/Kg-dry	91.8			79.4	120	LCS2	16783	15124
	MBLK		< 5.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	20.26	mg/Kg-dry	105			70	130	0804144-021A MS	16783	16783
	MSD	15.05	20.26	mg/Kg-dry	105	0.00834	20	70	130	0804144-021A MS	16783	16783
PMOIST	DUP		31.87	wt%		1.86	20			0804144-020A DUP	R58798	
	DUP		86.78	wt%		0.269	20			0803707-001A DUP	R58798	16782
	DUP		2.807	wt%		2.48	20			0804145-004A DUP	R58798	
	DUP		97.76	wt%		0.026	20			0804075-001A DUP	R58798	
	DUP		24.28	wt%		5.02	20			0804144-010A DUP	R58798	
	LCS	98	98	wt%	100			95	108	LCS #3	R58798	
	LCS	98	98	wt%	100			95	108	LCS #2	R58798	
	LCS	98	98	wt%	100			95	108	LCS #1	R58798	
	MBLK		100	wt%						Method Blank #3	R58798	
	MBLK		100	wt%						Method Blank #1	R58798	
	MBLK		100	wt%						Method Blank #2	R58798	
Selenium	DUP	0.2	4.649	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	138	119	mg/Kg-dry	86.2			77.5	122.5	LCS2	16783	15124
	MBLK		2.265	mg/Kg-dry						MBLK2	16783	15124
	MSD	15.05	16.01	mg/Kg-dry	71.5	4.75	20	70	130	0804144-021A MS	16783	16783
	PDS	10	8.482	mg/Kg-dry	84.8			75	125	0804144-021A PDS	16783	
Silver	DUP	0.1	< 1.5	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	96.8	83.92	mg/Kg-dry	86.7			66.3	133	LCS2	16783	15124
	MBLK		< 1.0	mg/Kg-dry						MBLK2	16783	15124
	PDS	5	4.748	mg/Kg-dry	95			75	125	0804144-021A PDS	16783	
Thallium	DUP	0.2	< 3.0	mg/Kg-dry		0	20			0804144-021A DUP	16783	16783
	LCS	170	160.4	mg/Kg-dry	94.4			77.6	122	LCS2	16783	15124
	MBLK		< 2.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	11.28	mg/Kg-dry	74.8			70	130	0804144-021A MS	16783	16783
	MSD	15.05	11.79	mg/Kg-dry	78.3	4.37	20	70	130	0804144-021A MS	16783	16783
Tin	DUP		< 58	mg/Kg-dry		0	20			0804145-001A DUP	16785	16785
	LCS	141	142.2	mg/Kg	101			69.9	130.5	16785 LCS	16785	
	MBLK		5.034	mg/Kg						16785 MBLK	16785	
	MS	57.94	57.26	mg/Kg-dry	98.8			75	125	0804145-001A MS	16785	16785
	MSD	57.98	57.35	mg/Kg-dry	98.9		20	75	125	0804145-001A MS	16785	16785
	PDS	999.6	973.7	mg/Kg-dry	97.4			75	125	0804145-001A PDS	16785	
Total Solids	DUP		2.242	wt%		1.14	15			0804075-001A DUP	R58798	
	DUP		97.19	wt%		0.0726	15			0804145-004A DUP	R58798	
	DUP		75.72	wt%		1.67	15			0804144-010A DUP	R58798	
	DUP		13.4	wt%		4.7	15			0803707-001A DUP	R58798	16782
	DUP		13.22	wt%		6.06	15			0803707-001A DUP	R58798	16782
	DUP		68.13	wt%		0.859	15			0804144-020A DUP	R58798	
	LCS	2	1.964	wt%	98.2			90	110	LCS #1 (Inorganic)	R58798	
	LCS	2	2.005	wt%	100			90	110	LCS #2	R58798	

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

4/15/2008

Company: USACHPPM-Metals

Report No: 0804145

Project: 35169-0995 (4/25)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Total Solids	LCS	2	2.003	wt%	100			90	110	LCS #3	R58798	
	LCS	2	2.004	wt%	100			90	110	LCS #1	R58798	
	MBLK		< 0.050	wt%						Method Blank	R58798	
	MBLK		< 0.050	wt%						Method Blank #1	R58798	
	MBLK		< 0.050	wt%						Method Blank #3	R58798	
	MBLK		< 0.050	wt%						Method Blank #2	R58798	
Vanadium	DUP	0.2	19.04	mg/Kg-dry		38.8	20			0804144-021A DUP	16783	16783
	LCS	129	113	mg/Kg-dry	87.6			77.1	123	LCS2	16783	15124
	MBLK		< 5.0	mg/Kg-dry						MBLK2	16783	15124
	MS	15.08	32.38	mg/Kg-dry	85.6			70	130	0804144-021A MS	16783	16783
	MSD	15.05	34.53	mg/Kg-dry	100	6.43	20	70	130	0804144-021A MS	16783	16783
Zinc	DUP		232.3	mg/Kg-dry		26.2	20			0804145-001A DUP	16785	16785
	LCS	117	122.3	mg/Kg	104			79.1	121.4	16785 LCS	16785	
	MBLK		0.1165	mg/Kg						16785 MBLK	16785	
	PDS	499.8	739.2	mg/Kg-dry	87.4			75	125	0804145-001A PDS	16785	

Reviewed By _____ Date 4/15/2008

Notes: MBLK: Method Blank PDS: Post Digestion/Distillation Spike MSD: Matrix Spike Duplicate DUP: Duplicate
MS: Matrix Spike LCS(D): Laboratory Control Sample (Duplicate) RPD: Relative Percent Difference REC: Recovery
ICB/ICV: Initial Calibration Blank(Verification Standard) CCB/CCV: Continuing Calibration Blank(Verification Standard)

U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DIRECTORATE OF LABORATORY SCIENCES (DLS)

5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403
(410) 436-2208

FINAL ANALYTICAL REPORT

CLIENT: Mr. David Jones
USACHPPM
MCHB-TS-EGW
5158 Blackhawk Rd Bldg E1677
Gunpowder MD 21010 United States
5-2305

PROJECT SITE: NAPR-Cp Moscrip
PROGRAM 38 **SUBJONO:** 0995
DLS PROFILE #: 35169 **DLS WORK ORDER #:** 29709
REPORT SERIAL NUMBER: 418225

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REPORT RELEASE AUTHORIZATION:

Signature: _____ Date: 6 May 2008

Charles Stoner, Ph.D, Chief, Analytical Spectrometry Division

DLS HOLDS ACCREDITATION FROM AIHA, A2LA, NLLAP, AND COLA

Readiness thru Health

DLS Final Analytical Report, NAPR-Cp Moscrip

Program 38, SUBJONO 0995, DLS WO# 29709, Report Serial No. 418225, 5/6/2008

CASE NARRATIVE

Provided are the results for thirteen soil and four ground water samples submitted from Camp Moscrip with chain of custody for metals analysis. The soil samples (DLS#s: 29709 001-007, 29709 009-014) were requested for mercury (Hg) analysis. The ground water samples (DLS#s: 29709 008, 015-017) were requested for seventeen metals (Sn, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn and Hg) analysis. The samples were collected on 31 March 08- 01 Apr 08 and received in DLS on 02 Apr 08. The samples DLS#s: 29709 009-017 were received at 3 degrees C which is within the acceptable temperature range of 2-6 degrees C. The samples DLS#s: 29709 001-008 were received at 9 degrees C which is not within the acceptable temperature range of 2-6 degrees C. The required holding times were met.

Sample Preparation:
The ground water samples were digested for Sn on 28-29 Apr 08 IAW EPA 3010A / SOP MET 14.7. The ground water samples were digested for all other metals on 28-29 Apr 08 IAW EPA 3020A / SOP MET 13.7
The ground water samples were prepared for Hg analysis on 24 Apr 08 IAW EPA 7470A / SOP MET 19.6.

The soil samples were prepared for Hg analysis on 23 Apr 08 IAW EPA 7471B / SOP MET 20.6.

Sample Analysis-Ground Water:
The tin (Sn) was determined on 01 May 08 IAW EPA 6010B / SOP MET 42.7 using the PE ICP 4300DV. The reporting limit (RL) was met.

The fifteen metals (Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn), were determined on 01 May 07 IAW EPA 6020B / SOP MET 9.5 using the AG 4500 ICP-MS Instrumentation. All reporting limits were met.

The samples were analyzed for Hg on 25 Apr 08 IAW EPA 7470A / SOP MET 19.6 using FIMS II. The reporting limit was met.

Sample Analysis- Soil:
The soil samples were analyzed for Hg on 24 April 08 IAW EPA 7471B / SOP MET 20.6 using FIMS II. The reporting limit was met

Quality control:
The following QC were analyzed with this data set for ground water samples: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and post digestion instrument spike (IS) samples.
The following QC were analyzed with this data set for soil samples: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and post digestion instrument spike (IS) samples.

All QC results were within acceptance limits except for the following:

1-MS
Sb 63.26% (limit: 80%-120%)

3-MSDs
Zn 23.09 % RPD (limit: %RPD<20%) RPD: Relative Percent Difference
Sb 33.44 % RPD (limit: %RPD<20%)
Se 22.44 % RPD (limit: %RPD<20%)

2-LCS
Se 67.70% (limit: 80%-120%)
Be 71.94% (limit: 80%-120%)

The low recoveries in: MS (for: Sb); LCS (for Se, Be) are attributed to matrix interference. Three elements (Zn, Sb, Se) failed in MSD due to non-homogeneity of the sample. Additionally, Se needed a 1:10 sample dilution for acceptable IS recovery due to matrix interference. Based on the failed QC results and suspected matrix interference the reported results for Se, Be, Sb and Zn are considered as estimates.

The ground water results are reported in mg/L for EPA Methods 6010B; ug/L for EPA Methods 6020B and 7470A. The soil results for Hg are reported in mg/kg on the dry weight basis.

List of the report contents:

DLS Final Analytical Report, NAPR-Cp Moscrip
Program 38, SUBJONO 0995, DLS WO# 29709, Report Serial No. 418225, 5/6/2008

Section	Number of Pages
Transmittal Memo	0
Cover Letter	1
Case Narrative	2
Sample Summary	1
Analytical Data Report	7
Quality Control Data Report	5
Raw Data	0
Terminology/Abbreviations	1

Report Point-of-Contact: Chuck Stoner
Reviewer: WD / AS A. Simon for Wanda Dudek / A. Simon

List of all tests used:

DLS Procedure	Count
EPA 6010 MET42	4
EPA 6020 MET9	60
EPA 7470 MET19	4
EPA 7471 MET20	13

Number of samples included in the report, by matrix:

Matrix	Quantity
Soil	13
Water (Ground water)	4

Analyst(s):

Analyst Code	Analyst Name	Signature
0180	BOWMANDL	Desiree Johnson
0041	MCKENZIERM	A. Simon for Robert McKenzie
0062	SIMONAS	Angelina Simon

SAMPLE SUMMARY

Sorted by Field ID

Field ID	DLS ID	Date Collected	Matrix
73 ER-03	29709017	01-Apr-08	Water (Ground water)
73 FB-01	29709015	01-Apr-08	Water (Ground water)
73 FB-02	29709016	01-Apr-08	Water (Ground water)
73 SB01-00	29709001	31-Mar-08	Soil
73 SB01A-00	29709003	31-Mar-08	Soil
73 SB02-00	29709002	31-Mar-08	Soil
73 SB03-00	29709004	31-Mar-08	Soil
73 SB04-00	29709005	31-Mar-08	Soil
73 SB05-00	29709006	31-Mar-08	Soil
73 SB06-00	29709007	31-Mar-08	Soil
73 SB07-00	29709009	01-Apr-08	Soil
73 SB08-00	29709010	01-Apr-08	Soil
73 SB09-00	29709011	01-Apr-08	Soil
73 SB-10-00	29709012	01-Apr-08	Soil
73 SB-11-00	29709013	01-Apr-08	Soil
73 SB-12-00	29709014	01-Apr-08	Soil
ER-01	29709008	31-Mar-08	Water (Ground water)

ANALYTICAL DATA REPORT

(FORMAT OPTION 1)
Sorted by Field ID

FINAL REPORT

Field ID: 73 ER-03 **DLS ID:** 29709017

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	15.3 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73 FB-01 **DLS ID:** 29709015

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	23.5 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73 FB-02 **DLS ID:** 29709016

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	13.4 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73 SB01-00 **DLS ID:** 29709001

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0203 mg/kg	0.0136	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB01A-00 **DLS ID:** 29709003

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0685 mg/kg	0.0122	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB02-00 **DLS ID:** 29709002

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.103 mg/kg	0.0134	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB03-00 **DLS ID:** 29709004

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0593 mg/kg	0.0118	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB04-00 **DLS ID:** 29709005

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.123 mg/kg	0.0124	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB05-00 **DLS ID:** 29709006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73 SB05-00 **DLS ID:** 29709006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0294 mg/kg	0.0117	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB06-00 **DLS ID:** 29709007

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.399 mg/kg	0.0122	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB07-00 **DLS ID:** 29709009

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0150 mg/kg	0.0123	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB08-00 **DLS ID:** 29709010

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.184 mg/kg	0.0118	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB09-00 **DLS ID:** 29709011

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0202 mg/kg	0.0122	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB-10-00 **DLS ID:** 29709012

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73 SB-10-00 **DLS ID:** 29709012

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0797 mg/kg	0.0117	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB-11-00 **DLS ID:** 29709013

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0124 mg/kg	0.0124	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73 SB-12-00 **DLS ID:** 29709014

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.145 mg/kg	0.0118	EPA 7471 MET20	0180	24-Apr-08

Field ID: ER-01 **DLS ID:** 29709008

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: ER-01 **DLS ID:** 29709008

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	24.8 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

TERMINOLOGY/ABBREVIATIONS

Term	Description
MDA	The minimum detectable activity.
ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CFR	Code of Federal Regulations
OSHA	Occupational Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
ACCURACY	A measure of how close a measured value is to a known true value. Accuracy is assessed by means of reference samples and percent recoveries of spiked samples.
ANALYSIS OF VARIANCE	A technique of statistical analysis by which the components of variation for different elements of the data set are separated and estimated.
BLANK	An artificial sample designed to monitor the introduction of artifacts or contamination into the analytical process. The blank is taken through the appropriate steps in the analytical process. Examples are: trip, field, equipment, and reagent blanks.
AIHA	American Industrial Hygiene Association

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* **DIVISION/TEAM:** *ASD-Metals*

INSTALLATION: *NAPR-Cp Moscrip* **CONTRACT LAB:** *Microbac*

PROJECT NO: *38-0995* **LIMS W.O. NO:** *29768*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

X DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

OTHER.

COMMENTS/ NARRATIVE:

Please see the Contractor Case Narrative (page 56 of the 244 page report).

Antimony was detected at 1 mg/kg in the method blank. This was noted on results sheets where low level antimony was detected. Please remember that the LIMS database EDD does not include the method blank data. Other method blank detections in the analysis set were insignificant.

Matrix spike QC outliers with either the matrix spike or the matrix spike duplicate are the probable result of the sample matrices in these samples. "High" levels of some native metals in the samples likely skewed the MS/MSD results. The satisfactory performance of the laboratory control standards indicates the problems were not method/laboratory related. Some qualification of the data may be required.

R. Valls

REVIEWED BY: *R. Valls*
DATE: *18 Apr 08*

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CERTIFICATE OF ANALYSIS

USACHPPM-Metals
Contract #W91ZLK-05-C-0025
Bldg E2100, Rm 201
APG, MD 21010-5422
Attn: Heidi Taylor

Report No. 0804258

This report of analysis contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 4/8/2008

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 29 Pages plus Attachment(s)

Final report reviewed by: Michael D. Arbaugh, Sr./Division Manager

Report issue date 4/30/2008

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com

Microbac Laboratories, Inc. Baltimore Division- laboratory accreditations: MD 109, VA 00152, PA 68-339, NY 11158, SC 86010, ISO 17025, NELAC, AIHA 100491. The data and information on this, and other accompanying documents, represents only the sample(s) analyzed and is not to be reproduced wholly or in part for advertising or other purposes without written approval from the laboratory. Organics Qualifiers: (U) analyzed for but not detected; (J) estimated value, below the reporting limit but above one-half the reporting limit; (B) detected in the associated method blank; (D) reanalyzed at a higher dilution factor. Inorganics Qualifiers: (U) analyzed for but not detected; (B) estimated value, below the reporting limit but above one-half the reporting limit. A copy of COC is attached.

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Sample Summary

Project: 35241-0995 (4/29)

Report No: 0804258

Date Received 4/8/2008

Client Sample ID	Lab Sample ID	Matrix	Collection Date	Collection Time
29768001 73SB13-00	0804258-001A	Soil	4/2/2008	9:30
29768002 73SB13A-00	0804258-002A	Soil	4/2/2008	9:30
29768003 73SB17-00	0804258-003A	Soil	4/2/2008	10:00
29768004 73SB21-00	0804258-004A	Soil	4/2/2008	10:45
29768005 73SB16-00	0804258-005A	Soil	4/2/2008	11:15
29768006 73SB20-00	0804258-006A	Soil	4/2/2008	11:45
29768007 73SB24-00	0804258-007A	Soil	4/2/2008	12:00
29768008 73SB15-00	0804258-008A	Soil	4/2/2008	13:00
29768009 73SB19-00	0804258-009A	Soil	4/2/2008	13:15
29768010 73SB22-00	0804258-010A	Soil	4/2/2008	14:00
29768011 73SB23-00	0804258-011A	Soil	4/2/2008	13:30
29768012 73SB18-00	0804258-012A	Soil	4/3/2008	11:00
29768013 73SB18A-00	0804258-013A	Soil	4/3/2008	11:00
29768014 73SB14-00	0804258-014A	Soil	4/3/2008	11:30
29768015 73SB35-00	0804258-015A	Soil	4/3/2008	13:45
29768016 73SB31-00	0804258-016A	Soil	4/3/2008	13:55
29768017 73SB27-00	0804258-017A	Soil	4/3/2008	14:05
29768018 73SB27A-00	0804258-018A	Soil	4/3/2008	14:05
29768019 73SB36-00	0804258-019A	Soil	4/3/2008	14:15
29768020 73SB32-00	0804258-020A	Soil	4/3/2008	14:25
29768021 73SB28-00	0804258-021A	Soil	4/3/2008	14:30
29768022 73SB33-00	0804258-022A	Soil	4/3/2008	14:35
29768023 73SB29-00	0804258-023A	Soil	4/3/2008	14:45
29768024 73SB25-00	0804258-024A	Soil	4/3/2008	14:55
29768025 73SB34-00	0804258-025A	Soil	4/3/2008	15:05
29768026 73SB30-00	0804258-026A	Soil	4/3/2008	15:10
29768027 73SB26-00	0804258-027A	Soil	4/3/2008	15:20

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-001 **Collection Date:** 4/2/2008 9:30:00 AM

Client Sample ID: 29768001 73SB13-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Antimony	1.2	0.99	mg/Kg-dry	4/21/2008	12:54
Arsenic	7.3	0.40	mg/Kg-dry	4/23/2008	12:51
Barium	87	0.99	mg/Kg-dry	4/21/2008	12:54
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008	16:02
Cadmium	0.17	0.099	mg/Kg-dry	4/21/2008	12:54
Chromium	26	2.5	mg/Kg-dry	4/23/2008	16:02
Cobalt	38	0.99	mg/Kg-dry	4/23/2008	12:51
Copper	190	0.40	mg/Kg-dry	4/21/2008	12:54
Lead	9.2	0.40	mg/Kg-dry	4/21/2008	12:54
Nickel	16	0.99	mg/Kg-dry	4/21/2008	12:54
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008	12:54
Silver	0.38	0.20	mg/Kg-dry	4/21/2008	12:54
Thallium	0.51	0.40	mg/Kg-dry	4/21/2008	12:54
Vanadium	170	0.99	mg/Kg-dry	4/21/2008	12:54
Zinc	72	4.0	mg/Kg-dry	4/21/2008	12:54

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-002 **Collection Date:** 4/2/2008 9:30:00 AM

Client Sample ID: 29768002 73SB13A-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 12:58
Arsenic	7.7	0.40	mg/Kg-dry	4/23/2008 12:55
Barium	75	0.99	mg/Kg-dry	4/21/2008 12:58
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:07
Cadmium	0.22	0.099	mg/Kg-dry	4/21/2008 12:58
Chromium	24	2.5	mg/Kg-dry	4/23/2008 16:07
Cobalt	33	0.99	mg/Kg-dry	4/23/2008 12:55
Copper	200	0.40	mg/Kg-dry	4/21/2008 12:58
Lead	8.5	0.40	mg/Kg-dry	4/21/2008 12:58
Nickel	16	0.99	mg/Kg-dry	4/21/2008 12:58
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 12:58
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 12:58
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 12:58
Vanadium	160	0.99	mg/Kg-dry	4/21/2008 12:58
Zinc	72	4.0	mg/Kg-dry	4/21/2008 12:58

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-003 **Collection Date:** 4/2/2008 10:00:00 AM

Client Sample ID: 29768003 73SB17-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008	13:02
Arsenic	9.0	0.40	mg/Kg-dry	4/23/2008	12:59
Barium	82	0.99	mg/Kg-dry	4/21/2008	13:02
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008	16:11
Cadmium	0.19	0.099	mg/Kg-dry	4/21/2008	13:02
Chromium	30	2.5	mg/Kg-dry	4/23/2008	16:11
Cobalt	27	0.99	mg/Kg-dry	4/23/2008	12:59
Copper	130	0.40	mg/Kg-dry	4/21/2008	13:02
Lead	11	0.40	mg/Kg-dry	4/21/2008	13:02
Nickel	16	0.99	mg/Kg-dry	4/21/2008	13:02
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008	13:02
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008	13:02
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008	13:02
Vanadium	160	0.99	mg/Kg-dry	4/21/2008	13:02
Zinc	72	4.0	mg/Kg-dry	4/21/2008	13:02

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-004 **Collection Date:** 4/2/2008 10:45:00 AM

Client Sample ID: 29768004 73SB21-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 1.0	1.0	mg/Kg-dry	4/21/2008 13:07
Arsenic	11	0.40	mg/Kg-dry	4/23/2008 13:03
Barium	66	1.0	mg/Kg-dry	4/21/2008 13:07
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:15
Cadmium	0.47	0.10	mg/Kg-dry	4/21/2008 13:07
Chromium	21	2.5	mg/Kg-dry	4/23/2008 16:15
Cobalt	20	1.0	mg/Kg-dry	4/23/2008 13:03
Copper	110	0.40	mg/Kg-dry	4/21/2008 13:07
Lead	23	0.40	mg/Kg-dry	4/21/2008 13:07
Nickel	14	1.0	mg/Kg-dry	4/21/2008 13:07
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 13:07
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:07
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:07
Vanadium	110	1.0	mg/Kg-dry	4/21/2008 13:07
Zinc	86	4.0	mg/Kg-dry	4/21/2008 13:07

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-005 **Collection Date:** 4/2/2008 11:15:00 AM
Client Sample ID: 29768005 73SB16-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:08:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	1.1	1.0	mg/Kg-dry	4/21/2008 13:11
Arsenic	11	0.40	mg/Kg-dry	4/23/2008 13:07
Barium	69	1.0	mg/Kg-dry	4/21/2008 13:11
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:19
Cadmium	0.49	0.10	mg/Kg-dry	4/21/2008 13:11
Chromium	28	2.5	mg/Kg-dry	4/23/2008 16:19
Cobalt	17	1.0	mg/Kg-dry	4/23/2008 13:07
Copper	170	0.40	mg/Kg-dry	4/21/2008 13:11
Lead	90	0.40	mg/Kg-dry	4/21/2008 13:11
Nickel	18	1.0	mg/Kg-dry	4/21/2008 13:11
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 13:11
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:11
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:11
Vanadium	100	1.0	mg/Kg-dry	4/21/2008 13:11
Zinc	88	4.0	mg/Kg-dry	4/21/2008 13:11

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-006 **Collection Date:** 4/2/2008 11:45:00 AM
Client Sample ID: 29768006 73SB20-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.98	0.98	mg/Kg-dry	4/21/2008 13:15
Arsenic	10	0.39	mg/Kg-dry	4/23/2008 13:12
Barium	70	0.98	mg/Kg-dry	4/21/2008 13:15
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:24
Cadmium	0.36	0.098	mg/Kg-dry	4/21/2008 13:15
Chromium	22	2.5	mg/Kg-dry	4/23/2008 16:24
Cobalt	20	0.98	mg/Kg-dry	4/23/2008 13:12
Copper	250	0.39	mg/Kg-dry	4/21/2008 13:15
Lead	20	0.39	mg/Kg-dry	4/21/2008 13:15
Nickel	15	0.98	mg/Kg-dry	4/21/2008 13:15
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008 13:15
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:15
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 13:15
Vanadium	140	0.98	mg/Kg-dry	4/21/2008 13:15
Zinc	80	3.9	mg/Kg-dry	4/21/2008 13:15

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-007 **Collection Date:** 4/2/2008 12:00:00 PM

Client Sample ID: 29768007 73SB24-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Antimony	1.5	0.98	mg/Kg-dry	4/21/2008	13:32
Arsenic	10	0.39	mg/Kg-dry	4/23/2008	13:16
Barium	73	0.98	mg/Kg-dry	4/21/2008	13:32
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008	16:28
Cadmium	0.96	0.098	mg/Kg-dry	4/21/2008	13:32
Chromium	27	2.5	mg/Kg-dry	4/23/2008	16:28
Cobalt	18	0.98	mg/Kg-dry	4/23/2008	13:16
Copper	240	0.39	mg/Kg-dry	4/21/2008	13:32
Lead	110	0.39	mg/Kg-dry	4/21/2008	13:32
Nickel	15	0.98	mg/Kg-dry	4/21/2008	13:32
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008	13:32
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008	13:32
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008	13:32
Vanadium	110	0.98	mg/Kg-dry	4/21/2008	13:32
Zinc	180	3.9	mg/Kg-dry	4/21/2008	13:32

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-008 **Collection Date:** 4/2/2008 1:00:00 PM

Client Sample ID: 29768008 73SB15-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	1.3	0.99	mg/Kg-dry	4/21/2008 13:36
Arsenic	11	0.40	mg/Kg-dry	4/23/2008 13:20
Barium	80	0.99	mg/Kg-dry	4/21/2008 13:36
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:32
Cadmium	0.92	0.099	mg/Kg-dry	4/21/2008 13:36
Chromium	29	2.5	mg/Kg-dry	4/23/2008 16:32
Cobalt	17	0.99	mg/Kg-dry	4/23/2008 13:20
Copper	260	0.40	mg/Kg-dry	4/21/2008 13:36
Lead	110	0.40	mg/Kg-dry	4/21/2008 13:36
Nickel	14	0.99	mg/Kg-dry	4/21/2008 13:36
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 13:36
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:36
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:36
Vanadium	110	0.99	mg/Kg-dry	4/21/2008 13:36
Zinc	180	4.0	mg/Kg-dry	4/21/2008 13:36

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-009 **Collection Date:** 4/2/2008 1:15:00 PM

Client Sample ID: 29768009 73SB19-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	1.4	0.99	mg/Kg-dry	4/21/2008 13:40
Arsenic	6.6	0.40	mg/Kg-dry	4/23/2008 13:37
Barium	91	0.99	mg/Kg-dry	4/21/2008 13:40
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 16:36
Cadmium	0.17	0.099	mg/Kg-dry	4/21/2008 13:40
Chromium	170	2.5	mg/Kg-dry	4/23/2008 16:36
Cobalt	25	0.99	mg/Kg-dry	4/23/2008 13:37
Copper	110	0.40	mg/Kg-dry	4/21/2008 13:40
Lead	12	0.40	mg/Kg-dry	4/21/2008 13:40
Nickel	18	0.99	mg/Kg-dry	4/21/2008 13:40
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 13:40
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:40
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:40
Vanadium	150	0.99	mg/Kg-dry	4/21/2008 13:40
Zinc	85	4.0	mg/Kg-dry	4/21/2008 13:40

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-010 **Collection Date:** 4/2/2008 2:00:00 PM
Client Sample ID: 29768010 73SB22-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 1.0	1.0	mg/Kg-dry	4/21/2008 13:45
Arsenic	12	0.40	mg/Kg-dry	4/23/2008 13:41
Barium	23	1.0	mg/Kg-dry	4/21/2008 13:45
Beryllium	< 0.050	0.050	mg/Kg-dry	4/23/2008 16:40
Cadmium	0.30	0.10	mg/Kg-dry	4/21/2008 13:45
Chromium	0.80	0.050	mg/Kg-dry	4/23/2008 16:40
Cobalt	4.9	1.0	mg/Kg-dry	4/23/2008 13:41
Copper	31	0.40	mg/Kg-dry	4/21/2008 13:45
Lead	1.5	0.40	mg/Kg-dry	4/21/2008 13:45
Nickel	7.9	1.0	mg/Kg-dry	4/21/2008 13:45
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 13:45
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:45
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:45
Vanadium	34	1.0	mg/Kg-dry	4/21/2008 13:45
Zinc	25	4.0	mg/Kg-dry	4/21/2008 13:45

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-011 **Collection Date:** 4/2/2008 1:30:00 PM

Client Sample ID: 29768011 73SB23-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	2.0	0.99	mg/Kg-dry	4/21/2008 13:49
Arsenic	6.4	0.40	mg/Kg-dry	4/23/2008 13:45
Barium	120	0.99	mg/Kg-dry	4/21/2008 13:49
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 17:05
Cadmium	0.80	0.099	mg/Kg-dry	4/21/2008 13:49
Chromium	170	2.5	mg/Kg-dry	4/23/2008 17:05
Cobalt	93	0.99	mg/Kg-dry	4/23/2008 13:45
Copper	200	0.40	mg/Kg-dry	4/21/2008 13:49
Lead	88	0.40	mg/Kg-dry	4/21/2008 13:49
Nickel	17	0.99	mg/Kg-dry	4/21/2008 13:49
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 13:49
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 13:49
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 13:49
Vanadium	170	0.99	mg/Kg-dry	4/21/2008 13:49
Zinc	220	4.0	mg/Kg-dry	4/21/2008 13:49

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-012 **Collection Date:** 4/3/2008 11:00:00 AM

Client Sample ID: 29768012 73SB18-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	1.6	0.98	mg/Kg-dry	4/21/2008 13:53
Arsenic	11	0.39	mg/Kg-dry	4/23/2008 13:49
Barium	62	0.98	mg/Kg-dry	4/21/2008 13:53
Beryllium	< 2.4	2.4	mg/Kg-dry	4/23/2008 17:10
Cadmium	1.1	0.098	mg/Kg-dry	4/21/2008 13:53
Chromium	110	2.4	mg/Kg-dry	4/23/2008 17:10
Cobalt	15	0.98	mg/Kg-dry	4/23/2008 13:49
Copper	140	0.39	mg/Kg-dry	4/21/2008 13:53
Lead	170	0.39	mg/Kg-dry	4/21/2008 13:53
Nickel	14	0.98	mg/Kg-dry	4/21/2008 13:53
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008 13:53
Silver	0.64	0.20	mg/Kg-dry	4/21/2008 13:53
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 13:53
Vanadium	97	0.98	mg/Kg-dry	4/21/2008 13:53
Zinc	140	3.9	mg/Kg-dry	4/21/2008 13:53

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-013 **Collection Date:** 4/3/2008 11:00:00 AM

Client Sample ID: 29768013 73SB18A-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Method blank contained 1.0 mg/Kg-dry Antimony.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Antimony	2.7	0.98	mg/Kg-dry	4/21/2008	13:57
Arsenic	11	0.39	mg/Kg-dry	4/23/2008	13:54
Barium	60	0.98	mg/Kg-dry	4/21/2008	13:57
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008	17:14
Cadmium	0.78	0.098	mg/Kg-dry	4/21/2008	13:57
Chromium	110	2.5	mg/Kg-dry	4/23/2008	17:14
Cobalt	15	0.98	mg/Kg-dry	4/23/2008	13:54
Copper	130	0.39	mg/Kg-dry	4/21/2008	13:57
Lead	370	0.39	mg/Kg-dry	4/21/2008	13:57
Nickel	14	0.98	mg/Kg-dry	4/21/2008	13:57
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008	13:57
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008	13:57
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008	13:57
Vanadium	100	0.98	mg/Kg-dry	4/21/2008	13:57
Zinc	120	3.9	mg/Kg-dry	4/21/2008	13:57

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-014 **Collection Date:** 4/3/2008 11:30:00 AM

Client Sample ID: 29768014 73SB14-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 1.0	1.0	mg/Kg-dry	4/21/2008 14:02
Arsenic	9.0	0.40	mg/Kg-dry	4/23/2008 13:58
Barium	180	1.0	mg/Kg-dry	4/21/2008 14:02
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 17:18
Cadmium	0.68	0.10	mg/Kg-dry	4/21/2008 14:02
Chromium	140	2.5	mg/Kg-dry	4/23/2008 17:18
Cobalt	42	1.0	mg/Kg-dry	4/23/2008 13:58
Copper	190	0.40	mg/Kg-dry	4/21/2008 14:02
Lead	46	0.40	mg/Kg-dry	4/21/2008 14:02
Nickel	17	1.0	mg/Kg-dry	4/21/2008 14:02
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 14:02
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 14:02
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 14:02
Vanadium	170	1.0	mg/Kg-dry	4/21/2008 14:02
Zinc	87	4.0	mg/Kg-dry	4/21/2008 14:02

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-015 **Collection Date:** 4/3/2008 1:45:00 PM

Client Sample ID: 29768015 73SB35-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

note: Reported results are estimated due to matrix spike and post digestion spike recoveries out of acceptance limits for Beryllium.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed	
Antimony	< 0.98	0.98	mg/Kg-dry	4/21/2008	14:06
Arsenic	8.0	0.39	mg/Kg-dry	4/23/2008	14:02
Barium	170	0.98	mg/Kg-dry	4/21/2008	14:06
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008	17:22
Cadmium	0.37	0.098	mg/Kg-dry	4/21/2008	14:06
Chromium	180	2.5	mg/Kg-dry	4/23/2008	17:22
Cobalt	65	0.98	mg/Kg-dry	4/23/2008	14:02
Copper	160	0.39	mg/Kg-dry	4/21/2008	14:06
Lead	23	0.39	mg/Kg-dry	4/21/2008	14:06
Nickel	20	0.98	mg/Kg-dry	4/21/2008	14:06
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008	14:06
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008	14:06
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008	14:06
Vanadium	270	0.98	mg/Kg-dry	4/21/2008	14:06
Zinc	130	3.9	mg/Kg-dry	4/21/2008	14:06

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-016 **Collection Date:** 4/3/2008 1:55:00 PM

Client Sample ID: 29768016 73SB31-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 1.0	1.0	mg/Kg-dry	4/21/2008 14:44
Arsenic	7.0	0.40	mg/Kg-dry	4/23/2008 14:40
Barium	56	1.0	mg/Kg-dry	4/21/2008 14:44
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 17:44
Cadmium	0.29	0.10	mg/Kg-dry	4/21/2008 14:44
Chromium	44	2.5	mg/Kg-dry	4/23/2008 17:44
Cobalt	18	1.0	mg/Kg-dry	4/23/2008 14:40
Copper	170	0.40	mg/Kg-dry	4/21/2008 14:44
Lead	15	0.40	mg/Kg-dry	4/21/2008 14:44
Nickel	13	1.0	mg/Kg-dry	4/21/2008 14:44
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 14:44
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 14:44
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 14:44
Vanadium	220	1.0	mg/Kg-dry	4/21/2008 14:44
Zinc	110	4.0	mg/Kg-dry	4/21/2008 14:44

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-017 **Collection Date:** 4/3/2008 2:05:00 PM

Client Sample ID: 29768017 73SB27-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 14:49
Arsenic	6.3	0.40	mg/Kg-dry	4/23/2008 14:44
Barium	72	0.99	mg/Kg-dry	4/21/2008 14:49
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 18:00
Cadmium	< 0.099	0.099	mg/Kg-dry	4/21/2008 14:49
Chromium	35	2.5	mg/Kg-dry	4/23/2008 18:00
Cobalt	15	0.99	mg/Kg-dry	4/23/2008 14:44
Copper	200	0.40	mg/Kg-dry	4/21/2008 14:49
Lead	6.9	0.40	mg/Kg-dry	4/21/2008 14:49
Nickel	10	0.99	mg/Kg-dry	4/21/2008 14:49
Selenium	1.8	0.99	mg/Kg-dry	4/21/2008 14:49
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 14:49
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 14:49
Vanadium	300	0.99	mg/Kg-dry	4/21/2008 14:49
Zinc	65	4.0	mg/Kg-dry	4/21/2008 14:49

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-018 **Collection Date:** 4/3/2008 2:05:00 PM

Client Sample ID: 29768018 73SB27A-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.97	0.97	mg/Kg-dry	4/21/2008 14:53
Arsenic	6.1	0.39	mg/Kg-dry	4/23/2008 14:48
Barium	78	0.97	mg/Kg-dry	4/21/2008 14:53
Beryllium	< 2.4	2.4	mg/Kg-dry	4/23/2008 18:04
Cadmium	< 0.097	0.097	mg/Kg-dry	4/21/2008 14:53
Chromium	37	2.4	mg/Kg-dry	4/23/2008 18:04
Cobalt	13	0.97	mg/Kg-dry	4/23/2008 14:48
Copper	210	0.39	mg/Kg-dry	4/21/2008 14:53
Lead	7.6	0.39	mg/Kg-dry	4/21/2008 14:53
Nickel	12	0.97	mg/Kg-dry	4/21/2008 14:53
Selenium	1.6	0.97	mg/Kg-dry	4/21/2008 14:53
Silver	< 0.19	0.19	mg/Kg-dry	4/21/2008 14:53
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 14:53
Vanadium	300	0.97	mg/Kg-dry	4/21/2008 14:53
Zinc	71	3.9	mg/Kg-dry	4/21/2008 14:53

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-019 **Collection Date:** 4/3/2008 2:15:00 PM
Client Sample ID: 29768019 73SB36-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 14:57
Arsenic	5.6	0.40	mg/Kg-dry	4/23/2008 14:53
Barium	140	0.99	mg/Kg-dry	4/21/2008 14:57
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 18:09
Cadmium	< 0.099	0.099	mg/Kg-dry	4/21/2008 14:57
Chromium	24	2.5	mg/Kg-dry	4/23/2008 18:09
Cobalt	290	0.99	mg/Kg-dry	4/23/2008 14:53
Copper	200	0.40	mg/Kg-dry	4/21/2008 14:57
Lead	1.5	0.40	mg/Kg-dry	4/21/2008 14:57
Nickel	25	0.99	mg/Kg-dry	4/21/2008 14:57
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 14:57
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 14:57
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 14:57
Vanadium	130	0.99	mg/Kg-dry	4/21/2008 14:57
Zinc	310	4.0	mg/Kg-dry	4/21/2008 14:57

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-020 **Collection Date:** 4/3/2008 2:25:00 PM

Client Sample ID: 29768020 73SB32-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3060B Prep. Date: 4/17/2008 8:06:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 15:01
Arsenic	6.2	0.40	mg/Kg-dry	4/23/2008 14:57
Barium	410	0.99	mg/Kg-dry	4/21/2008 15:01
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 18:13
Cadmium	0.12	0.099	mg/Kg-dry	4/21/2008 15:01
Chromium	30	2.5	mg/Kg-dry	4/23/2008 18:13
Cobalt	63	0.99	mg/Kg-dry	4/23/2008 14:57
Copper	210	0.40	mg/Kg-dry	4/21/2008 15:01
Lead	5.6	0.40	mg/Kg-dry	4/21/2008 15:01
Nickel	16	0.99	mg/Kg-dry	4/21/2008 15:01
Selenium	< 0.99	0.99	mg/Kg-dry	4/21/2008 15:01
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 15:01
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 15:01
Vanadium	250	0.99	mg/Kg-dry	4/21/2008 15:01
Zinc	140	4.0	mg/Kg-dry	4/21/2008 15:01

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-021 **Collection Date:** 4/3/2008 2:30:00 PM

Client Sample ID: 29768021 73SB28-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 15:42
Arsenic	7.3	2.0	mg/Kg-dry	4/23/2008 18:25
Barium	350	0.99	mg/Kg-dry	4/21/2008 15:42
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 18:25
Cadmium	0.20	0.099	mg/Kg-dry	4/21/2008 15:42
Chromium	26	2.5	mg/Kg-dry	4/23/2008 18:25
Cobalt	69	5.0	mg/Kg-dry	4/23/2008 18:25
Copper	270	0.40	mg/Kg-dry	4/21/2008 15:42
Lead	7.6	0.40	mg/Kg-dry	4/21/2008 15:42
Nickel	18	0.99	mg/Kg-dry	4/21/2008 15:42
Selenium	1.2	0.99	mg/Kg-dry	4/21/2008 15:42
Silver	0.25	0.20	mg/Kg-dry	4/21/2008 15:42
Thallium	0.48	0.40	mg/Kg-dry	4/21/2008 15:42
Vanadium	240	5.0	mg/Kg-dry	4/23/2008 18:25
Zinc	180	4.0	mg/Kg-dry	4/21/2008 15:42

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-022 — **Collection Date:** 4/3/2008 2:35:00 PM

Client Sample ID: 29768022 73SB33-00 — **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) — Analyst: PRM

Prep. Method: SW846 3050B — Prep. Date: 4/17/2008 9:12:00 AM — Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.99	0.99	mg/Kg-dry	4/21/2008 16:08
Arsenic	6.8	2.0	mg/Kg-dry	4/23/2008 18:59
Barium	130	0.99	mg/Kg-dry	4/21/2008 16:08
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 18:59
Cadmium	< 0.099	0.099	mg/Kg-dry	4/21/2008 16:08
Chromium	34	2.5	mg/Kg-dry	4/23/2008 18:59
Cobalt	17	5.0	mg/Kg-dry	4/23/2008 18:59
Copper	230	0.40	mg/Kg-dry	4/21/2008 16:08
Lead	4.2	0.40	mg/Kg-dry	4/21/2008 16:08
Nickel	9.1	0.99	mg/Kg-dry	4/21/2008 16:08
Selenium	1.1	0.99	mg/Kg-dry	4/21/2008 16:08
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 16:08
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 16:08
Vanadium	300	5.0	mg/Kg-dry	4/23/2008 18:59
Zinc	76	4.0	mg/Kg-dry	4/21/2008 16:08

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-023 **Collection Date:** 4/3/2008 2:45:00 PM

Client Sample ID: 29768023 73SB29-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.97	0.97	mg/Kg-dry	4/21/2008 16:12
Arsenic	6.5	1.9	mg/Kg-dry	4/23/2008 19:03
Barium	87	0.97	mg/Kg-dry	4/21/2008 16:12
Beryllium	< 2.4	2.4	mg/Kg-dry	4/23/2008 19:03
Cadmium	< 0.097	0.097	mg/Kg-dry	4/21/2008 16:12
Chromium	29	2.4	mg/Kg-dry	4/23/2008 19:03
Cobalt	18	4.9	mg/Kg-dry	4/23/2008 19:03
Copper	200	0.39	mg/Kg-dry	4/21/2008 16:12
Lead	7.3	0.39	mg/Kg-dry	4/21/2008 16:12
Nickel	11	0.97	mg/Kg-dry	4/21/2008 16:12
Selenium	1.2	0.97	mg/Kg-dry	4/21/2008 16:12
Silver	< 0.19	0.19	mg/Kg-dry	4/21/2008 16:12
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 16:12
Vanadium	230	4.9	mg/Kg-dry	4/23/2008 19:03
Zinc	75	3.9	mg/Kg-dry	4/21/2008 16:12

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-024 **Collection Date:** 4/3/2008 2:55:00 PM

Client Sample ID: 29768024 73SB25-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP

note:Method blank contained 0.2 mg/Kg-dry Lead.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 1.0	1.0	mg/Kg-dry	4/21/2008 16:16
Arsenic	5.7	2.0	mg/Kg-dry	4/23/2008 19:07
Barium	67	1.0	mg/Kg-dry	4/21/2008 16:16
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 19:07
Cadmium	< 0.10	0.10	mg/Kg-dry	4/21/2008 16:16
Chromium	41	2.5	mg/Kg-dry	4/23/2008 19:07
Cobalt	8.3	5.0	mg/Kg-dry	4/23/2008 19:07
Copper	260	0.40	mg/Kg-dry	4/21/2008 16:16
Lead	3.5	0.40	mg/Kg-dry	4/21/2008 16:16
Nickel	7.9	1.0	mg/Kg-dry	4/21/2008 16:16
Selenium	< 1.0	1.0	mg/Kg-dry	4/21/2008 16:16
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 16:16
Thallium	< 0.40	0.40	mg/Kg-dry	4/21/2008 16:16
Vanadium	280	5.0	mg/Kg-dry	4/23/2008 19:07
Zinc	65	4.0	mg/Kg-dry	4/21/2008 16:16

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-025 **Collection Date:** 4/3/2008 3:05:00 PM

Client Sample ID: 29768025 73SB34-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.96	0.96	mg/Kg-dry	4/21/2008 16:33
Arsenic	5.9	1.8	mg/Kg-dry	4/23/2008 19:12
Barium	250	0.96	mg/Kg-dry	4/21/2008 16:33
Beryllium	< 2.4	2.4	mg/Kg-dry	4/23/2008 19:12
Cadmium	< 0.096	0.096	mg/Kg-dry	4/21/2008 16:33
Chromium	40	2.4	mg/Kg-dry	4/23/2008 19:12
Cobalt	8.8	4.8	mg/Kg-dry	4/23/2008 19:12
Copper	240	0.39	mg/Kg-dry	4/21/2008 16:33
Lead	5.4	0.39	mg/Kg-dry	4/21/2008 16:33
Nickel	14	0.96	mg/Kg-dry	4/21/2008 16:33
Selenium	1.0	0.96	mg/Kg-dry	4/21/2008 16:33
Silver	< 0.19	0.19	mg/Kg-dry	4/21/2008 16:33
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 16:33
Vanadium	330	4.8	mg/Kg-dry	4/23/2008 19:12
Zinc	70	3.9	mg/Kg-dry	4/21/2008 16:33

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-026 **Collection Date:** 4/3/2008 3:10:00 PM
Client Sample ID: 29768026 73SB30-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM
Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP
note:Method blank contained 0.2 mg/Kg-dry Lead.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.98	0.98	mg/Kg-dry	4/21/2008 16:38
Arsenic	6.0	2.0	mg/Kg-dry	4/23/2008 19:16
Barium	430	0.98	mg/Kg-dry	4/21/2008 16:38
Beryllium	< 2.5	2.5	mg/Kg-dry	4/23/2008 19:16
Cadmium	< 0.098	0.098	mg/Kg-dry	4/21/2008 16:38
Chromium	23	2.5	mg/Kg-dry	4/23/2008 19:16
Cobalt	9.4	4.9	mg/Kg-dry	4/23/2008 19:16
Copper	200	0.39	mg/Kg-dry	4/21/2008 16:38
Lead	3.5	0.39	mg/Kg-dry	4/21/2008 16:38
Nickel	7.3	0.98	mg/Kg-dry	4/21/2008 16:38
Selenium	1.4	0.98	mg/Kg-dry	4/21/2008 16:38
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 16:38
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 16:38
Vanadium	220	4.9	mg/Kg-dry	4/23/2008 19:16
Zinc	63	3.9	mg/Kg-dry	4/21/2008 16:38

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Test Results

Client: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

Lab ID: 0804258-027 **Collection Date:** 4/3/2008 3:20:00 PM

Client Sample ID: 29768027 73SB26-00 **Matrix:** SOIL

ICP/MS METALS, TOTAL (SW846 6020) Analyst: PRM

Prep. Method: SW846 3050B Prep. Date: 4/17/2008 9:12:00 AM Prep Analyst EDP

note:Method blank contained 0.2 mg/Kg-dry Lead.

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Antimony	< 0.98	0.98	mg/Kg-dry	4/21/2008 16:42
Arsenic	5.9	2.0	mg/Kg-dry	4/23/2008 19:20
Barium	230	0.98	mg/Kg-dry	4/21/2008 16:42
Beryllium	< 2.4	2.4	mg/Kg-dry	4/23/2008 19:20
Cadmium	< 0.098	0.098	mg/Kg-dry	4/21/2008 16:42
Chromium	33	2.4	mg/Kg-dry	4/23/2008 19:20
Cobalt	16	4.9	mg/Kg-dry	4/23/2008 19:20
Copper	240	0.39	mg/Kg-dry	4/21/2008 16:42
Lead	2.8	0.39	mg/Kg-dry	4/21/2008 16:42
Nickel	18	0.98	mg/Kg-dry	4/21/2008 16:42
Selenium	< 0.98	0.98	mg/Kg-dry	4/21/2008 16:42
Silver	< 0.20	0.20	mg/Kg-dry	4/21/2008 16:42
Thallium	< 0.39	0.39	mg/Kg-dry	4/21/2008 16:42
Vanadium	220	4.9	mg/Kg-dry	4/23/2008 19:20
Zinc	130	3.9	mg/Kg-dry	4/21/2008 16:42

Report ID: HMA0022v1
Sequence: 411639

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Pick-Up / Work / Delivery Order
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5 Batches

0804258

Section I - Contract/Project Information

Contract Information

Pickup Order: 908/1
DLS WO#: 29768
Batch: 2643
Contractor Code: GAS
HBN: 208115
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 6

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29768
DLS Profile#: 35241

Contractor Due Date
PDF
Hardcopy 29 Apr 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/8/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [signature] (Signature of laboratory courier) (Date/Time of pick-up) 4-8-08 16:10

Number of samples received intact: 6 (#/All)

Number of samples received broken: 6 (#/None)

Data package received by at CHPPM: Sarah R. Roots

Delivery Data: [signature] (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS776
29768001	73SB13-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768002	73SB13A-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768003	73SB17-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768004	73SB21-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768005	73SB16-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768006	73SB20-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS776	Copper (Cu)		6
GAS2363	Procedure Description (Vanadium (V)	EPA 6020	6
GAS2361	Procedure Description Cobalt (Co)	EPA 6020	6
GAS2360	Procedure Description Beryllium (Be)	EPA 6020	6
GAS2181	Procedure Description Zinc (Zn)	EPA 6020	6
GAS2180	Procedure Description Selenium (Se)	EPA 6020	6
GAS2154	Procedure Description Silver (Ag)	EPA 6020	6
GAS2153	Procedure Description Nickel (Ni)	EPA 6020	6
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	6

GAS2152	Thallium (Tl)		6
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		6
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		6
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		6
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		6
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		6
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		6
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 411641

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Pick-Up / Work / Delivery Order
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5 BATCHES

Section I - Contract/Project Information

Contract Information

Pickup Order: 908/1
DLS WO#: 29768
Batch: 2644
HBN: 208116
Contractor Code: GAS
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 6

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29768
DLS Profile#: 35241

Contractor Due Date
PDF
Hardcopy 29 April 08

Pick-Up/Work/Delivery Order Approved by: Heidi Taylor (Signature of USACHPPM's COR)

USACHPPM called for pickup: Heidi Taylor (Caller's Name) 4/8/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: (Signature of laboratory courier) (Date/Time of pick-up) 4-8-08 16:10

Number of samples received intact: 6 (#/All)

Number of samples received broken: 0 (#/None)

Data package received by at CHPPM: Sarah R. Boats

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS776
29768007	73SB24-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768008	73SB15-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768009	73SB19-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768010	73SB22-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768011	73SB23-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768012	73SB18-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS776	Copper (Cu)		6
GAS2363	Procedure Description (Vanadium (V)	EPA 6020	6
GAS2361	Procedure Description Cobalt (Co)	EPA 6020	6
GAS2360	Procedure Description Beryllium (Be)	EPA 6020	6
GAS2181	Procedure Description Zinc (Zn)	EPA 6020	6
GAS2180	Procedure Description Selenium (Se)	EPA 6020	6
GAS2154	Procedure Description Silver (Ag)	EPA 6020	6
GAS2153	Procedure Description Nickel (Ni)	EPA 6020	6
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	6

GAS2152	Thallium (Tl)		6
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		6
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		6
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		6
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		6
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		6
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		6
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 411644

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Pick-Up / Work / Delivery Order
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5 Batches

Section I - Contract/Project Information

Contract Information

Pickup Order: **908/1**
DLS WO#: 29768
Batch: 2645
Contractor Code: GAS
HBN: 208117
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 8

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29768
DLS Profile#: 35241

Contractor Due Date
PDF
Hardcopy 29 Apr 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) 4-8-08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) 4-8-08 16:10

Number of samples received intact: 6 (#/All)

Number of samples received broken: 0 (#/None)

Data package received by at CHPPM: Sarah R. Boats

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS776
29768013	73SB18A-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768014	73SB14-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768015	73SB35-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768016	73SB31-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768017	73SB27-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768018	73SB27A-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS776	Copper (Cu)		6
GAS2363	Procedure Description (Vanadium (V)	EPA 6020	6
GAS2361	Procedure Description Cobalt (Co)	EPA 6020	6
GAS2360	Procedure Description Beryllium (Be)	EPA 6020	6
GAS2181	Procedure Description Zinc (Zn)	EPA 6020	6
GAS2180	Procedure Description Selenium (Se)	EPA 6020	6
GAS2154	Procedure Description Silver (Ag)	EPA 6020	6
GAS2153	Procedure Description Nickel (Ni)	EPA 6020	6
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	6

GAS2152	Thallium (Tl)		6
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		6
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		6
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		6
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		6
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		6
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		6
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 411646

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5 BATCHES

Pick-Up / Work / Delivery Order
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Section I - Contract/Project Information

Contract Information

Pickup Order: 908/1
DLS WO#: 29768 Batch: 2646
Contractor Code: GAS HBN: 208118
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 6

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29768
DLS Profile#: 35241

Contractor Due Date
PDF
Hardcopy 29 Apr 08

Pick-Up/Work/Delivery Order Approved by: [signature] (Signature of USACHPPM's COR)

USACHPPM called for pickup: [signature] (Caller's Name) 4/8/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [signature] (Signature of laboratory courier) (Date/Time of pick-up) 4.8.08 16:10

Number of samples received intact: 6 (#/All)

Number of samples received broken: 0 (#/None)

Data package received by at CHPPM: Sarah K. Boots

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS776
29768019	73SB36-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768020	73SB32-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768021	73SB28-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768022	73SB33-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768023	73SB29-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768024	73SB25-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS776	Copper (Cu)		6
GAS2363	Procedure Description (Vanadium (V)	EPA 6020	6
GAS2361	Procedure Description Cobalt (Co)	EPA 6020	6
GAS2360	Procedure Description Berylilum (Be)	EPA 6020	6
GAS2181	Procedure Description Zinc (Zn)	EPA 6020	6
GAS2180	Procedure Description Selenium (Se)	EPA 6020	6
GAS2154	Procedure Description Silver (Ag)	EPA 6020	6
GAS2153	Procedure Description Nickel (Ni)	EPA 6020	6
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	6

GAS2152	Thallium (Tl)		8
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		6
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		8
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		6
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		6
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		6
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		6
	Procedure Description	EPA 6020	

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

5 Batches

Section I - Contract/Project Information

Contract Information

Pickup Order: **908/1**
DLS WO#: 29768
Batch: 2647
Contractor Code: GAS
HBN: 208119
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 3

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38–38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29768
DLS Profile#: 35241

Contractor Due Date
PDF
Hardcopy 29 Apr 08

Pick-Up/Work/Delivery Order Approved by: Heidi Taylor (Signature of USACHPPM's COR)

USACHPPM called for pickup: Heidi Taylor (Caller's Name) 4/8/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [illegible] (Signature of laboratory courier) (Date/Time of pick-up) 4-8-08 1610

Number of samples received intact: 3 (#/All)

Number of samples received broken: 0 (#/None)

Data package received by at CHPPM: Sarah R. Boots

Delivery Data: Email (Means of Delivery - UPS/FedEx) 4/30/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS776
29768025	73SB34-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768026	73SB30-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29768027	73SB26-00	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS776	Copper (Cu)		3
GAS2363	Procedure Description (Vanadium (V)	EPA 6020	3
GAS2361	Procedure Description Cobalt (Co)	EPA 6020	3
GAS2360	Procedure Description Beryllium (Be)	EPA 6020	3
GAS2181	Procedure Description Zinc (Zn)	EPA 6020	3
GAS2180	Procedure Description Selenium (Se)	EPA 6020	3
GAS2154	Procedure Description Silver (Ag)	EPA 6020	3
GAS2153	Procedure Description Nickel (Ni)	EPA 6020	3
GAS2152	Procedure Description Thallium (Tl)	EPA 6020	3
GAS2151	Procedure Description Lead (Pb)	EPA 6020	3
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	3

GAS2150	Cadmium (Cd)		3
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		3
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		3
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		3
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		3
	Procedure Description	EPA 6020	

Report ID: HRA0191C-ACodes
COC #: 411266

USACHPPM
Readiness thru Health

Run Date: 07-Apr-08 12:08
Generated By: HEIDI.TAYLOR

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/4/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35241 - 0995
Workorder #: 29768
Queue: GAS
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip--35241
Workorder ID: 099598
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes:

Total Samples: 27 **Total Containers:** 27

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29768001	29768001-1	73SB13-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 09:30 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768002	29768002-1	73SB13A-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 09:30 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768003	29768003-1	73SB17-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 10:00 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)

NR=Not Reported.

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768004	29768004-1	73SB21-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 10:45 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768005	29768005-1	73SB16-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 11:15 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768006	29768006-1	73SB20-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 11:45 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768007	29768007-1	73SB24-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 12:00 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768008	29768008-1	73SB15-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 01:00 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768009	29768009-1	73SB19-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 01:15 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768010	29768010-1	73SB22-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 02:00 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768011	29768011-1	73SB23-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	02-Apr-2008 01:30 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768012	29768012-1	73SB18-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768013	29768013-1	73SB18A-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 11:00 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768014	29768014-1	73SB14-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 11:30 AM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768015	29768015-1	73SB35-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 01:45 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768016	29768016-1	73SB31-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 01:55 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768017	29768017-1	73SB27-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:05 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768018	29768018-1	73SB27A-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:05 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768019	29768019-1	73SB36-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:15 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768020	29768020-1	73SB32-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:25 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768021	29768021-1	73SB28-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:30 PM	02-May-2008

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768022	29768022-1	73SB33-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:35 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768023	29768023-1	73SB29-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:45 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768024	29768024-1	73SB25-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 02:55 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768025	29768025-1	73SB34-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 03:05 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

29768026	29768026-1	73SB30-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 03:10 PM	02-May-2008

ACodes:
GAS2146 : Antimony (Sb) GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd) GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag) GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co) GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

USACHPPM
Readiness thru Health

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

29768027	29768027-1	73SB26-00	SAMPLE	SO	Soil	2.0	degrees C	04-Apr-2008 10:20 AM	03-Apr-2008 03:20 PM	02-May-2008

ACodes:

GAS2146 : Antimony (Sb)	GAS2147 : Arsenic (As)	GAS2148 : Chromium (Cr)	GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)	GAS2151 : Lead (Pb)	GAS2152 : Thallium (Tl)	GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)	GAS2180 : Selenium (Se)	GAS2181 : Zinc (Zn)	GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)	GAS2363 : (Vanadium (V)	GAS776 : Copper (Cu)	

Total Samples: 27	Total Containers: 27

Samples Received By:	[signature]			Date Received:	4.8.08
Document Reviewed By:	Heidi Taylor [signature]	Initials:	HT	Date Reviewed:	4/7/08
Document Quality Review By:	[signature]			Date Reviewed:	
Samples Approved For Distribution:	Yes ✓ No ___	Initials:	[signature]	Date Approved:	

NR=Not Reported.

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip~35241
Workorder #: 29768	Workorder ID: 099598
Queue: GA8	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29768001	73SB13-00	29768001-1	SO
29768003	73SB17-00	29768003-1	SO
29768005	73SB16-00	29768005-1	SO
29768007	73SB24-00	29768007-1	SO
29768009	73SB19-00	29768009-1	SO
29768011	73SB23-00	29768011-1	SO
29768013	73SB18A-00	29768013-1	SO
29768015	73SB35-00	29768015-1	SO
29768017	73SB27-00	29768017-1	SO
29768019	73SB36-00	29768019-1	SO
29768021	73SB28-00	29768021-1	SO
29768023	73SB29-00	29768023-1	SO
29768025	73SB34-00	29768025-1	SO
29768027	73SB26-00	29768027-1	SO

HSN	Customer Sample Id	Container Id	Mx
29768002	73SB13A-00	29768002-1	SO
29768004	73SB21-00	29768004-1	SO
29768006	73SB20-00	29768006-1	SO
29768008	73SB15-00	29768008-1	SO
29768010	73SB22-00	29768010-1	SO
29768012	73SB18-00	29768012-1	SO
29768014	73SB14-00	29768014-1	SO
29768016	73SB31-00	29768016-1	SO
29768018	73SB27A-00	29768018-1	SO
29768020	73SB32-00	29768020-1	SO
29768022	73SB33-00	29768022-1	SO
29768024	73SB25-00	29768024-1	SO
29768026	73SB30-00	29768026-1	SO

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35241 - 0995	Description: NAPR CMS-Cp Moscrip--35241
Workorder #: 29768	Workorder ID: 099598
Queue: GAS	Customer: Program 38

Total Samples: 27 | Total Containers: 27

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	[illegible]	4-7-08/1720	See SML's Comments	4-7-08/1720	To holding refrigerator in room #0202. Complete soil splitting [illegible]
	[illegible]	4.8.08 @ 1615	[illegible]	4-8-08 @ 16:15	

Remarks:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35241 - 0995
Workorder #: 29768
Queue: GAS

Description: NAPR CMS-Cp Moscrip~35241
Workorder ID: 099598
Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29768001		1		
29768002		1		
29768003		1		
29768004		1		
29768005		1		
29768006		1		
29768007		1		
29768008		1		
29768009		1		
29768010		1		
29768011		1		
29768012		1		
29768013		1		
29768014		1		
29768015		1		
29768016		1		
29768017		1		
29768018		1		
29768019		1		
29768020		1		
29768021		1		
29768022		1		
29768023		1		
29768024		1		
29768025		1		
29768026		1		
29768027		1		

Total Samples: 27 | Total Containers: 27

NR=Not Reported.

www.microbac.com

Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0804258
Report To: U.S. Army Center for Health Promotion and
Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

April 30, 2008
page 1 of 1

Pick-Up Order: 908/1
Date Samples Received: 04/08/2008

Sample Numbers: 29768001 - 29768027 Matrix: Soil

Twenty-seven samples were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

- Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. The Method Blank in batch 16865 contained 1.0 mg/Kg-dry of Antimony and 0.2 mg/Kg-dry of Lead. Samples were footnoted where appropriate for Antimony, samples were over twenty times higher than the Lead and therefore did not require notation.
2. The Matrix Spike for batch 16865 was out of acceptance limits for Antimony, biased low, Barium, Beryllium, Chromium, and Zinc, biased high. The Matrix Spike Duplicate was out of acceptance limits for Antimony, Barium, biased low, Beryllium, Chromium, Copper and Lead, biased high. The Post Digestion Spike was with in acceptance limits for all elements except Beryllium, biased low. Beryllium was footnoted as an estimated result due to this.
3. The Matrix Spike for batch 16866 was out of acceptance limits for Antimony, Barium, Cobalt and Copper, biased low. The Matrix Spike Duplicate was out of acceptance limits for Antimony, Barium, Vanadium, Zinc, biased low, and Cobalt, biased high. The Post Digestion Spike was with in acceptance limits.
4. Continuing Calibration Verifications were out of acceptance limits for several elements, samples were rerun at a later date, April 23, for the effected elements.

Notes:

1. The samples were prepared in two batches: Batch 1, 16865: samples 29768001 - 92768020; Batch 2, 16866 29768021 - 29768027.

Microbac Laboratories, Inc., Baltimore Division

L. Burwell Gunn III
Inorganic Production Manager

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

4/30/2008

Company: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Antimony	DUP		0.5815	mg/Kg-dry		0	20			0804258-015A DUP	16865	16865
	LCS	127	149.7	mg/Kg-dry	118			3.94	210.24	16865 4-17 6020 S	16865	
	MBLK		1.005	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	3.761	mg/Kg-dry	32.1			70	130	0804258-015A MS	16865	16865
	MSD	9.824	6.363	mg/Kg-dry	58.7	51.4	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	110.7	mg/Kg-dry	112			75	125	0804258-015A PDS	16865	
	DUP		0.5895	mg/Kg-dry		0	20			0804258-021A DUP	16866	16866
	LCS	127	154.3	mg/Kg-dry	122			3.94	210.24	16866 4-17 6020 S	16866	
	MBLK		0.3604	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	3.509	mg/Kg-dry	26.8			70	130	0804258-021A MS	16866	16866
	MSD	9.914	3.198	mg/Kg-dry	23.7			70	130	0804258-021A MS	16866	16866
	PDS	99.26	115.7	mg/Kg-dry	116			75	125	0804258-021A PDS	16866	
Arsenic	DUP		7.688	mg/Kg-dry		4.34	20			0804258-015A DUP	16865	16865
	LCS	280	253.1	mg/Kg-dry	90.4			80.71	118.93	16865 4-17 6020 S	16865	
	MBLK		< 0.40	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	16.75	mg/Kg-dry	88.7			70	130	0804258-015A MS	16865	16865
	MSD	9.824	16.62	mg/Kg-dry	87.5	0.764	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	113.8	mg/Kg-dry	108			75	125	0804258-015A PDS	16865	
	DUP		7.109	mg/Kg-dry		2.01	20			0804258-021A DUP	16866	16866
	LCS	280	328.7	mg/Kg-dry	117			80.71	118.93	16866 6020 LCS	16866	
	MBLK		< 0.40	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	17.31	mg/Kg-dry	101			70	130	0804258-021A MS	16866	16866
	MSD	9.914	17.55	mg/Kg-dry	104	1.36	20	70	130	0804258-021A MS	16866	16866
	PDS	496.3	549.2	mg/Kg-dry	109			75	125	0804258-021A PDS	16866	
Barium	DUP		152.2	mg/Kg-dry		13.2	20			0804258-015A DUP	16865	16865
	LCS	520	559.8	mg/Kg-dry	108			82.69	117.12	16865 4-17 6020 S	16865	
	MBLK		0.2323	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	191.2	mg/Kg-dry	178			70	130	0804258-015A MS	16865	16865
	MSD	9.824	165.2	mg/Kg-dry	-86.6	14.6	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	270	mg/Kg-dry	98			75	125	0804258-015A PDS	16865	
	DUP		376.3	mg/Kg-dry		6.93	20			0804258-021A DUP	16866	16866
	LCS	520	585.5	mg/Kg-dry	113			82.69	117.12	16866 4-17 6020 S	16866	
	MBLK		0.2128	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	302.5	mg/Kg-dry	-489			70	130	0804258-021A MS	16866	16866
	MSD	9.914	326	mg/Kg-dry	-253			70	130	0804258-021A MS	16866	16866
	PDS	99.26	467.3	mg/Kg-dry	117			75	125	0804258-021A PDS	16866	
Beryllium	DUP		< 2.5	mg/Kg-dry		0	20			0804258-015A DUP	16865	16865
	LCS	51	56.67	mg/Kg-dry	111			83.14	116.86	16865 6020 S LCSC	16865	
	MBLK		< 0.50	mg/Kg-dry						16865 6020 S MBL	16865	
	MS	9.836	20.87	mg/Kg-dry	212			70	130	0804258-015A MS	16865	16865
	MSD	9.824	20.93	mg/Kg-dry	213	0.28	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	72.31	mg/Kg-dry	73.55			75	125	0804258-015A PDS	16865	
	DUP		< 2.5	mg/Kg-dry		0	20			0804258-021A DUP	16866	16866
	LCS	51	50.59	mg/Kg-dry	99.2			83.14	116.86	16866 6020 LCS	16866	
	MBLK		< 0.50	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	< 2.5	mg/Kg-dry				70	130	0804258-021A MS	16866	16866
	MSD	9.914	< 2.5	mg/Kg-dry			20	70	130	0804258-021A MS	16866	16866

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals
Project: 35241-0995 (4/29)

Report No: 0804258

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Beryllium	PDS	496.3	585.3	mg/Kg-dry	118			75	125	0804258-021A PDS	16866	
Cadmium	DUP		0.3336	mg/Kg-dry		10.5	20			0804258-015A DUP	16865	16865
	LCS	182	197.4	mg/Kg-dry	108			81.87	118.13	16865 4-17 6020 S	16865	
	MBLK		< 0.10	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	10.79	mg/Kg-dry	106			70	130	0804258-015A MS	16865	16865
	MSD	9.824	10.76	mg/Kg-dry	106	0.262	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	100.1	mg/Kg-dry	101			75	125	0804258-015A PDS	16865	
	DUP		0.2364	mg/Kg-dry		15	20			0804258-021A DUP	16866	16866
	LCS	182	201.5	mg/Kg-dry	111			81.87	118.13	16866 4-17 6020 S	16866	
	MBLK		< 0.10	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	10.79	mg/Kg-dry	107			70	130	0804258-021A MS	16866	16866
	MSD	9.914	10.22	mg/Kg-dry	101			70	130	0804258-021A MS	16866	16866
	PDS	99.26	104.5	mg/Kg-dry	105			75	125	0804258-021A PDS	16866	
Chromium	DUP		179.5	mg/Kg-dry		1.84	20			0804258-015A DUP	16865	16865
	LCS	142	146	mg/Kg-dry	103			80.99	119.72	16865 4-17 6020 S	16865	
	MBLK		< 0.50	mg/Kg-dry						16865 6020 S MBL	16865	
	MS	9.836	47.48	mg/Kg-dry	152			70	130	0804258-015A MS	16865	16865
	MSD	9.824	45.51	mg/Kg-dry	133	4.24	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	145.2	mg/Kg-dry	115			75	125	0804258-015A PDS	16865	
	DUP		25.91	mg/Kg-dry		0.184	20			0804258-021A DUP	16866	16866
	LCS	142	125.5	mg/Kg-dry	88.4			80.99	119.72	16866 6020 LCS	16866	
	MBLK		0.5759	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	37.3	mg/Kg-dry	120			70	130	0804258-021A MS	16866	16866
	MSD	9.914	35.81	mg/Kg-dry	105			70	130	0804258-021A MS	16866	16866
	PDS	99.26	141.5	mg/Kg-dry	117			75	125	0804258-021A PDS	16866	
Cobalt	DUP		56.42	mg/Kg-dry		14.3	20			0804258-015A DUP	16865	16865
	LCS	110	112.7	mg/Kg-dry	102			82.18	118.18	16865 4-17 6020 S	16865	
	MBLK		< 1.0	mg/Kg-dry						16865 6020 S MBL	16865	
	MS	9.836	83.32	mg/Kg-dry	185			70	130	0804258-015A MS	16865	16865
	MSD	9.824	71.06	mg/Kg-dry	60.5	15.9	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	181.4	mg/Kg-dry	122			75	125	0804258-015A PDS	16865	
	DUP		76.02	mg/Kg-dry		9.73	20			0804258-021A DUP	16866	16866
	LCS	110	98.23	mg/Kg-dry	89.3			82.18	118.18	16866 6020 LCS	16866	
	MBLK		< 1.0	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	75.7	mg/Kg-dry	67.8			70	130	0804258-021A MS	16866	16866
	MSD	9.914	87.7	mg/Kg-dry	189	14.7	20	70	130	0804258-021A MS	16866	16866
	PDS	496.3	648.3	mg/Kg-dry	117			75	125	0804258-021A PDS	16866	
Copper	DUP		155.2	mg/Kg-dry		2.64	20			0804258-015A DUP	16865	16865
	LCS	132	146.1	mg/Kg-dry	111			83.33	117.42	16865 4-17 6020 S	16865	
	MBLK		< 0.40	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	168.4	mg/Kg-dry	92			70	130	0804258-015A MS	16865	16865
	MSD	9.824	173	mg/Kg-dry	139	2.67	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	264.5	mg/Kg-dry	107			75	125	0804258-015A PDS	16865	
	DUP		272.7	mg/Kg-dry		0.782	20			0804258-021A DUP	16866	16866
	LCS	132	152.4	mg/Kg-dry	115			83.33	117.42	16866 4-17 6020 S	16866	
	MBLK		< 0.40	mg/Kg-dry						16866 4-17 6020 S	16866	

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Copper	MS	9.934	268.4	mg/Kg-dry	-22			70	130	0804258-021A MS	16866	16866
	MSD	9.914	283	mg/Kg-dry	126			70	130	0804258-021A MS	16866	16866
	PDS	99.26	377.1	mg/Kg-dry	107			75	125	0804258-021A PDS	16866	
Lead	DUP		23.27	mg/Kg-dry		0.864	20			0804258-015A DUP	16865	16865
	LCS	72.2	78.38	mg/Kg-dry	109			81.86	118.28	16865 4-17 6020 S	16865	
	MBLK		0.2306	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	32.19	mg/Kg-dry	88.7			70	130	0804258-015A MS	16865	16865
	MSD	9.824	39.78	mg/Kg-dry	166	21.1	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	133.1	mg/Kg-dry	111			75	125	0804258-015A PDS	16865	
	DUP		7.36	mg/Kg-dry		2.61	20			0804258-021A DUP	16866	16866
	LCS	72.2	79.93	mg/Kg-dry	111			81.86	118.28	16866 4-17 6020 S	16866	
	MBLK		0.2318	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	16.62	mg/Kg-dry	91.3			70	130	0804258-021A MS	16866	16866
	MSD	9.914	16.78	mg/Kg-dry	93			70	130	0804258-021A MS	16866	16866
	PDS	99.26	109.6	mg/Kg-dry	103			75	125	0804258-021A PDS	16866	
Nickel	DUP		18.05	mg/Kg-dry		8.37	20			0804258-015A DUP	16865	16865
	LCS	155	175.5	mg/Kg-dry	113			82.58	117.42	16865 4-17 6020 S	16865	
	MBLK		< 1.0	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	29.25	mg/Kg-dry	97.8			70	130	0804258-015A MS	16865	16865
	MSD	9.824	29.32	mg/Kg-dry	98.7	0.263	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	125.3	mg/Kg-dry	108			75	125	0804258-015A PDS	16865	
	DUP		18.87	mg/Kg-dry		3.46	20			0804258-021A DUP	16866	16866
	LCS	155	181.9	mg/Kg-dry	117			82.58	117.42	16866 4-17 6020 S	16866	
	MBLK		< 1.0	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	28.94	mg/Kg-dry	108			70	130	0804258-021A MS	16866	16866
	MSD	9.914	29.29	mg/Kg-dry	112			70	130	0804258-021A MS	16866	16866
	PDS	99.26	128.7	mg/Kg-dry	111			75	125	0804258-021A PDS	16866	
Selenium	DUP		0.8733	mg/Kg-dry		0	20			0804258-015A DUP	16865	16865
	LCS	165	171.2	mg/Kg-dry	104			77.58	123.03	16865 4-17 6020 S	16865	
	MBLK		< 1.0	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	9.584	mg/Kg-dry	90			70	130	0804258-015A MS	16865	16865
	MSD	9.824	9.074	mg/Kg-dry	84.9	5.47	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	99.12	mg/Kg-dry	100			75	125	0804258-015A PDS	16865	
	DUP		0.7088	mg/Kg-dry		0	20			0804258-021A DUP	16866	16866
	LCS	165	180.1	mg/Kg-dry	109			77.58	123.03	16866 4-17 6020 S	16866	
	MBLK		< 1.0	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	9.679	mg/Kg-dry	85.6			70	130	0804258-021A MS	16866	16866
	MSD	9.914	9.454	mg/Kg-dry	83.5			70	130	0804258-021A MS	16866	16866
	PDS	99.26	98.49	mg/Kg-dry	98			75	125	0804258-021A PDS	16866	
Silver	DUP		< 0.20	mg/Kg-dry		0	20			0804258-015A DUP	16865	16865
	LCS	126	143.6	mg/Kg-dry	114			66.43	134.13	16865 4-17 6020 S	16865	
	MBLK		0.07665	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	4.918	5.356	mg/Kg-dry	109			70	130	0804258-015A MS	16865	16865
	MSD	4.912	5.421	mg/Kg-dry	110	1.21	20	70	130	0804258-015A MS	16865	16865
	PDS	49.16	52.03	mg/Kg-dry	106			75	125	0804258-015A PDS	16865	
	DUP		0.09865	mg/Kg-dry		0	20			0804258-021A DUP	16866	16866

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Silver	LCS	126	151.2	mg/Kg-dry	120			66.43	134.13	16866 4-17 6020 S	16866	
	MBLK		< 0.20	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	4.967	5.548	mg/Kg-dry	107			70	130	0804258-021A MS	16866	16866
	MSD	4.957	5.357	mg/Kg-dry	103			70	130	0804258-021A MS	16866	16866
	PDS	49.63	54.9	mg/Kg-dry	110			75	125	0804258-021A PDS	16866	
Thallium	DUP		0.09136	mg/Kg-dry		0	20			0804258-015A DUP	16865	16865
	LCS	184	213.8	mg/Kg-dry	116			77.17	122.28	16865 4-17 6020 S	16865	
	MBLK		< 0.40	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	10.16	mg/Kg-dry	102			70	130	0804258-015A MS	16865	16865
	MSD	9.824	9.915	mg/Kg-dry	99.8	2.4	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	111	mg/Kg-dry	113			75	125	0804258-015A PDS	16865	
	DUP		0.1734	mg/Kg-dry		0	20			0804258-021A DUP	16866	16866
	LCS	184	218.2	mg/Kg-dry	119			77.17	122.28	16866 4-17 6020 S	16866	
	MBLK		< 0.40	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	10.23	mg/Kg-dry	98.1			70	130	0804258-021A MS	16866	16866
	MSD	9.914	10.34	mg/Kg-dry	99.5			70	130	0804258-021A MS	16866	16866
	PDS	99.26	107.1	mg/Kg-dry	107			75	125	0804258-021A PDS	16866	
Vanadium	LCS	186	225.3	mg/Kg-dry	121			77.42	123.12	16865 4-17 6020 S	16865	
	MBLK		< 1.0	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	295.9	mg/Kg-dry	311.44			70	130	0804258-015A MS	16865	16865
	MSD	9.824	279.4	mg/Kg-dry	142.91			70	130	0804258-015A MS	16865	16865
	PDS	491.6	1986	mg/Kg-dry	110			75	125	0804258-015A PDS	16865	
	DUP		239.5	mg/Kg-dry		1.88	20			0804258-021A DUP	16866	16866
	LCS	186	228.3	mg/Kg-dry	123			77.42	123.12	16866 6020 LCS	16866	
	MBLK		< 1.0	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	238	mg/Kg-dry	72.2			70	130	0804258-021A MS	16866	16866
	MSD	9.914	251.6	mg/Kg-dry	76.3	3.49	20	70	130	0804258-021A MS	16866	16866
	PDS	496.3	864.9	mg/Kg-dry	125			75	125	0804258-021A PDS	16866	
	PDS	99.26	345.3	mg/Kg-dry	115			75	125	0804258-021A PDS	16866	
Zinc	DUP		127.5	mg/Kg-dry		0.503	20			0804258-015A DUP	16865	16865
	LCS	346	358.1	mg/Kg-dry	103			78.9	120.81	16865 4-17 6020 S	16865	
	MBLK		< 4.0	mg/Kg-dry						16865 4-17 6020 S	16865	
	MS	9.836	144.8	mg/Kg-dry	169			70	130	0804258-015A MS	16865	16865
	MSD	9.824	139.5	mg/Kg-dry	116	3.71	20	70	130	0804258-015A MS	16865	16865
	PDS	98.32	229.2	mg/Kg-dry	103			75	125	0804258-015A PDS	16865	
	DUP		158.7	mg/Kg-dry		0.411	20			0804258-021A DUP	16866	16866
	LCS	346	364.5	mg/Kg-dry	105			78.9	120.81	16866 4-17 6020 S	16866	
	MBLK		< 4.0	mg/Kg-dry						16866 4-17 6020 S	16866	
	MS	9.934	167.3	mg/Kg-dry	92.8			70	130	0804258-021A MS	16866	16866
	MSD	9.914	164.7	mg/Kg-dry	67			70	130	0804258-021A MS	16866	16866
	PDS	99.26	263.6	mg/Kg-dry	106			75	125	0804258-021A PDS	16866	

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804258

Project: 35241-0995 (4/29)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample

Reviewed By _____ Date _____

Notes: MBLK: Method Blank PDS: Post Digestion/Distillation Spike MSD: Matrix Spike Duplicate DUP: Duplicate
MS: Matrix Spike LCS(D): Laboratory Control Sample (Duplicate) RPD: Relative Percent Difference REC: Recovery
ICB/ICV: Initial Calibration Blank(Verification Standard) CCB/CCV: Continuing Calibration Blank(Verification Standard)

2May08

U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DIRECTORATE OF LABORATORY SCIENCES (DLS)

5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403
(410) 436-2208

FINAL ANALYTICAL REPORT

CLIENT: Mr. David Jones
USACHPPM
MCHB-TS-EGW
5158 Blackhawk Rd Bldg E1677
Gunpowder MD 21010 United States
5-2305

PROJECT SITE: NAPR-Cp Moscrip
PROGRAM 38 **SUBJONO:** 0995
DLS PROFILE #: 35241 **DLS WORK ORDER #:** 29768
REPORT SERIAL NUMBER: 417557

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REPORT RELEASE AUTHORIZATION:

Signature: _____ **Date:** 2 May 2008

Charles Stoner, Ph.D, Chief, Analytical Spectrometry Division

DLS HOLDS ACCREDITATION FROM AIHA, A2LA, NLLAP, AND COLA

Readiness thru Health

DLS Final Analytical Report, NAPR-Cp Moscrip

Program 38, SUBJONO 0995, DLS WO# 29768, Report Serial No. 417557, 5/2/2008

CASE NARRATIVE

Provided are the results for twenty seven soil and two ground water samples submitted from Camp Moscrip with chain of custody for metals analysis. The soil samples (DLS#s: 29768 001-027) were requested for mercury (Hg) analysis. The ground water samples (DLS#s: 29768 027-029) were requested for seventeen metals (Sn, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn and Hg) analysis. The samples were collected on 02-03 Apr 08 and received in DLS on 04 Apr 08. The samples were received at 2 degrees C which is within the acceptable temperature range of 2-6 degrees C. The required holding times were met.

Sample Preparation:
The ground water samples were digested for Sn on 23-24 Apr 08 IAW EPA 3010A / SOP MET 14.7. The ground water samples were digested for all other metals on 23-24 Apr 08 IAW EPA 3020A / SOP MET 13.7
The ground water samples were prepared for Hg analysis on 24 Apr 08 IAW EPA 7470A / SOP MET 19.6.

The soil samples were prepared for Hg analysis on 15 Apr 08 IAW EPA 7471B / SOP MET 20.6.

Sample Analysis-Ground Water:
The tin (Sn) was determined on 01 May 08 IAW EPA 6010B / SOP MET 42.7 using the PE ICP 4300DV. The reporting limit (RL) was met.

The fifteen metals (Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn), were determined on 01-02 May 07 IAW EPA 6020B / SOP MET 9.5 using the AG 4500 ICP-MS instrumentation. All reporting limits were met.

The samples were analyzed for Hg on 25 Apr 08 IAW EPA 7470A / SOP MET 19.6 using FIMS II. The reporting limit was met.

Sample Analysis- Soil:
The soil samples were analyzed for Hg on 15 April 08 IAW EPA 7471B / SOP MET 20.6 using FIMS II. The reporting limit was met. Due to high concentration of the Hg several samples required dilutions and the reporting limits were increased accordingly:
Sample DLS# : 29768 004 (1:1 dilution)
Sample DLS# s: 29768 006-008, 011(1:10 dilution)
Sample DLS# 29768 012-013 (1:5 dilution)

Quality control:
The following QC were analyzed with this data set for ground water samples: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and post digestion instrument spike (IS) samples.
The following QC were analyzed with this data set for soil samples: two laboratory control (LCS), two matrix spike (MS), two matrix spike duplicate (MSD), and two post digestion instrument spike (IS) samples.

All QC results were within acceptance limits except for the following:

2-MSs
Se 71.1% (limit: 80%-120%)
Zn 74.9% (limit: 80%-120%)

1-IS
Se 74.1% (limit: 75%-125%)

1-LCS
Se 71.1% (limit: 80%-120%)

1-MSD
Zn 34.99 % RPD (limit: %RPD<20%) RPD: Relative Percent Difference

The low recoveries in MS, IS, LCS for Sa and in MS for Zn are attributed to matrix interference.
Additionally, Zn failed in MSD due to non-homogeneity of the sample. Based on the failed QC results and suspected matrix interference the reported results for Se and Zn are considered as estimates.

The ground water results are reported in mg/L for EPA Methods 6010B; ug/L for EPA Methods 6020B and 7470A. The soil results for Hg are reported in mg/kg on the dry weight basis.

List of the report contents:

DLS Final Analytical Report, NAPR-Cp Moscrip

Program 38, SUBJONO 0995, DLS WO# 29768, Report Serial No. 417557, 5/2/2008

Section	Number of Pages
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Cover Letter	1
Case Narrative	2
Sample Summary	1
Analytical Data Report	8
Quality Control Data Report	5
Raw Data	
Terminology/Abbreviations	1

Report Point-of-Contact: Charles Stoner

Reviewer: WD / DB

List of all tests used:

DLS Procedure	Count
EPA 6010 MET42	2
EPA 6020 MET9	30
EPA 7470 MET19	2
EPA 7471 MET20	27

Number of samples included in the report, by matrix:

Matrix	Quantity
Soil	27
Water (Ground water)	2

Analyst(s):

Analyst Code	Analyst Name	Signature
0180	BOWMANDL	
0041	MCKENZIERM	
0062	SIMONAS	

SAMPLE SUMMARY

Sorted by Field ID

Field ID	DLS ID	Date Collected	Matrix
73ER-04	29768028	02-Apr-08	Water (Ground water)
73ER-05	29768029	03-Apr-08	Water (Ground water)
73SB13-00	29768001	02-Apr-08	Soil
73SB13A-00	29768002	02-Apr-08	Soil
73SB14-00	29768014	03-Apr-08	Soil
73SB15-00	29768008	02-Apr-08	Soil
73SB16-00	29768005	02-Apr-08	Soil
73SB17-00	29768003	02-Apr-08	Soil
73SB18-00	29768012	03-Apr-08	Soil
73SB18A-00	29768013	03-Apr-08	Soil
73SB19-00	29768009	02-Apr-08	Soil
73SB20-00	29768006	02-Apr-08	Soil
73SB21-00	29768004	02-Apr-08	Soil
73SB22-00	29768010	02-Apr-08	Soil
73SB23-00	29768011	02-Apr-08	Soil
73SB24-00	29768007	02-Apr-08	Soil
73SB25-00	29768024	03-Apr-08	Soil
73SB26-00	29768027	03-Apr-08	Soil
73SB27-00	29768017	03-Apr-08	Soil
73SB27A-00	29768018	03-Apr-08	Soil
73SB28-00	29768021	03-Apr-08	Soil
73SB29-00	29768023	03-Apr-08	Soil
73SB30-00	29768026	03-Apr-08	Soil
73SB31-00	29768016	03-Apr-08	Soil
73SB32-00	29768020	03-Apr-08	Soil
73SB33-00	29768022	03-Apr-08	Soil
73SB34-00	29768025	03-Apr-08	Soil
73SB35-00	29768015	03-Apr-08	Soil
73SB36-00	29768019	03-Apr-08	Soil

ANALYTICAL DATA REPORT

(FORMAT OPTION 1)
Sorted by Field ID

FINAL REPORT

Field ID: 73ER-04 **DLS ID:** 29768028

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Beryllium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	02-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	02-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	02-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Zinc	29.5 ug/L	5.00	EPA 6020 MET9	0041	02-May-08

FINAL REPORT

Field ID: 73ER-05 **DLS ID:** 29768029

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Beryllium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	02-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	02-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Silver	2.66 ug/L	2.00	EPA 6020 MET9	0041	02-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	02-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	02-May-08
Zinc	18.1 ug/L	5.00	EPA 6020 MET9	0041	02-May-08

FINAL REPORT

Field ID: 73SB13-00 **DLS ID:** 29768001

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.153 mg/kg	0.0125	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB13A-00 **DLS ID:** 29768002

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0921 mg/kg	0.0127	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB14-00 **DLS ID:** 29768014

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.368 mg/kg	0.0128	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB15-00 **DLS ID:** 29768008

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	3.62 mg/kg	0.125	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB16-00 **DLS ID:** 29768005

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.539 mg/kg	0.0120	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB17-00 **DLS ID:** 29768003

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB17-00 **DLS ID:** 29768003

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.140 mg/kg	0.0125	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB18-00 **DLS ID:** 29768012

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	1.65 mg/kg	0.0667	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB18A-00 **DLS ID:** 29768013

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	1.41 mg/kg	0.0687	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB19-00 **DLS ID:** 29768009

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.215 mg/kg	0.0128	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB20-00 **DLS ID:** 29768006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	2.69 mg/kg	0.127	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB21-00 **DLS ID:** 29768004

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB21-00 **DLS ID:** 29768004

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.899 mg/kg	0.0252	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB22-00 **DLS ID:** 29768010

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0207 mg/kg	0.0121	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB23-00 **DLS ID:** 29768011

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	2.45 mg/kg	0.129	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB24-00 **DLS ID:** 29768007

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	4.31 mg/kg	0.127	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB25-00 **DLS ID:** 29768024

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0200 mg/kg	0.0141	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB26-00 **DLS ID:** 29768027

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB26-00 **DLS ID:** 29768027

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0182 mg/kg	0.0146	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB27-00 **DLS ID:** 29768017

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0618 mg/kg	0.0145	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB27A-00 **DLS ID:** 29768018

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0351 mg/kg	0.0142	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB28-00 **DLS ID:** 29768021

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0424 mg/kg	0.0139	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB29-00 **DLS ID:** 29768023

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0402 mg/kg	0.0153	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB30-00 **DLS ID:** 29768026

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB30-00 **DLS ID:** 29768026

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0182 mg/kg	0.0144	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB31-00 **DLS ID:** 29768016

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0436 mg/kg	0.0146	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB32-00 **DLS ID:** 29768020

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0294 mg/kg	0.0143	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB33-00 **DLS ID:** 29768022

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0196 mg/kg	0.0140	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB34-00 **DLS ID:** 29768025

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0382 mg/kg	0.0151	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB35-00 **DLS ID:** 29768015

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB35-00 **DLS ID:** 29768015

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0838 mg/kg	0.0132	EPA 7471 MET20	0180	15-Apr-08

Field ID: 73SB36-00 **DLS ID:** 29768019

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0149 mg/kg	0.0149	EPA 7471 MET20	0180	15-Apr-08

Report ID: HMA0189v1
Report Seq: 417515

Date Generated: 5/2/2008 11:10:49
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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Quality Control Report

DLS Workorder: 29768
Installation: NAPR-Cp Moscrip
Project Officer: David Jones
Profile: 0995

Report ID: HMA0189v1
Report Seq: 417515
Workorder No: 29788
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness and Health

Date Generated: 5/2/2008 11:11:05 AM
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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Laboratory Control Samples Report

Analyte	Date	Sample Number	Mx	Observed	Units	Theoretical	Units	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/15/2008	08HGL2-4	SO	38.5	ug/L	48.694	ug/L	**79.07**	BOWMANDL	EPA 7471 MET20	WANDA.DUD	☐	70	130
Mercury	4/15/2008	08HGL2-5	SO	39.94	ug/L	48.888	ug/L	**81.70**	BOWMANDL	EPA 7471 MET20	WANDA.DUD	☐	70	130
Mercury	4/25/2008	08HGL2-8	GW	4.67	ug/L	5	ug/L	**93.40**	BOWMANDL	EPA 7470 MET19	WANDA.DUD	☐	80	120
Antimony	5/1/2008	08LCS2-86	GW	48.37	ug/L	50	ug/L	**96.74**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Arsenic	5/1/2008	08LCS2-86	GW	43.78	ug/L	50	ug/L	**87.56**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Barium	5/1/2008	08LCS2-86	GW	49.85	ug/L	50	ug/L	**99.70**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Beryllium	5/2/2008	08LCS2-86	GW	44.28	ug/L	50	ug/L	**88.56**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Cadmium	5/1/2008	08LCS2-86	GW	44.81	ug/L	50	ug/L	**89.62**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Chromium	5/1/2008	08LCS2-86	GW	51.03	ug/L	50	ug/L	**102.06**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Cobalt	5/1/2008	08LCS2-86	GW	46.51	ug/L	50	ug/L	**93.02**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Copper	5/1/2008	08LCS2-86	GW	48.01	ug/L	50	ug/L	**96.02**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Lead	5/1/2008	08LCS2-86	GW	51.36	ug/L	50	ug/L	**102.72**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Nickel	5/1/2008	08LCS2-86	GW	47.13	ug/L	50	ug/L	**94.26**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Selenium	5/1/2008	08LCS2-86	GW	36.95	ug/L	50	ug/L	**73.90**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☑	80	120
Silver	5/1/2008	08LCS2-86	GW	51.34	ug/L	50	ug/L	**102.68**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐		
Thallium	5/1/2008	08LCS2-86	GW	46.41	ug/L	50	ug/L	**92.82**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Vanadium	5/1/2008	08LCS2-86	GW	48.41	ug/L	50	ug/L	**96.82**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Zinc	5/1/2008	08LCS2-86	GW	56.5	ug/L	50	ug/L	**113.00**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Tin	5/1/2008	08LCS2-87	GW	1.032	mg/L	1	mg/L	**103.20**	SIMONAS	EPA 6010 MET42	WANDA.DUD	☐	80	120

Report ID: HMA0189v1
Report Seq: 417515
Workorder No: 29768
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness from Health

Date Generated: 5/2/2008 11:10:56 AM
Generated By: WANDA.DUDEK

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Instrument Spike Sample Report

Analyte	Date	Sample Number	Mx		Initial Result	Units	Sample Volume	Spike Solution Conc	Spike Volume	Spiked Result	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/15/2008	29768001 IS	SO		2.435	ug/L	8	10	2	3.964	**100.80**	BOWMANDL	EPA 7471 MET2	WANDA.DUD	☐	85	123
Mercury	4/15/2008	29768021 IS	SO		0.611	ug/L	8	10	2	2.61	**106.06**	BOWMANDL	EPA 7471 MET2	WANDA.DUD	☐	85	123
Tin	5/1/2008	29768028 IS	GW	<	0.2	mg/L	9.9	100	0.1	1.009	**100.90**	SIMONAS	EPA 6010 MET4	WANDA.DUD	☐		
Antimony	5/1/2008	29768028 IS	GW	<	5	ug/L	10	10000	0.05	48.22	**96.92**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Arsenic	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	43.65	**87.74**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Barium	5/1/2008	29768028 IS	GW	<	5	ug/L	10	10000	0.05	50.42	**101.34**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Beryllium	5/2/2008	29768028 IS	GW	<	5	ug/L	10	10000	0.05	45.59	**91.64**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Cadmium	5/1/2008	29768028 IS	GW	<	2	ug/L	10	10000	0.05	45.09	**90.63**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Chromium	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	51.72	**103.96**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Cobalt	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	47.64	**95.76**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Copper	5/1/2008	29768028 IS	GW	<	5	ug/L	10	10000	0.05	48.83	**98.15**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Lead	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	51.04	**102.59**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Mercury	4/25/2008	29768028 IS	GW	<	0.2	ug/L	8	10	2	1.921	**96.05**	BOWMANDL	EPA 7470 MET1	WANDA.DUD	☐	85	115
Nickel	5/1/2008	29768028 IS	GW	<	10	ug/L	10	10000	0.05	48.29	**97.06**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Selenium	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	36.86	**74.09**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☑	75	125
Silver	5/1/2008	29768028 IS	GW	<	2	ug/L	10	10000	0.05	51.83	**104.16**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Thallium	5/1/2008	29768028 IS	GW	<	4	ug/L	10	10000	0.05	50.48	**101.46**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Vanadium	5/1/2008	29768028 IS	GW	<	5	ug/L	10	10000	0.05	49.97	**100.44**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Zinc	5/1/2008	29768028 IS	GW		29.46	ug/L	10	10000	0.05	68.67	**79.11**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125

Report ID: HMA0189v1
Report Seq: 417515
Workorder No: 29768
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness thru Health

Date Generated: 5/2/2008 11:11:13 AM
Generated By: WANDA.DUDEK

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Matrix (Pre-digested) Spike Sample Report

Analyte	Date	Sample Number	Mx		Initial Result	Units	MS Result	Units	Theoretical	Units	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/15/2008	29768001 MS	SO		2.435	ug/L	6.077	ug/L	5	ug/L	**72.84**	BOWMANDL	EPA 7471 MET20	WANDA.DU	☐	70	130
Mercury	4/15/2008	29768021 MS	SO		0.611	ug/L	5.124	ug/L	5	ug/L	**90.26**	BOWMANDL	EPA 7471 MET20	WANDA.DU	☐	70	130
Tin	5/1/2008	29768028 MS	GW	<	0.2	mg/L	1.033	mg/L	1	mg/L	**103.30**	SIMONAS	EPA 6010 MET42	WANDA.DU	☐		
Antimony	5/1/2008	29768028 MS	GW	<	5	ug/L	48.99	ug/L	50	ug/L	**97.98**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Arsenic	5/1/2008	29768028 MS	GW	<	4	ug/L	43.45	ug/L	50	ug/L	**86.90**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Barium	5/1/2008	29768028 MS	GW	<	5	ug/L	50.5	ug/L	50	ug/L	**101.00**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Beryllium	5/2/2008	29768028 MS	GW	<	5	ug/L	42.61	ug/L	50	ug/L	**85.22**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Cadmium	5/1/2008	29768028 MS	GW	<	2	ug/L	44.3	ug/L	50	ug/L	**88.60**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Chromium	5/1/2008	29768028 MS	GW	<	4	ug/L	51.72	ug/L	50	ug/L	**103.44**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Cobalt	5/1/2008	29768028 MS	GW	<	4	ug/L	47.6	ug/L	50	ug/L	**95.20**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Copper	5/1/2008	29768028 MS	GW	<	5	ug/L	48.32	ug/L	50	ug/L	**96.64**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Lead	5/1/2008	29768028 MS	GW	<	4	ug/L	51.51	ug/L	50	ug/L	**103.02**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Mercury	4/25/2008	29768028 MS	GW	<	0.2	ug/L	4.59	ug/L	5	ug/L	**91.80**	BOWMANDL	EPA 7470 MET19	WANDA.DU	☐	70	130
Nickel	5/1/2008	29768028 MS	GW	<	10	ug/L	48.53	ug/L	50	ug/L	**97.06**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐		
Selenium	5/1/2008	29768028 MS	GW	<	4	ug/L	35.55	ug/L	50	ug/L	**71.10**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☑	80	120
Silver	5/1/2008	29768028 MS	GW	<	2	ug/L	52.73	ug/L	50	ug/L	**105.46**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Thallium	5/1/2008	29768028 MS	GW	<	4	ug/L	47.2	ug/L	50	ug/L	**94.40**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Vanadium	5/1/2008	29768028 MS	GW	<	5	ug/L	48.81	ug/L	50	ug/L	**97.62**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Zinc	5/1/2008	29768028 MS	GW		29.46	ug/L	66.93	ug/L	50	ug/L	**74.94**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☑	80	120

Report ID: HMA0189v1
Report Seq: 417515
Workorder No: 29768
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness through Health

Date Generated: 5/2/2008 11:11:09 AM
Generated By: WANDA.DUDEK

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Matrix Spike Duplicates Report

Analyte	Date	Sample Number	Mx	MS Result	Units	MSD Result	Units	% RPD	Recovery	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/15/2008	29768001 MSD	SO	6.077	ug/L	6.084	ug/L	0.12	72.98	BOWMANDL	EPA 7471 MET20	WANDA.DUDE	☐		
Mercury	4/15/2008	29768021 MSD	SO	5.124	ug/L	5.092	ug/L	0.63	89.62	BOWMANDL	EPA 7471 MET20	WANDA.DUDE	☐		
Tin	5/1/2008	29768028 MSD	GW	1.033	mg/L	1.034	mg/L	0.10		SIMONAS	EPA 6010 MET42	WANDA.DUDE	☐		
Antimony	5/1/2008	29768028 MSD	GW	48.99	ug/L	47.78	ug/L	2.50	95.56	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Arsenic	5/1/2008	29768028 MSD	GW	43.45	ug/L	45.63	ug/L	4.89	91.26	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Barium	5/1/2008	29768028 MSD	GW	50.5	ug/L	49.65	ug/L	1.70	99.30	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Beryllium	5/2/2008	29768028 MSD	GW	42.61	ug/L	45.58	ug/L	6.74	91.16	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Cadmium	5/1/2008	29768028 MSD	GW	44.3	ug/L	45.87	ug/L	3.48	91.74	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Chromium	5/1/2008	29768028 MSD	GW	51.72	ug/L	52.38	ug/L	1.27	104.76	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Cobalt	5/1/2008	29768028 MSD	GW	47.6	ug/L	47.48	ug/L	0.25	94.96	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Copper	5/1/2008	29768028 MSD	GW	48.32	ug/L	49.41	ug/L	2.23	98.82	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Lead	5/1/2008	29768028 MSD	GW	51.51	ug/L	52.46	ug/L	1.83	104.92	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Mercury	4/25/2008	29768028 MSD	GW	4.59	ug/L	4.428	ug/L	3.59	88.56	BOWMANDL	EPA 7470 MET19	WANDA.DUDE	☐		
Nickel	5/1/2008	29768028 MSD	GW	48.53	ug/L	48.65	ug/L	0.25	97.30	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Selenium	5/1/2008	29768028 MSD	GW	35.55	ug/L	40.8	ug/L	13.75	81.60	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Silver	5/1/2008	29768028 MSD	GW	52.73	ug/L	53.11	ug/L	0.72	106.22	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Thallium	5/1/2008	29768028 MSD	GW	47.2	ug/L	46.15	ug/L	2.25	92.30	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Vanadium	5/1/2008	29768028 MSD	GW	48.81	ug/L	48.54	ug/L	0.55	97.08	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Zinc	5/1/2008	29768028 MSD	GW	66.93	ug/L	95.31	ug/L	34.99	131.70	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		

TERMINOLOGY/ABBREVIATIONS

Term	Description
MDA	The minimum detectable activity.
ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CFR	Code of Federal Regulations
OSHA	Occupational Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
ACCURACY	A measure of how close a measured value is to a known true value. Accuracy is assessed by means of reference samples and percent recoveries of spiked samples.
ANALYSIS OF VARIANCE	A technique of statistical analysis by which the components of variation for different elements of the data set are separated and estimated.
BLANK	An artificial sample designed to monitor the introduction of artifacts or contamination into the analytical process. The blank is taken through the appropriate steps in the analytical process. Examples are: trip, field, equipment, and reagent blanks.
AIHA	American Industrial Hygiene Association

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* DIVISION/TEAM: *ASD-Metals*

INSTALLATION: *NAPR-Cp Moscrip* CONTRACT LAB: *Microbac*

PROJECT NO: *38-0995* LIMS W.O. NO: *29805*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

X OTHER.

COMMENTS/ NARRATIVE:

Please see the Contractor Case Narrative.

Arsenic was detected at 5.46 mg/kg in the method blank, and in the six samples at 6.7, 5.6, 5.6, 4.7, 4.8, and 4.1 mg/kg, respectively. Arsenic measurements in these samples therefore need to be rejected. Remember that the electronic data deliverable (EDD) for this sample set does not include method blank data, so that the arsenic measurements will be misinterpreted if the data are evaluated based solely on the EDD information.

Antimony was detected at 0.47 mg/kg in the method blank, and in the six samples at 1.0, <0.98, <0.99, 1.1, <0.97, and <0.99 mg/kg, respectively. The two antimony detections in these samples therefore need to be qualified or rejected. Remember that the electronic data deliverable (EDD) for this sample set does not include method blank data, so that the antimony measurements will be misinterpreted if the data are evaluated based solely on the EDD information.

Barium was detected at 0.94 mg/kg, chromium at 0.26 mg/kg, and zinc at 0.82 mg/kg in the method blank, but high levels of these metals were reported in the sample set tested.

The QC outliers reported for the matrix spike/matrix spike duplicates are judged to be the result of the high levels of native metals in the samples.

The EDD for beryllium as received lists EPA 6020 as the method used for analysis, but the hardcopy lists EPA 6010. This discrepancy needs to be resolved.

REVIEWED BY: *R. Valls* R. Valls
DATE: *18 Apr 08*

LIDS 2.0 Feb 06

Valis, Robert J Mr ORISE

From: Valis, Robert J Mr ORISE
Sent: Wednesday, May 07, 2008 4:51 PM
To: Stoner, Charles E JR (Chuck) Dr USACHPPM; Taylor, Heidi L Ms USACHPPM
Cc: Smelser, Barbara A Ms USACHPPM
Subject: Summary of Two GAS EDD Delays (NAPR-Cp Moscrip) - 7 May 1700 hrs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Heidi/Chuck,

Per Chuck Stoner, I will release the hardcopy reports for the following delinquent NAPR-Moscrip packages:

- WO 29709 (PO 902/DO 1) The hardcopy report is okay, but we still do not have the EDD for sample 29709001.

- WO 29805 (PO 918/DO 1) The hardcopy report lists EPA 6010 for Beryllium, but the EDD lists EPA 6020 for the six soil samples.

The problems above have not been corrected as of 7 May 08.

Bob Valis

-----Original Message-----
From: Valis, Robert J Mr ORISE
Sent: Friday, April 18, 2008 4:03 PM
To: Taylor, Heidi L Ms USACHPPM; Gaffney, Rosemary J Ms USACHPPM
Cc: CHPPM-LAOHELP; Morrow, David F Mr USACHPPM
Subject: Summary of EDD Delays - 18 Apr 1600 hrs (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Heidi/Rosemary,

I have processed all WO's this week, except the following:

WO 29754	Gascoyne	Missing EDD - Total Halides values missing
WO 29800	Gascoyne	EDD missing Pb value - hardcopy OK
WO 29709	Gascoyne	Missing EDD - Also need to change Zn and Be Acode to 6010
WO 29724	GALM	Missing EDD

I plan to work Monday and Thursday next week. I could potentially work Wednesday if we get backed up.

Bob V
Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

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Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
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CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0804407
Report To: U.S. Army Center for Health Promotion and
Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

May 1, 2008
page 1 of 1

Pick-Up Order: 918/1
Date Samples Received: 04/10/2008

Sample Numbers: 29805001, 29805002, 29805003, 2985005, 29805006, 29805007

Matrix: Soil

Six samples were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

- Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. The Matrix Spike recoveries for Barium, Antimony, Arsenic, Chromium, Copper, Nickel, Vanadium, and Zinc were out of acceptance limits. The Matrix Spike Duplicate recoveries for Antimony, Arsenic, Chromium, Copper, Nickel, Vanadium and Zinc were out of acceptance limits. Post Digestion Spike recoveries for Barium, Copper, and Vanadium were out of acceptance limits. Samples were re-analyzed with a Post Digestion Spike and were with in acceptance limits.
2. Method Blank contained 5.5 mg/Kg-dry of Arsenic, samples were footnoted.
3. Method Blank contained 0.3 mg/Kg-dry of Chromium, samples were greater than twenty times that level and did not require footnotes.
4. Continuing Calibration Verification standards were biased high for Thallium, samples were non detect for Thallium.

Notes:
1. None.

Microbac Laboratories, Inc., Baltimore Division

L. Burwell Gunn III
Inorganic Production Manager

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CERTIFICATE OF ANALYSIS

USACHPPM-Metals
Contract #W91ZLK-05-C-0025
Bldg E2100, Rm 201
APG, MD 21010-5422
Attn: Heidi Taylor

Page 1

Report No. 0804407

This report of analysis contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 4/10/2008 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 14 Pages plus Attachment(s)

Final report reviewed by: Michael D. Arbaugh, Sr./Division Manager

5/1/2008
Report issue date

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com

Microbac Laboratories, Inc. Baltimore Division- laboratory accreditations: MD 109, VA 00152, PA 68-339, NY 11138, SC 86010, ISO 17025, NELAC, AIHA 100491. The data and information on this, and other accompanying documents, represents only the sample(s) analyzed and is not to be reproduced wholly or in part for advertising or other purposes without written approval from the laboratory. Organics Qualifiers: (U) analyzed for but not detected; (J) estimated value, below the reporting limit but above one-half the reporting limit; (B) detected in the associated method blank; (D) reanalyzed at a higher dilution factor. Inorganics Qualifiers: (U) analyzed for but not detected; (B) estimated value, below the reporting limit but above one-half the reporting limit. A copy of COC is attached.

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Sample Summary

Project: 35256-0995 (5/1)

Report No: 0804407

Date Received 4/10/2008

Client Sample ID	Lab Sample ID	Matrix	Collection Date	Collection Time
29805001 73SB02-01	0804407-001A	Soil	4/7/2008	10:15
29805002 73SB02-04	0804407-002A	Soil	4/7/2008	10:25
29805003 73SB14-01	0804407-003A	Soil	4/7/2008	11:05
29805005 73SB27-01	0804407-004A	Soil	4/7/2008	13:15
29805006 73SB27A-01	0804407-005A	Soil	4/7/2008	13:45
29805007 73SB27-09	0804407-006A	Soil	4/7/2008	14:25

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-001			**Collection Date:** 4/7/2008 10:15:00 AM	
Client Sample ID: 29805001 73SB02-01			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	0.15	0.027	mg/kg-dry	4/25/2008 12:01
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.2	1.2	mg/Kg-dry	4/24/2008 14:23
Tin	< 49	49	mg/Kg-dry	4/24/2008 14:23
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	1.0	1.0	mg/Kg-dry	4/28/2008 4:38
Arsenic	6.7	0.40	mg/Kg-dry	4/28/2008 4:38
Barium	210	5.0	mg/Kg-dry	4/29/2008 12:33
Cadmium	0.75	0.10	mg/Kg-dry	4/28/2008 4:38
Chromium	46	0.50	mg/Kg-dry	4/28/2008 4:38
Cobalt	20	1.0	mg/Kg-dry	4/28/2008 4:38
Copper	100	2.0	mg/Kg-dry	4/29/2008 12:33
Lead	56	0.40	mg/Kg-dry	4/28/2008 4:38
Nickel	13	5.0	mg/Kg-dry	4/29/2008 12:33
Selenium	< 1.0	1.0	mg/Kg-dry	4/28/2008 4:38
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 4:38
Thallium	< 0.40	0.40	mg/Kg-dry	4/28/2008 4:38
Vanadium	140	5.0	mg/Kg-dry	4/30/2008 17:31

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Zinc	600	4.0	mg/Kg-dry	4/28/2008 4:38
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	9.5	0.050	wt%	4/16/2008 15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-002			**Collection Date:** 4/7/2008 10:25:00 AM	
Client Sample ID: 29805002 73SB02-04			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	< 0.027	0.027	mg/kg-dry	4/25/2008 12:03
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.2	1.2	mg/Kg-dry	4/24/2008 14:28
Tin	< 50	50	mg/Kg-dry	4/24/2008 14:28
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	< 0.98	0.98	mg/Kg-dry	4/28/2008 4:43
Arsenic	5.6	0.39	mg/Kg-dry	4/28/2008 4:43
Barium	100	4.9	mg/Kg-dry	4/29/2008 12:38
Cadmium	< 0.098	0.098	mg/Kg-dry	4/28/2008 4:43
Chromium	18	0.49	mg/Kg-dry	4/28/2008 4:43
Cobalt	24	0.98	mg/Kg-dry	4/28/2008 4:43
Copper	130	2.0	mg/Kg-dry	4/29/2008 12:38
Lead	1.7	0.39	mg/Kg-dry	4/28/2008 4:43
Nickel	< 4.9	4.9	mg/Kg-dry	4/29/2008 12:38
Selenium	< 0.98	0.98	mg/Kg-dry	4/28/2008 4:43
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 4:43
Thallium	< 0.39	0.39	mg/Kg-dry	4/28/2008 4:43
Vanadium	180	4.9	mg/Kg-dry	4/30/2008 17:35
Zinc	57	3.9	mg/Kg-dry	4/28/2008 4:43

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	11	0.050	wt%	4/16/2008 15:00

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Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-003			**Collection Date:** 4/7/2008 11:05:00 AM	
Client Sample ID: 29805003 73SB14-01			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	0.041	0.028	mg/kg-dry	4/25/2008 12:06
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.1	1.1	mg/Kg-dry	4/24/2008 14:32
Tin	< 43	43	mg/Kg-dry	4/24/2008 14:32
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 6.5 mg/Kg-dry Arsenic.				
Antimony	< 0.99	0.99	mg/Kg-dry	4/28/2008 4:47
Arsenic	5.6	0.39	mg/Kg-dry	4/28/2008 4:47
Barium	180	4.9	mg/Kg-dry	4/29/2008 12:42
Cadmium	0.15	0.099	mg/Kg-dry	4/28/2008 4:47
Chromium	31	0.49	mg/Kg-dry	4/28/2008 4:47
Cobalt	55	0.99	mg/Kg-dry	4/28/2008 4:47
Copper	190	2.0	mg/Kg-dry	4/29/2008 12:42
Lead	3.1	0.39	mg/Kg-dry	4/28/2008 4:47
Nickel	7.7	4.9	mg/Kg-dry	4/29/2008 12:42
Selenium	< 0.99	0.99	mg/Kg-dry	4/28/2008 4:47
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 4:47
Thallium	< 0.39	0.39	mg/Kg-dry	4/28/2008 4:47
Vanadium	250	4.9	mg/Kg-dry	4/30/2008 17:39
Zinc	64	3.9	mg/Kg-dry	4/28/2008 4:47

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	10	0.050	wt%	4/16/2008 15:00

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Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-004			**Collection Date:** 4/7/2008 1:15:00 PM	
Client Sample ID: 29805005 73SB27-01			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	< 0.030	0.030	mg/kg-dry	4/25/2008 12:08
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.2	1.2	mg/Kg-dry	4/24/2008 14:36
Tin	< 49	49	mg/Kg-dry	4/24/2008 14:36
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	1.1	1.0	mg/Kg-dry	4/28/2008 4:13
Arsenic	4.7	0.40	mg/Kg-dry	4/28/2008 4:13
Barium	210	5.0	mg/Kg-dry	4/29/2008 12:46
Cadmium	0.16	0.10	mg/Kg-dry	4/28/2008 4:13
Chromium	41	0.50	mg/Kg-dry	4/28/2008 4:13
Cobalt	21	1.0	mg/Kg-dry	4/28/2008 4:13
Copper	460	2.0	mg/Kg-dry	4/29/2008 12:46
Lead	2.4	0.40	mg/Kg-dry	4/28/2008 4:13
Nickel	12	5.0	mg/Kg-dry	4/29/2008 12:46
Selenium	1.1	1.0	mg/Kg-dry	4/28/2008 4:13
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 4:13
Thallium	< 0.40	0.40	mg/Kg-dry	4/28/2008 4:13
Vanadium	300	5.0	mg/Kg-dry	4/30/2008 17:44
Zinc	110	4.0	mg/Kg-dry	4/28/2008 4:13

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	18	0.050	wt%	4/16/2008 15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-005			**Collection Date:** 4/7/2008 1:45:00 PM	
Client Sample ID: 29805006 73SB27A-01			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	< 0.030	0.030	mg/kg-dry	4/25/2008 12:10
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.2	1.2	mg/Kg-dry	4/24/2008 15:16
Tin	< 49	49	mg/Kg-dry	4/24/2008 15:16
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	< 0.97	0.97	mg/Kg-dry	4/28/2008 4:51
Arsenic	4.8	0.39	mg/Kg-dry	4/28/2008 4:51
Barium	86	4.9	mg/Kg-dry	4/29/2008 17:49
Cadmium	0.19	0.097	mg/Kg-dry	4/28/2008 4:51
Chromium	41	0.49	mg/Kg-dry	4/28/2008 4:51
Cobalt	23	0.97	mg/Kg-dry	4/28/2008 4:51
Copper	420	1.9	mg/Kg-dry	4/29/2008 17:49
Lead	1.4	0.39	mg/Kg-dry	4/28/2008 4:51
Molybdenum	82	4.9	mg/Kg-dry	4/29/2008 17:49
Nickel	11	4.9	mg/Kg-dry	4/29/2008 17:49
Selenium	< 0.97	0.97	mg/Kg-dry	4/28/2008 4:51
Silver	< 0.19	0.19	mg/Kg-dry	4/28/2008 4:51
Thallium	< 0.39	0.39	mg/Kg-dry	4/28/2008 4:51
Vanadium	300	4.9	mg/Kg-dry	4/30/2008 18:17
Zinc	100	3.9	mg/Kg-dry	4/28/2008 4:51

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	17	0.050	wt%	4/16/2008 15:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804407-006			**Collection Date:** 4/7/2008 2:25:00 PM	
Client Sample ID: 29805007 73SB27-09			**Matrix:** SOIL	
MERCURY, TOTAL (EPA 7471A)				Analyst: APS
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
Mercury	< 0.029	0.029	mg/kg-dry	4/25/2008 12:12
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date: 4/22/2008 1:30:00 PM		Prep Analyst EDP	
Beryllium	< 1.2	1.2	mg/Kg-dry	4/24/2008 15:20
Tin	< 49	49	mg/Kg-dry	4/24/2008 15:20
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 4/24/2008 7:18:00 AM		Prep Analyst EDP	
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	< 0.99	0.99	mg/Kg-dry	4/28/2008 5:08
Arsenic	4.1	0.40	mg/Kg-dry	4/28/2008 5:08
Barium	110	5.0	mg/Kg-dry	4/29/2008 17:53
Cadmium	< 0.099	0.099	mg/Kg-dry	4/28/2008 5:08
Chromium	24	0.50	mg/Kg-dry	4/28/2008 5:08
Cobalt	20	0.99	mg/Kg-dry	4/28/2008 5:08
Copper	200	2.0	mg/Kg-dry	4/29/2008 17:53
Lead	0.74	0.40	mg/Kg-dry	4/28/2008 5:08
Molybdenum	< 5.0	5.0	mg/Kg-dry	4/29/2008 17:53
Nickel	< 5.0	5.0	mg/Kg-dry	4/29/2008 17:53
Selenium	< 0.99	0.99	mg/Kg-dry	4/28/2008 5:08
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 5:08
Thallium	< 0.40	0.40	mg/Kg-dry	4/28/2008 5:08
Vanadium	160	5.0	mg/Kg-dry	4/30/2008 18:21
Zinc	59	4.0	mg/Kg-dry	4/28/2008 5:08

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Test Results

Client: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	16	0.050	wt%	4/16/2008 15:00

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

5/1/2008

Company: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Antimony	DUP		0.7192	mg/Kg-dry		0	20			0804407-004A DUP	16926	16926
	LCS	127	152.6	mg/Kg-dry	120			3.94	210.24	16926 4-24 6020 S	16926	
	MBLK		0.4724	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	3.375	mg/Kg-dry	23			70	130	0804407-004A MS	16926	16926
	MSD	9.966	3.791	mg/Kg-dry	27.2	11.6	20	70	130	0804407-004A MS	16926	16926
	PDS	99.76	103.2	mg/Kg-dry	102			75	125	0804407-001A PDS	16926	
Arsenic	DUP		4.502	mg/Kg-dry		3.46	20			0804407-004A DUP	16926	16926
	LCS	280	283.8	mg/Kg-dry	101			80.71	118.93	16926 4-24 6020 S	16926	
	MBLK		5.462	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	11.52	mg/Kg-dry	68.9			70	130	0804407-004A MS	16926	16926
	MSD	9.966	11.17	mg/Kg-dry	65.3	3.09	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	104.1	mg/Kg-dry	99.8			75	125	0804407-004A PDS	16926	
Barium	DUP		224.8	mg/Kg-dry		8.88	20			0804407-004A DUP	16926	16926
	LCS	520	498.7	mg/Kg-dry	95.9			82.69	117.12	16926 4-24 6020 S	16926	
	MBLK		0.9386	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	277.8	mg/Kg-dry	724			70	130	0804407-004A MS	16926	16926
	MSD	9.966	228.7	mg/Kg-dry	231	19.4	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	275.8	mg/Kg-dry	83.4			75	125	0804407-004A PDS	16926	
Beryllium	DUP		< 1.2	mg/Kg-dry		0	20			0804636-001A DUP	16912	16912
	LCS	51	48.81	mg/Kg-dry	95.7			83.1	116.9	16912 LCS	16912	
	MBLK		< 0.25	mg/Kg-dry						16912 MBLK	16912	
	MS	49.42	45.19	mg/Kg-dry	91.4			75	125	0804636-001A MS	16912	16912
	MSD	49.47	45.13	mg/Kg-dry	91.2	0.146	20	75	125	0804636-001A MS	16912	16912
	PDS	493.6	453	mg/Kg-dry	91.8			75	125	0804636-001A PDS	16912	
Cadmium	DUP		0.1897	mg/Kg-dry		14.2	20			0804407-004A DUP	16926	16926
	LCS	182	168.5	mg/Kg-dry	92.6			81.87	118.13	16926 4-24 6020 S	16926	
	MBLK		< 0.10	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	9.072	mg/Kg-dry	89.4			70	130	0804407-004A MS	16926	16926
	MSD	9.966	8.346	mg/Kg-dry	82.1	8.34	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	100.2	mg/Kg-dry	100			75	125	0804407-004A PDS	16926	
Chromium	DUP		44.09	mg/Kg-dry		6.21	20			0804407-004A DUP	16926	16926
	LCS	142	145.2	mg/Kg-dry	102			80.99	119.72	16926 4-24 6020 S	16926	
	MBLK		0.2623	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	43.5	mg/Kg-dry	20.8			70	130	0804407-004A MS	16926	16926
	MSD	9.966	44.46	mg/Kg-dry	30.4	2.18	20	70	130	0804407-004A MS	16926	16926
	PDS	99.76	140.5	mg/Kg-dry	99.3			75	125	0804407-001A PDS	16926	
Cobalt	DUP		23.78	mg/Kg-dry		10.8	20			0804407-004A DUP	16926	16926
	LCS	110	114	mg/Kg-dry	104			82.18	118.18	16926 4-24 6020 S	16926	
	MBLK		< 1.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	29.2	mg/Kg-dry	78.9			70	130	0804407-004A MS	16926	16926
	MSD	9.966	24.27	mg/Kg-dry	29.4	18.4	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	120.4	mg/Kg-dry	99.4			75	125	0804407-004A PDS	16926	
Copper	DUP		476.2	mg/Kg-dry		4.45	20			0804407-004A DUP	16926	16926
	LCS	132	131.6	mg/Kg-dry	99.7			83.33	117.42	16926 4-24 6020 S	16926	
	MBLK		< 2.0	mg/Kg-dry						16926 4-24 6020 S	16926	

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Copper	MS	9.962	469.9	mg/Kg-dry	145			70	130	0804407-004A MS	16926	16926
	MSD	9.966	436.1	mg/Kg-dry	-194	7.46	20	70	130	0804407-004A MS	16926	16926
	PDS	498.1	983.6	mg/Kg-dry	109			75	125	0804407-004A PDS	16926	
Lead	DUP		2.994	mg/Kg-dry		20.5	20			0804407-004A DUP	16926	16926
	LCS	72.2	75.31	mg/Kg-dry	104			81.86	118.28	16926 4-24 6020 S	16926	
	MBLK		< 0.40	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	11.01	mg/Kg-dry	86.1			70	130	0804407-004A MS	16926	16926
	MSD	9.966	10.33	mg/Kg-dry	79.2	6.37	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	102.4	mg/Kg-dry	100			75	125	0804407-004A PDS	16926	
Mercury	DUP		0.01195	mg/Kg-dry		0	20			0804504-001A DUP	R59194	
	LCS	8.48	8.011	mg/Kg-dry	94.5			66	132.1	LCS	R59194	16240
	MBLK		0.00299	mg/Kg-dry						MBLK	R59194	15569
	MS	0.2773	0.2984	mg/Kg-dry	103			70	130	0804504-001A MS	R59194	
	MSD	0.2782	0.2935	mg/Kg-dry	101	1.64	20	70	130	0804504-001A MS	R59194	
Nickel	DUP		11.64	mg/Kg-dry		0.0128	20			0804407-004A DUP	16926	16926
	LCS	155	152.9	mg/Kg-dry	98.7			82.58	117.42	16926 4-24 6020 S	16926	
	MBLK		< 5.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	21.89	mg/Kg-dry	103			70	130	0804407-004A MS	16926	16926
	MSD	9.966	20.03	mg/Kg-dry	84.2	8.84	20	70	130	0804407-004A MS	16926	16926
	PDS	498.1	605	mg/Kg-dry	121			75	125	0804407-004A PDS	16926	
PMOIST	DUP		18.62	wt%		2.93	20			0804407-004A DUP	R58992	16926
	LCS	98	97.97	wt%	100			95	108	LCS #1	R58992	
	MBLK		100	wt%						Method Blank #1	R58992	
Selenium	DUP		0.91	mg/Kg-dry		0	20			0804407-004A DUP	16926	16926
	LCS	165	163.5	mg/Kg-dry	99.1			77.58	123.03	16926 4-24 6020 S	16926	
	MBLK		< 1.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	9.082	mg/Kg-dry	80.5			70	130	0804407-004A MS	16926	16926
	MSD	9.966	8.668	mg/Kg-dry	76.3	4.67	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	97.94	mg/Kg-dry	97.3			75	125	0804407-004A PDS	16926	
Silver	DUP		< 0.20	mg/Kg-dry		0	20			0804407-004A DUP	16926	16926
	LCS	126	125.3	mg/Kg-dry	99.4			66.43	134.13	16926 4-24 6020 S	16926	
	MBLK		< 0.20	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	4.981	4.242	mg/Kg-dry	85.2			70	130	0804407-004A MS	16926	16926
	MSD	4.983	3.935	mg/Kg-dry	79	7.5	20	70	130	0804407-004A MS	16926	16926
	PDS	49.81	53.82	mg/Kg-dry	108			75	125	0804407-004A PDS	16926	
Thallium	DUP		< 0.40	mg/Kg-dry		0	20			0804407-004A DUP	16926	16926
	LCS	184	202.8	mg/Kg-dry	110			77.17	122.28	16926 4-24 6020 S	16926	
	MBLK		< 0.40	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	8.698	mg/Kg-dry	87.3			70	130	0804407-004A MS	16926	16926
	MSD	9.966	8.159	mg/Kg-dry	81.9	6.4	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	101.8	mg/Kg-dry	102			75	125	0804407-004A PDS	16926	
Tin	DUP		< 49	mg/Kg-dry		0	20			0804636-001A DUP	16912	16912
	LCS	153	155.2	mg/Kg-dry	101			69.9	130.1	16912 LCS	16912	
	MBLK		3.823	mg/Kg-dry						16912 MBLK	16912	

5/1/2008

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804407

Project: 35256-0995 (5/1)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Tin	MS	49.42	47.42	mg/Kg-dry	96			75	125	0804636-001A MS	16912	16912
	MSD	49.47	47.12	mg/Kg-dry	95.3		20	75	125	0804636-001A MS	16912	16912
	PDS	987.3	893	mg/Kg-dry	90.5			75	125	0804636-001A PDS	16912	
Vanadium	DUP		310.2	mg/Kg-dry		2.14	20			0804407-004A DUP	16926	16926
	LCS	186	191.6	mg/Kg-dry	103			77.42	123.12	16926 4-24 6020 S	16926	
	MBLK		< 5.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	0.2	302.9	mg/Kg-dry	-367			70	130	0804407-004A MS	16926	16926
	MSD	0.2	288.9	mg/Kg-dry	-7360	4.73	20	70	130	0804407-004A MS	16926	16926
	PDS	498.1	918.8	mg/Kg-dry	124			75	125	0804407-004A PDS	16926	
Zinc	DUP		112.1	mg/Kg-dry		0.403	20			0804407-004A DUP	16926	16926
	LCS	346	343.6	mg/Kg-dry	99.3			78.9	120.81	16926 4-24 6020 S	16926	
	MBLK		0.8184	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	117.1	mg/Kg-dry	45.6			70	130	0804407-004A MS	16926	16926
	MSD	9.966	114.7	mg/Kg-dry	21.8	2.05	20	70	130	0804407-004A MS	16926	16926
	PDS	99.62	213.2	mg/Kg-dry	101			75	125	0804407-004A PDS	16926	

Reviewed By _____ Date _____

Notes: MBLK: Method Blank PDS: Post Digestion/Distillation Spike MSD: Matrix Spike Duplicate DUP: Duplicate
MS: Matrix Spike LCS(D): Laboratory Control Sample (Duplicate) RPD: Relative Percent Difference REC: Recovery
ICB/ICV: Initial Calibration Blank(Verification Standard) CCB/CCV: Continuing Calibration Blank(Verification Standard)

Report ID: HMA0022v1
Sequence: 413057

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 10-Apr-08 1:40:08 PM
Page: 1 of 3

2 BATCHES

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

0804407

Section I - Contract/Project Information

Contract Information

Pickup Order: **918/1**
DLS WO#: 29805
Batch: 2660
Contractor Code: GAS
HBN: 208212
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
~~Sent by Team: MET~~
Priority: Standard
~~# of Samples: 5~~

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29805
DLS Profile#: 35256

Contractor Due Date
PDF _____
Hardcopy 1 May 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) 4/10/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) 4-10-08 1411

Number of samples received intact: 5 (#/All)

Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Brooks

Delivery Data: Email (Means of Delivery - UPS/FedEx) 5/1/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS2092	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2280	GAS2281	GAS2283	GAS2416	GAS776
29805001	73SB02-01	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29805002	73SB02-04	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29805003	73SB14-01	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29805005	73SB27-01	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29805006	73SB27A-01	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2153	Nickel (Ni)		5
	Procedure Description	EPA 6020	
GAS2092	Mercury (Hg) EPA 7471		5
	Procedure Description	EPA 7471	
GAS2146	Antimony (Sb)		5
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		5
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		5
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		5
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		5
	Procedure Description	EPA 6020	
GAS1717	%Moisture		5
	Procedure Description	EPA 160.3	
GAS2152	Thallium (Tl)		5
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	5

GAS776	Copper (Cu)		5
	Procedure Description	EPA 6020	
GAS2154	Silver (Ag)		5
	Procedure Description	EPA 6020	
GAS2180	Selenium (Se)		5
	Procedure Description	EPA 6020	
GAS2181	Zinc (Zn)		5
	Procedure Description	EPA 6020	
GAS2360	Berylium (Be)		5
	Procedure Description	EPA 6020	
GAS2361	Cobalt (Co)		5
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		5
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 6010B (Soil)		5
	Procedure Description	SW-846/EPA 6010	
GAS2151	Lead (Pb)		5
	Procedure Description	EPA 6020	

Report ID: HMA0022v1
Sequence: 413059

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 10-Apr-08 1:40:35 PM
Page: 1 of 3

2 BATCHES

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

Section I - Contract/Project Information

Contract Information

Pickup Order: 918/1
DLS WO#: 29805
Batch: 2661
Contractor Code: GAS
HBN: 208213
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 1

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38–38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29805
DLS Profile#: 35256

Contractor Due Date
PDF
Hardcopy 1 MAY 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) 4/10/08 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) 4-10-08 1411

Number of samples received intact: 1 (#/All)

Number of samples received broken: None (#/None)

Data package received by at CHPPM: _____

Delivery Date: _____ (Means of Delivery - UPS/FedEx) _____ Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS2092	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2380	GAS2381	GAS2383	GAS2416	GAS776
29805007	73SB27-09	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2153	Nickel (Ni)		1
	Procedure Description	EPA 6020	
GAS2092	Mercury (Hg) EPA 7471		1
	Procedure Description	EPA 7471	
GAS2146	Antimony (Sb)		1
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		1
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		1
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		1
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		1
	Procedure Description	EPA 6020	
GAS1717	%Moisture		1
	Procedure Description	EPA 160.3	
GAS2152	Thallium (Tl)		1
	Procedure Description	EPA 6020	
GAS776	Copper (Cu)		1
	Procedure Description	EPA 6020	
GAS2154	Silver (Ag)		1
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	1

GAS2180	Selenium (Se)		1
	Procedure Description	EPA 6020	
GAS2181	Zinc (Zn)		1
	Procedure Description	EPA 6020	
GAS2360	Beryllium (Be)		1
	Procedure Description	EPA 6020	
GAS2361	Cobalt (Co)		1
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		1
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 6010B (Soil)		1
	Procedure Description	SW-846/EPA 6010	
GAS2151	Lead (Pb)		1
	Procedure Description	EPA 6020	

Report ID: HRA0191C-ACodes
COC #: 411773

Run Date: 09-Apr-08 8:20
Generated By: CHRISTINA.MOORER

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

QA Review Required

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/8/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35256 - 0995
Workorder #: 29805
Queue: GAS
Location: NAPR-Cp Moscrip
Jono: 77HRW
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~35256
Workorder ID: 099599
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes: Recvd 4 cont for sample 73FB-03 and (2) containers for sample 73FB-03A. H.Taylor 4/8/08 Sample ID 73SB14-04 was not received H.Taylor 4/8/08

Total Samples: 6 **Total Containers:** 6

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29805001	29805001-1	73SB02-01	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 10:15 AM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2092 : Mercury (Hg) EPA 7471
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29805002	29805002-1	73SB02-04	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 10:25 AM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2092 : Mercury (Hg) EPA 7471
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

29805003	29805003-1	73SB14-01	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 11:05 AM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2092 : Mercury (Hg) EPA 7471
GAS2146 : Antimony (Sb)

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 411773

USACHPPM
Readiness thru Health

Run Date: 09-Apr-08 8:20
Generated By: CHRISTINA.MOORER

Profile:	35256 - 0995	Description:	NAPR CMS-Cp Moscrip~35256
Workorder #:	29805	Workorder ID:	099599
Queue:	GAS	Customer:	Program 38

GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V) GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29805005	29805005-1	73SB27-01	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 01:15 PM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2092 : Mercury (Hg) EPA 7471 GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V) GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29805006	29805006-1	73SB27A-01	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 01:45 PM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2092 : Mercury (Hg) EPA 7471 GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V) GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

29805007	29805007-1	73SB27-09	SAMPLE	SO	Soil	2.0	degrees C	08-Apr-2008 09:40 AM	07-Apr-2008 02:25 PM	06-May-2008

ACodes:
GAS1288 : EPA 3050 Prep GAS1717 : %Moisture GAS2092 : Mercury (Hg) EPA 7471 GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As) GAS2148 : Chromium (Cr) GAS2149 : Barium (Ba) GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb) GAS2152 : Thallium (Tl) GAS2153 : Nickel (Ni) GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se) GAS2181 : Zinc (Zn) GAS2360 : Beryllium (Be) GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V) GAS2416 : Tin (Sn) 6010B (Soil) GAS776 : Copper (Cu)

Total Samples: 6	Total Containers: 6

Samples Received By:		Date Received:	4-10-08
Document Reviewed By:	~~Christina Moorer~~ Heidi Taylor Initials: HT	Date Reviewed:	9 Apr 08
Document Quality Review By:		Date Reviewed:	↓
Samples Approved For Distribution:	Yes ✓ No ___ Initials: CL	Date Approved:	↓

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 411773

USACHPPM
Readiness thru Health

Run Date: 09-Apr-08 8:20
Generated By: CHRISTINA.MOORER

Profile: 35256 - 0995	Description: NAPR CMS-Cp Moscrip~35256
Workorder #: 29805	Workorder ID: 099599
Queue: GAS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
29805001	73SB02-01	29805001-1	SO
29805003	73SB14-01	29805003-1	SO
29805006	73SB27A-01	29805006-1	SO

HSN	Customer Sample Id	Container Id	Mx
29805002	73SB02-04	29805002-1	SO
29805005	73SB27-01	29805005-1	SO
29805007	73SB27-09	29805007-1	SO

Total Samples: 6

Total Containers: 6

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
		4-8-08/1645	See SML's Comments	4-8-08/1645	Returned to holding refrigerator in room #0202. Completed % Moisture prep
		4-10-08 1411		4-10-08 1411	
		4-10-08 1535			

Remarks:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35256 - 0995
Workorder #: 29805
Queue: GAS

Description: NAPR CMS-Cp Moscrip~35256
Workorder ID: 099599
Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29805001		1		
29805002		1		
29805003		1		
29805005		1		
29805006		1		
29805007		1		

Total Samples: 6 | Total Containers: 6

Custody

NR=Not Reported.

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones DIVISION/TEAM: _____

INSTALLATION: NAPR- Cp Moserip CONTRACT LAB: Gascoyne

PROJECT NO: Program 38 LIMS W.O. NO: 30362

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

__✓__ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____ OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrows
DATE: 29 May 08

LIDS 2.0 Feb 06

Microbac
www.microbac.com

Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals
Contract #W91ZLK-05-C-0025
Bldg E2100, Rm 201
APG, MD 21010-5422
Attn: Heidi Taylor

Page 1

Report No. 0805540

This report of analysis contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 5/16/2008 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 4 Pages plus Attachment(s)

Final report reviewed by: Michael D. Arbaugh, Sr./Division Manager

Report issue date 5/28/2008

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com

Microbac Laboratories, Inc. Baltimore Division- laboratory accreditations: MD 109, VA 00152, PA 68-339, NY 11158, SC 86010, ISO 17025, NELAC, AIHA 100491. The data and information on this, and other accompanying documents, represents only the sample(s) analyzed and is not to be reproduced wholly or in part for advertising or other purposes without written approval from the laboratory. Organics Qualifiers: (U) analyzed for but not detected; (J) estimated value, below the reporting limit but above one-half the reporting limit; (B) detected in the associated method blank; (D) reanalyzed at a higher dilution factor. Inorganics Qualifiers: (U) analyzed for but not detected; (B) estimated value, below the reporting limit but above one-half the reporting limit. A copy of COC is attached.

Microbac
www.microbac.com

Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Sample Summary

Project: 35553-0995 (5/29)

Report No: 0805540

Date Received 5/16/2008

Client Sample ID	Lab Sample ID	Matrix	Collection Date	Collection Time
30362001 73SB02-01	0805540-001A	Soil	5/7/2008	10:15
30362002 731DW-01	0805540-002A	Soil	4/10/2008	10:15
30362003 73SB02-04	0805540-003A	Soil	4/7/2008	10:25
30362004 73SB14-01	0805540-004A	Soil	4/7/2008	11:05
30362005 73SB27-01	0805540-005A	Soil	4/7/2008	13:15
30362006 73SB27A-01	0805540-006A	Soil	4/7/2008	13:45
30362007 73SB27-09	0805540-007A	Soil	4/7/2008	14:25

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Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Test Results

Client: USACHPPM-Metals

Report No: 0805540

Project: 35553-0995 (5/29)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0805540-001			**Collection Date:** 5/7/2008 10:15:00 AM	
Client Sample ID: 30362001 73SB02-01			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 5/22/2008 1:28:00 PM		Prep Analyst EDP	
Arsenic	0.96	0.40	mg/Kg-dry	5/23/2008 12:19
Lab ID: 0805540-002			**Collection Date:** 4/10/2008 10:15:00 AM	
Client Sample ID: 30362002 731DW-01			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 5/22/2008 1:28:00 PM		Prep Analyst EDP	
Arsenic	< 0.39	0.39	mg/Kg-dry	5/23/2008 12:23
Lab ID: 0805540-003			**Collection Date:** 4/7/2008 10:25:00 AM	
Client Sample ID: 30362003 73SB02-04			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date: 5/22/2008 1:28:00 PM		Prep Analyst EDP	
Arsenic	< 0.39	0.39	mg/Kg-dry	5/23/2008 12:48

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Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

Test Results

Client: USACHPPM-Metals

Report No: 0805540

Project: 35553-0995 (5/29)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0805540-004			**Collection Date:** 4/7/2008 11:05:00 AM	
Client Sample ID: 30362004 73SB14-01			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	5/22/2008 1:28:00 PM	Prep Analyst	EDP
Arsenic	0.74	0.40	mg/Kg-dry	5/23/2008 13:05
Lab ID: 0805540-005			**Collection Date:** 4/7/2008 1:15:00 PM	
Client Sample ID: 30362005 73SB27-01			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	5/22/2008 1:28:00 PM	Prep Analyst	EDP
Arsenic	< 0.40	0.40	mg/Kg-dry	5/23/2008 13:09
Lab ID: 0805540-006			**Collection Date:** 4/7/2008 1:45:00 PM	
Client Sample ID: 30362006 73SB27A-01			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	5/22/2008 1:28:00 PM	Prep Analyst	EDP
Arsenic	< 0.39	0.39	mg/Kg-dry	5/23/2008 13:13
Lab ID: 0805540-007			**Collection Date:** 4/7/2008 2:25:00 PM	
Client Sample ID: 30362007 73SB27-09			**Matrix:** SOIL	
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	5/22/2008 1:28:00 PM	Prep Analyst	EDP
Arsenic	< 0.40	0.40	mg/Kg-dry	5/23/2008 13:17

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2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
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CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0805540
Report To: U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

May 28, 2008
page 1 of 1

Pick-Up Order: 1027/1
Date Samples Received: 05/16/2008

Sample Numbers: 30362001 - 30362007 Matrix: Soil

Seven samples were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

- Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. None.

Notes:
1. None.

Microbac Laboratories, Inc., Baltimore Division

L. Burwell Gunn III
Inorganic Production Manager

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

5/28/2008

Company: USACHPPM-Metals

Report No: 0805540

Project: 35553-0995 (5/29)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Arsenic	DUP		0.2481	mg/Kg-dry		0	20			0805540-002A DUP	17102	17102
	LCS	280	290.4	mg/Kg-dry	104			80.71	118.93	17102 5-22 6020 S	17102	
	MBLK		< 0.40	mg/Kg-dry						17102 5-22 6020 S	17102	
	MS	9.852	10.27	mg/Kg-dry	102			70	130	0805540-002A MS	17102	17102
	MSD	9.86	9.983	mg/Kg-dry	99.1	2.84	20	70	130	0805540-002A MS	17102	17102
	PDS	98.74	101.3	mg/Kg-dry	102			75	125	0805540-002A PDS	17102	

Reviewed By _____ Date _____

Notes: MBLK: Method Blank PDS: Post Digestion/Distillation Spike MSD: Matrix Spike Duplicate DUP: Duplicate
MS: Matrix Spike LCS(D): Laboratory Control Sample (Duplicate) RPD: Relative Percent Difference REC: Recovery
ICB/ICV: Initial Calibration Blank(Verification Standard) CCB/CCV: Continuing Calibration Blank(Verification Standard)

MAY 0 5 2008

U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DIRECTORATE OF LABORATORY SCIENCES (DLS)

5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403
(410) 436-2208

FINAL ANALYTICAL REPORT

CLIENT: Mr. David Jones
USACHPPM
MCHB-TS-EGW
5158 Blackhawk Rd Bldg E1677
Gunpowder MD 21010 United States
5-2305

PROJECT SITE: NAPR-Cp Moscrip
PROGRAM 38 **SUBJONO:** 0995
DLS PROFILE #: 35256 **DLS WORK ORDER #:** 29805
REPORT SERIAL NUMBER: 417817

This report shall not be reproduced except in full without the written approval of DLS. The results relate only to the specific samples identified within the report.

REPORT RELEASE AUTHORIZATION:

Signature: _____ **Date:** 5 May 2008

Charles Stoner, Ph.D, Chief, Analytical Spectrometry Division

DLS HOLDS ACCREDITATION FROM AIHA, A2LA, NLLAP, AND COLA

Readiness thru Health

CASE NARRATIVE

Provided are the results for six soil and four ground water samples submitted from Camp Moscrip with chain of custody for metals analysis. The soil samples (DLS#s: 29805 001-003, 005-007) were requested for mercury (Hg) analysis. The ground water samples (DLS#s: 29805 008-011) were requested for seventeen metals (Sn, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn and Hg) analysis. The samples were collected on 07 Apr 08 and received in DLS on 08 Apr 08. The samples were received at 2 degrees C which is within the acceptable temperature range of 2-6 degrees C. Two ground water samples DLS#s: 29805 009 (container 29805 009-2 for Hg) and 29805 010 (both containers: 29805 010-1, 2) arrived not acid preserved. They had pH values>2.0 pH units. The samples pH was adjusted to< 2.0 pH units, as required by method. The required holding times were met.

Sample Preparation:
The ground water samples were digested for Sn on 28-29 Apr 08 IAW EPA 3010A / SOP MET 14.7. The ground water samples were digested for all other metals on 28-29 Apr 08 IAW EPA 3020A / SOP MET 13.7
The ground water samples were prepared for Hg analysis on 24 Apr 08 IAW EPA 7470A / SOP MET 19.6.

The soil samples were prepared for Hg analysis on 23 Apr 08 IAW EPA 7471B / SOP MET 20.6.

Sample Analysis-Ground Water:
The tin (Sn) was determined on 01 May 08 IAW EPA 6010B / SOP MET 42.7 using the PE ICP 4300DV. The reporting limit (RL) was met.

The fifteen metals (Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn), were determined on 01 May 07 IAW EPA 6020B / SOP MET 9.5 using the AG 4500 ICP-MS instrumentation. All reporting limits were met.

The samples were analyzed for Hg on 25 Apr 08 IAW EPA 7470A / SOP MET 19.6 using FIMS II. The reporting limit was met.

Sample Analysis- Soil:
The soil samples were analyzed for Hg on 24 April 08 IAW EPA 7471B / SOP MET 20.6 using FIMS II. The reporting limit was met

Quality control:
The following QC were analyzed with this data set for ground water samples: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and post digestion instrument spike (IS) samples.
The following QC were analyzed with this data set for soil samples: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and post digestion instrument spike (IS) samples.

All QC results were within acceptance limits except for the following:

3-MSs
Be 73.00% (limit: 80%-120%)
Se 68.96% (limit: 80%-120%)
Zn 66.88% (limit: 80%-120%)

1-IS
Be 73.63% (limit: 75%-125%)

2-LCS
Se 67.70% (limit: 80%-120%)
Be 71.94% (limit: 80%-120%)

The low recoveries in: MS (for: Be, Se, Zn); LCS (for Se, Be); IS (for Ba) are attributed to matrix interference. Additionally, Se needed a 1:10 sample dilution for acceptable IS recovery due to matrix interference. Based on the failed QC results and suspected matrix interference the reported results for Se, Be and Zn are considered as estimates.

The ground water results are reported in mg/L for EPA Methods 6010B; ug/L for EPA Methods 6020B and 7470A. The soil results for Hg are reported in mg/kg on the dry weight basis

List of the report contents:

DLS Final Analytical Report, NAPR-Cp Moscrip
Program 38, SUBJONO 0995, DLS WO# 29805, Report Serial No. 417817, 5/5/2008

Section	Number of Pages
Transmittal Memo	0
Cover Letter	1
Case Narrative	2
Sample Summary	1
Analytical Data Report	6
Quality Control Data Report	5
Raw Data	
Terminology/Abbreviations	1

Report Point-of-Contact: Charles Stoner
Reviewer: WD / DB

List of all tests used:

DLS Procedure	Count
EPA 6010 MET42	4
EPA 6020 MET9	60
EPA 7470 MET19	4
EPA 7471 MET20	6

Number of samples included in the report, by matrix:

Matrix	Quantity
Soil	6
Water (Ground water)	4

Analyst(s):

Analyst Code	Analyst Name	Signature
0180	BOWMANDL	Desiree L Bowman
0041	MCKENZIERM	for Maria Bergman
0062	SIMONAS	Angelina Simon

SAMPLE SUMMARY

Sorted by Field ID

Field ID	DLS ID	Date Collected	Matrix
73ER-06	29805008	07-Apr-08	Water (Ground water)
73FB-03	29805009	07-Apr-08	Water (Ground water)
73FB-03 MS/MSD	29805011	07-Apr-08	Water (Ground water)
73FB-03A	29805010	07-Apr-08	Water (Ground water)
73SB02-01	29805001	07-Apr-08	Soil
73SB02-04	29805002	07-Apr-08	Soil
73SB14-01	29805003	07-Apr-08	Soil
73SB27-01	29805005	07-Apr-08	Soil
73SB27-09	29805007	07-Apr-08	Soil
73SB27A-01	29805006	07-Apr-08	Soil

ANALYTICAL DATA REPORT

(FORMAT OPTION 1)
Sorted by Field ID

FINAL REPORT

Field ID: 73ER-06 **DLS ID:** 29805008

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	12.7 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73FB-03 **DLS ID:** 29805009

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	51.1 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	40.5 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73FB-03 MS/MSD **DLS ID:** 29805011

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	52.4 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	33.0 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73FB-03A **DLS ID:** 29805010

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Barium	5.28 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Copper	52.4 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	25-Apr-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0041	01-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0041	01-May-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0041	01-May-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0041	01-May-08
Zinc	32.8 ug/L	5.00	EPA 6020 MET9	0041	01-May-08

FINAL REPORT

Field ID: 73SB02-01 **DLS ID:** 29805001

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.102 mg/kg	0.0117	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73SB02-04 **DLS ID:** 29805002

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0128 mg/kg	0.0128	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73SB14-01 **DLS ID:** 29805003

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	0.0311 mg/kg	0.0126	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73SB27-01 **DLS ID:** 29805005

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0120 mg/kg	0.0120	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73SB27-09 **DLS ID:** 29805007

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0133 mg/kg	0.0133	EPA 7471 MET20	0180	24-Apr-08

Field ID: 73SB27A-01 **DLS ID:** 29805006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED

FINAL REPORT

Field ID: 73SB27A-01 **DLS ID:** 29805006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0137 mg/kg	0.0137	EPA 7471 MET20	0180	24-Apr-08

Report ID: HMA0189v1
Report Seq: 417775

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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Quality Control Report

DLS Workorder: 29805
Installation: NAPR-Cp Moscrip
Project Officer: David Jones
Profile: 0995

Report ID: HMA0189v1
Report Seq: 417775
Workorder No: 29805
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

Date Generated: 5/5/2008 11:39:09 AM
Generated By: WANDA.DUDEK

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Instrument Spike Sample Report

Analyte	Date	Sample Number	Mx		Initial Result	Units	Sample Volume	Spike Solution Conc	Spike Volume	Spiked Result	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/24/2008	29805001 IS	SO		2.1	ug/L	8	10	2	3.974	**114.70**	BOWMANDL	EPA 7471 MET2	WANDA.DUD	☐	85	115
Tin	5/1/2008	29805008 IS	GW	<	0.2	mg/L	9.9	100	0.1	1.025	**102.50**	SIMONAS	EPA 6010 MET4	WANDA.DUD	☐		
Selenium	5/1/2008	29805008 10X IS	GW	<	4	ug/L	10	10000	0.05	45.6	**91.66**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Antimony	5/1/2008	29805008 IS	GW	<	5	ug/L	10	10000	0.05	45.43	**91.31**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Arsenic	5/1/2008	29805008 IS	GW	<	4	ug/L	10	10000	0.05	40.65	**81.71**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Barium	5/1/2008	29805008 IS	GW	<	5	ug/L	10	10000	0.05	52.45	**105.42**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Beryllium	5/1/2008	29805008 IS	GW	<	2	ug/L	10	10000	0.05	36.63	**73.63**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☑	75	125
Cadmium	5/1/2008	29805008 IS	GW	<	2	ug/L	10	10000	0.05	42.85	**86.13**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Chromium	5/1/2008	29805008 IS	GW	<	4	ug/L	10	10000	0.05	50.32	**101.14**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Cobalt	5/1/2008	29805008 IS	GW	<	4	ug/L	10	10000	0.05	48.56	**97.61**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Copper	5/1/2008	29805008 IS	GW	<	5	ug/L	10	10000	0.05	50.19	**100.88**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Lead	5/1/2008	29805008 IS	GW	<	4	ug/L	10	10000	0.05	51.81	**104.14**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Mercury	4/25/2008	29805008 IS	GW	<	0.2	ug/L	8	10	2	1.82	**91.00**	BOWMANDL	EPA 7470 MET1	WANDA.DUD	☐	85	115
Nickel	5/1/2008	29805008 IS	GW	<	10	ug/L	10	10000	0.05	48.83	**98.15**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Silver	5/1/2008	29805008 IS	GW	<	2	ug/L	10	10000	0.05	49.13	**98.75**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Thallium	5/1/2008	29805008 IS	GW	<	4	ug/L	10	10000	0.05	52.29	**105.10**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Vanadium	5/1/2008	29805008 IS	GW	<	5	ug/L	10	10000	0.05	49.41	**99.31**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125
Zinc	5/1/2008	29805008 IS	GW		12.72	ug/L	10	10000	0.05	51.46	**77.99**	MCKENZIER	EPA 6020 MET9	WANDA.DUD	☐	75	125

Report ID: HMA0189v1
Report Seq: 417775
Workorder No: 29805
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness thru Health

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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Laboratory Control Samples Report

Analyte	Date	Sample Number	Mx	Observed	Units	Theoretical	Units	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/24/2008	08HGL2-7	SO	39.96	ug/L	48.888	ug/L	**61.74**	BOWMANDL	EPA 7471 MET20	WANDA.DUD	☐	70	130
Mercury	4/25/2008	08HGL2-8	GW	4.67	ug/L	5	ug/L	**93.40**	BOWMANDL	EPA 7470 MET19	WANDA.DUD	☐	80	120
Tin	5/1/2008	08LCS2-91	GW	1.061	mg/L	1	mg/L	**106.10**	SIMONAS	EPA 6010 MET42	WANDA.DUD	☐	80	120
Antimony	5/1/2008	08LCS2-92	GW	44.22	ug/L	50	ug/L	**88.44**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Arsenic	5/1/2008	08LCS2-92	GW	40.2	ug/L	50	ug/L	**80.40**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Barium	5/1/2008	08LCS2-92	GW	50.64	ug/L	50	ug/L	**101.28**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Beryllium	5/1/2008	08LCS2-92	GW	35.97	ug/L	50	ug/L	**71.94**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☑	80	120
Cadmium	5/1/2008	08LCS2-92	GW	42.85	ug/L	50	ug/L	**85.70**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Chromium	5/1/2008	08LCS2-92	GW	48.77	ug/L	50	ug/L	**97.54**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Cobalt	5/1/2008	08LCS2-92	GW	47.85	ug/L	50	ug/L	**95.70**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Copper	5/1/2008	08LCS2-92	GW	49.97	ug/L	50	ug/L	**99.94**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Lead	5/1/2008	08LCS2-92	GW	50.64	ug/L	50	ug/L	**101.28**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Nickel	5/1/2008	08LCS2-92	GW	47.85	ug/L	50	ug/L	**95.70**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Selenium	5/1/2008	08LCS2-92	GW	33.85	ug/L	50	ug/L	**67.70**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☑	80	120
Silver	5/1/2008	08LCS2-92	GW	48.87	ug/L	50	ug/L	**97.74**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐		
Thallium	5/1/2008	08LCS2-92	GW	51.16	ug/L	50	ug/L	**102.32**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Vanadium	5/1/2008	08LCS2-92	GW	48.08	ug/L	50	ug/L	**96.16**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120
Zinc	5/1/2008	08LCS2-92	GW	57.17	ug/L	50	ug/L	**114.34**	MCKENZIERM	EPA 6020 MET9	WANDA.DUD	☐	80	120

Report ID: HMA0189v1
Report Seq: 417775
Workorder No: 29805
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness thru Health

Date Generated: 5/5/2008 11:39:19 AM
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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Matrix Spike Duplicates Report

Analyte	Date	Sample Number	Mx	MS Result	Units	MSD Result	Units	% RPD	Recovery	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/24/2008	29805001 MSD	SO	5.387	ug/L	5.224	ug/L	3.07	69.66	BOWMANDL	EPA 7471 MET20	WANDA.DUDE	☐		
Tin	5/1/2008	29805006 MSD	GW	1.065	mg/L	1.037	mg/L	2.66		SIMONAS	EPA 6010 MET42	WANDA.DUDE	☐		
Antimony	5/1/2008	29805008 MSD	GW	44.93	ug/L	44.34	ug/L	1.32	88.68	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Arsenic	5/1/2008	29805008 MSD	GW	40.88	ug/L	40.48	ug/L	0.98	80.96	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Barium	5/1/2008	29805008 MSD	GW	51.18	ug/L	50.99	ug/L	0.37	101.98	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Beryllium	5/1/2008	29805008 MSD	GW	36.5	ug/L	35.72	ug/L	2.16	71.44	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Cadmium	5/1/2008	29805008 MSD	GW	42.98	ug/L	42.77	ug/L	0.49	85.54	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Chromium	5/1/2008	29805008 MSD	GW	49.59	ug/L	48.7	ug/L	1.81	97.40	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Cobalt	5/1/2008	29805008 MSD	GW	48.51	ug/L	48	ug/L	1.06	96.00	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Copper	5/1/2008	29805008 MSD	GW	50.28	ug/L	50.08	ug/L	0.40	100.16	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Lead	5/1/2008	29805008 MSD	GW	50.47	ug/L	51.16	ug/L	1.36	102.32	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Mercury	4/25/2008	29805008 MSD	GW	4.265	ug/L	4.417	ug/L	3.50	88.34	BOWMANDL	EPA 7470 MET19	WANDA.DUDE	☐		
Nickel	5/1/2008	29805008 MSD	GW	48.81	ug/L	48.39	ug/L	0.86	96.78	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Selenium	5/1/2008	29805008 MSD	GW	34.48	ug/L	33.6	ug/L	2.59	67.20	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Silver	5/1/2008	29805008 MSD	GW	49.43	ug/L	49.16	ug/L	0.55	98.32	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Thallium	5/1/2008	29805008 MSD	GW	51.5	ug/L	51.78	ug/L	0.54	103.56	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Vanadium	5/1/2008	29805008 MSD	GW	48.76	ug/L	48.37	ug/L	0.80	96.74	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		
Zinc	5/1/2008	29805008 MSD	GW	46.16	ug/L	51.41	ug/L	10.76	77.38	MCKENZIER	EPA 6020 MET9	WANDA.DUDE	☐		

Report ID: HMA0189v1
Report Seq: 417775
Workorder No: 29805
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

Date Generated: 5/5/2008 11:39:23 AM
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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Matrix (Pre-digested) Spike Sample Report

Analyte	Date	Sample Number	Mx		Initial Result	Units	MS Result	Units	Theoretical	Units	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Mercury	4/24/2008	29805001 MS	SO		1.741	ug/L	5.387	ug/L	5	ug/L	**72.92**	BOWMANDL	EPA 7471 MET20	WANDA.DU	☐	70	130
Tin	5/1/2008	29805008 MS	GW	<	0.2	mg/L	1.065	mg/L	1	mg/L	**106.50**	SIMONAS	EPA 6010 MET42	WANDA.DU	☐		
Antimony	5/1/2008	29805008 MS	GW	<	5	ug/L	44.93	ug/L	50	ug/L	**89.86**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Arsenic	5/1/2008	29805008 MS	GW	<	4	ug/L	40.88	ug/L	50	ug/L	**81.76**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Barium	5/1/2008	29805008 MS	GW	<	5	ug/L	51.18	ug/L	50	ug/L	**102.36**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Beryllium	5/1/2008	29805008 MS	GW	<	2	ug/L	36.5	ug/L	50	ug/L	**73.00**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☑	80	120
Cadmium	5/1/2008	29805008 MS	GW	<	2	ug/L	42.98	ug/L	50	ug/L	**85.96**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Chromium	5/1/2008	29805008 MS	GW	<	4	ug/L	49.59	ug/L	50	ug/L	**99.18**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Cobalt	5/1/2008	29805008 MS	GW	<	4	ug/L	48.51	ug/L	50	ug/L	**97.02**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Copper	5/1/2008	29805008 MS	GW	<	5	ug/L	50.28	ug/L	50	ug/L	**100.56**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Lead	5/1/2008	29805008 MS	GW	<	4	ug/L	50.47	ug/L	50	ug/L	**100.94**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Mercury	4/25/2008	29805008 MS	GW	<	0.2	ug/L	4.265	ug/L	5	ug/L	**85.30**	BOWMANDL	EPA 7470 MET19	WANDA.DU	☐	70	130
Nickel	5/1/2008	29805008 MS	GW	<	10	ug/L	48.81	ug/L	50	ug/L	**97.62**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐		
Selenium	5/1/2008	29805008 MS	GW	<	4	ug/L	34.48	ug/L	50	ug/L	**68.96**	MCKENZIER	EPA 8020 MET9	WANDA.DU	☑	80	120
Silver	5/1/2008	29805008 MS	GW	<	2	ug/L	49.43	ug/L	50	ug/L	**98.86**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Thallium	5/1/2008	29805008 MS	GW	<	4	ug/L	51.5	ug/L	50	ug/L	**103.00**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Vanadium	5/1/2008	29805008 MS	GW	<	5	ug/L	48.76	ug/L	50	ug/L	**97.52**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☐	80	120
Zinc	5/1/2008	29805008 MS	GW		12.72	ug/L	46.16	ug/L	50	ug/L	**66.88**	MCKENZIER	EPA 6020 MET9	WANDA.DU	☑	80	120

TERMINOLOGY/ABBREVIATIONS

Term	Description
MDA	The minimum detectable activity.
ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CFR	Code of Federal Regulations
OSHA	Occupational Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
ACCURACY	A measure of how close a measured value is to a known true value. Accuracy is assessed by means of reference samples and percent recoveries of spiked samples.
ANALYSIS OF VARIANCE	A technique of statistical analysis by which the components of variation for different elements of the data set are separated and estimated.
BLANK	An artificial sample designed to monitor the introduction of artifacts or contamination into the analytical process. The blank is taken through the appropriate steps in the analytical process. Examples are: trip, field, equipment, and reagent blanks.
AIHA	American Industrial Hygiene Association

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: *David Jones* DIVISION/TEAM: *ASD-Metals*

INSTALLATION: *NAPR-Cp Moscrip* CONTRACT LAB: *Microbac*

PROJECT NO: *38-0995* LIMS W.O. NO: *29847*

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

X OTHER.

COMMENTS/ NARRATIVE:

Please see the Contractor Case Narrative.

Arsenic was detected at 5.46 mg/kg in the method blank, and in the sample at 5.6 mg/kg. Arsenic measurements in this sample therefore needs to be rejected. Remember that the electronic data deliverable (EDD) for this sample set does not include method blank data, so that the arsenic measurements will be misinterpreted if the data are evaluated based solely on the EDD information.

Antimony was detected at 0.47 mg/kg in the method blank, and in the sample at <0.99 mg/kg. Remember that the electronic data deliverable (EDD) for this sample set does not include method blank data, so that the antimony measurements will be misinterpreted if the data are evaluated based solely on the EDD information.

Barium was detected at 0.94 mg/kg, chromium at 0.26 mg/kg, and zinc at 0.82 mg/kg in the method blank, but high levels of these metals were reported in the sample tested.

There were QC outliers reported for the matrix spike/matrix spike duplicates are judged to be the result of the high levels of native metals in the samples.

REVIEWED BY: *R. Valls* R. Valls
DATE: *8 May 08*

LIDS 2.0 Feb 06

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Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals
Contract #W91ZLK-05-C-0025
Bldg E2100, Rm 201
APG, MD 21010-5422
Attn: Heidi Taylor

Page 1

Report No. 0804485

This report of analysis contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 4/14/2008 .

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Test Results
- Chain of Custody [Attachment]

This Report of Analysis Contains 4 Pages plus Attachment(s)

Final report reviewed by: Michael D. Arbaugh, Sr./Division Manager

5/7/2008
Report issue date

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com

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Microbac Laboratories, Inc.
Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
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Sample Summary

Project: 35296-0995 (5/6)

Report No: 0804485

Date Received 4/14/2008

Client Sample ID	Lab Sample ID	Matrix	Collection Date	Collection Time
29847007 73 1DW-01	0804485-001A	Soil	4/10/2008	14:00

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Test Results

Client: USACHPPM-Metals

Report No: 0804485

Project: 35296-0995 (5/6)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
Lab ID: 0804485-001			**Collection Date:** 4/10/2008 2:00:00 PM	
Client Sample ID: 29847007 73 1DW-01			**Matrix:** SOIL	
METALS, TOTAL (EPA 6010B)				Analyst: APS
Prep. Method: SW846 3050B	Prep. Date:	4/22/2008 1:30:00 PM	Prep Analyst	EDP
Tin	< 50	50	mg/Kg-dry	4/24/2008 15:24
ICP/MS METALS, TOTAL (SW846 6020)				Analyst: PRM
Prep. Method: SW846 3050B	Prep. Date:	4/24/2008 7:18:00 AM	Prep Analyst	EDP
note: Method blank contained 5.5 mg/Kg-dry Arsenic.				
Antimony	< 0.99	0.99	mg/Kg-dry	4/28/2008 5:12
Arsenic	5.6	0.39	mg/Kg-dry	4/28/2008 5:12
Barium	290	4.9	mg/Kg-dry	4/29/2008 17:58
Beryllium	< 2.5	2.5	mg/Kg-dry	4/30/2008 18:26
Cadmium	0.85	0.099	mg/Kg-dry	4/28/2008 5:12
Chromium	31	0.49	mg/Kg-dry	4/28/2008 5:12
Cobalt	26	0.99	mg/Kg-dry	4/28/2008 5:12
Copper	270	2.0	mg/Kg-dry	4/29/2008 17:58
Lead	19	0.39	mg/Kg-dry	4/28/2008 5:12
Molybdenum	< 4.9	4.9	mg/Kg-dry	4/29/2008 17:58
Nickel	10	4.9	mg/Kg-dry	4/29/2008 17:58
Selenium	< 0.99	0.99	mg/Kg-dry	4/28/2008 5:12
Silver	< 0.20	0.20	mg/Kg-dry	4/28/2008 5:12
Thallium	< 0.39	0.39	mg/Kg-dry	4/28/2008 5:12
Vanadium	180	4.9	mg/Kg-dry	4/30/2008 18:26
Zinc	140	3.9	mg/Kg-dry	4/28/2008 5:12

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Test Results

Client: USACHPPM-Metals

Report No: 0804485

Project: 35296-0995 (5/6)

Analyses	Test Result	Reporting Limit	Units	Date/Time Analyzed
MOISTURE CONTENT (DRIED AT 105°C)				Analyst: LCR
Prep. Method: NA	Prep. Date: NA		Prep Analyst NA	
PMOIST	20	0.050	wt%	4/16/2008 15:00

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CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0804485
Report To: U.S. Army Center for Health Promotion and
Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

May 7, 2008
page 1 of 1

Pick-Up Order: 936/1
Date Samples Received: 04/14/2008

Sample Numbers: 29847007 Matrix: Soil

One sample was transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and was relinquished to lab personnel in the sample control department for log-in. The sample container was checked and was noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

- Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. For the ICP/MS analysis run on 4/28/08, the Initial Calibration Verification (ICV) standard was biased low for Nickel. Sample was reanalyzed 4/29/08.
2. For the ICP/MS analysis run on 4/28/08, the Method Blank contained 5.5 mg/Kg-dry of Arsenic, sample was footnoted. Method Blank also contained 0.3 mg/Kg-dry of Chromium, sample was greater than twenty times higher in concentration, therefore no footnote required.
3. For the ICP/MS analysis run on 4/28/08, the Laboratory Control Standard (LCS) recoveries were biased low for Molybdenum and Beryllium. Sample was reanalyzed for these elements on 4/29/08 and 4/30/08 respectively.
4. For the ICP/MS analysis run on 4/28/08, the Matrix Spike (MS) recoveries were biased low for Antimony, Arsenic, Beryllium, Chromium, Zinc, Nickel, Barium, Copper, Molybdenum and Vanadium. The Matrix Spike Duplicate (MSD) recoveries were biased low for Antimony, Arsenic, Beryllium, Chromium, Cobalt, Zinc, Niekel, Barium, Copper, and Vanadium. The Matrix Spike Duplicate recovery was biased high for Molybdenum. The Post Digestion Spike (PDS) recoveries for Barium, Copper, Molybdenum and Vanadium were biased low. Post Digestion Spike was reanalyzed at end of run in attempt to get better recoveries for the biased low elements, recoveries did not meet acceptance criteria so sample was reanalyzed for Barium, Copper, and Molybdenum on 4/29/08.
5. For the ICP/MS analysis run on 4/28/08, Continuing Calibration Verification (CCV) standards were biased high for Beryllium and Thallium. Beryllium was reanalyzed on 4/30/08, Thallium was non-detect in sample.
6. For the ICP/MS analysis run on 4/29/08, the Matrix Spike (MS) recoveries were biased high for Barium and Copper. The Matrix Spike Duplicate (MSD) recoveries were biased high for Barium, Molybdenum, and were biased low for Copper. The Post Digestion Spike (PDS) recoveries were acceptable.
7. For the ICP/MS analysis run on 4/29/08, the Continuing calibration Verification (CCV) recovery was biased high for Vanadium, sample reanalyzed on 4/30/08.

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Baltimore Division

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CASE NARRATIVE
Microbac Laboratories, Inc., Gascoyne Division

Report Number: 0804485
Report To: U.S. Army Center for Health Promotion and
Preventive Medicine (USACHPPM)
Aberdeen Proving Ground, MD 21010-5422
Contract #W91ZLK-05-C-0025 **Metals**

May 7, 2008
page 2 of 1

8. For ICP/MS analysis run on 4/30/08, the Matrix Spike (MS) recovery was biased high for Beryllium and biased low for Vanadium. The Matrix Spike Duplicate (MSD) recovery was biased high for Beryllium and biased low for Vanadium. The Post Digestion Spike (PDS) was acceptable.
9. For ICP/MS analysis run on 4/30/08, the Continuing Calibration Verification (CCV) standards recovery were biased high for Beryllium, sample was non-detect for that element.

Notes:
1. Sample was analyzed by ICP/MS on three (3) different days, 4/28/08, 4/29/08, and 4/30/08 due to Quality Control failures for various elements.

Microbac Laboratories, Inc., Baltimore Division

L. Burwell Gunn III
Inorganic Production Manager

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

5/7/2008

QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804485

Project: 35296-0995 (5/6)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample	
Antimony	DUP		0.7192	mg/Kg-dry		0	20			0804407-004A DUP	16926
	LCS	127	152.6	mg/Kg-dry	120			3.94	210.24	16926 4-24 6020 S	16926
	MBLK		0.4724	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	3.375	mg/Kg-dry	23			70	130	0804407-004A MS	16926
	MSD	9.966	3.791	mg/Kg-dry	27.2	11.6	20	70	130	0804407-004A MS	16926
	PDS	99.76	103.2	mg/Kg-dry	102			75	125	0804407-001A PDS	16926
Arsenic	DUP		4.502	mg/Kg-dry		3.46	20			0804407-004A DUP	16926
	LCS	280	283.8	mg/Kg-dry	101			80.71	118.93	16926 4-24 6020 S	16926
	MBLK		5.462	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	11.52	mg/Kg-dry	68.9			70	130	0804407-004A MS	16926
	MSD	9.966	11.17	mg/Kg-dry	65.3	3.09	20	70	130	0804407-004A MS	16926
	PDS	99.62	104.1	mg/Kg-dry	99.8			75	125	0804407-004A PDS	16926
Barium	DUP		224.8	mg/Kg-dry		8.88	20			0804407-004A DUP	16926
	LCS	520	498.7	mg/Kg-dry	95.9			82.69	117.12	16926 4-24 6020 S	16926
	MBLK		0.9386	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	277.8	mg/Kg-dry	724			70	130	0804407-004A MS	16926
	MSD	9.966	228.7	mg/Kg-dry	231	19.4	20	70	130	0804407-004A MS	16926
	PDS	498.1	726.4	mg/Kg-dry	105			75	125	0804407-004A PDS	16926
Beryllium	DUP		< 2.5	mg/Kg-dry		0	20			0804407-004A DUP	16926
	LCS	51	54.84	mg/Kg-dry	108			83.14	116.86	16926 4-24 6020 S	16926
	MBLK		< 2.5	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	0.2	3.247	mg/Kg-dry	1620			70	130	0804407-004A MS	16926
	MSD	0.2	3.851	mg/Kg-dry	1930	17	20	70	130	0804407-004A MS	16926
	PDS	498.1	394.8	mg/Kg-dry	79.3			75	125	0804407-004A PDS	16926
Cadmium	DUP		0.1897	mg/Kg-dry		14.2	20			0804407-004A DUP	16926
	LCS	182	168.5	mg/Kg-dry	92.6			81.87	118.13	16926 4-24 6020 S	16926
	MBLK		< 0.10	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	9.072	mg/Kg-dry	89.4			70	130	0804407-004A MS	16926
	MSD	9.966	8.346	mg/Kg-dry	82.1	8.34	20	70	130	0804407-004A MS	16926
	PDS	99.62	100.2	mg/Kg-dry	100			75	125	0804407-004A PDS	16926
Chromium	DUP		44.09	mg/Kg-dry		6.21	20			0804407-004A DUP	16926
	LCS	142	145.2	mg/Kg-dry	102			80.99	119.72	16926 4-24 6020 S	16926
	MBLK		0.2623	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	43.5	mg/Kg-dry	20.8			70	130	0804407-004A MS	16926
	MSD	9.966	44.46	mg/Kg-dry	30.4	2.18	20	70	130	0804407-004A MS	16926
	PDS	99.62	139.4	mg/Kg-dry	98.4			75	125	0804407-004A PDS	16926
Cobalt	DUP		23.78	mg/Kg-dry		10.8	20			0804407-004A DUP	16926
	LCS	110	114	mg/Kg-dry	104			82.18	118.18	16926 4-24 6020 S	16926
	MBLK		< 1.0	mg/Kg-dry						16926 4-24 6020 S	16926
	MS	9.962	29.2	mg/Kg-dry	78.9			70	130	0804407-004A MS	16926
	MSD	9.966	24.27	mg/Kg-dry	29.4	18.4	20	70	130	0804407-004A MS	16926
	PDS	99.62	121.8	mg/Kg-dry	101			75	125	0804407-004A PDS	16926
Copper	DUP		476.2	mg/Kg-dry		4.45	20			0804407-004A DUP	16926
	LCS	132	131.6	mg/Kg-dry	99.7			83.33	117.42	16926 4-24 6020 S	16926
	MBLK		< 2.0	mg/Kg-dry						16926 4-24 6020 S	16926

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION
QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804485

Project: 35296-0995 (5/6)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Copper	MS	9.962	469.9	mg/Kg-dry	145			70	130	0804407-004A MS	16926	
	MSD	9.966	436.1	mg/Kg-dry	-194	7.46	20	70	130	0804407-004A MS	16926	
	PDS	498.1	1009	mg/Kg-dry	111			75	125	0804407-004A PDS	16926	
Lead	DUP		2.994	mg/Kg-dry		20.5	20			0804407-004A DUP	16926	
	LCS	72.2	75.31	mg/Kg-dry	104			81.86	118.28	16926 4-24 6020 S	16926	
	MBLK		< 0.40	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	11.01	mg/Kg-dry	86.1			70	130	0804407-004A MS	16926	
	MSD	9.966	10.33	mg/Kg-dry	79.2	6.37	20	70	130	0804407-004A MS	16926	
	PDS	99.62	101.4	mg/Kg-dry	99.3			75	125	0804407-004A PDS	16926	
Molybdenum	DUP		84.54	mg/Kg-dry		4.34	20			0804407-004A DUP	16926	
	LCS	80.9	71.05	mg/Kg-dry	87.8			79.85	120.15	16926 4-24 6020 S	16926	
	MBLK		1.901	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	93.22	mg/Kg-dry	123			70	130	0804407-004A MS	16926	
	MSD	9.966	106.7	mg/Kg-dry	258	13.5	20	70	130	0804407-004A MS	16926	
	PDS	498.1	574.4	mg/Kg-dry	99.1			75	125	0804407-004A PDS	16926	
Nickel	DUP		11.64	mg/Kg-dry		0.0128	20			0804407-004A DUP	16926	
	LCS	155	152.9	mg/Kg-dry	98.7			82.58	117.42	16926 4-24 6020 S	16926	
	MBLK		< 5.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	21.89	mg/Kg-dry	103			70	130	0804407-004A MS	16926	
	MSD	9.966	20.03	mg/Kg-dry	84.2	8.84	20	70	130	0804407-004A MS	16926	
	PDS	498.1	605	mg/Kg-dry	119			75	125	0804407-004A PDS	16926	
PMO1ST	DUP		18.62	wt%		2.93	20			0804407-004A DUP	R58992	16926
	LCS	98	97.97	wt%	100			95	108	LCS #1	R58992	
	MBLK		100	wt%						Method Blank #1	R58992	
Selenium	DUP		0.91	mg/Kg-dry		0	20			0804407-004A DUP	16926	
	LCS	165	163.5	mg/Kg-dry	99.1			77.58	123.03	16926 4-24 6020 S	16926	
	MBLK		< 1.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	9.082	mg/Kg-dry	80.5			70	130	0804407-004A MS	16926	
	MSD	9.966	8.668	mg/Kg-dry	76.3	4.67	20	70	130	0804407-004A MS	16926	
	PDS	99.62	97.94	mg/Kg-dry	97.3			75	125	0804407-004A PDS	16926	
Silver	DUP		< 0.20	mg/Kg-dry		0	20			0804407-004A DUP	16926	
	LCS	126	125.3	mg/Kg-dry	99.4			66.43	134.13	16926 4-24 6020 S	16926	
	MBLK		< 0.20	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	4.981	4.242	mg/Kg-dry	85.2			70	130	0804407-004A MS	16926	
	MSD	4.983	3.935	mg/Kg-dry	79	7.5	20	70	130	0804407-004A MS	16926	
	PDS	49.81	53.82	mg/Kg-dry	108			75	125	0804407-004A PDS	16926	
Thallium	DUP		< 0.40	mg/Kg-dry		0	20			0804407-004A DUP	16926	
	LCS	184	202.8	mg/Kg-dry	110			77.17	122.28	16926 4-24 6020 S	16926	
	MBLK		< 0.40	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	8.698	mg/Kg-dry	87.3			70	130	0804407-004A MS	16926	
	MSD	9.966	8.159	mg/Kg-dry	81.9	6.4	20	70	130	0804407-004A MS	16926	
	PDS	99.62	101.8	mg/Kg-dry	102			75	125	0804407-004A PDS	16926	
Tin	DUP		< 49	mg/Kg-dry		0	20			0804636-001A DUP	16912	16912
	LCS	153	155.2	mg/Kg-dry	101			69.9	130.1	16912 LCS	16912	

5/7/2008

MICROBAC LABORATORIES, INC., BALTIMORE DIVISION

QC SUMMARY REPORT

Company: USACHPPM-Metals

Report No: 0804485

Project: 35296-0995 (5/6)

	Sample Type	Spike Value	Results	Units	REC (%)	RPD (%)	RPD Limit (%)	Low Limit	High Limit	Sample		
Tin	MBLK		3.823	mg/Kg-dry						16912 MBLK	16912	
	MS	49.42	47.42	mg/Kg-dry	96			75	125	0804636-001A MS	16912	16912
	MSD	49.47	47.12	mg/Kg-dry	95.3		20	75	125	0804636-001A MS	16912	16912
	PDS	987.3	893	mg/Kg-dry	90.5			75	125	0804636-001A PDS	16912	
Vanadium	DUP		310.2	mg/Kg-dry		2.14	20			0804407-004A DUP	16926	
	LCS	186	191.6	mg/Kg-dry	103			77.42	123.12	16926 4-24 6020 S	16926	
	MBLK		< 5.0	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	0.2	302.9	mg/Kg-dry	-367			70	130	0804407-004A MS	16926	
	MSD	0.2	288.9	mg/Kg-dry	-7360	4.73	20	70	130	0804407-004A MS	16926	
	PDS	498.1	918.8	mg/Kg-dry	124			75	125	0804407-004A PDS	16926	
Zinc	DUP		112.1	mg/Kg-dry		0.403	20			0804407-004A DUP	16926	
	LCS	346	343.6	mg/Kg-dry	99.3			78.9	120.81	16926 4-24 6020 S	16926	
	MBLK		0.8184	mg/Kg-dry						16926 4-24 6020 S	16926	
	MS	9.962	117.1	mg/Kg-dry	45.6			70	130	0804407-004A MS	16926	
	MSD	9.966	114.7	mg/Kg-dry	21.8	2.05	20	70	130	0804407-004A MS	16926	
	PDS	99.62	213.2	mg/Kg-dry	101			75	125	0804407-004A PDS	16926	

Reviewed By _____ Date _____

Notes: MBLK: Method Blank PDS: Post Digestion/Distillation Spike MSD: Matrix Spike Duplicate DUP: Duplicate
MS: Matrix Spike LCS(D): Laboratory Control Sample (Duplicate) RPD: Relative Percent Difference REC: Recovery
ICB/ICV: Initial Calibration Blank(Verification Standard) CCB/CCV: Continuing Calibration Blank(Verification Standard)

Report ID: HMA0022v1
Sequence: 413689

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 14-Apr-08 1:10:47 PM
Page: 1 of 3

Pick-Up / Work / Delivery Order
Generated by: HEIDI.TAYLOR

0804485

Section I - Contract/Project Information

Contract Information

Pickup Order: 936/1
DLS WO#: 29847 Batch: 2681
Contractor Code: GAS HBN: 208298
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 1

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 77HRW
SUBJONO: 0995
DLS WO#: 29847
DLS Profile#: 35298

Contractor Due Date
PDF
Hardcopy 6 May 08

Pick-Up/Work/Delivery Order Approved by: _____ (Signature of USACHPPM's COR)

USACHPPM called for pickup: _____ (Caller's Name) (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: _____ (Signature of laboratory courier) (Date/Time of pick-up) 4/14/08 1435

Number of samples received intact: 1 (#/All)

Number of samples received broken: None (#/None)

Data package received by at CHPPM: Sarah R. Boots

Delivery Date: Email (Means of Delivery - UPS/FedEx) 5/7/08 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1717	GAS2146	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2152	GAS2153	GAS2154	GAS2180	GAS2181	GAS2360	GAS2361	GAS2363	GAS2416	GAS776
29847007	73 1DW-01	SO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS2154	Silver (Ag)		1
	Procedure Description	EPA 6020	
GAS2146	Antimony (Sb)		1
	Procedure Description	EPA 6020	
GAS2147	Arsenic (As)		1
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		1
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		1
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		1
	Procedure Description	EPA 6020	
GAS2151	Lead (Pb)		1
	Procedure Description	EPA 6020	
GAS1717	%Moisture		1
	Procedure Description	EPA 160.3	
GAS2153	Nickel (Ni)		1
	Procedure Description	EPA 6020	
GAS776	Copper (Cu)		1
	Procedure Description	EPA 6020	
GAS2180	Selenium (Se)		1
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	1

GAS2181	Zinc (Zn)		1
	Procedure Description	EPA 6020	
GAS2360	Beryllium (Be)		1
	Procedure Description	EPA 6020	
GAS2361	Cobalt (Co)		1
	Procedure Description	EPA 6020	
GAS2363	(Vanadium (V)		1
	Procedure Description	EPA 6020	
GAS2416	Tin (Sn) 6010B (Soil)		1
	Procedure Description	SW-846/EPA 6010	
GAS2152	Thallium (Tl)		1
	Procedure Description	EPA 6020	

Report ID: HRA0191C-ACodes
COC #: 413405

Run Date: 11-Apr-08 11:44
Generated By: HEIDI.TAYLOR

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 4/11/08 *to SML. This is SML's Internal Chain of Custody.*

Profile: 35296 - 0995	**Description:** NAPR CMS-Cp Moscrip~35296
Workorder #: 29847	**Workorder ID:** 0995102
Queue: GAS	**Customer:** Program 38 **POC:** David Jones
Location: NAPR-Cp Moscrip	**Project Number:** 38
Jono: 77HRW	**Notes:** MS/D containers split up to be 1 MS and 1 MSD per line in the COC. Multiple containers for dissolved metals were treated as extra containers for log-in. H. Taylor 4/11/08
Subjono: 0995	
Turn Code: R028 28 Calendar day from receipt	

Total Samples: 1 **Total Containers:** 1

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
29847007	29847007-1	73 1DW-01	SAMPLE	SO	Soil	4.0	degrees C	11-Apr-2008 10:15 AM	10-Apr-2008 02:00 PM	09-May-2008

ACodes:

GAS1288 : EPA 3050 Prep
GAS1717 : %Moisture
GAS2146 : Antimony (Sb)
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2152 : Thallium (Tl)
GAS2153 : Nickel (Ni)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)
GAS2181 : Zinc (Zn)
GAS2360 : Beryllium (Be)
GAS2361 : Cobalt (Co)
GAS2363 : (Vanadium (V)
GAS2416 : Tin (Sn) 6010B (Soil)
GAS776 : Copper (Cu)

Total Samples: 1 **Total Containers:** 1

Samples Received By:				**Date Received:**	4-14-08
Document Reviewed By:	Heidi Taylor	**Initials:**	HT	**Date Reviewed:**	4/11/08
Document Quality Review By:				**Date Reviewed:**	
Samples Approved For Distribution:	Yes ✓ No	**Initials:**	Cu	**Date Approved:**	

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Profile: 35296 - 0995	Description: NAPR CMS-Cp Moscrip~35296
Workorder #: 29847	Workorder ID: 0995102
Queue: GAS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx	HSN	Customer Sample Id	Container Id	Mx
29847007	73 1DW-01	29847007-1	SO				

Total Samples: 1 | Total Containers: 1

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
		4-14-08 1130	See SML's Comments	4-14-08 1130	Returned to holding refrigerator in room #0202. Completed % Moisture prep and splitting soils
		4/14/08 1435		4/14/08 1435	
		4-14-08 1530			

Remarks:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 35296 - 0995	Description: NAPR CMS-Cp Moscrip~35296
Workorder #: 29847	Workorder ID: 0995102
Queue: GAS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
29847007		1		

Total Samples: 1 | Total Containers: 1

DRAFT OF

NR=Not Reported.

Percent Solids/Moisture by Drying at 105°C

Import Spec. - WC_TS and WC_PMOIST

Analyst: LCR
Test Code: PMOIST
Analyte: PMOIST
Dried at 105°C
Units: wt%

Omega Batch ID:_ 080416L

Calculation: % Solids = ((Dry Pan and Sample Weight - Pan Weight)/(Wet pan and Sample Weight - Pan Weight)) X 100
% Moisture = 100- % Solids

105°C Oven: Fisher Isotemp S/N 70600094
Balance: #8

A	B	C	D	E	F	G	H	I	J (Time in Oven)	K (Time out of Oven)	L	M	N	O	P	Q	R	S	T
Import Spec. - WC_TS and WC_PMOIST																			
	Pan	Wet Sample	Client ID	Sample Type	Pan Weight (g)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	Date/Time	Date/Time	Units	QC Code	Analyte	QC Code	Analyte	Wet Weight Recovered	Moisture Recovered	Recovery Spike	Dilution
10	1	Method Blank #1	Method Blank	MBLK	1.2853	11.5154	1.2855	0.0002	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	0.002	99.998		0.05
20	2	LCS #1	LCS	LCS	1.2854	11.3052	1.4885	0.2031	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	2.029	97.971	101.45	0.05
21	3	0804332-001B	STP, 2ND SLUDGE	SAMP	1.2725	11.4219	1.3662	0.0937	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	0.923	99.077		0.05
22	4	0804332-001B DUP	DUP	DUP	1.2942	11.5204	1.3920	0.0978	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	0.947	99.053	0.02%	0.05
23	5	0804334-001A	PVSC	SAMP	1.2943	11.7686	7.0977	5.8034	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	55.406	44.594		0.05
24	6	0804504-001A		SAMP	1.2927	12.4591	11.0618	9.7691	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	87.487	12.513		0.04
25	7	0804504-002A		SAMP	1.2884	14.1522	14.0139	12.7155	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	98.924	1.076		0.04
26	8	0804504-003A		SAMP	1.2882	14.4947	13.2178	11.9164	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	90.528	9.472		0.04
27	9	0804504-004A		SAMP	1.2831	11.3858	10.5729	9.2897	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	91.954	8.046		0.05
28	10	0804504-005A		SAMP	1.2847	10.1078	9.3850	8.1003	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	91.808	8.192		0.05
29	11	0804407-001A		SAMP	1.2851	13.1249	11.9980	10.7029	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	90.474	9.526		0.04
30	12	0804407-002A		SAMP	1.2875	9.0508	8.1649	6.8871	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	88.570	11.430		0.05
31	13	0804407-003A		SAMP	1.3047	14.6518	13.3028	11.9981	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	89.894	10.106		0.04
32	14	0804407-004A		SAMP	1.2961	14.3264	11.9701	10.6740	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	81.917	18.083		0.04
33	15	0804407-004A DUP	DUP	DUP	1.2884	11.8878	9.8635	8.7751	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	81.379	18.621	2.93%	0.05
34	16	0804407-005A		SAMP	1.2825	12.1029	10.2317	8.9492	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	82.708	17.292		0.05
35	17	0804407-006A		SAMP	1.2769	11.1485	9.5931	8.3132	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	84.236	15.764		0.05
36	18	0804485-001A		SAMP	1.2971	11.6777	9.8844	8.5873	4/16/2008 15:00	4/17/2008 7:15	wt%	TS_S	Total Solids	PMOIST	PMOIST	80.495	19.505		0.05

E-877

Microbac Laboratories Inc., Baltimore Divis

PREP BATCH REPORT

Comment: Pipet 4

Prep Start Date: **4/22/2008 1:30:00 PM**
Prep End Date: **4/23/2008 7:29:37 AM**

Prep Batch **16912** Prep Code: **PR_ICP_S** Technician: **Erika D. Pabon**

Sample ID	Matrix	pH	wt (g)	Ini vol (mL)	Sol Added	Spk 1	Spk 2	Spk 3	Sol Recov	Fin Vol (mL)	factor
0804407-001A Dried	Soil		1.0104		0				0	50	49.485352
0804407-002A Dried	Soil		1.0055		0				0	50	49.726504
0804407-003A Dried	Soil		1.165		0				0	50	42.918455
0804407-004A Dried	Soil		1.026		0				0	50	48.732943
0804407-005A Dried	Soil		1.0139		0				0	50	49.314528
0804407-006A Dried	Soil		1.0228		0				0	50	48.894974
0804485-001A Dried	Soil		1.0047		0				0	50	49.766099
0804517-001C As received	Sludge		5.2278		0				0	50	9.5642526
0804636-001A Dried	Soil		1.0129		0				0	50	49.363215
0804636-001A DUP Dried	Soil		1.0163		0				0	50	49.198071
0804636-001A MS Dried	Soil		1.0117		0	0.5 ML	0.5 ML		0	50	49.421765
0804636-001A MSD Dried	Soil		1.0108		0	0.5 ML	0.5 ML		0	50	49.46577

Number	Reagent Name
2	1:1 HNO3 S30/08-61 (A-B)
4	Conc.HNO3 C30/08-10 (A-P)
5	Conc. HCl C30/07-40 (A-D)
6	H2O2 C30/08-11

Spk ID	Spike Name	SampType	AmtAdd
C30/08-14	ERA SOIL LCS		0
C40/07-016	ICP/MS PREP SPIKE A		0
C40/07-019	ICP/MS PREP SPIKE B		0

USACHPPM
Readiness thru Health

U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DIRECTORATE OF LABORATORY SCIENCES (DLS)

5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403
(410) 436-2208

FINAL ANALYTICAL REPORT

CLIENT: Mr. David Jones
USACHPPM
MCHB-TS-EGW
5158 Blackhawk Rd Bldg E1677
Gunpowder MD 21010 United States
5-2305

PROJECT SITE: NAPR-Cp Moscrip
PROGRAM 38 **SUBJONO:** 0995
DLS PROFILE #: 35296 **DLS WORK ORDER #:** 29847
REPORT SERIAL NUMBER: 426894

This report shall not be reproduced except in full without the written approval of DLS. The results relate only to the specific samples identified within the report.

REPORT RELEASE AUTHORIZATION:

Signature: Date: 9 June 2008

Charles Stoner, Ph.D, Chief, Analytical Spectrometry Division

DLS HOLDS ACCREDITATION FROM AIHA, A2LA, NLLAP, AND COLA

Readiness thru Health

DLS Final Analytical Report, NAPR-Cp Moscrip

Program 38, SUBJONO 0995, DLS WO# 29847, Report Serial No. 426894, 6/9/2008

CASE NARRATIVE

Provided are the results for one soil and nine ground water samples submitted from Camp Moscrip for metals analysis. The soil sample (DLS#s: 29847 007) was requested for mercury (Hg) analysis. The ground water samples (DLS#s: 29847 001, 02 MS, 03 MSD, 004, 005) were requested for seventeen metals (Sn, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn and Hg) analysis. The ground water samples (DLS#s: 29847 006, 008, 09 MS and 10 MSD) were requested for eight metals (As, Ba, Cd, Cr, Pb, Se, Ag, and Hg) analysis. The samples were collected on 10 Apr 08 and received in DLS on 11 Apr 08 on a chain of custody receipt. The samples were received at 4 degrees C which is within the acceptable temperature range of 2-6 degrees C. The required holding times were met.

Sample Preparation:
The initial digestion for metals analysis for the ground water samples took place on 30 Apr-02 May 08 IAW EPA 3020A / SOP MET 13.7. Due to high matrix interferences with the ICP-MS analysis portion a second digestion took place on 29-30 May 08.

The ground water samples were prepared for Hg analysis on 05 May 08 IAW EPA 7470A / SOP MET 19.6.

The soil sample was prepared for Hg analysis on 23 Apr 08 IAW EPA 7471B / SOP MET 20.6.

Sample Analysis-Ground Water:
The samples were analyzed for Hg on 05 May 08 IAW EPA 7470A / SOP MET 19.6 using FIMS II. The reporting limit was met.

The tin (Sn) was determined on 01 May 08 IAW EPA 6010B / SOP MET 42.7 using the PE ICP 4300DV. The reporting limit (RL) was met.

All other metals (Sb, As, Ba, Be, Cd, Cr, Co, Cu, Pb, Ni, Se, Ag, Tl, V, Zn), were determined on 04-05 Jun 08 IAW EPA 6020A / SOP MET 9.5 using the PE 6100 ICP-MS instrumentetion.

Sample Analysis- Soil:
The soil sample was analyzed for Hg on 24 April 08 IAW EPA 7471B / SOP MET 20.6 using FIMS II. The reporting limit was met.

Quality control:
The following QC were analyzed with this data set for ground water samples by 6020A: one laboratory control (LCS), two matrix spikes (MS), two matrix spike duplicates (MSD), one laboratory fortified blank (LFB) and two post digestion instrument spike (IS) samples.

For the Sn analysis: the following QC's were analyzed with this deta set for ground water sample analysis by 6010B: one laboratory fortified blank (LFB) and two post digestion instrument spike (IS) samples.

For Hg: the following QC's were analyzed with this deta set by EPA 7471B and 7470A methods: one laboratory control (LCS), one matrix spike (MS), one matrix spike duplicate (MSD), and one post digestion instrument spike (IS) sample for each method. One analyte recovered low in the LCS, Se recovered at 75%.

The following MS results did not recover within QC acceptence limits of 80%-120%: Sb 78%; Se 70%; Zn 141%; As 74%; Ba -463%; Cr -154%; Pb 37%; and Se 76%. The analytes Se in DLS sample #29847002 and As and Se in DLS sample 29847009 were diluted 1:5 to also obtain acceptable recoveries in the MS. For Ba and Cr, the MS did not recover in DLS sample # 29847008 because the amount of analyte in the sample masked the amount of spike on the sample. The recoveries for Sb, Se, Zn, As and Pb are due to suspect matrix interferences. The analytical results for these analytes can be considered as estimates.

For the MSD, the analyte Zn in DLS sample #29847003 and Ba and Cr in DLS sample 29847010 did not recover within the 20% RPD QC criteria.
The samples were re-analyzed for Pb, Tl, As, Cr and Se due to a failed CCV. For V, Zn, As and Ba, the sample was diluted 1:10 in the IS to obtain acceptable recoveries.

Additionally, Hg recovered low in IS, MS, MSD for ground water and needed a 1:5 diluted sample for acceptable recovery in IS, MS, MSD. This is due to suspected matrix interference. Consequently, reported Hg results for ground water are considered biased low.

The ground water results are reported in mg/L for EPA Methods 6010B; ug/L for EPA Methods 6020A and 7470A. The soil results for Hg are reported in mg/kg on the dry weight basis.

List of the report contents:

DLS Final Analytical Report, NAPR-Cp Moscrip
Program 38, SUBJONO 0995, DLS WO# 29847, Report Serial No. 426894, 6/9/2008

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Cover Letter	1
Case Narrative	2
Sample Summary	1
Analytical Data Report	10
Quality Control Data Report	8
Raw Data	
Terminology/Abbreviations	1

Report Point-of-Contact: Chuck Stoner
Reviewer: KH / WD / MC L. Houston / W. Dudek / M. Coard

List of all tests used:

DLS Procedure	Count
EPA 6010 MET42	5
EPA 6020 MET9	103
EPA 7470 MET19	9
EPA 7471 MET20	1

Number of samples included in the report, by matrix:

Matrix	Quantity
Soil	1
Water (Ground water)	9

Analyst(s):

Analyst Code	Analyst Name	Signature
0180	BOWMANDL	L. Houston for D. Bowman
0062	SIMONAS	Angelina Simon
0241	WANDA.DUDEK	W. Dudek

SAMPLE SUMMARY

Sorted by DLS ID

Field ID	DLS ID	Date Collected	Matrix
73MW01	29847001	10-Apr-08	Water (Ground water)
73MW01 MS	29847002	10-Apr-08	Water (Ground water)
73MW01 MSD	29847003	10-Apr-08	Water (Ground water)
73MW01A	29847004	10-Apr-08	Water (Ground water)
73MW02	29847005	10-Apr-08	Water (Ground water)
73ER-07	29847006	10-Apr-08	Water (Ground water)
73 1DW-01	29847007	10-Apr-08	Soil
73 1DW-02	29847008	10-Apr-08	Water (Ground water)
73 1DW-02 MS	29847009	10-Apr-08	Water (Ground water)
73 1DW-02 MSD	29847010	10-Apr-08	Water (Ground water)

ANALYTICAL DATA REPORT

(FORMAT OPTION 1)

FINAL REPORT

Sorted by DLS ID

Field ID: 73MW01 **DLS ID:** 29847001

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	147 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	7.65 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73MW01 MS **DLS ID:** 29847002

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	39.1 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Arsenic	47.9 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	190 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	40.3 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	46.9 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	54.6 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	56.4 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	48.1 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Lead	45.3 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Nickel	50.9 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Selenium	35.1 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	47.2 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Thallium	46.6 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	57.0 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	78.1 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73MW01 MSD **DLS ID:** 29847003

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	40.5 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Arsenic	46.0 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	174 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	39.0 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	45.1 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	56.0 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	58.1 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	48.9 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Lead	48.1 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Nickel	52.4 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Selenium	40.1 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	47.2 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Thallium	49.3 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	58.7 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	58.5 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73MW01A **DLS ID:** 29847004

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	154 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	7.02 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Selenium	18.8 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73MW02 **DLS ID:** 29847005

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Arsenic	35.1 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	132 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	12.8 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	6.69 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	277 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	57.6 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Nickel	140 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Selenium	61.6 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	5.98 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	01-May-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	154 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73ER-07 **DLS ID:** 29847006

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Arsenic	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Lead	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73 1DW-01 **DLS ID:** 29847007

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Mercury	<0.0158 mg/kg	0.0158	EPA 7471 MET20	0180	24-Apr-08

FINAL REPORT

Field ID: 73 IDW-02 **DLS ID:** 29847008

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Arsenic	5.71 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	733 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	4.09 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	322 ug/L	20.0	EPA 6020 MET9	0241	04-Jun-08
Lead	39.9 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Selenium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73 1DW-02 MS **DLS ID:** 29847009

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Arsenic	43.5 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	502 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	46.8 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	209 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Lead	58.6 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Selenium	37.3 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	45.9 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08

FINAL REPORT

Field ID: 73 1DW-02 MSD **DLS ID:** 29847010

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Arsenic	42.8 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Barium	676 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Cadmium	47.7 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Chromium	296 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Lead	64.0 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Mercury	<0.200 ug/L	0.200	EPA 7470 MET19	0180	05-May-08
Selenium	33.9 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Silver	46.2 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08

Report ID: HMA0189v1
Report Seq: 426888

Date Generated: 6/9/2008 3:51:24
Generated By: HOUSTONKL

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Quality Control Report

DLS Workorder: 29847
Installation: NAPR-Cp Moscrip
Project Officer: David Jones
Profile: 0995

U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE

DIRECTORATE OF LABORATORY SCIENCES (DLS)

5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5403
(410) 436-2208

FINAL ANALYTICAL REPORT

CLIENT: Mr. David Jones
USACHPPM
MCHB-TS-EGW
5158 Blackhawk Rd Bldg E1677
Gunpowder MD 21010 United States
5-2305

PROJECT SITE: NAPR-Cp Moscrip
PROGRAM 38 **SUBJONO:** 0995
DLS PROFILE #: 35726 **DLS WORK ORDER #:** 30651
REPORT SERIAL NUMBER: 429557

This report shall not be reproduced except in full without the written approval of DLS. The results relate only to the specific samples identified within the report.

REPORT RELEASE AUTHORIZATION:

Signature: _____ **Date:** 17 June 2008

Charles Stoner, Ph.D, Chief, Analytical Spectrometry Division

DLS HOLDS ACCREDITATION FROM AIHA, A2LA, NLLAP, AND COLA

Readiness thru Health

DLS Final Analytical Report, NAPR-Cp Moscrip

Program 38, SUBJONO 0995, DLS WO# 30651, Report Serial No. 429560, 6/17/2008

CASE NARRATIVE

Provided is the result for one ground water sample received from Camp Moscrip for metals analysis. The sample was submitted initially under DLS work order # 29847. In this report for DLS sample # 29847006, additional metals were added that were not reported in the initial report. The following analytes are contained in this report: Be, Co, Cu, Ni, Tl, V, Zn and Sb.

DLS sample # 29847006 was re-analyzed for Sn on 10 Jun 08 IAW EPA 6010B/MET SOP 42.7 using the PE ICP 4300 DV. The reporting limit was met. The sample was re-assigned as work order 30651. The sample was collected 10 Apr 08 and received into DLS on 11 Apr 08. The sample was received at 8 degrees C, which is not within the acceptable temperature range of 2-6 degrees C. The holding time was met.

For other details about wo 29847, see initial narrative submitted from DLS.

Quality control:
The QC report contains one-laboratory fortified blank (LFB) and an instrument spike (IS) values. All QC results were within acceptable limits.

The sample result for Sn is reported in mg/L and for all other metals, in ug/L.

List of the report contents:

Section	Number of Pages
Transmittal Memo	0
Cover Letter	1
Case Narrative	1
Sample Summary	1
Analytical Data Report	1
Quality Control Data Report	3
Raw Data	
Terminology/Abbreviations	1

Report Point-of-Contact: Chuck Stoner
Reviewer: KH / MC K. Houston / M Coard

List of all tests used:

DLS Procedure	Count
EPA 6010 MET42	1
EPA 6020 MET9	8

Number of samples included in the report, by matrix:

Matrix	Quantity
Water (Ground water)	1

Analyst(s):

Analyst Code	Analyst Name	Signature
0062	SIMONAS	Angelina Simonas
0241	WANDA.DUDEK	W. Dudek

SAMPLE SUMMARY

Sorted by Field ID

Field ID	DLS ID	Date Collected	Matrix
73ER-07	30651001	10-Apr-08	Water (Ground water)

DLS Final Analytical Report, NAPR-Cp Moscrip
Program 38, SUBJONO 0995, DLS WO# 30651, Report Serial No. 429557, 6/17/2008

ANALYTICAL DATA REPORT
FINAL REPORT

(FORMAT OPTION 1)
Sorted by Field ID

Field ID: 73ER-07 **DLS ID:** 30651001

ANALYTE	RESULT/UNITS	METHOD REPORTING LIMIT	ANALYTICAL METHOD	ANALYST	DATE ANALYZED
Antimony	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Beryllium	<2.00 ug/L	2.00	EPA 6020 MET9	0241	04-Jun-08
Cobalt	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Copper	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Nickel	<10.0 ug/L	10.0	EPA 6020 MET9	0241	04-Jun-08
Thallium	<4.00 ug/L	4.00	EPA 6020 MET9	0241	04-Jun-08
Tin	<0.200 mg/L	0.200	EPA 6010 MET42	0062	10-Jun-08
Vanadium	<5.00 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08
Zinc	18.9 ug/L	5.00	EPA 6020 MET9	0241	04-Jun-08

Report ID: HMA0189v1
Report Seq: 429561

Date Generated: 6/17/2008 3:52:25
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US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Quality Control Report

DLS Workorder: 30651
Installation: NAPR-Cp Moscrip
Project Officer: David Jones
Profile: 0995

Report ID: HMA0189v1
Report Seq: 429561
Workorder No: 30651
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

USACHPPM
Readiness thru Health

Date Generated: 6/17/2008 3:52:37 PM
Generated By: HOUSTONKL

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)
Instrument Spike Sample Report

Analyte	Date	Sample Number	Mx		Initial Result	Units	Sample Volume	Spike Solution Conc	Spike Volume	Spiked Result	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Tin	6/10/2008	30651001 IS	GW	<	0.2	mg/L	9.9	100	0.1	0.944	94.40	SIMONAS	EPA 6010 MET4	HOUSTONKL	☐		

Report ID: HMA0189v1
Report Seq: 429561
Workorder No: 30651
Installation: NAPR-Cp Moscrip
Officer: David Jones
Subjono: 0995

Date Generated: 6/17/2008 3:52:42 PM
Generated By: HOUSTONKL

US Army Center for Health Promotion and Preventive Medicine
Directorate Of Laboratory Sciences (DLS)

Laboratory Fortified Blank Samples Report

Analyte	Date	Sample Number	Mx	Observed	Units	Theoretical	Units	% Rec.	Analyst	Method	Reviewer	Outside Limits	LCL	UCL
Tin	6/10/2008	08LFB2-I4	GW	1.288	mg/L	1.1	mg/L	117.09	SIMONAS	EPA 6010 MET42	HOUSTONKL	☐		

TERMINOLOGY/ABBREVIATIONS

Term	Description
MDA	The minimum detectable activity.
ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CFR	Code of Federal Regulations
OSHA	Occupational Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
ACCURACY	A measure of how close a measured value is to a known true value. Accuracy is assessed by means of reference samples and percent recoveries of spiked samples.
ANALYSIS OF VARIANCE	A technique of statistical analysis by which the components of variation for different elements of the data set are separated and estimated.
BLANK	An artificial sample designed to monitor the introduction of artifacts or contamination into the analytical process. The blank is taken through the appropriate steps in the analytical process. Examples are: trip, field, equipment, and reagent blanks.
AIHA	American Industrial Hygiene Association

JANUARY 2009

PAH DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones **DIVISION/TEAM:** _____

INSTALLATION: NAPR-Cp Moserip **CONTRACT LAB:** Lancaster (LLS)

PROJECT NO: Program 38 **LIMS W.O. NO:** 33571

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

✓ **DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.**

_____ **DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.**

_____ **OTHER.**

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrows
DATE: 11 Feb 09

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Type I Data Package
for
U.S. Army CHPPM

Contract Number: 08-P-0732

SDG# PUJ98

Project: PO# 0401, DO# 1 NAPR-CP MOSCRIP
Soil and Water Samples
Collected on 01/13/09-01/15/09

GROUP	SAMPLE NUMBERS
1128631	5579594-5579603

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-08A-TX

Prepared by Karen R. Williams

Reviewed by Audrey McClenna

Date 2-5-09

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Sample Reference List for SDG Number PUJ98
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 0401, DO# 1 NAPR-CP MOSCRIP

Lab Sample Number	Lab Sample Code	Client Sample Description
5579594	40101	33571001 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB24-01 # 08-P-0732
5579595	40102	33571002 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB24-09 # 08-P-0732
5579596	40125	33571025 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB241-00 # 08-P-0732
5579597	40126	33571026 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB242-00 # 08-P-0732
5579598	40127	33571027 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB243-00 # 08-P-0732
5579599	40128	33571028 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB244-00 # 08-P-0732
5579600	40129	33571029 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB245-00 # 08-P-0732
5579601	40130	33571030 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB246-00 # 08-P-0732
5579602	40131	33571031 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB246A-00 # 08-P-0732
5579603	40133	33571033 NAPR-Cp Moscrip #37066-0995 Jones Water Field# 73ER-10 # 08-P-0732

PUJ98: 0001

Report ID: HMA0022v1
Sequence: 473344

4694
1128631
55-7894-603
PU098

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 16-Jan-09 4:32:10 PM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: JESSICA.BROCKMEYER

Section I - Contract/Project Information

Contract Information

Pickup Order: 0401/1

DLS WO#: 33571 Batch: 1767
Contractor Code: LLS HBN: 214818
Contract#: W912LK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: VSV
Priority: Standard
# of Samples: 10

Project Information

Project Site: NAPR-Cp Mosarip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 97HR41
SUBJONO: 0995
DLS WO#: 33571
DLS Profile#: 37088

Contractor Due Date
PDF
Hardcopy 2/9/09

Pick-Up/Work/Delivery Order Approved by: Brockmeyer
(Signature of USACHPPM's COR)

USACHPPM called for pickup: Brockmeyer (Caller's Name) 1/16/09 (Date/Time called)

CONTRACTOR'S ENTRY

Pick-Up Order received by: via FedEx m 1/19/09 @ 09:00 Sheila R Moyer (CAU 1885) (Signature of laboratory courier) (Date/Time of pick-up)

Number of samples received intact: All (#/All) Number of samples received broken: None (#/None)

Date package received by at CHPPM: Christeth Green Delivery Data: Email (Means of Delivery - UPS/FedEx) 2-5-09 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLS2408	LLS2407
33571001	73SB24-01	SO		1
33571002	73SB24-09	SO		1
33571025	73SB241-00	SO		1
33571026	73SB242-00	SO		1
33571027	73SB243-00	SO		1
33571028	73SB244-00	SO		1
33571029	73SB245-00	SO		1
33571030	73SB246-00	SO		1
33571031	73SB246A-00	SO		1
33571033	73ER-10	GW	1	

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description	Quantity
LLS2407	PAH in low level in Solids	9
	Procedure Description	EPA 8270C (SIM)
LLS2408	PAH in low level in Water	1
	Procedure Description	EPA 8270C (SIM)

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	9
Water (Ground water)	GW	1

Report ID: HRA0191C-ACodes
COC #: 473339

Run Date: 16-Jan-09 16:12
Generated By: CHRISTINA.MOORER

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 1/16/09 to SML. This is SML's Internal Chain of Custody.

Profile: 37066 - 0995
Workorder #: 33571
Queue: LLS
Location: NAPR-Cp Moscrip
Jono: 97HR41
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-37066
Workorder ID: 099516
Customer: Program 38 POC: David Jones
Project Number: 38
Note:

Total Samples: 10
Total Containers: 11

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
33571001	33571001-1	73SB24-01	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	13-Jan-2009 10:10 AM	13-Feb-2009
ACodes: LLS2407 : PAH in low level in Solids										
33571002	33571002-1	73SB24-09	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	13-Jan-2009 10:45 AM	13-Feb-2009
ACodes: LLS2407 : PAH in low level in Solids										
33571025	33571025-1	73SB241-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 03:15 PM	13-Feb-2009
ACodes: LLS2407 : PAH in low level in Solids										
33571026	33571026-1	73SB242-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 03:00 PM	13-Feb-2009
ACodes: LLS2407 : PAH in low level in Solids										
33571027	33571027-1	73SB243-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 01:45 PM	13-Feb-2009
ACodes: LLS2407 : PAH in low level in Solids										

LIDS Form 235 IMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473339

Run Date: 16-Jan-09 18:12
Generated By: CHRISTINA.MOORER

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: LLS	Customer: Program 38

33571028	33571028-1	73SB244-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 01:15 PM	13-Feb-2009

ACodes:
LLS2407 : PAH in low level in Solids

33571029	33571029-1	73SB245-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 02:30 PM	13-Feb-2009

ACodes:
LLS2407 : PAH in low level in Solids

33571030	33571030-1	73SB248-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 02:15 PM	13-Feb-2009

ACodes:
LLS2407 : PAH in low level in Solids

33571031	33571031-1	73SB248A-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 02:15 PM	13-Feb-2009

ACodes:
LLS2407 : PAH in low level in Solids

33571033	33571033-1	73ER-10	SAMPLE	GW	Water (Ground	12.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 04:00 PM	13-Feb-2009

ACodes:
LLS2408 : PAH in low level in Water

33571033	33571033-2	73ER-10	SAMPLE	GW	Water (Ground	12.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 04:00 PM	13-Feb-2009

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

Chain Of Custody

Total Samples: 10 | Total Containers: 11

Samples Received By: [signature] Date Received: 1-19-09 @ 0900
Document Reviewed By: Christina Moorer Initials: CM Date Reviewed: 16 Jan 09
Document Quality Review By: [signature] Date Reviewed:
Samples Approved For Distribution: Yes ✓ No ___ Initials: [illegible] Date Approved:

* Also submitting "2" samples - labeled "Hold". Please hold these for further instruction.

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473339

Run Date: 16-Jan-09 15:12
Generated By: CHRISTINA.MOORER

Profile: 37068 - 0995	Description: NAPR CMS-Cp Moscrip~37068
Workorder #: 33571	Workorder ID: 099516
Queue: LLS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
33571001	73SB24-01	33571001-1	SO
33571025	73SB241-00	33571025-1	SO
33571027	73SB243-00	33571027-1	SO
33571029	73SB245-00	33571029-1	SO
33571031	73SB246A-00	33571031-1	SO
33571033	73ER-10	33571033-1	GW

HSN	Customer Sample Id	Container Id	Mx
33571002	73SB24-09	33571002-1	SO
33571026	73SB242-00	33571026-1	SO
33571028	73SB244-00	33571028-1	SO
33571030	73SB246-00	33571030-1	SO
33571033	73ER-10	33571033-2	GW

Total Samples: Total Containers: 11

Chain Of Custody

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	From refrigerator	1/16/09 @ 1615	See SML's Comments	1/16/09 @ 1615	For sample numbering 23
	Brockman	1/16/09 @ 1620	See SML's Comments	1/16/09 @ 1620	~~Returned to holding refrigerator in room 00262~~ 23 to cooler for Shipping
	~~From refrigerator~~	1/16/09 @ 1625	See SML's Comments	1/16/09 @ 1625	to FedEx
	From Fedex	1-19-09 0900	Shelton/Moore	1-19-09 0900	Lanc. Labs unpacking

Remarks:

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473339

Run Date: 16-Jan-09 16:12
Generated By: CHRISTINA.MOORER

Profile: 37088 - 0995	Description: NAPR CMS-Cp Moscrip~37088
Workorder #: 33571	Workorder ID: 099516
Queue: LLS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
33571001		1		
33571002		1		
33571025		1		
33571026		1		
33571027		1		
33571028		1		
33571029		1		
33571030		1		
33571031		1		
33571033		2		

Total Samples: 10 | Total Containers: 11

Chain Of Custody

LIDS Form 235 CMS, 02 Feb 2003

NR=Not Reported.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: USACHPPM

Date of Receipt: 1-19-09

Time of Receipt: 0900

Source Code: 50-1

Unpacker Emp. No.: 2132

Shipping Container Sealed: (YES) NO

Custody Seal Present: (YES) NO

Custody Seal Intact: (YES) NO NA

Package: (Chilled) Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	03106	3.3°-3.7°	ST	IP	N	NA	No temp bottle
2							
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:

Rcvd 2 ambers 73ER-10 The 2 ambers labeled "HOLD" are 1 sample - ID# 73ER-08 1-13-09@1600

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	1-19-09	1026	Unpacking [signature]
[signature]	1-19-09	2016	Place in Storage or Entry
			Entry
			Entry

2174.03

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1128631. Samples arrived at the laboratory on Monday, January 19, 2009. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
33571001 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579594
33571002 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579595
33571025 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579596
33571026 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579597
33571027 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579598
33571028 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579599
33571029 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579600
33571030 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579601
33571031 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579602
33571033 NAPR-Cp Moscrip #37066-0995 Jones Water	5579603

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

PUT98 0012

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579594 SW Group No. 1128631

33571001 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB24-01 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/13/2009 10:10

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40101 SDG#: PUJ98-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	16.1		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	1.4	J	2.0	0.79	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.3	J	2.0	0.79	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		2.0	0.79	ug/kg	1
02867	Acenaphthylene	208-96-8	0.87	J	2.0	0.40	ug/kg	1
02868	Acenaphthene	83-32-9	1.6	J	2.0	0.79	ug/kg	1
02870	Fluorene	86-73-7	1.1	J	2.0	0.79	ug/kg	1
02871	Phenanthrene	85-01-8	24		2.0	0.79	ug/kg	1
02872	Anthracene	120-12-7	4.5		2.0	0.40	ug/kg	1
02874	Fluoranthene	206-44-0	43		2.0	0.79	ug/kg	1
02875	Pyrene	129-00-0	36		2.0	0.79	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	25		2.0	0.79	ug/kg	1
02877	Chrysene	218-01-9	25		2.0	0.40	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	32		2.0	0.79	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	12		2.0	0.79	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	19		2.0	0.79	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	8.8		2.0	0.79	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	3.6		2.0	0.79	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	8.3		2.0	0.79	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Preisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 02:12	William T Parker	1
00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Foreman	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579594 SW Group No. 1128631

33571001 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB24-01 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/13/2009 10:10

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40101 SDG#: PUJ98-01

PUT9E 0015

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579595 SW Group No. 1128631

33571002 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB24-09 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/13/2009 10:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40102 SDG#: PUJ98-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	24.5		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	N.D.		2.2	0.88	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		2.2	0.88	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		2.2	0.88	ug/kg	1
02867	Acenaphthylene	208-96-8	N.D.		2.2	0.44	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		2.2	0.88	ug/kg	1
02870	Fluorene	86-73-7	N.D.		2.2	0.88	ug/kg	1
02871	Phenanthrene	85-01-8	N.D.		2.2	0.88	ug/kg	1
02872	Anthracene	120-12-7	N.D.		2.2	0.44	ug/kg	1
02874	Fluoranthene	206-44-0	N.D.		2.2	0.88	ug/kg	1
02875	Pyrene	129-00-0	N.D.		2.2	0.88	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	N.D.		2.2	0.88	ug/kg	1
02877	Chrysene	218-01-9	0.60	J	2.2	0.44	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	N.D.		2.2	0.88	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	N.D.		2.2	0.88	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	N.D.		2.2	0.88	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		2.2	0.88	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	N.D.		2.2	0.88	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	N.D.		2.2	0.88	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 00:38	William T Parker	1
00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L[illegible]	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579595 SW Group No. 1128631

33571002 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB24-09 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/13/2009 10:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40102 SDG#: PUJ98-02

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579596 SW Group No. 1128631

33571025 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB241-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 15:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40125 SDG#: PUJ98-03

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.8		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	0.93	J	1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	N.D.		1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	N.D.		1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	14		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	N.D.		1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	0.89	J	1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	5.8		1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	10		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	47		1.8	0.71	ug/kg	1
02875	Pyrene	129-00-0	51		1.8	0.71	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	37		1.8	0.71	ug/kg	1
02877	Chrysene	218-01-9	50		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	100		1.8	0.71	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	35		1.8	0.71	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	50		1.8	0.71	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	25		1.8	0.71	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	8.8		1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	25		1.8	0.71	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 02:43	William T Parker	1
00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Forman	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579596 SW Group No. 1128631

33571025 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB241-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 15:15

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

40125 SDG#: PUJ98-03

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

PUJ98: 0619

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Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579597 SW Group No. 1128631

33571026 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB242-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 15:00

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40126 SDG#: PUJ98-04

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	3.6		1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	2.4		1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.5	J	1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	140		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	1.6	J	1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	8.8		1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	7.6		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	77		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	65		1.8	0.70	ug/kg	1
02875	Pyrene	129-00-0	110		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	140		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	180		1.8	0.35	ug/kg	1
02878	Benzo(b)fluoranthene	205-99-2	320		1.8	0.70	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	160		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	220		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	120		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	45		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	150		1.8	0.70	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 08:59	Joseph M Gambler	1
00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Foreman	[illegible]

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579597 SW Group No. 1128631

33571026 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB242-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 15:00

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

40126 SDG#: PUJ98-04

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

PUJ98 0021

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Lancaster Laboratories Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579598 SW Group No. 1128631

33571027 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB243-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 13:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40127 SDG#: PUJ98-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.8	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	6.2	1.8	0.73	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	4.9	1.8	0.73	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	3.7	1.8	0.73	ug/kg	1
02867	Acenaphthylene	208-96-8	47	1.8	0.37	ug/kg	1
02868	Acenaphthene	83-32-9	18	1.8	0.73	ug/kg	1
02870	Fluorene	86-73-7	10	1.8	0.73	ug/kg	1
02871	Phenanthrene	85-01-8	210	1.8	0.73	ug/kg	1
02872	Anthracene	120-12-7	66	1.8	0.37	ug/kg	1
02874	Fluoranthene	206-44-0	780	18	7.3	ug/kg	10
02875	Pyrene	129-00-0	630	18	7.3	ug/kg	10
02876	Benzo(a)anthracene	56-55-3	270	1.8	0.73	ug/kg	1
02877	Chrysene	218-01-9	380	18	3.7	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	340	1.8	0.73	ug/kg	1
02879	Benzo(k)fluoranthene	207-08-9	240	1.8	0.73	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	190	1.8	0.73	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	83	1.8	0.73	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	29	1.8	0.73	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	78	1.8	0.73	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/29/2009 19:46	Ryan P Byrne	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/30/2009 09:12	Mark A Clark	10

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579598 SW Group No. 1128631

33571027 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB243-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 13:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40127 SDG#: PUJ98-05

00381	BNA Soil Extraction	SW-846 3550B	2	01/27/2009 11:00	Jessica Agosto	1

PUJ98 0029

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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579599 SW Group No. 1128631

33571028 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB244-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 13:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40128 SDG#: PUJ98-06

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	5.2		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
02858	PAHs in soils by SIM							
02863	Naphthalene	91-20-3	3.3		1.8	0.70	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	1.8	J	1.8	0.70	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	1.4	J	1.8	0.70	ug/kg	1
02867	Acenaphthylene	208-96-8	95		1.8	0.35	ug/kg	1
02868	Acenaphthene	83-32-9	7.8		1.8	0.70	ug/kg	1
02870	Fluorene	86-73-7	6.0		1.8	0.70	ug/kg	1
02871	Phenanthrene	85-01-8	67		1.8	0.70	ug/kg	1
02872	Anthracene	120-12-7	110		1.8	0.35	ug/kg	1
02874	Fluoranthene	206-44-0	340		18	7.0	ug/kg	10
02875	Pyrene	129-00-0	320		1.8	0.70	ug/kg	1
02876	Benzo(a)anthracene	56-55-3	280		1.8	0.70	ug/kg	1
02877	Chrysene	218-01-9	340		18	3.5	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	600		18	7.0	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	310		1.8	0.70	ug/kg	1
02880	Benzo(a)pyrene	50-32-8	340		1.8	0.70	ug/kg	1
02881	Indeno(1,2,3-cd)pyrene	193-39-5	180		1.8	0.70	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	59		1.8	0.70	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	190		1.8	0.70	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 10:34	Joseph M Gambler	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 11:05	Joseph M Gambler	[illegible]

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Lancaster Laboratories Sample No. 5579599 SW Group No. 1128631

33571028 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB244-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 13:15

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40128 SDG#: PUJ98-06

00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Foreman	1

PUJ98 0025

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579600 SW Group No. 1128631

33571029 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB245-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:30

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40129 SDG#: PUJ98-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	6.6	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	8.7	1.8	0.71	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	5.3	1.8	0.71	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	4.2	1.8	0.71	ug/kg	1
02867	Acenaphthylene	208-96-8	190	18	3.6	ug/kg	10
02868	Acenaphthene	83-32-9	27	1.8	0.71	ug/kg	1
02870	Fluorene	86-73-7	26	1.8	0.71	ug/kg	1
02871	Phenanthrene	85-01-8	190	1.8	0.71	ug/kg	1
02872	Anthracene	120-12-7	210	18	3.6	ug/kg	10
02874	Fluoranthene	206-44-0	1,300	18	7.1	ug/kg	10
02875	Pyrene	129-00-0	1,300	18	7.1	ug/kg	10
02876	Benzo(a)anthracene	56-55-3	910	18	7.1	ug/kg	10
02877	Chrysene	218-01-9	1,300	18	3.6	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	1,900	18	7.1	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	950	18	7.1	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	930	18	7.1	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	570	18	7.1	ug/kg	10
02882	Dibenz(a,h)anthracene	53-70-3	170	1.8	0.71	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	650	18	7.1	ug/kg	10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 11:36	Joseph M Gambler	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/24/2009 03:22	Linda M Harpster	1

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579600 SW Group No. 1128631

33571029 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB245-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:30

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40129 SDG#: PUJ98-07

00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Foreman	1

FUN90 6622

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579601 SW Group No. 1128631

33571030 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB246-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40130 SDG#: PUJ98-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	11.9	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	4.6	1.9	0.76	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	4.2	1.9	0.76	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	3.7	1.9	0.76	ug/kg	1
02867	Acenaphthylene	208-96-8	150	1.9	0.38	ug/kg	1
02868	Acenaphthene	83-32-9	20	1.9	0.76	ug/kg	1
02870	Fluorene	86-73-7	15	1.9	0.76	ug/kg	1
02871	Phenanthrene	85-01-8	160	1.9	0.76	ug/kg	1
02872	Anthracene	120-12-7	160	1.9	0.38	ug/kg	1
02874	Fluoranthene	206-44-0	450	19	7.6	ug/kg	10
02875	Pyrene	129-00-0	460	19	7.6	ug/kg	10
02876	Benzo(a)anthracene	56-55-3	350	19	7.6	ug/kg	10
02877	Chrysene	218-01-9	400	19	3.8	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	660	19	7.6	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	290	19	7.6	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	380	19	7.6	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	180	1.9	0.76	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	61	1.9	0.76	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	190	1.9	0.76	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/23/2009 12:07	Joseph M Gambler	1
02858	PAHs in soile by SIM	SW-846 8270C SIM	1	01/24/2009 03:54	Linda M Har[illegible]	[illegible]

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Lancaster Laboratories Sample No. 5579601 SW Group No. 1128631

33571030 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB246-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40130 SDG#: PUJ98-08

00381	BNA Soil Extraction	SW-846 3550B	1	01/20/2009 23:00	Patricia L Foreman	1

PUJ98 0829

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Lancaster Laboratories Sample No. 5579602 SW Group No. 1128631

33571031 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB246A-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40131 SDG#: PUJ98-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	11.4	0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.						
02858	PAHs in soils by SIM						
02863	Naphthalene	91-20-3	5.4	1.9	0.75	ug/kg	1
02864	2-Methylnaphthalene	91-57-6	8.4	1.9	0.75	ug/kg	1
02865	1-Methylnaphthalene	90-12-0	6.6	1.9	0.75	ug/kg	1
02867	Acenaphthylene	208-96-8	110	1.9	0.38	ug/kg	1
02868	Acenaphthene	83-32-9	16	1.9	0.75	ug/kg	1
02870	Fluorene	86-73-7	12	1.9	0.75	ug/kg	1
02871	Phenanthrene	85-01-8	130	1.9	0.75	ug/kg	1
02872	Anthracene	120-12-7	99	1.9	0.38	ug/kg	1
02874	Fluoranthene	206-44-0	360	19	7.5	ug/kg	10
02875	Pyrene	129-00-0	470	19	7.5	ug/kg	10
02876	Benzo(a)anthracene	56-55-3	340	1.9	0.75	ug/kg	1
02877	Chrysene	218-01-9	400	19	3.8	ug/kg	10
02878	Benzo(b)fluoranthene	205-99-2	440	19	7.5	ug/kg	10
02879	Benzo(k)fluoranthene	207-08-9	370	19	7.5	ug/kg	10
02880	Benzo(a)pyrene	50-32-8	370	19	7.5	ug/kg	10
02881	Indeno(1,2,3-cd)pyrene	193-39-5	210	1.9	0.75	ug/kg	1
02882	Dibenz(a,h)anthracene	53-70-3	73	1.9	0.75	ug/kg	1
02883	Benzo(g,h,i)perylene	191-24-2	210	1.9	0.75	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/30/2009 08:00	Mark A Clark	1
02858	PAHs in soils by SIM	SW-846 8270C SIM	1	01/30/2009 08:36	Mark A Clark	10

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579602 SW Group No. 1128631

33571031 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB246A-00 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Soil

Collected:01/15/2009 14:15

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40131 SDG#: PUJ98-09

00381	BNA Soil Extraction	SW-846 3550B	2	01/27/2009 11:00	Jessica Agosto	1

PUJ98 0031

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579603 WW Group No. 1128631

33571033 NAPR-Cp Moscrip #37066-0995 Jones Water
Field# 73ER-10 # 08-P-0732
Pick-Up Order #0401 Delivery Order# 01 Water

Collected:01/15/2009 16:00

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 01/30/2009 at 11:16
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40133 SDG#: PUJ98-10*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	0.013 J	0.054	0.011	ug/l	1
08362	Naphthalene	91-20-3	0.048 J	0.054	0.011	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.022 J	0.054	0.011	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.054	0.011	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.054	0.011	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.054	0.011	ug/l	1
08369	Phenanthrene	85-01-8	0.016 J	0.054	0.011	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.054	0.011	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.054	0.011	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.054	0.011	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.054	0.011	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.054	0.011	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.054	0.011	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.054	0.011	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.054	0.011	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.054	0.011	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.054	0.011	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.054	0.011	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/23/2009 16:20	Joseph M Gambler	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 08:00	Denise L Trimby	1

PUJ98 0032

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Semivolatiles by GC/MS Data (SIM)

PUR99 0032

Case Narrative Conformance/Nonconformance Summary

PUJ98 0034

Lancaster Laboratories
Where quality is a science.

CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUJ98

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBERS:

LL #'s	Sample Code	Matrix Soil	Matrix Water	Comments
5579594	40101	X		
5579595	40102	X		Unspiked
5579595	40102MS	X		Matrix Spike
5579595	40102MSD	X		Matrix Spike Dup
5579596	40125	X		
5579597	40126	X		
5579598	40127	X		
5579598DL	40127DL	X		10X Dilution
5579599	40128	X		
5579599DL	40128DL	X		10X Dilution
5579600	40129	X		
5579600DL	40129DL	X		10X Dilution
5579601	40130	X		
5579601DL	40130DL	X		10X Dilution
5579602	40131	X		
5579602DL	40131DL	X		10X Dilution
5579603	40133		X	

LABORATORY SUBMITTED QC:

SBLKLD020	SBLKLD0203	X		Method Blank
SBLKWE020	SBLKWE0203		X	Method Blank
SBLKLI026	SBLKLI0266	X		Method Blank
020LDLCS	020LDLCS3	X		Lab Control Sample
020WELCS	020WELCS3		X	Lab Control Sample
020WELCSD	020WELCSD3		X	Lab Control Sample Dup
026LILCS	026LILCS6	X		Lab Control Sample

PUJ98 0035

Lancaster Laboratories
Where quality is a science.

Case Narrative (continued)
SDG: PUJ98

SAMPLE PREPARATION:

Due to insufficient sample, only 923 mls were used in the extraction of 5579603.

No other problems were encountered during the extraction of these samples.

ANALYSIS:

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The recovery of pyrene is outside QC limits in the MSD.

The relative percent differences (RPDs) for fluoranthene and pyrene between the MS and MSD are greater than 30 percent.

All other QC is within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Audrey McClure for Date: 2-3-09
Dana M. Kauffman
Manager, Data Deliverables

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

QC Summary

PUJ98 0037

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUJ98

	LL #'s	EPA SAMPLE NO.	S1 (TPH)#	S2 (NBZ)#	S3 (FBP)#	TOT OUT
01	5579594	40101	79	95	92	0
02	5579595	40102	77	90	89	0
03	5579595	40102MS	81	97	93	0
04	5579595	40102MSD	77	92	89	0
05	5579596	40125	72	82	80	0
06	5579597	40126	75	101	100	0
07	5579598	40127	83	109	107	0
08	5579598DL	40127DL	106	100	103	0
09	5579599	40128	71	98	95	0
10	5579599DL	40128DL	63	91	93	0
11	5579600	40129	73	103	98	0
12	5579600DL	40129DL	82	83	87	0
13	5579601	40130	70	104	98	0
14	5579601DL	40130DL	81	87	90	0
15	5579602	40131	92	110	116	0
16	5579602DL	40131DL	100	105	106	0
17	SBLKLD020	SBLKLD0203	67	70	73	0
18	SBLKLI026	SBLKLI0266	86	84	87	0
19	020LDLCS	020LDLCS3	81	86	87	0
20	026LILCS	026LILCS6	81	100	100	0

	QC LIMITS
S1 (TPH) = Terphenyl-d14	(51-141)
S2 (NBZ) = Nitrobenzene-d5	(53-152)
S3 (FBP) = 2-Fluorobiphenyl	(63-129)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

page 1 of 1

FORM II SV-1

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUJ98

	LL #'s	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	TOT OUT
01	5579603	40133	111	112	88	0
02	SBLKWE020	SBLKWE0203	108	110	96	0
03	020WELCS	020WELCS3	112	112	94	0
04	020WELCSD	020WELCSD3	110	111	93	0

	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(64-147)
S2 (FBP) = 2-Fluorobiphenyl	(68-132)
S3 (TPH) = Terphenyl-d14	(69-140)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

page 1 of 1

FORM II SV-1

PUJ98 0059

SOIL GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS Lab Code: LANCAS

UNSPIKED:ca00118.d
40102 5579595
AMT USED:30.0 g
FINAL VOL:1 ml

MATRIX SPIKE:ca00119.d
40102MS 5579595
AMT USED: 30.0 g
FINAL VOL: 1 ml

SPIKE DUPLICATE:ca00120.d
40102MSD 5579595
AMT USED: 30.0 g
FINAL VOL: 1 ml

INSTRUMENT: HP10623 DILUTION FACTOR: 1 BATCH: 09020SLD026

%MOISTURE: 25 EXTRACT SPIKE LEVEL: 44.44

COMPOUND NAME	MS SPIKE	MSD SPIKE	US CONC UG/KG	MS CONC UG/KG	MSD CONC UG/KG	MS REC %	MSD REC %	Range LOWER-UPPER	INSPEC	RPD %	RPD MAX	INSPEC
Naphthalene	44.44	44.44	ND	36.04	35.04	81	79	27-145	YES	2	30	YES
2-Methylnaphthalene	44.44	44.44	ND	37.85	36.52	85	82	49-134	YES	4	30	YES
1-Methylnaphthalene	44.44	44.44	ND	38.37	37.13	86	84	46-132	YES	2	30	YES
Acenaphthylene	44.44	44.44	ND	40.68	42.64	92	96	42-141	YES	4	30	YES
Acenaphthene	44.44	44.44	ND	37.65	36.63	85	82	23-137	YES	4	30	YES
Fluorene	44.44	44.44	ND	39.89	39.84	90	90	34-142	YES	0	30	YES
Phenanthrene	44.44	44.44	ND	38.82	39.16	87	88	42-144	YES	1	30	YES
Anthracene	44.44	44.44	ND	39.21	40.93	88	92	34-161	YES	4	30	YES
Fluoranthene	44.44	44.44	ND	39.25	64.39	88	145	26-166	YES	49	30	NO
Pyrene	44.44	44.44	ND	38.83	76.44	87	172	37-154	NO	66	30	NO
Benzo(a)anthracene	44.44	44.44	ND	46.14	60.67	104	137	25-166	YES	27	30	YES
Chrysene	44.44	44.44	0.60	39.38	52.78	87	117	14-174	YES	29	30	YES
Benzo(b)fluoranthene	44.44	44.44	ND	43.79	47.28	99	106	17-182	YES	7	30	YES
Benzo(k)fluoranthene	44.44	44.44	ND	41.14	44.49	93	100	40-156	YES	7	30	YES
Benzo(a)pyrene	44.44	44.44	ND	43.16	51.74	97	116	34-156	YES	18	30	YES
Indeno(1,2,3-cd)pyrene	44.44	44.44	ND	42.87	45.96	96	103	10-164	YES	7	30	YES
Dibenz(a,h)anthracene	44.44	44.44	ND	43.41	44.16	98	99	16-159	YES	1	30	YES
Benzo(g,h,i)perylene	44.44	44.44	ND	42.06	44.62	95	100	33-141	YES	5	30	YES

COMMENTS:

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP10623

Method: SW-846 8270C (SIM) File ID: ca00117.d

LCS SAMPLE NO: 020LDLCS BATCH: 09020SLD026 Sample Code: 020LDLCS3

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	QCREF REC %	RANGE LOWER-UPPER	INSPEC
Naphthalene	33.33	25.27	76	67 - 105	YES
2-Methylnaphthalene	33.33	26.55	80	62 - 115	YES
1-Methylnaphthalene	33.33	26.99	81	57 - 119	YES
Acenaphthylene	33.33	26.31	79	67 - 100	YES
Acenaphthene	33.33	26.39	79	73 - 104	YES
Fluorene	33.33	28.26	85	75 - 110	YES
Phenanthrene	33.33	27.90	84	76 - 109	YES
Anthracene	33.33	26.70	80	70 - 103	YES
Fluoranthene	33.33	27.76	83	78 - 114	YES
Pyrene	33.33	27.78	83	69 - 116	YES
Benzo(a)anthracene	33.33	28.60	86	74 - 112	YES
Chrysene	33.33	28.84	87	79 - 111	YES
Benzo(b)fluoranthene	33.33	32.94	99	70 - 125	YES
Benzo(k)fluoranthene	33.33	31.09	93	72 - 124	YES
Benzo(a)pyrene	33.33	30.07	90	70 - 109	YES
Indeno(1,2,3-cd)pyrene	33.33	34.65	104	64 - 127	YES
Dibenz(a,h)anthracene	33.33	36.10	108	63 - 138	YES
Benzo(g,h,i)perylene	33.33	32.80	98	58 - 131	YES

NC = Could not calculate

Comments:

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: ca00144.d
020WELCS3 020WELCS
Method: SW-846 8270C (SIM)
Instrument: HP10623

LCS Duplicate: ca00145.d
020WELCSD3 020WELCSD
Matrix/Level: W/L
Dilution Factor: 1.0

Batch: 09020WAE026

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	LCSD CONC UG/L	LCS REC %	LCSD REC %	Range LOWER-UPPER	REC INSPEC	RPD %	RPD MAX	RPD INSPEC
Naphthalene	1.00	.95	.94	95	94	72-109	YES	1	30	YES
2-Methylnaphthalene	1.00	.97	.96	97	96	75-115	YES	1	30	YES
1-Methylnaphthalene	1.00	.99	.98	99	98	71-117	YES	1	30	YES
Acenaphthylene	1.00	1.06	1.03	106	103	70-110	YES	3	30	YES
Acenaphthene	1.00	1.01	.99	101	99	74-109	YES	2	30	YES
Fluorene	1.00	1.06	1.02	106	102	75-114	YES	4	30	YES
Phenanthrene	1.00	1.05	1.04	105	104	76-111	YES	1	30	YES
Anthracene	1.00	1.04	1.00	104	100	66-111	YES	4	30	YES
Fluoranthene	1.00	1.00	.98	100	98	75-116	YES	2	30	YES
Pyrene	1.00	1.01	.99	101	99	69-118	YES	2	30	YES
Benzo(a)anthracene	1.00	1.03	1.03	103	103	72-114	YES	0	30	YES
Chrysene	1.00	1.05	1.04	105	104	76-116	YES	1	30	YES
Benzo(b)fluoranthene	1.00	1.07	1.06	107	106	69-123	YES	1	30	YES
Benzo(k)fluoranthene	1.00	.98	.97	98	97	72-122	YES	1	30	YES
Benzo(a)pyrene	1.00	1.00	.99	100	99	64-115	YES	1	30	YES
Indeno(1,2,3-cd)pyrene	1.00	1.08	1.07	108	107	69-124	YES	1	30	YES
Dibenz(a,h)anthracene	1.00	1.08	1.07	108	107	71-125	YES	1	30	YES
Benzo(g,h,i)perylene	1.00	1.10	1.10	110	110	68-125	YES	0	30	YES

N/C = Could not calculate

Lab Chronicle: _____ Ent. by _____

_____ Ver. by [redacted]

Lancaster Laboratories, Inc.
SOIL Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP07166

Method: SW-846 8270C (SIM) File ID: fa0414a.d

LCS SAMPLE NO: 026LILCS . BATCH: 09026SL1026 Sample Code: 026LILCS6

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/Kg	QCREF REC %	RANGE LOWER-UPPER	INSPEC
Naphthalene	33.33	25.64	77	67 - 105	YES
2-Methylnaphthalene	33.33	26.72	80	62 - 115	YES
1-Methylnaphthalene	33.33	27.90	84	72 - 114	YES
Acenaphthylene	33.33	27.78	83	67 - 100	YES
Acenaphthene	33.33	28.13	84	59 - 102	YES
Fluorene	33.33	28.77	86	75 - 110	YES
Phenanthrene	33.33	30.44	91	76 - 109	YES
Anthracene	33.33	27.05	81	53 - 105	YES
Fluoranthene	33.33	31.59	95	78 - 114	YES
Pyrene	33.33	25.64	77	69 - 116	YES
Benzo(a)anthracene	33.33	28.96	87	74 - 112	YES
Chrysene	33.33	30.06	90	79 - 111	YES
Benzo(b)fluoranthene	33.33	36.64	110	70 - 125	YES
Benzo(k)fluoranthene	33.33	30.42	91	72 - 124	YES
Benzo(a)pyrene	33.33	28.71	86	70 - 109	YES
Indeno(1,2,3-cd)pyrene	33.33	23.62	71	64 - 127	YES
Dibenz(a,h)anthracene	33.33	24.43	73	63 - 138	YES
Benzo(g,h,i)perylene	33.33	21.06	63	44 - 138	YES

NC = Could not calculate

Comments:

PB1908 0043

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKLD0203

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00116.d Lab Sample ID: SBLKLD020

Date Extracted: 01/20/09 Extraction: Sonc

Date Analyzed: 01/22/09 Time Analyzed: 18:49

Matrix (soil/water): SOIL Level: (low/med) LOW

Instrument ID: HP10623

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	020LDLCS3	020LDLCS	ca00117.d	01/22/09
02	40102	5579595	ca00118.d	01/23/09
03	40102MS	5579595	ca00119.d	01/23/09
04	40102MSD	5579595	ca00120.d	01/23/09
05	40101	5579594	ca00121.d	01/23/09
06	40125	5579596	ca00122.d	01/23/09
07	40126	5579597	ca00146.d	01/23/09
08	40127	5579598	ca00147.d	01/23/09
09	40127DL	5579598DL	ca00148.d	01/23/09
10	40128	5579599	ca00149.d	01/23/09
11	40128DL	5579599DL	ca00150.d	01/23/09
12	40129	5579600	ca00151.d	01/23/09
13	40130	5579601	ca00152.d	01/23/09
14	40131	5579602	ca00153.d	01/23/09
15	40129DL	5579600DL	ca00179.d	01/24/09
16	40130DL	5579601DL	ca00180.d	01/24/09
17	40131DL	5579602DL	ca00181.d	01/24/09

COMMENTS:

PHL590 0044

page 1 of 1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWE0203

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00143.d Lab Sample ID: SBLKWE020

Date Extracted: 01/21/09 Extraction: Sepf

Date Analyzed: 01/23/09 Time Analyzed: 07:25

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP10623

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	020WELCS3	020WELCS	ca00144.d	01/23/09
02	020WELCSD3	020WELCSD	ca00145.d	01/23/09
03	LAN10	5578259	ca00154.d	01/23/09
04	LANB1	5578260	ca00155.d	01/23/09
05	MW013	5578819	ca00156.d	01/23/09
06	MW030	5578820	ca00157.d	01/23/09
07	MW018	5578821	ca00158.d	01/23/09
08	MW012	5578822	ca00159.d	01/23/09
09	40133	5579603	ca00160.d	01/23/09

COMMENTS:

PTA90 0045

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKLI0266

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: fa0413a.d Lab Sample ID: SBLKLI026

Date Extracted: 01/27/09 Extraction: Sonc

Date Analyzed: 01/29/09 Time Analyzed: 18:35

Matrix (soil/water): SOIL Level: (low/med) LOW

Instrument ID: HP07166

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	026LILCS6	026LILCS	fa0414a.d	01/29/09
02	40127	5579598	fa0415a.d	01/29/09
03	40127MS	5579598	fa0416a.d	01/29/09
04	40127MSD	5579598	fa0417a.d	01/29/09
05	40131	5579602	fa0464.d	01/30/09
06	40131DL	5579602DL	fa0466.d	01/30/09
07	40127DL	5579598DL	fa0465.d	01/30/09

COMMENTS:

page 1 of 1

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00090.d DFTPP Injection Date: 01/22/09

Instrument ID: HP10623 DFTPP Injection Time: 07:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.8
68	Less than 2.0% of mass 69	0.75 (1.82)1
69	Mass 69 relative abundance	41.1
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	50.8
197	Less than 1.0% of mass 198	0.35
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.89
275	10.0 - 30.0% of mass 198	25.7
365	Greater than 1.00% of mass 198	2.71
441	Present, and less than mass 443	10.4
442	Greater than 40.0 % of mass 198	68.8
443	17.0 - 23.0% of mass 442	13.0 (18.9)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD005	LPAH0219	ca00091a.d	01/22/09	08:43
02	SSTD010	LPAH0219	ca00092.d	01/22/09	09:57
03	SSTD.05	LPAH0219	ca00093.d	01/22/09	10:28
04	SSTD001	LPAH0219	ca00094.d	01/22/09	11:00
05	SSTD0.2	LPAH0219	ca00095.d	01/22/09	13:11
06	SSTD0.5	LPAH0219	ca00096.d	01/22/09	13:42
07	SSTD0.02	LPAHMDL0219	ca00097.d	01/22/09	14:14
08	SSTD001	LPAHICV2598	ca00098.d	01/22/09	14:46

FULSH. 00447

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00100.d DFTPP Injection Date: 01/22/09

Instrument ID: HP10623 DFTPP Injection Time: 15:12

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.4
68	Less than 2.0% of mass 69	0.76 (1.89)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.55)1
127	40.0 - 60.0% of mass 198	49.8
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.53
275	10.0 - 30.0% of mass 198	26.6
365	Greater than 1.00% of mass 198	2.91
441	Present, and less than mass 443	10.1
442	Greater than 40.0 % of mass 198	70.2
443	17.0 - 23.0% of mass 442	13.1 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD001	LPAH0219	ca00101.d	01/22/09	15:34
02	SBLKWC0193	SBLKWC019	ca00104.d	01/22/09	16:41
03	019WCLCS3	019WCLCS	ca00105.d	01/22/09	17:13
04	019WCLCSD3	019WCLCSD	ca00106.d	01/22/09	17:45
05	SBLKLD0203	SBLKLD020	ca00116.d	01/22/09	18:49
06	020LDLCS3	020LDLCS	ca00117.d	01/22/09	19:21
07	H99M7RE	5577691RE	ca00102.d	01/22/09	19:53
08	MW032	5578811	ca00107.d	01/22/09	20:25
09	MW033	5578812	ca00108.d	01/22/09	20:57
10	MW027	5578813	ca00109.d	01/22/09	21:28
11	MW029	5578814	ca00110.d	01/22/09	22:00
12	MW026	5578815	ca00111.d	01/22/09	22:32
13	MW005	5578816	ca00112.d	01/22/09	23:03
14	MW028	5578817	ca00113.d	01/22/09	23:35
15	MW003	5578818	ca00114.d	01/23/09	00:06
16	40102	5579595	ca00118.d	01/23/09	00:38
17	40102MS	5579595	ca00119.d	01/23/09	01:09
18	40102MSD	5579595	ca00120.d	01/23/09	01:41

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00100.d DFTPP Injection Date: 01/22/09

Instrument ID: HP10623 DFTPP Injection Time: 15:12

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.4
68	Less than 2.0% of mass 69	0.76 (1.89)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.55)1
127	40.0 - 60.0% of mass 198	49.8
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.53
275	10.0 - 30.0% of mass 198	26.6
365	Greater than 1.00% of mass 198	2.91
441	Present, and less than mass 443	10.1
442	Greater than 40.0 % of mass 198	70.2
443	17.0 - 23.0% of mass 442	13.1 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	40101	5579594	ca00121.d	01/23/09	02:12
20	40125	5579596	ca00122.d	01/23/09	02:43

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00140.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 05:54

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.2
68	Less than 2.0% of mass 69	0.94 (1.93)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.31 (0.62)1
127	40.0 - 60.0% of mass 198	57.3
197	Less than 1.0% of mass 198	0.44
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.78
275	10.0 - 30.0% of mass 198	24.8
365	Greater than 1.00% of mass 198	2.85
441	Present, and less than mass 443	8.53
442	Greater than 40.0 % of mass 198	56.3
443	17.0 - 23.0% of mass 442	10.6 (18.9)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD005	LPAH0219	ca00141.d	01/23/09	06:17
02	SBLKWE0203	SBLKWE020	ca00143.d	01/23/09	07:25
03	020WELCS3	020WELCS	ca00144.d	01/23/09	07:56
04	020WELCSD3	020WELCSD	ca00145.d	01/23/09	08:28
05	40126	5579597	ca00146.d	01/23/09	08:59
06	40127	5579598	ca00147.d	01/23/09	09:31
07	40127DL	5579598DL	ca00148.d	01/23/09	10:02
08	40128	5579599	ca00149.d	01/23/09	10:34
09	40128DL	5579599DL	ca00150.d	01/23/09	11:05
10	40129	5579600	ca00151.d	01/23/09	11:36
11	40130	5579601	ca00152.d	01/23/09	12:07
12	40131	5579602	ca00153.d	01/23/09	12:39
13	LAN10	5578259	ca00154.d	01/23/09	13:11
14	LANB1	5578260	ca00155.d	01/23/09	13:42
15	MW013	5578819	ca00156.d	01/23/09	14:14
16	MW030	5578820	ca00157.d	01/23/09	14:45
17	MW018	5578821	ca00158.d	01/23/09	15:17
18	MW012	5578822	ca00159.d	01/23/09	15:49

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00140.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 05:54

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.2
68	Less than 2.0% of mass 69	0.94 (1.93)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.31 (0.62)1
127	40.0 - 60.0% of mass 198	57.3
197	Less than 1.0% of mass 198	0.44
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.78
275	10.0 - 30.0% of mass 198	24.8
365	Greater than 1.00% of mass 198	2.85
441	Present, and less than mass 443	8.53
442	Greater than 40.0 % of mass 198	56.3
443	17.0 - 23.0% of mass 442	10.6 (18.9)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	40133	5579603	ca00160.d	01/23/09	16:20

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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00170z.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 20:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.8
68	Less than 2.0% of mass 69	0.79 (1.94)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.54)1
127	40.0 - 60.0% of mass 198	51.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.74
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	2.9
441	Present, and less than mass 443	10.5
442	Greater than 40.0 % of mass 198	72.3
443	17.0 - 23.0% of mass 442	13.4 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD.50	LPAH0219	ca00171a.d	01/23/09	21:27
02	SBLKWE0213	SBLKWE021	ca00184.d	01/23/09	22:30
03	021WELCS3	021WELCS	ca00185.d	01/23/09	23:02
04	SBLKWI0223	SBLKWI022	ca00173.d	01/24/09	00:12
05	022WILCS3	022WILCS	ca00174.d	01/24/09	00:44
06	022WILCSD3	022WILCSD	ca00175.d	01/24/09	01:15
07	H99M5RE	5577689RE	ca00176.d	01/24/09	01:47
08	H99M8RE	5577692RE	ca00177.d	01/24/09	02:19
09	H9910RE	5577694RE	ca00178.d	01/24/09	02:50
10	40129DL	5579600DL	ca00179.d	01/24/09	03:22
11	40130DL	5579601DL	ca00180.d	01/24/09	03:54
12	40131DL	5579602DL	ca00181.d	01/24/09	04:26
13	40404	5580631	ca00186.d	01/24/09	05:03
14	40406	5580632	ca00187.d	01/24/09	05:35
15	40408	5580633	ca00188.d	01/24/09	06:12
16	40409	5580634	ca00189.d	01/24/09	06:43
17	40410	5580635	ca00190.d	01/24/09	07:14
18	40410MS	5580635	ca00191.d	01/24/09	07:45

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00170z.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 20:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.8
68	Less than 2.0% of mass 69	0.79 (1.94)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.54)1
127	40.0 - 60.0% of mass 198	51.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.74
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	2.9
441	Present, and less than mass 443	10.5
442	Greater than 40.0 % of mass 198	72.3
443	17.0 - 23.0% of mass 442	13.4 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	40410MSD	5580635	ca00192.d	01/24/09	08:16

PUL96 0053

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: fa0390.d DFTPP Injection Date: 01/27/09

Instrument ID: HP07166 DFTPP Injection Time: 12:53

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.2
68	Less than 2.0% of mass 69	0.38 (0.85)1
69	Mass 69 relative abundance	44.6
70	Less than 2.0% of mass 69	0.24 (0.55)1
127	40.0 - 60.0% of mass 198	53.0
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.06
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	3.8
441	Present, and less than mass 443	9.09
442	Greater than 40.0 % of mass 198	61.0
443	17.0 - 23.0% of mass 442	12.1 (19.9)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD001	LPAH0219	fa0391.d	01/27/09	13:11
02	SSTD010	LPAH0219	fa0392.d	01/27/09	14:02
03	SSTD.05	LPAH0219	fa0393.d	01/27/09	14:37
04	SSTD005	LPAH0219	fa0394.d	01/27/09	15:13
05	SSTD0.2	LPAH0219	fa0395.d	01/27/09	15:48
06	SSTD0.5	LPAH0219	fa0396.d	01/27/09	16:23
07	SSTD0.02	LPAHMDL0219	fa0397.d	01/27/09	16:59
08	SSTD001	LPAHICV2598	fa0398.d	01/27/09	17:35

PNF98: 0054

FORM V SV

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: fa0410.d DFTPP Injection Date: 01/29/09

Instrument ID: HP07166 DFTPP Injection Time: 11:25

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.5
68	Less than 2.0% of mass 69	0.33 (0.73)1
69	Mass 69 relative abundance	45.1
70	Less than 2.0% of mass 69	0.21 (0.48)1
127	40.0 - 60.0% of mass 198	52.8
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.05
275	10.0 - 30.0% of mass 198	27.1
365	Greater than 1.00% of mass 198	3.97
441	Present, and less than mass 443	8.67
442	Greater than 40.0 % of mass 198	60.4
443	17.0 - 23.0% of mass 442	11.5 (19.0)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD005	LPAH0219	fa0411.d	01/29/09	11:44
02	SBLKLC0276	SBLKLC027	fa0420.d	01/29/09	17:09
03	027LCLCS6	027LCLCS	fa0421.d	01/29/09	17:44
04	SBLKLI0266	SBLKLI026	fa0413a.d	01/29/09	18:35
05	026LILCS6	026LILCS	fa0414a.d	01/29/09	19:10
06	40127	5579598	fa0415a.d	01/29/09	19:46
07	40127MS	5579598	fa0416a.d	01/29/09	20:21
08	40127MSD	5579598	fa0417a.d	01/29/09	20:57
09	SB235	5584340	fa0422.d	01/29/09	22:08
10	SB235MS	5584340	fa0423.d	01/29/09	22:43
11	SB235MSD	5584340	fa0424.d	01/29/09	23:18

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: fa0440.d DFTPP Injection Date: 01/30/09

Instrument ID: HP07166 DFTPP Injection Time: 05:52

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.5
68	Less than 2.0% of mass 69	0.71 (1.54)1
69	Mass 69 relative abundance	46.1
70	Less than 2.0% of mass 69	0.24 (0.53)1
127	40.0 - 60.0% of mass 198	53.8
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.21
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	4.19
441	Present, and less than mass 443	10.1
442	Greater than 40.0 % of mass 198	63.4
443	17.0 - 23.0% of mass 442	12.5 (19.7)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0.5	LPAH0219	fa0441.d	01/30/09	06:10
02	40131	5579602	fa0464.d	01/30/09	08:00
03	40131DL	5579602DL	fa0466.d	01/30/09	08:36
04	40127DL	5579598DL	fa0465.d	01/30/09	09:12
05	A17-5	5578398	fa0443.d	01/30/09	09:48
06	A1739	5578399	fa0444.d	01/30/09	10:24
07	A20-5	5578400	fa0445.d	01/30/09	11:00
08	A18-5	5578401	fa0446.d	01/30/09	11:35
09	A1841	5578402	fa0447.d	01/30/09	12:10
10	ASB19	5579216	fa0448.d	01/30/09	12:45
11	ASB20	5579217	fa0449.d	01/30/09	13:21
12	ASB21	5579218	fa0450.d	01/30/09	13:57

FORM V SV

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00101.d Date Analyzed: 01/22/09

Instrument ID: HP10623 Time Analyzed: 15:34

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	121251	7.139	541270	8.653	275634	10.802
	UPPER LIMIT	242502	7.639	1082540	9.153	551268	11.302
	LOWER LIMIT	60626	6.639	270635	8.153	137817	10.302
	EPA SAMPLE NO.						
01	SBLKWC0193	125721	7.139	573642	8.653	290817	10.802
02	019WCLCS3	123342	7.139	571194	8.644	288717	10.802
03	019WCLCSD3	122696	7.139	569745	8.653	285751	10.802
04	SBLKLD0203	115276	7.130	532446	8.644	268600	10.802
05	020LDLCS3	119026	7.139	550470	8.644	282096	10.802
06	H99M7RE	113948	7.139	523206	8.653	266082	10.802
07	MW032	122338	7.139	566062	8.653	290994	10.802
08	MW033	122518	7.139	569353	8.653	291846	10.802
09	MW027	117056	7.139	539242	8.653	276718	10.802
10	MW029	113578	7.139	521282	8.653	266662	10.802
11	MW026	115228	7.139	543694	8.653	273396	10.802
12	MW005	113697	7.138	530182	8.653	266941	10.802
13	MW028	109905	7.139	513179	8.653	256147	10.802
14	MW003	114323	7.139	530126	8.653	264339	10.802
15	40102	110763	7.130	514836	8.644	257081	10.802
16	40102MS	103399	7.139	480057	8.644	244208	10.802
17	40102MSD	108841	7.139	506702	8.644	255634	10.802

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00101.d Date Analyzed: 01/22/09

Instrument ID: HP10623 Time Analyzed: 15:34

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	121251	7.139	541270	8.653	275634	10.802
	UPPER LIMIT	242502	7.639	1082540	9.153	551268	11.302
	LOWER LIMIT	60626	6.639	270635	8.153	137817	10.302
	EPA SAMPLE NO.						
18	40101	105140	7.130	490982	8.644	249897	10.802
19	40125	109894	7.139	505926	8.644	258505	10.802

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

PEJ98 0850

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00101.d Date Analyzed: 01/22/09

Instrument ID: HP10623 Time Analyzed: 15:34

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	500373	12.646	421874	15.921	310495	17.798
	UPPER LIMIT	1000746	13.146	843748	16.421	620990	18.298
	LOWER LIMIT	250187	12.146	210937	15.421	155248	17.298
	EPA SAMPLE NO.						
01	SBLKWC0193	529539	12.646	422692	15.921	295901	17.798
02	019WCLCS3	528863	12.646	432935	15.921	297588	17.798
03	019WCLCSD3	519361	12.646	431046	15.921	294090	17.798
04	SBLKLD0203	487789	12.646	393589	15.921	273987	17.798
05	020LDLCS3	507054	12.646	414250	15.921	293806	17.798
06	H99M7RE	476268	12.646	383210	15.921	1906*	17.704
07	MW032	533859	12.646	424020	15.921	301000	17.798
08	MW033	528848	12.646	433205	15.921	312367	17.797
09	MW027	507569	12.646	406146	15.921	284711	17.798
10	MW029	488096	12.646	388141	15.921	278230	17.798
11	MW026	504358	12.646	397552	15.921	280985	17.798
12	MW005	496110	12.646	390480	15.920	274800	17.797
13	MW028	480114	12.646	373066	15.921	261553	17.798
14	MW003	477715	12.646	385990	15.921	276159	17.798
15	40102	464329	12.646	398369	15.921	308179	17.798
16	40102MS	443501	12.646	372984	15.921	264982	17.798
17	40102MSD	464447	12.646	392024	15.921	293657	17.798

IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00101.d Date Analyzed: 01/22/09

Instrument ID: HP10623 Time Analyzed: 15:34

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	500373	12.646	421874	15.921	310495	17.798
	UPPER LIMIT	1000746	13.146	843748	16.421	620990	18.298
	LOWER LIMIT	250187	12.146	210937	15.421	155248	17.298
	EPA SAMPLE NO.						
18	40101	450811	12.646	384922	15.921	272104	17.798
19	40125	472547	12.646	392201	15.921	236577	17.798

IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00141.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 06:17

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	76625	7.111	354182	8.625	165933	10.777
	UPPER LIMIT	153250	7.611	708364	9.125	331866	11.277
	LOWER LIMIT	38313	6.611	177091	8.125	82967	10.277
	EPA SAMPLE NO.						
01	SBLKWE0203	66119	7.111	309675	8.625	148228	10.777
02	020WELCS3	63364	7.111	295107	8.625	140377	10.777
03	020WELCSD3	62501	7.111	293008	8.625	139700	10.777
04	40126	67822	7.102	305059	8.625	140456	10.777
05	40127	73002	7.102	324999	8.625	151520	10.777
06	40127DL	64154	7.111	283681	8.626	132841	10.777
07	40128	64152	7.111	288253	8.625	135704	10.777
08	40128DL	62006	7.111	279862	8.625	131805	10.777
09	40129	60781	7.111	267692	8.625	127614	10.777
10	40130	59555	7.111	265439	8.625	128427	10.777
11	40131	64340	7.111	290894	8.625	136656	10.777
12	LAN10	55369	7.111	248675	8.626	139207	10.777
13	LANB1	54533	7.111	247131	8.625	121169	10.777
14	MW013	55160	7.111	242914	8.625	123300	10.777
15	MW030	54340	7.111	246183	8.625	118007	10.777
16	MW018	53953	7.111	239464	8.625	112586	10.777
17	MW012	56181	7.111	249525	8.626	118549	10.777

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00141.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 06:17

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	76625	7.111	354182	8.625	165933	10.777
	UPPER LIMIT	153250	7.611	708364	9.125	331866	11.277
	LOWER LIMIT	38313	6.611	177091	8.125	82967	10.277
	EPA SAMPLE NO.						
18	40133	56511	7.111	255969	8.626	124201	10.777

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00141.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 06:17

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	280753	12.617	232176	15.889	191286	17.750
	UPPER LIMIT	561506	13.117	464352	16.389	382572	18.250
	LOWER LIMIT	140377	12.117	116088	15.389	95643	17.250
	EPA SAMPLE NO.						
01	SBLKWE0203	255312	12.617	201946	15.889	163732	17.751
02	020WELCS3	243071	12.617	194923	15.889	156035	17.751
03	020WELCSD3	236446	12.617	192453	15.889	157277	17.751
04	40126	247946	12.617	254090	15.889	230156	17.758
05	40127	257604	12.617	304993	15.897	253190	17.766
06	40127DL	245536	12.617	262572	15.890	245038	17.759
07	40128	241030	12.617	254370	15.897	203306	17.766
08	40128DL	251399	12.617	271951	15.889	232637	17.758
09	40129	232710	12.617	283623	15.905	190261	17.774
10	40130	237750	12.617	274934	15.897	190723	17.766
11	40131	252855	12.617	270106	15.897	200503	17.766
12	LAN10	222989	12.617	259988	15.897	176450	17.759
13	LANB1	221892	12.617	230376	15.889	169076	17.758
14	MW013	218635	12.617	228287	15.889	164324	17.758
15	MW030	223447	12.617	223400	15.889	165626	17.759
16	MW018	203972	12.617	216261	15.889	160731	17.758
17	MW012	216389	12.617	231036	15.890	170664	17.759

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00141.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 06:17

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	280753	12.617	232176	15.889	191286	17.750
	UPPER LIMIT	561506	13.117	464352	16.389	382572	18.250
	LOWER LIMIT	140377	12.117	116088	15.389	95643	17.250
	EPA SAMPLE NO.						
18	40133	231460	12.617	234827	15.890	169387	17.759

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	79941	7.084	374562	8.598	186323	10.752
	UPPER LIMIT	159882	7.584	749124	9.098	372646	11.252
	LOWER LIMIT	39971	6.584	187281	8.098	93162	10.252
	EPA SAMPLE NO.						
01	SBLKWE0213	76163	7.083	360531	8.598	177099	10.752
02	021WELCS3	73855	7.084	349000	8.598	173001	10.753
03	SBLKWI0223	75133	7.084	356728	8.598	176163	10.753
04	022WILCS3	77322	7.084	365283	8.598	181747	10.753
05	022WILCSD3	79676	7.084	379073	8.598	187738	10.753
06	H99M5RE	74662	7.083	352407	8.598	175642	10.752
07	H99M8RE	77894	7.083	498434	8.598	202757	10.752
08	H9910RE	80854	7.084	386751	8.598	192298	10.753
09	40129DL	79328	7.083	377357	8.598	189208	10.752
10	40130DL	81202	7.084	386779	8.598	194949	10.753
11	40131DL	78299	7.084	373553	8.598	188059	10.752
12	40404	78445	7.084	366783	8.598	183876	10.753
13	40406	78241	7.083	366978	8.598	183240	10.752
14	40408	74732	7.083	349897	8.598	175776	10.752
15	40409	72679	7.084	339889	8.598	355663	10.753
16	40410	75648	7.083	357863	8.598	176309	10.752
17	40410MS	72677	7.084	341341	8.598	168124	10.752

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	79941	7.084	374562	8.598	186323	10.752
	UPPER LIMIT	159882	7.584	749124	9.098	372646	11.252
	LOWER LIMIT	39971	6.584	187281	8.098	93162	10.252
	EPA SAMPLE NO.						
18	40410MSD	74534	7.084	346054	8.598	168972	10.753

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	344434	12.588	282195	15.858	211348	17.712
	UPPER LIMIT	688868	13.088	564390	16.358	422696	18.212
	LOWER LIMIT	172217	12.088	141098	15.358	105674	17.212
	EPA SAMPLE NO.						
01	SBLKWE0213	328697	12.588	265786	15.858	198320	17.719
02	021WELCS3	318227	12.589	265497	15.858	194346	17.719
03	SBLKWI0223	321935	12.588	258206	15.858	195501	17.712
04	022WILCS3	328312	12.589	276541	15.858	203369	17.712
05	022WILCSD3	346636	12.589	282899	15.858	208830	17.712
06	H99M5RE	323934	12.588	261046	15.858	200186	17.711
07	H99M8RE	342910	12.588	280399	15.858	226203	17.711
08	H9910RE	346664	12.588	284640	15.858	218708	17.712
09	40129DL	359679	12.588	308430	15.858	250305	17.719
10	40130DL	363417	12.589	311638	15.858	243147	17.719
11	40131DL	351979	12.588	300189	15.858	231204	17.712
12	40404	336008	12.588	278091	15.858	207961	17.719
13	40406	333010	12.588	276789	15.858	209276	17.719
14	40408	315573	12.588	260416	15.858	199703	17.719
15	40409	309775	12.589	253807	15.858	189902	17.712
16	40410	319828	12.588	263364	15.858	139112	17.711
17	40410MS	309043	12.588	252552	15.858	130041	17.712

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	344434	12.588	282195	15.858	211348	17.712
	UPPER LIMIT	688868	13.088	564390	16.358	422696	18.212
	LOWER LIMIT	172217	12.088	141098	15.358	105674	17.212
	EPA SAMPLE NO.						
18	40410MSD	311126	12.588	254535	15.858	129695	17.712

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): fa0411.d Date Analyzed: 01/29/09

Instrument ID: HP07166 Time Analyzed: 11:44

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	233978	6.542	954381	8.486	538689	11.344
	UPPER LIMIT	467956	7.042	1908762	8.986	1077378	11.844
	LOWER LIMIT	116989	6.042	477191	7.986	269345	10.844
	EPA SAMPLE NO.						
01	SBLKLC0276	176481	6.531	702171	8.475	366677	11.345
02	027LCLCS6	174975	6.531	701831	8.475	377014	11.344
03	SBLKLI0266	178278	6.530	723159	8.474	384799	11.344
04	026LILCS6	184343	6.530	757237	8.474	396401	11.345
05	40127	167281	6.530	643204	8.474	332124	11.344
06	40127MS	209471	6.541	717111	8.485	469361	11.344
07	40127MSD	150955	6.541	577340	8.485	287400	11.344
08	SB235	163071	6.529	631895	8.473	319845	11.345
09	SB235MS	158462	6.530	617010	8.474	315497	11.343
10	SB235MSD	168999	6.530	666652	8.474	345334	11.345

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

FILE90 0067

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): fa0411.d Date Analyzed: 01/29/09

Instrument ID: HP07166 Time Analyzed: 11:44

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	815811	13.774	593877	19.595	417185	22.780
	UPPER LIMIT	1631622	14.274	1187754	20.095	834370	23.280
	LOWER LIMIT	407906	13.274	296939	19.095	208593	22.280
	EPA SAMPLE NO.						
01	SBLKLC0276	515143	13.774	425467	19.595	296927	22.780
02	027LCLCS6	522316	13.773	449500	19.595	333031	22.780
03	SBLKLI0266	539535	13.773	442974	19.595	334414	22.780
04	026LILCS6	494464	13.774	484479	19.595	395047	22.780
05	40127	414155	13.773	297960	19.605	285388	22.790
06	40127MS	411407	13.773	349285	19.615	286024	22.801
07	40127MSD	304336*	13.773	298145	19.615	247820	22.800
08	SB235	426274	13.772	313212	19.596	217677	22.781
09	SB235MS	447553	13.772	397453	19.595	248352	22.780
10	SB235MSD	489502	13.773	396760	19.594	274589	22.780

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): fa0441.d Date Analyzed: 01/30/09

Instrument ID: HP07166 Time Analyzed: 06:10

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	151433	6.520	633860	8.453	364783	11.306
	UPPER LIMIT	302866	7.020	1267720	8.953	729566	11.806
	LOWER LIMIT	75717	6.020	316930	7.953	182392	10.806
	EPA SAMPLE NO.						
01	40131	131559	6.508	546032	8.452	267458	11.314
02	40131DL	135348	6.519	538988	8.452	298340	11.305
03	40127DL	135919	6.519	548331	8.452	298808	11.314
04	A17-5	137400	6.509	568919	8.442	320791	11.314
05	A1739	139071	6.508	574677	8.441	322305	11.304
06	A20-5	135860	6.509	564622	8.442	313863	11.306
07	A18-5	138423	6.509	569556	8.442	321993	11.305
08	A1841	135769	6.508	566194	8.441	316967	11.305
09	ASB19	151694	6.509	435715	8.453	348295	11.314
10	ASB20	132320	6.520	477369	8.453	361608	11.305
11	ASB21	119971	6.509	496530	8.442	263691	11.314

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

FILE: 08071

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): fa0441.d Date Analyzed: 01/30/09

Instrument ID: HP07166 Time Analyzed: 06:10

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	633768	13.736	447024	19.545	292729	22.731
	UPPER LIMIT	1267536	14.236	894048	20.045	585458	23.231
	LOWER LIMIT	316884	13.236	223512	19.045	146365	22.231
	EPA SAMPLE NO.						
01	40131	379588	13.735	288966	19.555	270381	22.750
02	40131DL	522640	13.734	327435	19.545	247006	22.731
03	40127DL	563642	13.736	373185	19.545	273022	22.730
04	A17-5	586205	13.735	358673	19.544	242054	22.729
05	A1739	582167	13.735	360605	19.545	243946	22.730
06	A20-5	569237	13.737	463976	19.536	252130	22.731
07	A18-5	594637	13.736	365031	19.544	256221	22.730
08	A1841	573205	13.734	394077	19.544	260519	22.729
09	ASB19	567607	13.735	400392	19.544	267910	22.730
10	ASB20	579177	13.735	303105	19.545	208772	22.730
11	ASB21	343617	13.735	277548	19.545	312783	22.760

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones DIVISION/TEAM: _____

INSTALLATION: NAPR-Cp Moscrip CONTRACT LAB: Lancaster (LLS)

PROJECT NO: Program 38 LIMS W.O. NO: 33574

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

✓ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____ OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrows
DATE: 11 Feb 09

LIDS 2.0 Feb 06

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Type I Data Package
for
U.S. Army CHPPM

Contract Number: 08-P-0732

SDG# PUK02

Project: PO# 0404, DO# 1 NAPR-CP MOSCRIP
Water Samples
Collected on 01/16/09

GROUP	SAMPLE NUMBERS
1128805	5580631-5580636

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-08A-TX

Prepared by Karen R. Williams

Reviewed by Audrey McClune

Date 2-5-09

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Lancaster Laboratories
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Sample Reference List for SDG Number PUK02
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 0404, DO# 1 NAPR-CP MOSCRIP

Lab Sample Number	Lab Sample Code	Client Sample Description
5580631	40404	33574004 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 MW03 # 08-P-0732
5580632	40406	33574006 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 MW03A # 08-P-0732
5580633	40408	33574008 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-04 # 08-P-0732
5580634	40409	33574009 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-05 # 08-P-0732
5580635	40410	33574010 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-06 # 08-P-0732
5580636	40413	33574013 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-06A # 08-P-0732

Report ID: HMA0022v1 4694
Sequence: 473381
1128805
5580631-36
PUK02

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 20-Jan-09 8:58:51 AM

Pick-Up / Work / Delivery Order
Generated by: SMELSERBA

Section I - Contract/Project Information

Contract Information

Pickup Order: 0404/1
DLS WO#: 33574 Batch: 1758
Contractor Code: LLS HBN: 214822
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: VSV
Priority: Standard
# of Samples: 26 TW4HSA 1/21/09

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38--38
Client Name: Mr. David Jones
JONO: 97HR41
SUBJONO: 0995
DLS WO#: 33574
DLS Profile#: 37073

Pick-Up/Work/Delivery Order Approved by: Geraldine Miles GM for L. Brockmeyer 1/20/09
(Signature of USACHPPM's COR)

USACHPPM called for pickup: Geraldine Miles (Caller's Name) 1/20/09 @ 0930hrs (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [signature] (Signature of laboratory courier) 1/20/09 13:00 (Date/Time of pick-up)

Number of samples received intact: All (#/All)
Number of samples received broken: None (#/None)

Data package received by at CHPPM: Antoinette Green
Delivery Data: email (Means of Delivery - UPS/FedEx) 2-5-09 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	Acodes Assigned: LLS2408
33574004	73 MW03	GW	1
33574006	73 MW03A	GW	1
33574008	73 FB - 04	GW	1
33574009	73 FB - 05	GW	1
33574010	73 FB - 06 (BKG)	GW	1
~~33574011~~	~~73 FB - 06 MS~~	GW	1
~~33574012~~	~~73 FB - 06 MSD~~	GW	1
33574013	73 FB - 06A	GW	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description	Quantity
LLS2408	PAH in low level in Water	~~8~~ 6
	Procedure Description EPA 8270C (SIM)	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Water (Ground water)	GW	~~8~~ 6

TWH 1/21/09

Report ID: HRA0191C-ACodes
COC #: 473358

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Batch # 1758

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 1/17/09 *to SML. This is SML's internal Chain of Custody.*

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS
Location: NAPR-Cp Moscrip
Jono: 97HR41
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38 POC: David Jones
Project Number: 38
Notes: MS and MSD for 73 FB-06 not listed on Field COC. Coll. Time on 73 1DW-03 and 04 did not match COC. Used time on container for LIMS log-in. Cont label for 73MW02 did not say dissolved like CoC. Confusion on 73FB05 and 06 samples calrified w/ PO H.Taylor 1

Total Samples: 8 | Total Containers: 14

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
33574004	33574004-1	73 MW03	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009
ACodes: LLS2406 : PAH in low level in Water										
33574004	33574004-2	73 MW03	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009
ACodes: LLSXCTNR : XTRACTNR, Additional Container										
33574006	33574006-1	73 MW03A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009
ACodes: LLS2406 : PAH in low level in Water										
33574006	33574006-2	73 MW03A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009
ACodes: LLSXCTNR : XTRACTNR, Additional Container										
33574008	33574008-1	73 FB - 04	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:00 PM	16-Feb-2009
ACodes: LLS2406 : PAH in low level in Water										

NR=Not Reported.

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS

Description: NAPR CMS-Cp Moscrip~37073
Workorder ID: 099617
Customer: Program 38

33574008	33574008-2	73 FB - 04	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:00 PM	16-Feb-2009

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

33574009	33574009-1	73 FB - 05	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:30 PM	16-Feb-2009

ACodes:
LLS2406 : PAH in low level in Water

33574009	33574009-2	73 FB - 05	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:30 PM	16-Feb-2009

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

33574010	33574010-1	73 FB - 06	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLS2406 : PAH in low level in Water

33574010	33574010-2	73 FB - 06	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

33574011	33574011-1	73 FB - 06 MS	MS	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLS2406 : PAH in low level in Water

33574012	33574012-1	73 FB - 06 MSD	MSD	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLS2406 : PAH in low level in Water

33574013	33574013-1	73 FB - 06A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLS2406 : PAH in low level in Water

33574013	33574013-2	73 FB - 06A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLSXCTNR : XTRACTNR, Additional Container

Original
Copy

Report ID: HRA0191C-Acodes
COC #: 473358

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS

Description: NAPR CMS-Cp Moscrip~37073
Workorder ID: 099517
Customer: Program 38

Total Samples: 8	Total Containers: 14

Samples Received By:				Date Received:	1/20/09
Document Reviewed By:	Heidi Taylor	Initials:	HT	Date Reviewed:	1/17/09
Document Quality Review By:				Date Reviewed:	20 Jan 09
Samples Approved For Distribution:	Yes ✓ No	Initials:	CW	Date Approved:	

Custody

E-983

LIOS Form 236 UMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
33574004	73 MW03	33574004-2	GW
33574006	73 MW03A	33574006-2	GW
33574008	73 FB - 04	33574008-2	GW
33574009	73 FB - 05	33574009-2	GW
33574010	73 FB - 06	33574010-2	GW
33574011	73 FB - 06 MS	33574011-1	GW
33574013	73 FB - 06A	33574013-2	GW

HSN	Customer Sample Id	Container Id	Mx
33574004	73 MW03	33574004-1	GW
33574006	73 MW03A	33574006-1	GW
33574008	73 FB - 04	33574008-1	GW
33574009	73 FB - 05	33574009-1	GW
33574010	73 FB - 06	33574010-1	GW
33574012	73 FB - 06 MSD	33574012-1	GW
33574013	73 FB - 06A	33574013-1	GW

Chain of Custody

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473358

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
33574004		2		
33574006		2		
33574008		2		
33574009		2		
33574010		2		
33574011		1		
33574012		1		
33574013		2		

Total Samples: 8 | Total Containers: 14

Chain of Custody

E-985

LIDS Form 235 CMS, 02 Feb 2003

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473358

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLS

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38

Total Samples: 8	Total Containers: 14

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	From refrigerator H Taylor	1/17/09 1050	H Taylor	1/17/09 1050	For Sample Numbering
	H Taylor	1/17/09 1130	See SML's Comments HT	1/17/09 1130	Returned to holding refrigerator in room #0202.
	From refrigerator	1-20-09		1/20/09	
		1/20/09 1620		1/20/09 1620	

Custody

Remarks:

LIDS Form 235 UMS, 02 Feb 2003

NR=Not Reported.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: CHPPM
Date of Receipt: 1/20/09
Time of Receipt: 1620
Source Code: 01
Unpacker Emp. No.: 2308

Shipping Container Sealed: YES NO
Custody Seal Present: YES NO
Custody Seal Intact: YES NO NA
Package: Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	CHP0483	0.9°C	TB	WI	Y	B	
2		0.5°C					
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:
NJT time says 1500, sample NJU time says 840

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	1/20/09	1640	Unpacking [illegible]
[illegible]	1/20/09	1827	Place in Storage or Entry
			Entry
			Entry

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1128805. Samples arrived at the laboratory on Tuesday, January 20, 2009. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
33574004 NAPR-Cp Moscrip #37073-0995 Jones Water	5580631
33574006 NAPR-Cp Moscrip #37073-0995 Jones Water	5580632
33574008 NAPR-Cp Moscrip #37073-0995 Jones Water	5580633
33574009 NAPR-Cp Moscrip #37073-0995 Jones Water	5580634
33574010 NAPR-Cp Moscrip #37073-0995 Jones Water	5580635
33574013 NAPR-Cp Moscrip #37073-0995 Jones Water	5580636

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

PUR02 6814

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Chad A Moline
Group Leader

PUE02 0015

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580631 WW Group No. 1128805

33574004 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 MW03 # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 10:20

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

40404 SDG#: PUK02-01

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	0.015 J	0.050	0.010	ug/l	1
08362	Naphthalene	91-20-3	0.029 J	0.050	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.050	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.050	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.050	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.050	0.010	ug/l	1
08369	Phenanthrene	85-01-8	0.025 J	0.050	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.050	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.050	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.050	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.050	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.050	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.050	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.050	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.050	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.050	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.050	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.050	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/24/2009 05:03	Linda M Hartenstine	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02 0816

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580632 WW Group No. 1128805

33574006 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 MW03A # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 10:20

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

40406 SDG#: PUK02-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.049	0.0099	ug/l	1
08362	Naphthalene	91-20-3	0.027 J	0.049	0.0099	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.049	0.0099	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.049	0.0099	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.049	0.0099	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.049	0.0099	ug/l	1
08369	Phenanthrene	85-01-8	0.027 J	0.049	0.0099	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.049	0.0099	ug/l	1
08372	Fluoranthene	206-44-0	0.010 J	0.049	0.0099	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.049	0.0099	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.049	0.0099	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.049	0.0099	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.049	0.0099	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.049	0.0099	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.049	0.0099	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.049	0.0099	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.049	0.0099	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.049	0.0099	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/24/2009 05:35	Linda M Hartenstine	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02 0012

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580633 WW Group No. 1128805

33574008 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-04 # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 14:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40408 SDG#: PUK02-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.062	0.012	ug/l	1
08362	Naphthalene	91-20-3	0.041 J	0.062	0.012	ug/l	1
08363	2-Methylnaphthalene	91-57-6	0.018 J	0.062	0.012	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.062	0.012	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.062	0.012	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.062	0.012	ug/l	1
08369	Phenanthrene	85-01-8	0.020 J	0.062	0.012	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.062	0.012	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.062	0.012	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.062	0.012	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.062	0.012	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.062	0.012	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.062	0.012	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.062	0.012	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.062	0.012	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.062	0.012	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.062	0.012	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.062	0.012	ug/l	1

Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/24/2009 06:12	Linda M Hartenstine	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02 0012

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580634 WW Group No. 1128805

33574009 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-05 # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 14:30

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40409 SDG#: PUK02-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.058	0.012	ug/l	1
08362	Naphthalene	91-20-3	N.D.	0.058	0.012	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.058	0.012	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.058	0.012	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.058	0.012	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.058	0.012	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.058	0.012	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.058	0.012	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.058	0.012	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.058	0.012	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.058	0.012	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.058	0.012	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.058	0.012	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.058	0.012	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.058	0.012	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.058	0.012	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.058	0.012	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.058	0.012	ug/l	1

Surrogate recoveries are outside of QC limits for the initial GC/MS semivolatile analysis. The analysis was repeated outside of the required hold time and surrogate recoveries are again outside of QC limits, indicating a matrix effect. The data reported is from the initial extraction of the sample.

Due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

PUK02 0019

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580634 WW Group No. 1128805

33574009 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-05 # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 14:30

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40409 SDG#: PUK02-04

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/24/2009 06:43	Linda M Hartenstine	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02 8020

*=This limit was used in the evaluation of the final result

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580635 WW Group No. 1128805

33574010 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06 # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40410 SDG#: PUK02-05BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.050	0.010	ug/l	1
08362	Naphthalene	91-20-3	N.D.	0.050	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.050	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.050	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.050	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.050	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.050	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.050	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.050	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.050	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.050	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.050	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.050	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.050	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.050	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.050	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.050	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.050	0.010	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/24/2009 07:14	Linda M Hartenstine	1
00813	BNA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02 0021

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580636 WW Group No. 1128805

33574013 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06A # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40413 SDG#: PUK02-06*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
08357	PAHs in waters by SIM						
02884	1-Methylnaphthalene	90-12-0	N.D.	0.051	0.010	ug/l	1
08362	Naphthalene	91-20-3	N.D.	0.051	0.010	ug/l	1
08363	2-Methylnaphthalene	91-57-6	N.D.	0.051	0.010	ug/l	1
08365	Acenaphthylene	208-96-8	N.D.	0.051	0.010	ug/l	1
08366	Acenaphthene	83-32-9	N.D.	0.051	0.010	ug/l	1
08368	Fluorene	86-73-7	N.D.	0.051	0.010	ug/l	1
08369	Phenanthrene	85-01-8	N.D.	0.051	0.010	ug/l	1
08370	Anthracene	120-12-7	N.D.	0.051	0.010	ug/l	1
08372	Fluoranthene	206-44-0	N.D.	0.051	0.010	ug/l	1
08373	Pyrene	129-00-0	N.D.	0.051	0.010	ug/l	1
08374	Benzo(a)anthracene	56-55-3	N.D.	0.051	0.010	ug/l	1
08375	Chrysene	218-01-9	N.D.	0.051	0.010	ug/l	1
08376	Benzo(b)fluoranthene	205-99-2	N.D.	0.051	0.010	ug/l	1
08377	Benzo(k)fluoranthene	207-08-9	N.D.	0.051	0.010	ug/l	1
08378	Benzo(a)pyrene	50-32-8	N.D.	0.051	0.010	ug/l	1
08379	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.051	0.010	ug/l	1
08380	Dibenz(a,h)anthracene	53-70-3	N.D.	0.051	0.010	ug/l	1
08381	Benzo(g,h,i)perylene	191-24-2	N.D.	0.051	0.010	ug/l	1

The GC/MS semivolatile internal standard peak areas were outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	01/25/2009 16:03	William T Parker	1
00813	ENA Water Extraction	SW-846 3510C	1	01/21/2009 15:00	Kevin P Love	1

PUK02: 0022

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580636 WW Group No. 1128805

33574013 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06A # 08-P-0732
Pick-Up Order #0404 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 11:20
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40413 SDG#: PUK02-06*

PUK02 0823

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Semivolatiles by GC/MS Data (SIM)

PUR02 0024

Case Narrative Conformance/Nonconformance Summary

FUR82 8025

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CASE NARRATIVE

Client: U.S. Army CHPPM
SDG #: PUK02

LANCASTER LABORATORIES
SEMIVOLATILES BY GC/MS

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
5580631	40404	X	
5580632	40406	X	
5580633	40408	X	
5580634	40409	X	
5580634RE	40409RE	X	Reextraction
5580635	40410	X	Unspiked
5580635	40410MS	X	Matrix Spike
5580635	40410MSD	X	Matrix Spike Dup
5580636	40413	X	
5580636RE	40413RE	X	Reinjection
LABORATORY SUBMITTED QC:			
SBLKWE021	SBLKWE0213	X	Method Blank
SBLKWD026	SBLKWD0263	X	Method Blank
021WELCS	021WELCS3	X	Lab Control Sample
026WDLCS	026WDLCS3	X	Lab Control Sample
026WDLCSD	026WDLCSD3	X	Lab Control Sample Dup

SAMPLE PREPARATION:

Due to insufficient sample, reduced volumes were used in the extraction of a number of samples. Refer to the organic extraction batchlogs for the specific samples and amounts.

No other problems were encountered during the extraction of these samples.

Lancaster Laboratories
Where quality is a science.

Case Narrative (continued)
SDG: PUK02

ANALYSIS:

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

5580636 had internal standard peak areas outside QC limits for both the initial injection and the reinjection.

Due to surrogate recoveries outside QC limits, 5580634 was reextracted. The reextraction was performed outside of the required hold time and surrogate recoveries are again outside of QC limits, indicating a matrix effect. Both sets of data are included in this data package.

A number of compounds were not recovered or their recoveries are outside QC limits in the MS/MSD. A number of relative percent differences (RPDs) between the MS and the MSD could not be calculated or are greater than 30 percent. Refer to the matrix spike/matrix spike duplicate form for the specific outliers.

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

All other QC was within specifications.

DATA INTERPRETATION:

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Audrey McClure for Date: 2-3-09
Dana M. Kauffman
Manager, Data Deliverables

PUK02 0027

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QC Summary

P0E02 8020

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: PUK02

	LL #'s	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	TOT OUT
01	5580631	40404	104	99	90	0
02	5580632	40406	106	104	91	0
03	5580633	40408	104	103	92	0
04	5580634	40409	108	48 *	91	1
05	5580634RE	40409RE	123	54 *	105	1
06	5580635	40410	106	104	91	0
07	5580635	40410MS	109	106	94	0
08	5580635	40410MSD	107	107	93	0
09	5580636	40413	108	107	96	0
10	5580636RE	40413RE	113	108	95	0
11	SBLKWE021	SBLKWE0213	96	103	93	0
12	SBLKWD026	SBLKWD0263	115	118	104	0
13	021WELCS	021WELCS3	89	94	83	0
14	026WDLCS	026WDLCS3	120	118	104	0
15	026WDLCSD	026WDLCSD3	116	115	102	0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(64-147)
S2 (FBP)	= 2-Fluorobiphenyl	(68-132)
S3 (TPH)	= Terphenyl-d14	(69-140)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

page 1 of 1

FORM II SV-1

PUK02 0029

WATER GC/MS SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: LANCASTER LABS Lab Code: LANCAS

UNSPIKED:ca00190.d
40410 5580635
AMT USED:1000.0 ml
FINAL VOL:1 ml

MATRIX SPIKE:ca00191.d
40410MS 5580635
AMT USED: 1000.0 ml
FINAL VOL: 1 ml

SPIKE DUPLICATE:ca00192.d
40410MSD 5580635
AMT USED: 1000.0 ml
FINAL VOL: 1 ml

INSTRUMENT: HP10623 DILUTION FACTOR: 1 BATCH: 09021WAE026

%MOISTURE: EXTRACT SPIKE LEVEL: 1.00

COMPOUND NAME	MS SPIKE	MSD SPIKE	US CONC UG/L	MS CONC UG/L	MSD CONC UG/L	MS REC %	MSD REC %	Range LOWER-UPPER	INSPEC	RPD %	RPD MAX	INSPEC
Naphthalene	1.00	1.00	ND	0.76	0.73	76	73	72-119	YES	4	30	YES
2-Methylnaphthalene	1.00	1.00	ND	0.01	ND	1	0	69-131	NO	200	30	NO
1-Methylnaphthalene	1.00	1.00	ND	0.08	0.05	8	5	67-130	NO	46	30	NO
Acenaphthylene	1.00	1.00	ND	0.04	0.03	4	3	49-132	NO	28	30	YES
Acenaphthene	1.00	1.00	ND	ND	ND	0	0	53-121	NO	NC	30	NA
Fluorene	1.00	1.00	ND	0.90	0.88	90	88	60-126	YES	2	30	YES
Phenanthrene	1.00	1.00	ND	0.15	0.10	15	10	77-116	NO	40	30	NO
Anthracene	1.00	1.00	ND	ND	ND	0	0	70-118	NO	NC	30	NA
Fluoranthene	1.00	1.00	ND	0.78	0.75	78	75	68-129	YES	4	30	YES
Pyrene	1.00	1.00	ND	ND	ND	0	0	72-127	NO	NC	30	NA
Benzo(a)anthracene	1.00	1.00	ND	0.01	0.01	1	1	73-125	NO	0	30	YES
Chrysene	1.00	1.00	ND	0.21	0.17	21	17	52-140	NO	21	30	YES
Benzo(b)fluoranthene	1.00	1.00	ND	1.19	1.04	119	104	70-124	YES	13	30	YES
Benzo(k)fluoranthene	1.00	1.00	ND	1.15	1.00	115	100	49-138	YES	14	30	YES
Benzo(a)pyrene	1.00	1.00	ND	ND	ND	0	0	42-132	NO	NC	30	NA
Indeno(1,2,3-cd)pyrene	1.00	1.00	ND	0.03	0.02	3	2	38-136	NO	40	30	NO
Dibenz(a,h)anthracene	1.00	1.00	ND	0.10	0.07	10	7	21-133	NO	35	30	NO
Benzo(g,h,i)perylene	1.00	1.00	ND	ND	ND	0	0	10-136	NO	NC	30	NA

COMMENTS:

Lancaster Laboratories, Inc.
WATER Semi Volatile Laboratory Control Sample Recovery

LAB NAME: LANCASTER LABS LAB CODE: LANCAS INSTRUMENT: HP10623

Method: SW-846 8270C (SIM) File ID: ca00185.d

LCS SAMPLE NO: 021WELCS BATCH: 09021WAE026 Sample Code: 021WELCS3

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	QCREF REC %	RANGE LOWER-UPPER	INSPEC
Naphthalene	1.00	.79	79	72 - 109	YES
2-Methylnaphthalene	1.00	.82	82	75 - 115	YES
1-Methylnaphthalene	1.00	.84	84	71 - 117	YES
Acenaphthylene	1.00	.86	86	70 - 110	YES
Acenaphthene	1.00	.83	83	74 - 109	YES
Fluorene	1.00	.87	87	75 - 114	YES
Phenanthrene	1.00	.87	87	76 - 111	YES
Anthracene	1.00	.82	82	66 - 111	YES
Fluoranthene	1.00	.84	84	75 - 116	YES
Pyrene	1.00	.82	82	69 - 118	YES
Benzo(a)anthracene	1.00	.83	83	72 - 114	YES
Chrysene	1.00	.88	88	76 - 116	YES
Benzo(b)fluoranthene	1.00	.83	83	69 - 123	YES
Benzo(k)fluoranthene	1.00	.93	93	72 - 122	YES
Benzo(a)pyrene	1.00	.83	83	64 - 115	YES
Indeno(1,2,3-cd)pyrene	1.00	.83	83	69 - 124	YES
Dibenz(a,h)anthracene	1.00	.84	84	71 - 125	YES
Benzo(g,h,i)perylene	1.00	.86	86	68 - 125	YES

NC = Could not calculate

Comments:

Lancaster Laboratories, Inc.
Semi Volatiles Laboratory Control Sample Recoveries

LCS: ca00258.d
026WDLCS3 026WDLCS
Method: SW-846 8270C (SIM)
Instrument: HP10623

LCS Duplicate: ca00259.d
026WDLCSD3 026WDLCSD
Matrix/Level: W/L
Dilution Factor: 1.0

Batch: 09026WAD026

COMPOUND NAME	SPIKE LEVEL	LCS CONC UG/L	LCSD CONC UG/L	LCS REC %	LCSD REC %	Range LOWER-UPPER	REC INSPEC	RPD %	RPD MAX	RPD INSPEC
Naphthalene	1.00	1.00	.95	100	95	72-109	YES	5	30	YES
2-Methylnaphthalene	1.00	1.02	.98	102	98	75-115	YES	4	30	YES
1-Methylnaphthalene	1.00	1.06	1.01	106	101	71-117	YES	5	30	YES
Acenaphthylene	1.00	1.05	1.02	105	102	70-110	YES	3	30	YES
Acenaphthene	1.00	1.02	1.00	102	100	74-109	YES	2	30	YES
Fluorene	1.00	1.08	1.06	108	106	75-114	YES	2	30	YES
Phenanthrene	1.00	1.09	1.05	109	105	76-111	YES	4	30	YES
Anthracene	1.00	1.01	1.00	101	100	66-111	YES	1	30	YES
Fluoranthene	1.00	1.05	1.03	105	103	75-116	YES	2	30	YES
Pyrene	1.00	1.09	1.06	109	106	69-118	YES	3	30	YES
Benzo(a)anthracene	1.00	1.06	1.04	106	104	72-114	YES	2	30	YES
Chrysene	1.00	1.10	1.09	110	109	76-116	YES	1	30	YES
Benzo(b)fluoranthene	1.00	1.11	1.06	111	106	69-123	YES	5	30	YES
Benzo(k)fluoranthene	1.00	1.14	1.11	114	111	72-122	YES	3	30	YES
Benzo(a)pyrene	1.00	1.05	1.01	105	101	64-115	YES	4	30	YES
Indeno(1,2,3-cd)pyrene	1.00	1.05	1.02	105	102	69-124	YES	3	30	YES
Dibenz(a,h)anthracene	1.00	1.04	1.01	104	101	71-125	YES	3	30	YES
Benzo(g,h,i)perylene	1.00	1.10	1.07	110	107	68-125	YES	3	30	YES

N/C = Could not calculate

ab Chronicle: _____ Ent. by _____

_____ Ver. by _____

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWE0213

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00184.d Lab Sample ID: SBLKWE021

Date Extracted: 01/21/09 Extraction: Sepf

Date Analyzed: 01/23/09 Time Analyzed: 22:30

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP10623

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	021WELCS3	021WELCS	ca00185.d	01/23/09
02	40404	5580631	ca00186.d	01/24/09
03	40406	5580632	ca00187.d	01/24/09
04	40408	5580633	ca00188.d	01/24/09
05	40409	5580634	ca00189.d	01/24/09
06	40410	5580635	ca00190.d	01/24/09
07	40410MS	5580635	ca00191.d	01/24/09
08	40410MSD	5580635	ca00192.d	01/24/09
09	40413	5580636	ca00202.d	01/25/09
10	40413RE	5580636RE	ca00222.d	01/26/09

COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKWD0263

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00257.d Lab Sample ID: SBLKWD026

Date Extracted: 01/26/09 Extraction: Sepf

Date Analyzed: 01/27/09 Time Analyzed: 09:58

Matrix (soil/water): WATER Level: (low/med) LOW

Instrument ID: HP10623

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	026WDLCS3	026WDLCS	ca00258.d	01/27/09
02	026WDLCSD3	026WDLCSD	ca00259.d	01/27/09
03	40409RE	5580634RE	ca00260.d	01/27/09
04	GP1WW	5584111	ca00261.d	01/27/09
05	GP4WW	5584112	ca00262.d	01/27/09

COMMENTS:

PUR62 0034

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00090.d DFTPP Injection Date: 01/22/09

Instrument ID: HP10623 DFTPP Injection Time: 07:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.8
68	Less than 2.0% of mass 69	0.75 (1.82)1
69	Mass 69 relative abundance	41.1
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	50.8
197	Less than 1.0% of mass 198	0.35
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.89
275	10.0 - 30.0% of mass 198	25.7
365	Greater than 1.00% of mass 198	2.71
441	Present, and less than mass 443	10.4
442	Greater than 40.0 % of mass 198	68.8
443	17.0 - 23.0% of mass 442	13.0 (18.9)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD005	LPAH0219	ca00091a.d	01/22/09	08:43
02	SSTD010	LPAH0219	ca00092.d	01/22/09	09:57
03	SSTD.05	LPAH0219	ca00093.d	01/22/09	10:28
04	SSTD001	LPAH0219	ca00094.d	01/22/09	11:00
05	SSTD0.2	LPAH0219	ca00095.d	01/22/09	13:11
06	SSTD0.5	LPAH0219	ca00096.d	01/22/09	13:42
07	SSTD0.02	LPAHMDL0219	ca00097.d	01/22/09	14:14
08	SSTD001	LPAHICV2598	ca00098.d	01/22/09	14:46

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00170z.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 20:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.8
68	Less than 2.0% of mass 69	0.79 (1.94)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.54)1
127	40.0 - 60.0% of mass 198	51.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.74
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	2.9
441	Present, and less than mass 443	10.5
442	Greater than 40.0 % of mass 198	72.3
443	17.0 - 23.0% of mass 442	13.4 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD.50	LPAH0219	ca00171a.d	01/23/09	21:27
02	SBLKWE0213	SBLKWE021	ca00184.d	01/23/09	22:30
03	021WELCS3	021WELCS	ca00185.d	01/23/09	23:02
04	SBLKWI0223	SBLKWI022	ca00173.d	01/24/09	00:12
05	022WILCS3	022WILCS	ca00174.d	01/24/09	00:44
06	022WILCSD3	022WILCSD	ca00175.d	01/24/09	01:15
07	H99M5RE	5577689RE	ca00176.d	01/24/09	01:47
08	H99M8RE	5577692RE	ca00177.d	01/24/09	02:19
09	H9910RE	5577694RE	ca00178.d	01/24/09	02:50
10	40129DL	5579600DL	ca00179.d	01/24/09	03:22
11	40130DL	5579601DL	ca00180.d	01/24/09	03:54
12	40131DL	5579602DL	ca00181.d	01/24/09	04:26
13	40404	5580631	ca00186.d	01/24/09	05:03
14	40406	5580632	ca00187.d	01/24/09	05:35
15	40408	5580633	ca00188.d	01/24/09	06:12
16	40409	5580634	ca00189.d	01/24/09	06:43
17	40410	5580635	ca00190.d	01/24/09	07:14
18	40410MS	5580635	ca00191.d	01/24/09	07:45

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00170z.d DFTPP Injection Date: 01/23/09

Instrument ID: HP10623 DFTPP Injection Time: 20:33

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.8
68	Less than 2.0% of mass 69	0.79 (1.94)1
69	Mass 69 relative abundance	40.4
70	Less than 2.0% of mass 69	0.22 (0.54)1
127	40.0 - 60.0% of mass 198	51.2
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.74
275	10.0 - 30.0% of mass 198	27.5
365	Greater than 1.00% of mass 198	2.9
441	Present, and less than mass 443	10.5
442	Greater than 40.0 % of mass 198	72.3
443	17.0 - 23.0% of mass 442	13.4 (18.6)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
19	40410MSD	5580635	ca00192.d	01/24/09	08:16

PW002 0637

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00200.d DFTPP Injection Date: 01/25/09

Instrument ID: HP10623 DFTPP Injection Time: 12:07

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.3
68	Less than 2.0% of mass 69	0.74 (1.79)1
69	Mass 69 relative abundance	41.5
70	Less than 2.0% of mass 69	0.17 (0.42)1
127	40.0 - 60.0% of mass 198	51.0
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.63
275	10.0 - 30.0% of mass 198	25.9
365	Greater than 1.00% of mass 198	2.74
441	Present, and less than mass 443	9.91
442	Greater than 40.0 % of mass 198	66.9
443	17.0 - 23.0% of mass 442	12.9 (19.3)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD001	LPAH0219	ca00201.d	01/25/09	12:26
02	SBLKLA0213	SBLKLA021	ca00204.d	01/25/09	13:28
03	021LALCS3	021LALCS	ca00205.d	01/25/09	13:59
04	SBLKLD0213	SBLKLD021	ca00211.d	01/25/09	15:01
05	021LDLCS3	021LDLCS	ca00212.d	01/25/09	15:32
06	40413	5580636	ca00202.d	01/25/09	16:03
07	CEN-5	5579868	ca00206.d	01/25/09	16:34
08	CEN-5MS	5579868	ca00207.d	01/25/09	17:05
09	CEN-5MSD	5579868	ca00208.d	01/25/09	17:36
10	CEN14	5579869	ca00209.d	01/25/09	18:07
11	HAR10	5580930	ca00213.d	01/25/09	18:38
12	HAR10MS	5580930	ca00214.d	01/25/09	19:09
13	HAR10MSD	5580930	ca00215.d	01/25/09	19:40
14	HAR15	5580931	ca00216.d	01/25/09	20:11

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00220.d DFTPP Injection Date: 01/26/09

Instrument ID: HP10623 DFTPP Injection Time: 06:18

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.2
68	Less than 2.0% of mass 69	0.81 (1.79)1
69	Mass 69 relative abundance	45.3
70	Less than 2.0% of mass 69	0.24 (0.53)1
127	40.0 - 60.0% of mass 198	53.5
197	Less than 1.0% of mass 198	0.28
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.68
275	10.0 - 30.0% of mass 198	25.4
365	Greater than 1.00% of mass 198	2.63
441	Present, and less than mass 443	8.93
442	Greater than 40.0 % of mass 198	60.4
443	17.0 - 23.0% of mass 442	11.3 (18.7)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD005	LPAH0219	ca00221a.d	01/26/09	07:35
02	40413RE	5580636RE	ca00222.d	01/26/09	09:10

PHR02 0039

FORM V SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Lancaster Laboratories Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID: ca00250y.d DFTPP Injection Date: 01/27/09

Instrument ID: HP10623 DFTPP Injection Time: 06:32

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.6
68	Less than 2.0% of mass 69	0.84 (1.84)1
69	Mass 69 relative abundance	45.5
70	Less than 2.0% of mass 69	0.23 (0.5)1
127	40.0 - 60.0% of mass 198	54.0
197	Less than 1.0% of mass 198	0.11
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.67
275	10.0 - 30.0% of mass 198	25.6
365	Greater than 1.00% of mass 198	2.84
441	Present, and less than mass 443	8.98
442	Greater than 40.0 % of mass 198	58.1
443	17.0 - 23.0% of mass 442	11.3 (19.5)2

1-Value is % mass 69 2-Value is % mass of 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD.50	LPAH0219	ca00251.d	01/27/09	06:51
02	SBLKWB0243	SBLKWB024	ca00253.d	01/27/09	07:54
03	024WBLCS3	024WBLCS	ca00254.d	01/27/09	08:25
04	024WBLCSD3	024WBLCSD	ca00255.d	01/27/09	08:56
05	SBLKWD0263	SBLKWD026	ca00257.d	01/27/09	09:58
06	026WDLCS3	026WDLCS	ca00258.d	01/27/09	10:30
07	026WDLCSD3	026WDLCSD	ca00259.d	01/27/09	11:01
08	40409RE	5580634RE	ca00260.d	01/27/09	11:32
09	GP1WW	5584111	ca00261.d	01/27/09	12:03
10	GP4WW	5584112	ca00262.d	01/27/09	12:34
11	NWFBL	5582844	ca00263.d	01/27/09	13:05
12	PHMW2	5582919	ca00264.d	01/27/09	13:36
13	403S6	5583620	ca00265.d	01/27/09	14:08
14	NWF22	5583802	ca00266.d	01/27/09	14:39

FORM V SV

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	79941	7.084	374562	8.598	186323	10.752
	UPPER LIMIT	159882	7.584	749124	9.098	372646	11.252
	LOWER LIMIT	39971	6.584	187281	8.098	93162	10.252
	EPA SAMPLE NO.						
01	SBLKWE0213	76163	7.083	360531	8.598	177099	10.752
02	021WELCS3	73855	7.084	349000	8.598	173001	10.753
03	SBLKWI0223	75133	7.084	356728	8.598	176163	10.753
04	022WILCS3	77322	7.084	365283	8.598	181747	10.753
05	022WILCSD3	79676	7.084	379073	8.598	187738	10.753
06	H99M5RE	74662	7.083	352407	8.598	175642	10.752
07	H99M8RE	77894	7.083	498434	8.598	202757	10.752
08	H9910RE	80854	7.084	386751	8.598	192298	10.753
09	40129DL	79328	7.083	377357	8.598	189208	10.752
10	40130DL	81202	7.084	386779	8.598	194949	10.753
11	40131DL	78299	7.084	373553	8.598	188059	10.752
12	40404	78445	7.084	366783	8.598	183876	10.753
13	40406	78241	7.083	366978	8.598	183240	10.752
14	40408	74732	7.083	349897	8.598	175776	10.752
15	40409	72679	7.084	339889	8.598	355663	10.753
16	40410	75648	7.083	357863	8.598	176309	10.752
17	40410MS	72677	7.084	341341	8.598	168124	10.752

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	79941	7.084	374562	8.598	186323	10.752
	UPPER LIMIT	159882	7.584	749124	9.098	372646	11.252
	LOWER LIMIT	39971	6.584	187281	8.098	93162	10.252
	EPA SAMPLE NO.						
18	40410MSD	74534	7.084	346054	8.598	168972	10.753

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asteriek
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	344434	12.588	282195	15.858	211348	17.712
	UPPER LIMIT	688868	13.088	564390	16.358	422696	18.212
	LOWER LIMIT	172217	12.088	141098	15.358	105674	17.212
	EPA SAMPLE NO.						
01	SBLKWE0213	328697	12.588	265786	15.858	198320	17.719
02	021WELCS3	318227	12.589	265497	15.858	194346	17.719
03	SBLKWI0223	321935	12.588	258206	15.858	195501	17.712
04	022WILCS3	328312	12.589	276541	15.858	203369	17.712
05	022WILCSD3	346636	12.589	282899	15.858	208830	17.712
06	H99M5RE	323934	12.588	261046	15.858	200186	17.711
07	H99M8RE	342910	12.588	280399	15.858	226203	17.711
08	H9910RE	346664	12.588	284640	15.858	218708	17.712
09	40129DL	359679	12.588	308430	15.858	250305	17.719
10	40130DL	363417	12.589	311638	15.858	243147	17.719
11	40131DL	351979	12.588	300189	15.858	231204	17.712
12	40404	336008	12.588	278091	15.858	207961	17.719
13	40406	333010	12.588	276789	15.858	209276	17.719
14	40408	315573	12.588	260416	15.858	199703	17.719
15	40409	309775	12.589	253807	15.858	189902	17.712
16	40410	319828	12.588	263364	15.858	139112	17.711
17	40410MS	309043	12.588	252552	15.858	130041	17.712

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00171a.d Date Analyzed: 01/23/09

Instrument ID: HP10623 Time Analyzed: 21:27

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	344434	12.588	282195	15.858	211348	17.712
	UPPER LIMIT	688868	13.088	564390	16.358	422696	18.212
	LOWER LIMIT	172217	12.088	141098	15.358	105674	17.212
	EPA SAMPLE NO.						
18	40410MSD	311126	12.588	254535	15.858	129695	17.712

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00201.d Date Analyzed: 01/25/09

Instrument ID: HP10623 Time Analyzed: 12:26

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	84019	7.056	394358	8.561	195284	10.719
	UPPER LIMIT	168038	7.556	788716	9.061	390568	11.219
	LOWER LIMIT	42010	6.556	197179	8.061	97642	10.219
	EPA SAMPLE NO.						
01	SBLKLA0213	69299	7.056	327785	8.561	161428	10.720
02	021LALCS3	71978	7.056	342915	8.561	168399	10.720
03	SBLKLD0213	78220	7.056	370530	8.561	185733	10.719
04	021LDLCS3	78964	7.056	377929	8.561	188676	10.720
05	40413	78524	7.056	372234	8.561	182510	10.720
06	CEN-5	70835	7.056	339213	8.561	167768	10.720
07	CEN-5MS	70535	7.056	340170	8.561	167867	10.720
08	CEN-5MSD	72039	7.056	345768	8.561	171413	10.720
09	CEN14	73697	7.047	350840	8.561	175490	10.720
10	HAR10	74435	7.056	357416	8.561	177651	10.720
11	HAR10MS	70280	7.056	338021	8.561	167490	10.720
12	HAR10MSD	73213	7.056	354647	8.561	175977	10.720
13	HAR15	72400	7.056	346377	8.561	172497	10.720

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

FUM82: 0045

BC

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00201.d Date Analyzed: 01/25/09

Instrument ID: HP10623 Time Analyzed: 12:26

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	360753	12.559	303265	15.842	221466	17.688
	UPPER LIMIT	721506	13.059	606530	16.342	442932	18.188
	LOWER LIMIT	180377	12.059	151633	15.342	110733	17.188
	EPA SAMPLE NO.						
01	SBLKLA0213	294963	12.560	245843	15.835	163730	17.688
02	021LALCS3	310615	12.560	260456	15.835	182491	17.688
03	SBLKLD0213	335907	12.559	280579	15.834	209021	17.688
04	021LDLCS3	348802	12.560	286315	15.835	198835	17.688
05	40413	337329	12.560	276724	15.835	81391*	17.688
06	CEN-5	305429	12.560	259917	15.835	196507	17.688
07	CEN-5MS	307316	12.560	261851	15.835	198619	17.688
08	CEN-5MSD	316231	12.560	266262	15.835	203672	17.688
09	CEN14	313364	12.560	265071	15.835	207324	17.688
10	HAR10	325056	12.560	272336	15.835	208709	17.688
11	HAR10MS	303552	12.560	258246	15.835	193371	17.688
12	HAR10MSD	322567	12.560	270560	15.835	213444	17.688
13	HAR15	314318	12.560	263421	15.835	201254	17.688

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00221a.d Date Analyzed: 01/26/09

Instrument ID: HP10623 Time Analyzed: 07:35

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	80818	7.221	358596	8.736	179774	10.893
	UPPER LIMIT	161636	7.721	717192	9.236	359548	11.393
	LOWER LIMIT	40409	6.721	179298	8.236	89887	10.393
	EPA SAMPLE NO.						
01	40413RE	79761	7.221	347416	8.736	171927	10.893

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

FORM8 SV-2

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00221a.d Date Analyzed: 01/26/09

Instrument ID: HP10623 Time Analyzed: 07:35

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	324120	12.723	264488	15.991	202753	17.821
	UPPER LIMIT	648240	13.223	528976	16.491	405506	18.321
	LOWER LIMIT	162060	12.223	132244	15.491	101377	17.321
	EPA SAMPLE NO.						
01	40413RE	306500	12.723	245325	15.999	63256*	17.829

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00251.d Date Analyzed: 01/27/09

Instrument ID: HP10623 Time Analyzed: 06:51

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	82016	7.194	383567	8.717	189699	10.868
	UPPER LIMIT	164032	7.694	767134	9.217	379398	11.368
	LOWER LIMIT	41008	6.694	191784	8.217	94850	10.368
	EPA SAMPLE NO.						
01	SBLKWB0243	77937	7.194	363971	8.708	180195	10.860
02	024WBLCS3	69871	7.194	327051	8.708	160750	10.860
03	024WBLCSD3	72040	7.194	341157	8.708	167565	10.860
04	SBLKWD0263	68832	7.194	326566	8.717	160260	10.860
05	026WDLCS3	68451	7.194	317963	8.708	159442	10.860
06	026WDLCSD3	72455	7.193	341539	8.708	169068	10.859
07	40409RE	68619	7.194	321602	8.717	347915	10.868
08	GP1WW	68234	7.193	342719	8.717	224849	10.868
09	GP4WW	72381	7.194	346812	8.717	175007	10.868
10	NWFBL	74007	7.193	353233	8.717	177629	10.867
11	PHMW2	72936	7.194	350215	8.717	182486	10.868
12	403S6	73546	7.194	346659	8.717	174211	10.868
13	NWF22	73590	7.194	348151	8.717	174859	10.868

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

PUHE2 8849

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: LANCASTER LABS Contract:_____

Lab Code: LANCAS Case No.:_____ SAS No.:_____ SDG No.:_____

Lab File ID (Standard): ca00251.d Date Analyzed: 01/27/09

Instrument ID: HP10623 Time Analyzed: 06:51

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	338365	12.694	263464	15.968	206946	17.782
	UPPER LIMIT	676730	13.194	526928	16.468	413892	18.282
	LOWER LIMIT	169183	12.194	131732	15.468	103473	17.282
	EPA SAMPLE NO.						
01	SBLKWB0243	321729	12.694	248833	15.968	189093	17.782
02	024WBLCS3	289968	12.694	231092	15.968	173369	17.782
03	024WBLCSD3	300542	12.694	237484	15.968	176042	17.782
04	SBLKWD0263	283926	12.694	223191	15.968	167093	17.782
05	026WDLCS3	283808	12.694	227407	15.968	168231	17.782
06	026WDLCSD3	301010	12.694	241944	15.967	180757	17.782
07	40409RE	288293	12.694	225767	15.968	169619	17.790
08	GP1WW	286861	12.703	303888	15.975	239162	17.797
09	GP4WW	309223	12.694	246995	15.968	199193	17.790
10	NWFBL	319764	12.694	254476	15.967	199086	17.789
11	PHMW2	304584	12.694	256092	15.968	199507	17.790
12	403S6	310530	12.694	251926	15.968	226160	17.790
13	NWF22	316255	12.694	250540	15.968	194956	17.790

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT (advisory) = +100% of internal standard area
AREA LOWER LIMIT (advisory) = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard are and RT values with an asterisk
* Values outside of QC limits.

JANUARY 2009

PESTICIDES DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER:____David Jones_____ DIVISION/TEAM: _____Review_____

INSTALLATION:___NAPR Cp Moscript _____CONTRACT LAB:_____LLP_____

PROJECT NO:_____38-0995_____ LIMS W.O. NO:_____33571_____

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

__X___ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Robert Berkshire
DATE: 2/12/09

DLS CR 1.1 **JUNE 2001**

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Type I Data Package
for
U.S. Army CHPPM

Contract Number: 08-P-0732

SDG# PUJ97

Project: PO# 0400, DO# 1 NAPR-CP MOSCRIP
Soil and Water Samples
Collected on 01/14/09

GROUP	SAMPLE NUMBERS
1128629	5579590-5579592

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-08A-TX

Prepared by Karen R. Williams

Reviewed by [illegible]

Date 2/6/09

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

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Sample Reference List for SDG Number PUJ97
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 0400, DO# 1 NAPR-CP MOSCRIP

Lab Sample Number	Lab Sample Code	Client Sample Description
5579590	40003	33571003 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB02B-02 # 08-P-0732
5579591	40004	33571004 NAPR-Cp Moscrip #37066-0995 Jones Soil Field# 73SB02B-03 # 08-P-0732
5579592	40002	33571032 NAPR-Cp Moscrip #37066-0995 Jones Water Field# 73ER-09 # 08-P-0732

FIRST SHEET

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1128629. Samples arrived at the laboratory on Monday, January 19, 2009. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
33571003 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579590
33571004 NAPR-Cp Moscrip #37066-0995 Jones Soil	5579591
33571032 NAPR-Cp Moscrip #37066-0995 Jones Water	5579592

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

PEJ97 6011

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Sarah Snyder
Specialist

PU197 0012

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579590 SW Group No. 1128629

33571003 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB02B-02 # 08-P-0732
Pick-Up Order #0400 Delivery Order# 01 Soil

Collected:01/14/2009 09:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40003 SDG#: PUJ97-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	11.0		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
06001	App. IX OC Pesticides in Soils							
03658	Kepone	143-50-0	N.D.		79	26	ug/kg	10
03659	Alpha BHC	319-84-6	N.D.		9.3	1.9	ug/kg	10
03660	Beta BHC	319-85-7	N.D.		9.3	2.1	ug/kg	10
03661	Delta BHC	319-86-8	N.D.		9.3	3.5	ug/kg	10
03662	Gamma BHC - Lindane	58-89-9	N.D.		9.3	1.9	ug/kg	10
03663	Heptachlor	76-44-8	N.D.		9.3	1.9	ug/kg	10
03664	Heptachlor Epoxide	1024-57-3	2.7	J	9.3	1.9	ug/kg	10
03665	Endosulfan I	959-98-8	N.D.		9.3	2.5	ug/kg	10
03666	Endosulfan II	33213-65-9	N.D.		19	3.7	ug/kg	10
03667	Dieldrin	60-57-1	N.D.		19	3.7	ug/kg	10
03668	Endrin	72-20-8	N.D.		19	3.7	ug/kg	10
03669	p,p-DDE	72-55-9	81		19	3.7	ug/kg	10
03670	p,p-DDD	72-54-8	4.0	J	19	3.7	ug/kg	10
03671	p,p-DDT	50-29-3	270		96	19	ug/kg	50
03672	Endosulfan Sulfate	1031-07-8	N.D.		19	3.7	ug/kg	10
03673	Endrin Aldehyde	7421-93-4	N.D.		19	3.7	ug/kg	10
03674	Methoxychlor	72-43-5	N.D.		93	19	ug/kg	10
03675	Toxaphene	8001-35-2	N.D.		370	120	ug/kg	10
03676	Chlordane	57-74-9	220		190	45	ug/kg	10
03677	Aldrin	309-00-2	N.D.		9.3	3.7	ug/kg	10

Due to the nature of the sample extract matrix, a dilution was used for the analysis. The reporting limits were raised accordingly.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

PUJ97 0013

Laboratory Chronicle

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579590 SW Group No. 1128629

33571003 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB02B-02 # 08-P-0732
Pick-Up Order #0400 Delivery Order# 01 Soil

Collected:01/14/2009 09:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40003 SDG#: PUJ97-01

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
06001	App. IX OC Pesticides in Soils	SW-846 8081A	1	02/03/2009 15:38	Jamie L Brillhart	10
06001	App. IX OC Pesticides in Soils	SW-846 8081A	1	02/03/2009 15:53	Jamie L Brillhart	50
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	01/20/2009 18:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	01/19/2009 18:00	Sally L Appleyard	1

PUJ97 0014

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579591 SW Group No. 1128629

33571004 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB02B-03 # 08-P-0732
Pick-Up Order #0400 Delivery Order# 01 Soil

Collected:01/14/2009 09:45

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40004 SDG#: PUJ97-02

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Limit of Quantitation*	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	11.3		0.50	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.							
06001	App. IX OC Pesticides in Soils							
03658	Kepone	143-50-0	N.D.		7.9	2.6	ug/kg	1
03659	Alpha BHC	319-84-6	N.D.		0.94	0.19	ug/kg	1
03660	Beta BHC	319-85-7	N.D.		0.94	0.21	ug/kg	1
03661	Delta BHC	319-86-8	N.D.		0.94	0.35	ug/kg	1
03662	Gamma BHC - Lindane	58-89-9	N.D.		0.94	0.19	ug/kg	1
03663	Heptachlor	76-44-8	N.D.		0.94	0.19	ug/kg	1
03664	Heptachlor Epoxide	1024-57-3	0.33	J	0.94	0.19	ug/kg	1
03665	Endosulfan I	959-98-8	N.D.		0.94	0.25	ug/kg	1
03666	Endosulfan II	33213-65-9	N.D.		1.9	0.37	ug/kg	1
03667	Dieldrin	60-57-1	N.D.		1.9	0.37	ug/kg	1
03668	Endrin	72-20-8	N.D.		1.9	0.37	ug/kg	1
03669	p,p-DDE	72-55-9	0.96	J	1.9	0.37	ug/kg	1
03670	p,p-DDD	72-54-8	N.D.		1.9	0.37	ug/kg	1
03671	p,p-DDT	50-29-3	1.9	J	1.9	0.37	ug/kg	1
03672	Endosulfan Sulfate	1031-07-8	N.D.		1.9	0.37	ug/kg	1
03673	Endrin Aldehyde	7421-93-4	N.D.		1.9	0.37	ug/kg	1
03674	Methoxychlor	72-43-5	N.D.		9.4	1.9	ug/kg	1
03675	Toxaphene	8001-35-2	N.D.		37	12	ug/kg	1
03676	Chlordane	57-74-9	9.8	J	19	4.5	ug/kg	1
03677	Aldrin	309-00-2	N.D.		0.94	0.37	ug/kg	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

PUJ97 [illegible]

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579591 SW Group No. 1128629

33571004 NAPR-Cp Moscrip #37066-0995 Jones Soil
Field# 73SB02B-03 # 08-F-0732
Pick-Up Order #0400 Delivery Order# 01 Soil

Collected:01/14/2009 09:45

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40004 SDG#: PUJ97-02

00111	Moisture	SM20 2540 G	1	01/21/2009 15:16	Scott W Freisher	1
06001	App. IX OC Pesticides in Soils	SW-846 8081A	1	02/03/2009 16:08	Jamie L Brillhart	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	1	01/20/2009 18:00	Sally L Appleyard	1
06006	PPL Pesticide Solid Extraction	SW-846 3550B	2	01/19/2009 18:00	Sally L Appleyard	1

PUJ97 8816

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579592 WW Group No. 1128629

33571032 NAPR-Cp Moscrip #37066-0995 Jones Water
Field# 73ER-09 # 08-P-0732
Pick-Up Order #0400 Delivery Order# 01 Water

Collected:01/14/2009 17:30

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40002 SDG#: PUJ97-03*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.21	0.074	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.011	0.0043	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.011	0.0032	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.021	0.0043	ug/l	1
03032	Endrin	72-20-8	N.D.	0.021	0.0043	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.021	0.0043	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.011	0.0029	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.011	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.011	0.0049	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.011	0.0032	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.011	0.0039	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.021	0.0043	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.021	0.0043	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.11	0.032	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.53	0.074	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.2	1.1	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.011	0.0032	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.021	0.0043	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.021	0.0043	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.11	0.021	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06020	Appendix IX Organochlorines	SW-846 8081A	1	01/22/2009 02:42	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	01/20/2009 14:15	Kelli M Barto	1

PUJ97 0017

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5579592 WW Group No. 1128629

33571032 NAPR-Cp Moscrip #37066-0995 Jones Water
Field# 73ER-09 # 08-P-0732
Pick-Up Order #0400 Delivery Order# 01 Water

Collected:01/14/2009 17:30

Account Number: 04694

Submitted: 01/19/2009 09:00
Reported: 02/06/2009 at 09:57
Discard: 02/21/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40002 SDG#: PUJ97-03*

00817	Water Sample Pest. Extraction	SW-846 3510C	2	01/20/2009 14:15	Kelli M Barto	1

PUJ97 0010

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Organochlorine Pesticides Data

PU.97 5019

Case Narrative Conformance/Nonconformance Summary

PUJ97 0070

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUJ97

LANCASTER LABORATORIES

App. IX OC Pesticides

LLI SAMPLE #	SAMPLE CODE	MATRIX WATER	MATRIX SOLID	COMMENT
BLANKA 1/20/09	PBLK9V		X	Method Blank
LCSA	LCSJO		X	Lab Control Spike
5579590	40003		X	DF10, DF50
5579591	40004		X	Unspiked
LAB SUBMITTED QC:				
5579591MS	40004MS		X	Matrix Spike
5579591MSD	40004MSD		X	Matrix Spike Dup
BLANKA 1/20/09	PBLKA5	X		Method Blank
LCSA	LCSJZ	X		Lab Control Spike
LCSDA	LCSDZ9	X		Lab Control Spike Dup
5579592	40002	X		

A. Sample Preparation:

No problems were encountered with the preparation of the samples.

B. Analysis:

The Chlordane linearity is >20% RSD for all peaks on Column A of ICAL 1D16021. Report from Column B.

The Toxaphene amd Endrin aldehyde recoveries in the Initial Calibration Verification of ICAL 1D16021 are outside the 20% criteria on Column B. Report from Column A.

Standard 508AM0824I is used as the Initial Calibration Verification standard for Endrin aldehyde in ICAL 1C13033.

All other target compounds in the Initial Calibration Verification standards are within the 20% criteria.

No other problems were encountered.

All continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

Lancaster Laboratories

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

All QC data are within specifications.

D. Data Interpretation:

No further interpretation is needed.

Data codes:

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes: 1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Narrative reviewed and approved by:

Dana Kaufman, Manager Data Deliverables — **Date** 2/6/09

QC Summary

PUP97 0023

2F
SOIL SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: PUJ97

GC Column (1): RTXCLPII ID: .32 GC Column (2): ID:

Batchnumber: 090200000A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5579590	40003	90	68	120	112	0
5579591	40004	82	79	93	88	0
5579591 MS	40004MS	74	70	94	90	0
5579591 MSD	40004MSD	77	73	93	87	0
BLANKA	PBLK9V	75	71	93	89	0
LCSA	LCSJO	77	77	89	84	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION	
TCX	= Tetrachloro-m-xylene	(55 - 131)	10.2	ug/kg
DCB	= Decachlorobiphenyl	(45 - 150)	10.2	ug/kg

PUJ97 0024

Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

2E
WATER SURROGATE RECOVERY

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No: SDG No.: PUJ97

GC Column (1): RTXCLPII ID: .32 GC Column (2): ID:

Batchnumber: 090200005A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5579592	40002	95	114	83	85	0
BLANKA	PBLKA5	120	118	135	137	0
LCSA	LCSJZ	127	126	118	120	0
LCSDA	LCSDZ9	126	123	133	134	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION	
TCX	= Tetrachloro-m-xylene	(41 - 132)	0.307	ug/l
DCB	= Decachlorobiphenyl	(40 - 144)	0.305	ug/l

PUJ97 8825

Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

3F
Soil Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 40004

Compound	Spike Added (ug/kg)	Sample Concen (ug/kg)	MS Concen (ug/kg)	MSD Concen (ug/kg)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.85	0	3.29	3.34	85	87	(10 - 129)	2	50
gamma-BHC (Lindane)	3.85	0	3.44	3.66	89	95	(10 - 140)	6	50
beta-BHC	3.56	0	3.43	3.45	96	97	(14 - 147)	1	50
delta-BHC	3.56	0	3.83	3.87	108	109	(23 - 140)	1	50
Heptachlor	3.90	0	3.26	3.30	84	85	(13 - 126)	1	50
Aldrin	3.48	0	3.38	3.51	97	101	(16 - 126)	4	50
Heptachlor epoxide	3.51	0.33	3.83	4.01	100	105	(13 - 157)	5	50
Endosulfan I	3.85	0	3.61	3.64	94	95	(16 - 137)	1	50
4,4'-DDE	7.00	0.96	8.51	8.48	108	107	(18 - 161)	0	50
Dieldrin	7.70	0	7.32	7.24	95	94	(19 - 154)	1	50
Endrin	7.90	0	7.69	7.75	97	98	(11 - 149)	1	50
4,4'-DDD	7.53	0	7.49	7.40	99	98	(16 - 163)	1	50
Endosulfan II	7.10	0	7.06	7.00	99	99	(28 - 154)	1	50
Endrin aldehyde	7.02	0	5.86	3.88	83	55	(10 - 148)	41	50
4,4'-DDT	7.82	1.88	8.46	8.71	84	87	(10 - 176)	3	50
Endosulfan sulfate	7.16	0	7.90	8.03	110	112	(21 - 160)	2	50
Methoxychlor	37.33	0	36.58	35.79	98	96	(32 - 147)	2	50

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 34 outside limits

PU397 8826

Comments:

Sample No.: 5579591 Batch: 090200000A

FORM III-2

3F

Soil Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSJO

Compound	Spike Added (ug/kg)	LCS Concen (ug/kg)	LCSD Concen (ug/kg)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	3.41	2.94		86		(20 - 124)		50
gamma-BHC (Lindane)	3.41	3.30		97		(34 - 117)		50
beta-BHC	3.15	2.90		92		(41 - 124)		50
delta-BHC	3.15	3.42		109		(40 - 122)		50
Heptachlor	3.46	2.94		85		(27 - 118)		50
Aldrin	3.08	3.09		100		(27 - 119)		50
Heptachlor epoxide	3.12	3.02		97		(44 - 126)		50
Endosulfan I	3.42	2.90		85		(45 - 123)		50
4,4'-DDE	6.21	6.29		101		(44 - 135)		50
Dieldrin	6.83	6.43		94		(50 - 123)		50
Endrin	7.01	6.56		94		(43 - 124)		50
4,4'-DDD	6.68	6.47		97		(43 - 139)		50
Endosulfan II	6.29	6.11		97		(63 - 127)		50
Endrin aldehyde	6.23	5.55		89		(46 - 119)		50
4,4'-DDT	6.93	6.42		93		(39 - 137)		50
Endosulfan sulfate	6.35	6.64		105		(59 - 126)		50
Methoxychlor	33.11	32.06		97		(44 - 136)		50

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 17 outside limits

PUI97 0027

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 090200000A

FORM III-2

3E

Water Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSJZ

Compound	Spike Added (ug/l)	LCS Concen (ug/l)	LCSD Concen (ug/l)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	0.10	0.11	0.11	110	110	(67 - 130)	0	30
gamma-BHC (Lindane)	0.10	0.11	0.11	110	110	(68 - 128)	0	30
beta-BHC	0.095	0.11	0.11	116	116	(69 - 136)	0	30
delta-BHC	0.095	0.11	0.11	116	116	(53 - 139)	0	30
Heptachlor	0.10	0.10	0.10	100	100	(57 - 126)	0	30
Aldrin	0.093	0.098	0.093	105	100	(39 - 136)	5	30
Heptachlor epoxide	0.093	0.11	0.11	118	118	(65 - 133)	0	30
Endosulfan I	0.10	0.10	0.10	100	100	(68 - 128)	0	30
4,4'-DDE	0.19	0.21	0.21	111	111	(66 - 130)	0	30
Dieldrin	0.21	0.22	0.22	105	105	(66 - 123)	0	30
Endrin	0.21	0.19	0.19	90	90	(43 - 133)	0	30
4,4'-DDD	0.20	0.21	0.21	105	105	(54 - 142)	0	30
Endosulfan II	0.19	0.21	0.21	111	111	(70 - 128)	0	30
Endrin aldehyde	0.19	0.22	0.22	116	116	(63 - 129)	0	30
4,4'-DDT	0.21	0.20	0.19	95	90	(53 - 126)	5	30
Endosulfan sulfate	0.19	0.21	0.22	111	116	(65 - 127)	5	30
Methoxychlor	0.99	0.99	0.99	100	100	(52 - 133)	0	30

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 34 outside limits

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 090200005A

FORM III-1

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLK9V

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUJ97

Lab Sample ID BLANKA Batch 090200000A Lab File ID: 1C13033.48R 1C13033B.48R

Matrix: (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup: (Y/N) N Date Extracted: 1/19/2009

Date Analyzed (1): 2/3/2009 Date Analyzed (2): 2/3/2009

Time Analyzed (1): 15:07:37 Time Analyzed (2): 15:07:37

Instrument ID (1): H6722A Instrument ID (2): H6722B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	40003	5579590	2/3/2009	2/3/2009
02	40004	5579591	2/3/2009	2/3/2009
03	40004MS	5579591MS	2/3/2009	2/3/2009
04	40004MSD	5579591MSD	2/3/2009	2/3/2009
05	PBLK9V	BLANKA	2/3/2009	2/3/2009
06	LCSJO	LCSA	2/3/2009	2/3/2009

PUJ97 8829

COMMENTS:

FORM IV

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLK9V

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 090200000A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) SOIL **Lab Sample ID:** BLANKA

Sample wt/vol: 30 (g/ml) g **Lab File ID:** 1C13033.48R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) SONC **Date Extracted:** 1/19/2009

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 2/3/2009

Injection Volume: 2 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) Y **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/kg	Q
319-84-6	alpha-BHC	0.50	U
58-89-9	gamma-BHC (Lindane)	0.17	U
319-85-7	beta-BHC	0.27	J
319-86-8	delta-BHC	0.31	U
76-44-8	Heptachlor	0.17	U
309-00-2	Aldrin	0.33	U
1024-57-3	Heptachlor epoxide	0.17	U
959-98-8	Endosulfan I	0.22	U
72-55-9	4,4'-DDE	0.33	U
60-57-1	Dieldrin	0.33	U
72-20-8	Endrin	0.33	U
72-54-8	4,4'-DDD	0.33	U
33213-65-9	Endosulfan II	0.33	U
143-50-0	Kepone.	2.3	U
7421-93-4	Endrin aldehyde	0.33	U
50-29-3	4,4'-DDT	0.33	U
1031-07-8	Endosulfan sulfate	0.33	U
72-43-5	Methoxychlor	1.7	U
57-74-9	Chlordane (Technical)	4.0	U
8001-35-2	Toxaphene	11	U

PU392 8838

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKA5

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUJ97

Lab Sample ID BLANKA Batch 090200005A Lab File ID: 1D16021.61R 1D16021B.61R

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N Date Extracted: 1/20/2009

Date Analyzed (1): 1/22/2009 Date Analyzed (2): 1/22/2009

Time Analyzed (1): 02:03:13 Time Analyzed (2): 02:03:13

Instrument ID (1): H5262A Instrument ID (2): H5262B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	40002	5579592	1/22/2009	1/22/2009
02	PBLKA5	BLANKA	1/22/2009	1/22/2009
03	LCSJZ	LCSA	1/22/2009	1/22/2009
04	LCSDZ9	LCSDA	1/22/2009	1/22/2009

PUJ97 0032

COMMENTS:

FORM IV

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKA5

Lab Name: Lancaster Laboratories **Contract:** **Batchnumber:** 090200005A

Lab Code: **Case No.:** **SAS No.:** **SDG No.:**

Matrix: (soil/water) WATER **Lab Sample ID:** BLANKA

Sample wt/vol: 1000 (g/ml) mL **Lab File ID:** 1D16021.61R

% Moisture: **Decanted: (Y/N)** **Date Received:**

Extraction: (SepF/Cont/Sonc) SEPF **Date Extracted:** 1/20/2009

Concentrated Extract Volume: 10000 (uL) **Date Analyzed:** 1/22/2009

Injection Volume: 1 (uL) **Dilution Factor:** 1

GPC Cleanup: (Y/N) N **pH:** **Sulfur Cleanup: (Y/N)** N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
319-84-6	alpha-BHC	0.0027	U
58-89-9	gamma-BHC (Lindane)	0.0046	U
319-85-7	beta-BHC	0.0038	U
319-86-8	delta-BHC	0.0030	U
76-44-8	Heptachlor	0.0040	U
309-00-2	Aldrin	0.0030	U
1024-57-3	Heptachlor epoxide	0.0037	U
959-98-8	Endosulfan I	0.0030	U
72-55-9	4,4'-DDE	0.0040	U
60-57-1	Dieldrin	0.0040	U
72-20-8	Endrin	0.0040	U
72-54-8	4,4'-DDD	0.0040	U
33213-65-9	Endosulfan II	0.0040	U
143-50-0	Kepone	0.070	U
7421-93-4	Endrin aldehyde	0.020	U
50-29-3	4,4'-DDT	0.0040	U
1031-07-8	Endosulfan sulfate	0.0040	U
72-43-5	Methoxychlor	0.030	U
57-74-9	Chlordane (Technical)	0.070	U
8001-35-2	Toxaphene	1.0	U

PHJ92 8832

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER:____David Jones_____ DIVISION/TEAM: _____Review_____

INSTALLATION:___NAPR Cp Moscript _____CONTRACT LAB:_____LLP_____

PROJECT NO:_____38-0995_____ LIMS W.O. NO:_____33574_____

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

__X___ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Robert Berkshire
DATE: 2/13/09

DLS CR 1.1 **JUNE 2001**

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Type I Data Package
for
U.S. Army CHPPM

Contract Number: 08-P-0732

SDG# PUJ99

Project: PO# 0402, DO# 1 NAPR-CP MOSCRIP
Water Samples
Collected on 01/16/09

GROUP	SAMPLE NUMBERS
1128804	5580627-5580630

PA Cert. # 36-00037
NY Cert. # 10670
NJ Cert. # PA011
NC Cert. # 521
TX Cert. # T104704194-08A-TX

Prepared by Karen A. Williams

Reviewed by

Date 2/5/09

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Sample Reference List for SDG Number PUJ99
with a Data Package Type of I
04694 - U.S. Army CHPPM
Project: PO# 0402, DO# 1 NAPR-CP MOSCRIP

Lab Sample Number	Lab Sample Code	Client Sample Description
5580627	40208	33574008 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-04 # 08-P-0732
5580628	40209	33574009 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-05 # 08-P-0732
5580629	40210	33574010 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-06 # 08-P-0732
5580630	40213	33574013 NAPR-Cp Moscrip #37073-0995 Jones Water Field# 73 FB-06A # 08-P-0732

PUJ99 [illegible]

Report ID: HMA0022v1
Sequence: 473378

4694
1128804
5580627-30
R099

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 20-Jan-09 8:57:19 AM
Page: 1 of 2

Pick-Up / Work / Delivery Order
Generated by: SMELSERBA

Section I - Contract/Project Information

Contract Information

Pickup Order: **0402/1**

DLS WO#: 33574 Batch: 1857
Contractor Code: LLP HBN: 214621
Contract#: W91ZLK-08-P-0732
Contract POC: Ms. Kathy Klinefelter
Sent by Team: PES
Priority: Standard
# of Samples: 8/4 TJW 01/21/09

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38–38
Client Name: Mr. David Jones
JCNO: 97HR41
SUBJCNO: 0995
DLS WO#: 33574
DLS Profile#: 37073

Pick-Up/Work/Delivery Order Approved by: Geraldine Miles (GM) for J. Brackmeyer 1/20/09
(Signature of USACHPPM's COR)

USACHPPM called for pickup: Geraldine Miles (Caller's Name) 1/20/09 @ 0930hrs (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [signature] (Signature of laboratory courier) 1/20/09 [illegible] (Date/Time of pick-up)

Number of samples received intact: All (#/All)
Number of samples received broken: None (#/None)

Data package received by at CHPPM: Antoinette Greene
Delivery Data: Ulmare (Means of Delivery - UPS/FedEx) 2-5-09 Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	LLP2421
33574008	73 FB - 04	GW	1
33574009	73 FB - 05	GW	1
33574010	73 FB - 06 (BKG)	GW	1
33574011	73 FB - 06 MS	GW	1
~~33574012~~	~~73 FB - 06 MSD~~	GW	1
33574013	73 FB - 06A	GW	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description	Quantity
LLP2421	Pesticides (OC) (App IX)	~~8~~ 4
	Procedure Description	EPA 8081A

Matrix types included in this Report

Matrix	Matrix code	Quantity
Water (Ground water)	GW	~~8~~ 4

TW41459
1/21/09

Report ID: HRA8191C-ACodes
COC #: 473357

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Batch # 1657

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 1/17/09 *to SML. This is SML's internal Chain of Custody.*

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLP
Location: NAPR-Cp Moscrip
Jono: 97HR41
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes: MS and MSD for 73 FB-06 not listed on Field COC. Coll. Time on 73 1DW-03 and 04 did not match COC. Used time on container for LIMS log-in. Cont label for 73MW02 did not say dissolved like CoC. Confusion on 73FB05 and 06 samples calrified w/ PO H.Taylor 1/17/09

Total Samples: 6 **Total Containers:** 10

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
33574008	33574008-3	73 FB - 04	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:00 PM	16-Feb-2009
ACodes: LLP2421 : Pesticides (OC) (App IX)										
33574008	33574008-4	73 FB - 04	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:00 PM	16-Feb-2009
ACodes: LLPXCTNR : XTRACTNR, Additional Container										
33574009	33574009-3	73 FB - 05	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:30 PM	16-Feb-2009
ACodes: LLP2421 : Pesticides (OC) (App IX)										
33574009	33574009-4	73 FB - 05	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:30 PM	16-Feb-2009
ACodes: LLPXCTNR : XTRACTNR, Additional Container										
33574010	33574010-3	73 FB - 06	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009
ACodes: LLP2421 : Pesticides (OC) (App IX)										

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473357

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLP

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38

33574010	33574010-4	73 FB - 06	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLPXCTNR : XTRACTNR, Additional Container

33574011	33574011-2	73 FB - 06 MS	MS	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLP2421 : Pesticides (OC) (App IX)

33574012	33574012-2	73 FB - 06 MSD	MSD	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLP2421 : Pesticides (OC) (App IX)

33574013	33574013-3	73 FB - 06A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLP2421 : Pesticides (OC) (App IX)

33574013	33574013-4	73 FB - 06A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
LLPXCTNR : XTRACTNR, Additional Container

Total Samples: 6 Total Containers: 10

Samples Received By: Date Received: 1/20/09
Document Reviewed By: Heidi Taylor Initials: HT Date Reviewed: 1/17/09
Document Quality Review By: Date Reviewed: 20 Jan 09
Samples Approved For Distribution: Yes ✓ No Initials: Date Approved:

NR=Not Reported.

Report ID: HRA0191C-Acodes
COC #: 473357

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDI.TAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLP

Description: NAPR CMS-Cp Moscrip~37073
Workorder ID: 099517
Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
33574008	73 FB - 04	33574008-4	GW
33574009	73 FB - 05	33574009-4	GW
33574010	73 FB - 06	33574010-4	GW
33574011	73 FB - 06 MS	33574011-2	GW
33574013	73 FB - 06A	33574013-4	GW

HSN	Customer Sample Id	Container Id	Mx
33574008	73 FB - 04	33574008-3	GW
33574009	73 FB - 05	33574009-3	GW
33574010	73 FB - 06	33574010-3	GW
33574012	73 FB - 06 MSD	33574012-2	GW
33574013	73 FB - 06A	33574013-3	GW

Total Samples: 6
Total Containers: 10

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	From refrigerator	1/17/09 1050		1/17/09 1050	For Sample Numbering
		1/17/09 1130	See SML's Comments	1/17/09 1130	Returned to holding refrigerator in room #0202.
	From refrigerator	1-20-09 1300		1/20/09	
		1/20/09 1620		1/20/09 1620	

Remarks:

LIDS Form 236 LIMS, 02 Feb 2003

NR=Not Reported.

E-1060

Report ID: HRA0191C-Acodes
COC #: 473357

USACHPPM
Readiness thru Health

Run Date: 17-Jan-09 10:42
Generated By: HEIDLTAYLOR

Profile: 37073 - 0995
Workorder #: 33574
Queue: LLP

Description: NAPR CMS-Cp Moscrip-37073
Workorder ID: 099517
Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
33574008		2		
33574009		2		
33574010		2		
33574011		1		
33574012		1		
33574013		2		

Total Samples: 6 Total Containers: 10

Custody

E-1061

LIDS Form 235 LBMS, 02 Feb 2003

NR=Not Reported.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: CHPOM
Date of Receipt: 1/20/09
Time of Receipt: 1620
Source Code: 01
Unpacker Emp. No.: 2308

Shipping Container Sealed: YES NO
Custody Seal Present: YES NO
Custody Seal Intact: YES NO NA
Package: Chilled Not Chilled

Temperature of Shipping Containers							
Cooler #	Thermometer ID	Temperature (°C)	Temp Bottle (TB) or Surface Temp (ST)	Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP)	Ice Present? Y/N	Loose (L) Bagged Ice (B) or NA	Comments
1	4/29/08	0.9°C	TB	WI	Y	B	
2		0.5°C					
3							
4							
5							
6							

Number of Trip Blanks received NOT listed on chain of custody: 0

Paperwork Discrepancy/Unpacking Problems:
NJT time says 1500, sample NJU time says 840

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	1/20/09	1640	Unpacking [illegible]
[illegible]	1/20/09	1827	Place in Storage or Entry
			Entry
			Entry

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

410-436-4465

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1128804. Samples arrived at the laboratory on Tuesday, January 20, 2009. The PO# for this group is W91ZLK-08-P-0732.

Client Description	Lancaster Labs Number
33574008 NAPR-Cp Moscrip #37073-0995 Jones Water	5580627
33574009 NAPR-Cp Moscrip #37073-0995 Jones Water	5580628
33574010 NAPR-Cp Moscrip #37073-0995 Jones Water	5580629
33574013 NAPR-Cp Moscrip #37073-0995 Jones Water	5580630

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO Data Package Group

PU1999 0011

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Katherine A Klinefelter at (717) 656-2300

Respectfully Submitted,

Sarah Snyder
Specialist

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580627 WW Group No. 1128804

33574008 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-04 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 14:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40208 SDG#: PUJ99-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.22	0.078	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.011	0.0045	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.011	0.0033	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.022	0.0045	ug/l	1
03032	Endrin	72-20-8	N.D.	0.022	0.0045	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.022	0.0045	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.011	0.0030	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.011	0.0042	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.011	0.0051	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.011	0.0033	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.011	0.0041	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.022	0.0045	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.022	0.0045	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.11	0.033	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.56	0.078	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.3	1.1	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.011	0.0033	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.022	0.0045	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.022	0.0045	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.11	0.022	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06020	Appendix IX Organochlorines	SW-846 8081A	1	01/23/2009 00:01	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	01/21/2009 14:15	Kelli M Barto	1

PUJ99 0813

*=This limit was used in the evaluation of the final result

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580627 WW Group No. 1128804

33574008 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-04 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 14:00

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

40208 SDG#: PUJ99-01

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

PUJ99 0014

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580628 WW Group No. 1128804

33574009 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-05 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 14:30

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40209 SDG#: PUJ99-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.21	0.074	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.011	0.0042	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.011	0.0032	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.021	0.0042	ug/l	1
03032	Endrin	72-20-8	N.D.	0.021	0.0042	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.021	0.0042	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.011	0.0029	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.011	0.0040	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.011	0.0049	ug/l	1
03037	Delta BHC	319-86-8	0.0058 J	0.011	0.0032	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.011	0.0039	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.021	0.0042	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.021	0.0042	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.11	0.032	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.53	0.074	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.2	1.1	ug/l	1
03044	Endosulfan I	959-98-8	0.0060 J	0.011	0.0032	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.021	0.0042	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.021	0.0042	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.11	0.021	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06020	Appendix IX Organochlorines	SW-846 8081A	1	01/23/2009 00:14	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	01/21/2009 14:15	Kelli M Barto	1

PUJ99 0015

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580628 WW Group No. 1128804

33574009 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-05 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 14:30

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

40209 SDG#: PUJ99-02

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

FILSWF 08:16

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580629 WW Group No. 1128804

33574010 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40210 SDG#: PUJ99-03BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.21	0.072	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0041	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.010	0.0031	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.021	0.0041	ug/l	1
03032	Endrin	72-20-8	N.D.	0.021	0.0041	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.021	0.0041	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0028	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.010	0.0039	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0047	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0031	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0038	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.021	0.0041	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.021	0.0041	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.031	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.52	0.072	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.1	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0031	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.021	0.0041	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.021	0.0041	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.021	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06020	Appendix IX Organochlorines	SW-846 8081A	1	01/23/2009 01:06	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	01/21/2009 14:15	Kelli M Barto	1

PUJ99 8817

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580629 WW Group No. 1128804

33574010 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06 # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Account Number: 04694

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

40210 SDG#: PUJ99-03BKG

PUJ99 8010

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580630 WW Group No. 1128804

33574013 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06A # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

40213 SDG#: PUJ99-04*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Units	Dilution Factor
06020	Appendix IX Organochlorines						
01321	Kepone	143-50-0	N.D.	0.20	0.070	ug/l	1
03029	Heptachlor	76-44-8	N.D.	0.010	0.0040	ug/l	1
03030	Aldrin	309-00-2	N.D.	0.010	0.0030	ug/l	1
03031	Dieldrin	60-57-1	N.D.	0.020	0.0040	ug/l	1
03032	Endrin	72-20-8	N.D.	0.020	0.0040	ug/l	1
03033	p,p-DDT	50-29-3	N.D.	0.020	0.0040	ug/l	1
03034	Alpha BHC	319-84-6	N.D.	0.010	0.0027	ug/l	1
03035	Beta BHC	319-85-7	N.D.	0.010	0.0038	ug/l	1
03036	Gamma BHC - Lindane	58-89-9	N.D.	0.010	0.0046	ug/l	1
03037	Delta BHC	319-86-8	N.D.	0.010	0.0030	ug/l	1
03038	Heptachlor Epoxide	1024-57-3	N.D.	0.010	0.0037	ug/l	1
03039	p,p-DDE	72-55-9	N.D.	0.020	0.0040	ug/l	1
03040	p,p-DDD	72-54-8	N.D.	0.020	0.0040	ug/l	1
03041	Methoxychlor	72-43-5	N.D.	0.10	0.030	ug/l	1
03042	Chlordane	57-74-9	N.D.	0.50	0.070	ug/l	1
03043	Toxaphene	8001-35-2	N.D.	3.0	1.0	ug/l	1
03044	Endosulfan I	959-98-8	N.D.	0.010	0.0030	ug/l	1
03045	Endosulfan II	33213-65-9	N.D.	0.020	0.0040	ug/l	1
03046	Endosulfan Sulfate	1031-07-8	N.D.	0.020	0.0040	ug/l	1
03047	Endrin Aldehyde	7421-93-4	N.D.	0.10	0.020	ug/l	1

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
06020	Appendix IX Organochlorines	SW-846 8081A	1	01/23/2009 01:45	Mark E McNulty	1
00817	Water Sample Pest. Extraction	SW-846 3510C	1	01/21/2009 14:15	Kelli M Barto	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. 5580630 WW Group No. 1128804

33574013 NAPR-Cp Moscrip #37073-0995 Jones Water
Field# 73 FB-06A # 08-P-0732
Pick-Up Order #0402 Delivery Order# 01 Water

Collected:01/16/2009 15:00

Submitted: 01/20/2009 16:20
Reported: 01/30/2009 at 10:33
Discard: 02/14/2009

40213 SDG#: PUJ99-04*

Account Number: 04694

U.S. Army CHPPM
ATTN: DFAS-RI-FPV BLDG. 68
Rock Island Operating Location
Rock Island IL 61299-8401

PUJ99 0026

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

2216 Rev. 3/27/06

Organochlorine Pesticides Data

PUN99 0021

Case Narrative Conformance/Nonconformance Summary

PUJ99 0022

Lancaster Laboratories

CLIENT: U.S. Army CHPPM
SDG: PUJ99

LANCASTER LABORATORIES

Appendix IX Organochlorines

		MATRIX		
LLI SAMPLE #	**SAMPLE CODE**	**WATER**	**SOLID**	**COMMENT**
BLANKA 1/21/08	PBLKBS	X		Method Blank
LCSA	LCSLC	X		Lab Control Spike
5580627	40208	X		
5580628	40209	X		
5580629	40210	X		Unspiked
5580630	40213	X		
LAB SUBMITTED QC:				
5580629MS	40210MS	X		Matrix Spike
5580629MSD	40210MSD	X		Matrix Spike Dup

A. Sample Preparation:

No problems were encountered with the preparation of the samples.

B. Analysis:

The Chlordane linearity is >20% linearity for all peaks on Column A. Report Chlordane from Column B.

The Toxaphene recovery in the Initial Calibration Verification standard is outside the 20% criteria on Column B. Report Toxaphene from Column A.

The Endrin aldehyde recovery in the Initial Calibration Verification standard is outside the 20% criteria on Column B. No Endrin aldehyde was detected in the samples.

The DCB and TCX recoveries in the initial calibration verification standard (2D16021.30) are outside the 20% criteria on both column A and B.

All other target compounds in the Initial Calibration Verification are within the 20% criteria.

No other problems were encountered.

The average %D and various compounds are outside the 15% criteria in continuing calibration standard 2D16021.55R on Column A and Column B. No target compounds are detected in the bracketed samples and the data is reported.

All other continuing calibration data are within method specifications since if any individual target analytes have a %D value outside the 15% criteria, then the average %D value of the standard is within the 15% criteria.

PUJ99 0023

Lancaster Laboratories

C. Quality Control:

Matrix QC may not be included if site-specific QC were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method or by the client.

For preparation/method blank results >LOQ, corrective action is not required if the sample result is >10 times the blank concentration, unless otherwise specified in the method or by the client.

Surrogate recoveries that are outside the QC window are confirmed unless attributed to a dilution or otherwise noted.

All QC data are within specifications.

D. Data Interpretation:

No further interpretation is needed.

Data codes:

Detected analytes are reported using the higher of the two column results in accordance with the method. Data with analytes showing disparity >40% are further evaluated for reporting based on chromatographic appearance. The analytes will be coded with a comment number on the data sheet. The comments are explained below:

- 1569 - A disparity of >40% between the primary and confirmatory analysis occurred. Due to suspected interference, the lower result was reported.
- 1570 - A disparity of >40% between the primary and confirmatory analysis occurred. Since no chromatographic anomalies were apparent, the higher result was reported.

Data that indicates that manual integration was required would include the following codes:
1 = missed peak and 2 = improper baseline. The peaks that have been manually changed are indicated with an "M" on the raw data.

Narrative reviewed and approved by:

Dana Kauffman, Manager Data Deliverables **Date** 2/3/09

Lancaster Laboratories, Inc. • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681

QC Summary

PWJ99 0825

2E
WATER SURROGATE RECOVERY

Lab Name: Lancaster Laboratories | Contract:

Lab Code: | Case No.: | SAS No: | SDG No.: PUJ99

GC Column (1): RTXCLPII | ID: .32 | GC Column (2): | ID:

Batchnumber: 090210017A

SAMPLE	SAMPLE CODE NO.	TCX 1 % REC #	TCX 2 % REC #	DCB 1 % REC #	DCB 2 % REC #	TOT OUT
5580627	40208	102	119	131	133	0
5580628	40209	125	125	124	132	0
5580629	40210	133 *	129	130	131	1
5580629 MS	40210MS	126	124	124	130	0
5580629 MSD	40210MSD	126	124	127	128	0
5580630	40213	115	112	118	123	0
BLANKA	PBLKBS	130	130	128	128	0
LCSA	LCSLC	131	128	128	130	0

		ADVISORY QC LIMITS	NOMINAL CONCENTRATION
TCX	= Tetrachloro-m-xylene	(41 - 132)	0.307 ug/l
DCB	= Decachlorobiphenyl	(40 - 144)	0.305 ug/l

PN[illegible] 0826

Column to be used to flag recovery values
* Values outside of QC Limits
D Surrogate diluted out

3E

Water Matrix Spike/Matrix Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Matrix Spike - Sample Code No.: 40210

Compound	Spike Added (ug/l)	Sample Concen (ug/l)	MS Concen (ug/l)	MSD Concen (ug/l)	MS % Rec #	MSD % Rec #	MS-MSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	0.10	0	0.10	0.10	100	100	(36 - 141)	0	30
gamma-BHC (Lindane)	0.10	0	0.10	0.10	100	100	(42 - 137)	0	30
beta-BHC	0.095	0	0.10	0.10	105	108	(10 - 173)	0	30
delta-BHC	0.095	0	0.10	0.10	105	108	(10 - 242)	0	30
Heptachlor	0.10	0	0.10	0.10	100	100	(19 - 145)	0	30
Aldrin	0.093	0	0.098	0.095	105	104	(22 - 155)	3	30
Heptachlor epoxide	0.094	0	0.10	0.10	106	109	(43 - 143)	0	30
Endosulfan I	0.10	0	0.10	0.096	100	98	(24 - 164)	2	30
4,4'-DDE	0.19	0	0.20	0.20	105	111	(50 - 142)	0	30
Dieldrin	0.21	0	0.21	0.20	100	100	(55 - 129)	5	30
Endrin	0.21	0	0.20	0.20	95	95	(48 - 134)	0	30
4,4'-DDD	0.20	0	0.20	0.20	100	100	(28 - 160)	0	30
Endosulfan II	0.19	0	0.20	0.20	105	105	(62 - 133)	0	30
Endrin aldehyde	0.19	0	0.20	0.20	105	111	(15 - 161)	0	30
4,4'-DDT	0.21	0	0.20	0.19	95	95	(35 - 139)	5	30
Endosulfan sulfate	0.19	0	0.21	0.21	111	111	(55 - 136)	0	30
Methoxychlor	1.0	0	0.99	0.97	99	99	(44 - 147)	2	30

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 34 outside limits

Comments: Results calculated on as-received basis.

Sample No.: 5580629 Batch: 090210017A

FORM III-1

3E

Water Lab Control Spike/Lab Control Spike Duplicate Recovery

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.:

Laboratory Control Spike - Sample Code No.: LCSLC

Compound	Spike Added (ug/l)	LCS Concen (ug/l)	LCSD Concen (ug/l)	LCS % Rec #	LCSD % Rec #	LCS-LCSD % REC Limits	% RPD #	% RPD Lim
alpha-BHC	0.10	0.11		110		(67 - 130)		30
gamma-BHC (Lindane)	0.10	0.10		100		(68 - 128)		30
beta-BHC	0.095	0.11		116		(69 - 136)		30
delta-BHC	0.095	0.10		105		(53 - 139)		30
Heptachlor	0.10	0.10		100		(57 - 126)		30
Aldrin	0.093	0.10		108		(39 - 136)		30
Heptachlor epoxide	0.093	0.10		108		(65 - 133)		30
Endosulfan I	0.10	0.10		100		(68 - 128)		30
4,4'-DDE	0.19	0.20		105		(66 - 130)		30
Dieldrin	0.21	0.21		100		(66 - 123)		30
Endrin	0.21	0.16		76		(43 - 133)		30
4,4'-DDD	0.20	0.21		105		(54 - 142)		30
Endosulfan II	0.19	0.20		105		(70 - 128)		30
Endrin aldehyde	0.19	0.21		111		(63 - 129)		30
4,4'-DDT	0.21	0.18		86		(53 - 126)		30
Endosulfan sulfate	0.19	0.21		111		(65 - 127)		30
Methoxychlor	0.99	0.93		94		(52 - 133)		30

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 17 outside limits

Spike Recovery: 0 out of 17 outside limits

Comments: Results calculated on as-received basis.

Sample No.: LCSA Batch: 090210017A

FORM III-1

4C

METHOD BLANK SUMMARY

SAMPLE CODE NO.

PBLKBS

Lab Name: Lancaster Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: PUJ99

Lab Sample ID BLANKA Batch 090210017A Lab File ID: 2D16021.37R 2D16021B.37R

Matrix: (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup: (Y/N) N Date Extracted: 1/21/2009

Date Analyzed (1): 1/22/2009 Date Analyzed (2): 1/22/2009

Time Analyzed (1): 23:34:55 Time Analyzed (2): 23:34:55

Instrument ID (1): H5262A Instrument ID (2): H5262B

GC Column: RTX-CLP ID: 0.32 (mm) GC Column: RTXCLPII ID: 0.32 (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD

	SAMPLE CODE NO.	LAB SAMPLEID	DATE ANALYZED 1	DATE ANALYZED 2
01	40208	5580627	1/23/2009	1/23/2009
02	40209	5580628	1/23/2009	1/23/2009
03	40210	5580629	1/23/2009	1/23/2009
04	40210MS	5580629MS	1/23/2009	1/23/2009
05	40210MSD	5580629MSD	1/23/2009	1/23/2009
06	40213	5580630	1/23/2009	1/23/2009
07	PBLKBS	BLANKA	1/22/2009	1/22/2009
08	LCSLC	LCSA	1/22/2009	1/22/2009

PUI99 0829

COMMENTS:

FORM IV

1D

ORGANICS ANALYSIS DATA SHEET

SAMPLE CODE NO.

PBLKBS

Lab Name: Lancaster Laboratories Contract: Batchnumber: 090210017A

Lab Code: Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: BLANKA

Sample wt/vol: 1000 (g/ml) mL Lab File ID: 2D16021.37R

% Moisture: Decanted: (Y/N) Date Received:

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 1/21/2009

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 1/22/2009

Injection Volume: 1 (uL) Dilution Factor: 1

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS (UG/L or UG/KG) ug/l	Q
319-84-6	alpha-BHC	0.0027	U
58-89-9	gamma-BHC (Lindane)	0.0046	U
319-85-7	beta-BHC	0.0038	U
319-86-8	delta-BHC	0.0030	U
76-44-8	Heptachlor	0.0040	U
309-00-2	Aldrin	0.0030	U
1024-57-3	Heptachlor epoxide	0.0037	U
959-98-8	Endosulfan I	0.0030	U
72-55-9	4,4'-DDE	0.0040	U
60-57-1	Dieldrin	0.0040	U
72-20-8	Endrin	0.0040	U
72-54-8	4,4'-DDD	0.0040	U
33213-65-9	Endosulfan II	0.0040	U
143-50-0	Kepone	0.070	U
7421-93-4	Endrin aldehyde	0.020	U
50-29-3	4,4'-DDT	0.0040	U
1031-07-8	Endosulfan sulfate	0.0040	U
72-43-5	Methoxychlor	0.030	U
57-74-9	Chlordane (Technical)	0.070	U
8001-35-2	Toxaphene	1.0	U

JANUARY 2009

METALS DATA

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones DIVISION/TEAM: _____

INSTALLATION: NAPR-Cp Moscrip CONTRACT LAB: Gascoyne (GAS)

PROJECT NO: Program 38 LIMS W.O. NO: 33571

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

✓ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.

_____ DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.

_____ OTHER.

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrows
DATE: 12 Feb 09

LIDS 2.0 Feb 06

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

COVER LETTER

Data

USACHPPM-Metals

Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201

APG, MD 21010-5422

RE: GW/Soil

February 10, 2009

Report No.: 09A0420

The report of analyses contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 01/20/2009 15:35.

The enclosed results were obtained from and applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report has been reviewed and meet the applicable project and certification specific requirements, unless otherwise noted.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories, Inc.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Case Narrative
- Test Results
- QC Summary
- Notes and Definitions
- Cooler Receipt Log
- Chain of Custody
- Data

Final report reviewed by: Lewis B. Gunn III For Michael D. Arbaugh/Customer Services Manager

2/10/2009

Report issue date

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com.

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

SAMPLE SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
33571001 73SB24-01	09A0420-01	Soil	Not Specified	01/13/2009 10:10	01/20/2009 15:35
33571002 73SB24-09	09A0420-02	Soil	Not Specified	01/13/2009 10:45	01/20/2009 15:35
33571005 73SB091-00	09A0420-03	Soil	Not Specified	01/14/2009 10:25	01/20/2009 15:35
33571006 73SB092-00	09A0420-04	Soil	Not Specified	01/14/2009 10:30	01/20/2009 15:35
33571007 73SB101-00	09A0420-05	Soil	Not Specified	01/14/2009 10:00	01/20/2009 15:35
33571008 73SB102-00	09A0420-06	Soil	Not Specified	01/14/2009 10:20	01/20/2009 15:35
33571009 73SB121-00	09A0420-07	Soil	Not Specified	01/14/2009 11:00	01/20/2009 15:35
33571010 73SB122-00	09A0420-08	Soil	Not Specified	01/14/2009 11:10	01/20/2009 15:35
33571011 73SB331-00	09A0420-09	Soil	Not Specified	01/14/2009 16:00	01/20/2009 15:35
33571012 73SB332-00	09A0420-10	Soil	Not Specified	01/14/2009 15:30	01/20/2009 15:35
33571013 73SB341-00	09A0420-11	Soil	Not Specified	01/14/2009 17:00	01/20/2009 15:35
33571014 73SB342-00	09A0420-12	Soil	Not Specified	01/14/2009 16:30	01/20/2009 15:35
33571015 73SB351-00	09A0420-13	Soil	Not Specified	01/15/2009 09:20	01/20/2009 15:35
33571016 73SB352-00	09A0420-14	Soil	Not Specified	01/15/2009 09:15	01/20/2009 15:35
33571017 73SB361-00	09A0420-15	Soil	Not Specified	01/15/2009 09:45	01/20/2009 15:35
33571018 73SB362-00	09A0420-16	Soil	Not Specified	01/15/2009 09:55	01/20/2009 15:35
33571019 73SB362A-00	09A0420-17	Soil	Not Specified	01/15/2009 09:55	01/20/2009 15:35
33571020 73SB211-00	09A0420-18	Soil	Not Specified	01/15/2009 11:00	01/20/2009 15:35
33571021 73SB212-00	09A0420-19	Soil	Not Specified	01/15/2009 11:10	01/20/2009 15:35
33571022 73SB231-00	09A0420-20	Soil	Not Specified	01/15/2009 10:35	01/20/2009 15:35
33571023 73SB232-00	09A0420-21	Soil	Not Specified	01/15/2009 10:45	01/20/2009 15:35
33571024 73SB232A-00	09A0420-22	Soil	Not Specified	01/15/2009 10:45	01/20/2009 15:35
33571025 73SB241-00	09A0420-23	Soil	Not Specified	01/15/2009 15:15	01/20/2009 15:35
33571026 73SB242-00	09A0420-24	Soil	Not Specified	01/15/2009 15:00	01/20/2009 15:35
33571027 73SB243-00	09A0420-25	Soil	Not Specified	01/15/2009 13:45	01/20/2009 15:35

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Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

SAMPLE SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
33571028 73SB244-00	09A0420-26	Soil	Not Specified	01/15/2009 13:15	01/20/2009 15:35
33571029 73SB245-00	09A0420-27	Soil	Not Specified	01/15/2009 14:30	01/20/2009 15:35
33571030 73SB246-00	09A0420-28	Soil	Not Specified	01/15/2009 14:15	01/20/2009 15:35
33571031 73SB246A-00	09A0420-29	Soil	Not Specified	01/15/2009 14:15	01/20/2009 15:35
33571032 73ER-09	09A0420-30	Ground Water	Not Specified	01/14/2009 17:30	01/20/2009 15:35
33571033 73ER-10	09A0420-31	Ground Water	Not Specified	01/15/2009 16:00	01/20/2009 15:35

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CASE NARRATIVE

Thirty one samples were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

· Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996 Methods for the Determination of Metals in Environmental Samples, USEPA Environmental Monitoring Systems Laboratory, Cincinnati, Ohio, EPA-600/R-94-111 May 1994.

All laboratory quality control parameters were met with the following exceptions:

1. The Initial Calibration Verification (ICV) Standard recoveries associated with Arsenic, Chromium, Cobalt, Nickel, Vanadium, and Zinc were biased high for the analysis of the soil samples. The Initial Calibration Verification (ICV) was re-analyzed and recoveries were within acceptance limits.
2. The Method Blank (MB1) for the analysis of the soil samples contained a detectable amount of Copper, all associated samples contained concentrations greater than twenty times this amount. Data was qualified.
3. The Matrix Spike (MS1) and Matrix Spike Duplicate (MSD1) recovery associated with Vanadium was biased high. The Post Digestion Spike (PS5) recovery was within acceptance limits.
4. The Batch Duplicate (DUP4) RPD associated with Cobalt was outside of acceptance limits, for the analysis of the soil samples. The data was qualified.
5. The Matrix Spike (MS4) recovery associated with Copper and Vanadium was biased low, for the analysis of the soil samples. The Matrix Spike Duplicate (MSD4) recovery associated with Copper was also biased low. The Post Digestion Spike (PS6) recoveries were within acceptance limits for these elements.
6. One of the Continuing Calibration Verification (CCV) Standards in the analysis of Mercury failed to inject one replicate properly, recovery was calculated based on the other replicates and recovery was within acceptance limits.

Notes:
1. Mercury samples 09A0420-25, 09A0420-26, and 09A0420-27, were diluted and re-analyzed later in analysis.
2. The raw data for the analysis of Mercury incorrectly displays a message saying several of the Continuing Calibration

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Baltimore Division

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Verification (CCV) Standards are not within acceptance limits, due to incorrect recovery limits being entered for the analysis of soils.

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APG, MD 21010-5422	Project Manager: Data	

33571001 73SB24-01

09A0420-01 (Soil) Sampled: 01/13/2009 10:10; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**83.60**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.090**	0.027	mg/kg dry	012809 1148	012909 1031	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Arsenic	**1.4**	0.99	mg/kg dry wt.	012609 1002	012709 1946	PRM	EPA 6020	D
Copper	**170**	0.99	mg/kg dry wt.	012609 1002	012709 1946	PRM	EPA 6020	B2, D, B
Zinc	**53**	9.9	mg/kg dry wt.	012609 1002	012709 1946	PRM	EPA 6020	D

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Microbac Laboratories, Inc.

Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
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APG, MD 21010-5422	Project Manager: Data	

33571002 73SB24-09

09A0420-02 (Soil) Sampled: 01/13/2009 10:45; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	78.08	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	ND	0.030	mg/kg dry	012809 1148	012909 1033	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Arsenic	ND	0.99	mg/kg dry wt.	012609 1002	012709 2004	PRM	EPA 6020	D
Copper	420	0.99	mg/kg dry wt.	012609 1002	012709 2004	PRM	EPA 6020	B2, D, B
Zinc	90	9.9	mg/kg dry wt.	012609 1002	012709 2004	PRM	EPA 6020	D

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Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
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APG, MD 21010-5422	Project Manager: Data	

33571005 73SB091-00

09A0420-03 (Soil) Sampled: 01/14/2009 10:25; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	93.75	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Nickel	39	0.97	mg/kg dry wt.	012609 1002	012709 2008	PRM	EPA 6020	D

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2101 Van Deman Street • Baltimore, MD 21224

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APG, MD 21010-5422	Project Manager: Data	

33571006 73SB092-00

09A0420-04 (Soil) Sampled: 01/14/2009 10:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**90.39**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Nickel	**40**	0.99	mg/kg dry wt.	012609 1002	012709 2011	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571007 73SB101-00

09A0420-05 (Soil) Sampled: 01/14/2009 10:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**94.85**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Zinc	**230**	10	mg/kg dry wt.	012609 1002	012709 2015	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571008 73SB102-00

09A0420-06 (Soil) Sampled: 01/14/2009 10:20; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**94.16**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Zinc	**120**	9.9	mg/kg dry wt.	012609 1002	012709 2030	FRM	EPA 6020	D

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Fax: 410-633-6553
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APG, MD 21010-5422	Project Manager: Data	

33571009 73SB121-00

09A0420-07 (Soil) Sampled: 01/14/2009 11:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**96.49**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	ND	0.026	mg/kg dry	012809 1148	012909 1036	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Zinc	47	10	mg/kg dry wt.	012609 1002	012709 2034	PRM	EPA 6020	D

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Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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APG, MD 21010-5422	Project Manager: Data	

33571010 73SB122-00

09A0420-08 (Soil) Sampled: 01/14/2009 11:10; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	91.52	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	ND	0.027	mg/kg dry	012809 1148	012909 1044	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Zinc	37	10	mg/kg dry wt.	012609 1002	012709 2037	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571011 73SB331-00

09A0420-09 (Soil) Sampled: 01/14/2009 16:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**85.58**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**250**	0.97	mg/kg dry wt.	012609 1002	012709 2041	PRM	EPA 6020	B2, D, B
Vanadium	**240**	0.97	mg/kg dry wt.	012609 1002	012709 2041	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571012 73SB332-00

09A0420-10 (Soil) Sampled: 01/14/2009 15:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**84.71**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**160**	0.99	mg/kg dry wt.	012609 1002	012709 2045	PRM	EPA 6020	B2, D, B
Vanadium	**300**	0.99	mg/kg dry wt.	012609 1002	012709 2045	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571013 73SB341-00

09A0420-11 (Soil) Sampled: 01/14/2009 17:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**83.27**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**200**	0.97	mg/kg dry wt.	012609 1002	012709 2048	PRM	EPA 6020	B2, D, B
Vanadium	**240**	0.97	mg/kg dry wt.	012609 1002	012709 2048	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571014 73SB342-00

09A0420-12 (Soil) Sampled: 01/14/2009 16:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**83.30**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**210**	0.97	mg/kg dry wt.	012609 1002	012709 2052	PRM	EPA 6020	B2, D, B
Vanadium	**230**	0.97	mg/kg dry wt.	012609 1002	012709 2052	PRM	EPA 6020	D

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2101 Van Deman Street • Baltimore, MD 21224

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Fax: 410-633-6553
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APG, MD 21010-5422	Project Manager: Data	

33571015 73SB351-00

09A0420-13 (Soil) Sampled: 01/15/2009 09:20; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**92.36**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**28**	2.0	mg/kg dry wt.	012609 1002	012709 2056	PRM	EPA 6020	D
Cobalt	**24**	5.0	mg/kg dry wt.	012609 1002	012709 2056	PRM	EPA 6020	D
Zinc	**200**	10	mg/kg dry wt.	012609 1002	012709 2056	PRM	EPA 6020	D

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2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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APG, MD 21010-5422	Project Manager: Data	

33571016 73SB352-00

09A0420-14 (Soil) Sampled: 01/15/2009 09:15; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**89.73**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**27**	2.0	mg/kg dry wt.	012609 1002	012709 2059	PRM	EPA 6020	D
Cobalt	**30**	5.0	mg/kg dry wt.	012609 1002	012709 2059	PRM	EPA 6020	D
Zinc	**210**	10	mg/kg dry wt.	012609 1002	012709 2059	PRM	EPA 6020	D

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Fax: 410-633-6553
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CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571017 73SB361-00

09A0420-15 (Soil) Sampled: 01/15/2009 09:45; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**83.88**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**25**	2.0	mg/kg dry wt.	012609 1002	012709 2103	PRM	EPA 6020	D
Cobalt	**30**	4.9	mg/kg dry wt.	012609 1002	012709 2103	PRM	EPA 6020	D
Zinc	**150**	9.8	mg/kg dry wt.	012609 1002	012709 2103	PRM	EPA 6020	D

Microbac Laboratories, Inc., Baltimore Division

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Fax: 410-633-6553
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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571018 73SB362-00

09A0420-16 (Soil) Sampled: 01/15/2009 09:55; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**90.39**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**12**	2.0	mg/kg dry wt.	012609 1002	012709 2118	PRM	EPA 6020	D
Cobalt	**53**	5.0	mg/kg dry wt.	012609 1002	012709 2118	PRM	EPA 6020	D
Zinc	**110**	9.9	mg/kg dry wt.	012609 1002	012709 2118	PRM	EPA 6020	D

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Fax: 410-633-6553
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USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571019 73SB362A-00

09A0420-17 (Soil) Sampled: 01/15/2009 09:55; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**90.32**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**12**	2.0	mg/kg dry wt.	012609 1002	012709 2121	PRM	EPA 6020	D
Cobalt	**49**	5.0	mg/kg dry wt.	012609 1002	012709 2121	PRM	EPA 6020	D
Zinc	**100**	9.9	mg/kg dry wt.	012609 1002	012709 2121	PRM	EPA 6020	D

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571020 73SB211-00

09A0420-18 (Soil) Sampled: 01/15/2009 11:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**93.55**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.20**	0.026	mg/kg dry	012809 1148	012909 1051	APS	SW846 7471A	D

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571021 73SB212-00

09A0420-19 (Soil) Sampled: 01/15/2009 11:10; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**91.07**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.21**	0.027	mg/kg dry	012809 1148	012909 1053	APS	SW846 7471A	D

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571022 73SB231-00

09A0420-20 (Soil) Sampled: 01/15/2009 10:35; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**90.46**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.16**	0.027	mg/kg dry	012809 1148	012909 1055	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**28**	2.0	mg/kg dry wt.	012609 1002	012709 2125	PRM	EPA 6020	D
Cobalt	**19**	4.9	mg/kg dry wt.	012609 1002	012709 2125	PRM	EPA 6020	D
Zinc	**72**	9.8	mg/kg dry wt.	012609 1002	012709 2125	PRM	EPA 6020	D

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Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: GW/Soil Project Manager: Data	Report: 09A0420 Reported: 02/10/2009 14:40

33571023 73SB232-00

09A0420-21 (Soil) Sampled: 01/15/2009 10:45; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	88.55	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	0.15	0.026	mg/kg dry	012809 1148	012909 1147	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	23	2.0	mg/kg dry wt.	012609 1002	012709 2129	PRM	EPA 6020	D
Cobalt	22	5.0	mg/kg dry wt.	012609 1002	012709 2129	PRM	EPA 6020	D
Zinc	96	9.9	mg/kg dry wt.	012609 1002	012709 2129	PRM	EPA 6020	D

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Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571024 73SB232A-00

09A0420-22 (Soil) Sampled: 01/15/2009 10:45; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**87.83**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.16**	0.024	mg/kg dry	012809 1148	012909 1100	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Chromium	**22**	2.0	mg/kg dry wt.	012609 1002	012709 2133	PRM	EPA 6020	D
Cobalt	**23**	5.0	mg/kg dry wt.	012609 1002	012709 2133	PRM	EPA 6020	D
Zinc	**100**	9.9	mg/kg dry wt.	012609 1002	012709 2133	PRM	EPA 6020	D

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Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571025 73SB241-00

09A0420-23 (Soil) Sampled: 01/15/2009 15:15; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**93.71**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.36**	0.024	mg/kg dry	012809 1148	012909 1102	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**16**	0.97	mg/kg dry wt.	012609 1002	012709 2136	PRM	EPA 6020	B2, D, B
Zinc	**14**	9.7	mg/kg dry wt.	012609 1002	012709 2136	PRM	EPA 6020	D

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Fax: 410-633-6553
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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571026 73SB242-00

09A0420-24 (Soil) Sampled: 01/15/2009 15:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**95.35**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**0.29**	0.024	mg/kg dry	012809 1148	012909 1104	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**32**	0.97	mg/kg dry wt.	012609 1002	012709 2140	PRM	EPA 6020	B2, D, B
Zinc	**21**	9.7	mg/kg dry wt.	012609 1002	012709 2140	PRM	EPA 6020	D

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Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571027 73SB243-00

09A0420-25 (Soil) Sampled: 01/15/2009 13:45; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**91.82**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**1.9**	0.12	mg/kg dry	012809 1148	012909 1140	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**34**	0.98	mg/kg dry wt.	012609 1002	012709 2143	PRM	EPA 6020	B2, D, B
Zinc	**43**	9.8	mg/kg dry wt.	012609 1002	012709 2143	PRM	EPA 6020	D

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2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571028 73SB244-00

09A0420-26 (Soil) Sampled: 01/15/2009 13:15; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	95.29	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	3.1	0.13	mg/kg dry	012809 1148	012909 1143	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	31	0.99	mg/kg dry wt.	012609 1002	012709 2147	PRM	EPA 6020	B2, D, B
Zinc	39	9.9	mg/kg dry wt.	012609 1002	012709 2147	PRM	EPA 6020	D

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Baltimore Division

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571029 73SB245-00

09A0420-27 (Soil) Sampled: 01/15/2009 14:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**93.13**	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	**4.4**	0.13	mg/kg dry	012809 1148	012909 1145	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	**220**	0.98	mg/kg dry wt.	012609 1002	012709 2151	PRM	EPA 6020	B2, D, B
Zinc	**360**	9.8	mg/kg dry wt.	012609 1002	012709 2151	PRM	EPA 6020	D

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Fax: 410-633-6553
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USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: GW/Soil Project Manager: Data	Report: 09A0420 Reported: 03/03/2009 10:24

33571030 73SB246-00

09A0420-28 (Soil) Sampled: 01/15/2009 14:15; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	89.43	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	1.2	0.027	mg/kg dry	012809 1148	012909 1132	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	160	0.99	mg/kg dry wt.	012609 1002	012709 2205	PRM	EPA 6020	B2, D, B
Zinc	170	9.9	mg/kg dry wt.	012609 1002	012709 2205	PRM	EPA 6020	D

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33571031 73SB246A-00

09A0420-29 (Soil) Sampled: 01/15/2009 14:15; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	88.92	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	1.1	0.023	mg/kg dry	012809 1148	012909 1134	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Copper	150	0.98	mg/kg dry wt.	012609 1002	012709 2209	PRM	EPA 6020	B2, D, B
Zinc	150	9.8	mg/kg dry wt.	012609 1002	012709 2209	PRM	EPA 6020	D

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APG, MD 21010-5422	Project Manager: Data	

33571032 73ER-09

09A0420-30 (Ground Water) Sampled: 01/14/2009 17:30; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1550	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Vanadium	ND	0.0050	mg/L	012209 1523	012309 1535	APS	EPA 200.7/6010B	
Copper	**0.0020**	0.0020	mg/L	012209 1528	012909 1400	PRM	EPA 200.8/6020	D
Nickel	ND	0.0050	mg/L	012209 1528	012909 1400	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1400	PRM	EPA 200.8/6020	D

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Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

33571033 73ER-10

09A0420-31 (Ground Water) Sampled: 01/15/2009 16:00; Type: Not Specified

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1557	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Chromium	**0.0027**	0.0025	mg/L	012209 1528	012909 1403	PRM	EPA 200.8/6020	D
Cobalt	ND	0.0050	mg/L	012209 1528	012909 1403	PRM	EPA 200.8/6020	D
Copper	ND	0.0020	mg/L	012209 1528	012909 1403	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1403	PRM	EPA 200.8/6020	D

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Lewis B. Gunn III For Michael D. Arbaugh, Customer Services Manager

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Wet Chemistry - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904086 - % Solids										
Blank (0904086-BLK1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK2)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK3)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK4)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
LCS (0904086-BS1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.04	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.96	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS2)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.03	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.97	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS3)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.04	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.96	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS4)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.03	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.97	0.05	"	100.0		98.0	80-120			
Duplicate (0904086-DUP1)		**Source: 09A0404-05**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.26	0.05	% by Weight		2.24			0.917	20	
% Moisture	97.74	0.05	"		97.76			0.0211	20	

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Wet Chemistry - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904086 - % Solids										
Duplicate (0904086-DUP2)		**Source: 09A0415-01**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	91.86	0.05	% by Weight		91.71			0.165	20	
% Moisture	8.14	0.05	"		8.29			1.85	20	
Duplicate (0904086-DUP3)		**Source: 09A0420-07**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	96.17	0.05	% by Weight		96.49			0.337	20	
% Moisture	3.83	0.05	"		3.51			8.85	20	
Duplicate (0904086-DUP4)		**Source: 09A0421-04**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	1.79	0.05	% by Weight		1.77			1.18	20	
% Moisture	98.21	0.05	"		98.23			0.0213	20	

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APG, MD 21010-5422	Project Manager: Data	

Mercury, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904101 - Metals_Hg_Prep										
Blank (0904101-BLK1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L							
LCS (0904101-BS1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00197	0.00020	mg/L	0.002020		97.6	85-115			
Duplicate (0904101-DUP1)		**Source: 09A0393-01**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L		ND				20	
Matrix Spike (0904101-MS1)		**Source: 09A0393-01**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00187	0.00020	mg/L	0.002020	ND	92.5	70-130			
Matrix Spike Dup (0904101-MSD1)		**Source: 09A0393-01**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00190	0.00020	mg/L	0.002020	ND	93.8	70-130	1.37	20	
Batch M9A2701 - 0904101										
Instrument Blank (M9A2701-IBL1)				Prepared & Analyzed: 01/26/2009						
Mercury	ND	0.00020	ug/L							
Batch M9A2901 - 0905043										
Instrument Blank (M9A2901-IBL1)				Prepared & Analyzed: 01/29/2009						
Mercury	ND	0.00020	ug/L							

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APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904078 - EPA 200.2 ICP										
Blank (0904078-BLK1)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	ND	0.0050	mg/L							
LCS (0904078-BS1)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.948	0.0050	mg/L	1.000		94.8	85-115			
LCS (0904078-BS2)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.192	0.0050	mg/L	0.2000		95.8	85-115			
Duplicate (0904078-DUP1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	ND	0.50	mg/L		ND				20	D
Matrix Spike (0904078-MS1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.954	0.0050	mg/L	1.000	ND	95.4	80-120			
Matrix Spike Dup (0904078-MSD1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.945	0.0050	mg/L	1.000	ND	94.5	80-120	0.903	20	
Post Spike (0904078-PS1)		Source: 09A0393-01		Prepared & Analyzed: 01/23/2009						
Vanadium	1.80		mg/L	2.000	0.0232	89.0	90-110			
Post Spike (0904078-PS2)		Source: 09A0393-01		Prepared & Analyzed: 01/23/2009						
Vanadium	180		mg/L	2.000	0.000232	NR	90-110			D
Batch 0904079 - EPA 200.2 ICPMS										
Blank (0904079-BLK1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	ND	0.0050	mg/L							D
Chromium	ND	0.0025	"							D
Cobalt	ND	0.0050	"							D
Copper	ND	0.0020	"							D
Nickel	ND	0.0050	"							D
Silver	ND	0.0020	"							D
Zinc	ND	0.020	"							D

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Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224
Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904079 - EPA 200.2 ICPMS										
LCS (0904079-BS1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.212	0.0050	mg/L	0.2000		106	85-115			D
Chromium	0.194	0.0025	"	0.2000		96.8	85-115			D
Cobalt	0.206	0.0050	"	0.2000		103	85-115			D
Copper	0.193	0.0020	"	0.2000		96.7	85-115			D
Nickel	0.202	0.0050	"	0.2000		101	85-115			D
Silver	0.0908	0.0020	"	0.1000		90.8	85-115			D
Zinc	0.228	0.020	"	0.2000		114	85-115			D
Duplicate (0904079-DUP1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.00993	0.0050	mg/L		0.00947			4.76	20	D
Chromium	0.00405	0.0025	"		0.00473			15.5	20	D
Cobalt	0.00576	0.0050	"		0.00591			2.59	20	D
Copper	0.0295	0.0020	"		0.0297			0.838	20	D
Nickel	0.0323	0.0050	"		0.0338			4.40	20	D
Silver	0.00197	0.0020	"		0.00194			1.23	20	D
Zinc	0.114	0.020	"		0.114			0.0796	20	D
Matrix Spike (0904079-MS1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.216	0.0050	mg/L	0.2000	0.00947	103	70-130			D
Chromium	0.205	0.0025	"	0.2000	0.00473	100	70-130			D
Cobalt	0.198	0.0050	"	0.2000	0.00591	96.0	70-130			D
Copper	0.206	0.0020	"	0.2000	0.0297	88.0	70-130			D
Nickel	0.225	0.0050	"	0.2000	0.0338	95.8	70-130			D
Silver	0.0848	0.0020	"	0.1000	0.00194	82.8	70-130			D
Zinc	0.287	0.020	"	0.2000	0.114	86.2	70-130			D
Matrix Spike Dup (0904079-MSD1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.214	0.0050	mg/L	0.2000	0.00947	102	70-130	0.533	20	D
Chromium	0.201	0.0025	"	0.2000	0.00473	98.2	70-130	1.94	20	D
Cobalt	0.196	0.0050	"	0.2000	0.00591	94.9	70-130	1.11	20	D
Copper	0.206	0.0020	"	0.2000	0.0297	88.2	70-130	0.192	20	D
Nickel	0.227	0.0050	"	0.2000	0.0338	96.5	70-130	0.586	20	D
Silver	0.0849	0.0020	"	0.1000	0.00194	83.0	70-130	0.223	20	D
Zinc	0.280	0.020	"	0.2000	0.114	82.9	70-130	2.33	20	D

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Baltimore Division

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Fax: 410-633-6553
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USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch M9A2605 - 0904078										
Instrument Blank (M9A2605-IBL1)				Prepared & Analyzed: 01/23/2009						
Vanadium	ND	0.0050	mg/L							

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Mercury, Total by EPA 7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905043 - Metals_Hg_Prep										
Blank (0905043-BLK1)				Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	ND	0.025	mg/kg wet							D
LCS (0905043-BS1)				Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	6.82	0.24	mg/kg wet	6.240		109	85-115			D
Duplicate (0905043-DUP1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.0153	0.026	mg/kg dry		0.0171			11.2	20	D
Matrix Spike (0905043-MS1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.270	0.026	mg/kg dry	0.2586	0.0171	97.7	70-130			D
Matrix Spike Dup (0905043-MSD1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.284	0.026	mg/kg dry	0.2610	0.0171	102	70-130	5.22	20	D

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APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Blank (0905005-BLK1)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	0.106	0.020	"							B1, D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D
Blank (0905005-BLK2)				Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	ND	0.020	"							D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D
Blank (0905005-BLK3)				Prepared: 01/26/2009 Analyzed: 01/29/2009						
Arsenic	ND	0.0010	mg/kg dry wt.							
Barium	ND	0.0010	"							
Cadmium	ND	0.00050	"							
Chromium	ND	0.0020	"							
Cobalt	ND	0.0050	"							
Copper	ND	0.0010	"							

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Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Blank (0905005-BLK3)				Prepared: 01/26/2009 Analyzed: 01/29/2009						
Lead	ND	0.0010	mg/kg dry wt.							
Nickel	ND	0.0010	"							
Selenium	ND	0.0010	"							
Silver	ND	0.0020	"							
Vanadium	ND	0.0010	"							
Zinc	ND	0.010	"							
Blank (0905005-BLK4)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	0.106	0.020	"							D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D
Blank (0905005-BLK5)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	ND	0.020	"							D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D

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Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
LCS (0905005-BS1)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	126	1.0	mg/kg dry wt.	133.0		95.1	80.7-118.9			D
Barium	214	1.0	"	226.0		94.6	82.7-117.1			D
Cadmium	94.1	0.50	"	103.0		91.4	81.9-118.1			D
Chromium	238	2.0	"	219.0		109	81-119.7			D
Cobalt	143	5.0	"	133.0		108	82.2-118.2			D
Copper	154	1.0	"	155.0		99.2	83.3-117.4			D, B
Lead	167	1.0	"	168.0		99.2	81.9-118.3			D
Nickel	117	1.0	"	119.0		98.7	82.6-117.4			D
Selenium	91.9	1.0	"	94.10		97.7	77.6-123			D
Silver	77.4	2.0	"	81.20		95.3	66.4-134.1			D
Vanadium	145	1.0	"	123.0		118	77.4-123.1			D
Zinc	292	10	"	280.0		104	78.9-120.8			D
LCS (0905005-BS2)				Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	132	1.0	mg/kg dry wt.	133.0		99.6	80.7-118.9			D
Barium	208	1.0	"	226.0		92.2	82.7-117.1			D
Cadmium	97.1	0.50	"	103.0		94.3	81.9-118.1			D
Chromium	232	2.0	"	219.0		106	81-119.7			D
Cobalt	145	5.0	"	133.0		109	82.2-118.2			D
Copper	158	1.0	"	155.0		102	83.3-117.4			D, B
Lead	174	1.0	"	168.0		103	81.9-118.3			D
Nickel	122	1.0	"	119.0		102	82.6-117.4			D
Selenium	92.6	1.0	"	94.10		98.4	77.6-123			D
Silver	82.6	2.0	"	81.20		102	66.4-134.1			D
Vanadium	143	1.0	"	123.0		116	77.4-123.1			D
Zinc	275	10	"	280.0		98.2	78.9-120.8			D
LCS (0905005-BS3)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	126	1.0	mg/kg dry wt.	133.0		95.1	80.7-118.9			D
Barium	214	1.0	"	226.0		94.6	82.7-117.1			D
Cadmium	96.7	0.50	"	103.0		93.9	81.9-118.1			D
Chromium	238	2.0	"	219.0		109	81-119.7			D
Cobalt	143	5.0	"	133.0		108	82.2-118.2			D
Copper	154	1.0	"	155.0		99.2	83.3-117.4			D, B

Microbac Laboratories, Inc., Baltimore Division

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Lewis B. Gunn III For Michael D. Arbaugh, Customer Services Manager

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
LCS (0905005-BS3)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Lead	167	1.0	mg/kg dry wt.	168.0		99.2	81.9-118.3			D
Nickel	117	1.0	"	119.0		98.7	82.6-117.4			D
Selenium	91.9	1.0	"	94.10		97.7	77.6-123			D
Silver	77.4	2.0	"	81.20		95.3	66.4-134.1			D
Vanadium	145	1.0	"	123.0		118	77.4-123.1			D
Zinc	292	10	"	280.0		104	78.9-120.8			D
LCS (0905005-BS4)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	128	1.0	mg/kg dry wt.	133.0		96.1	80.7-118.9			D
Barium	214	1.0	"	226.0		94.6	82.7-117.1			D
Cadmium	93.9	0.50	"	103.0		91.2	81.9-118.1			D
Chromium	242	2.0	"	219.0		111	81-119.7			D
Cobalt	143	5.0	"	133.0		108	82.2-118.2			D
Copper	158	1.0	"	155.0		102	83.3-117.4			D, B
Lead	171	1.0	"	168.0		102	81.9-118.3			D
Nickel	116	1.0	"	119.0		97.7	82.6-117.4			D
Selenium	91.3	1.0	"	94.10		97.0	77.6-123			D
Silver	83.1	2.0	"	81.20		102	66.4-134.1			D
Vanadium	151	1.0	"	123.0		123	77.4-123.1			D
Zinc	272	10	"	280.0		97.2	78.9-120.8			D
Duplicate (0905005-DUP1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	1.35	0.99	mg/kg dry wt.		1.39			2.61	20	D
Barium	42.2	0.99	"						20	D
Cadmium	ND	0.49	"						20	D
Chromium	28.8	2.0	"						20	D
Cobalt	11.7	4.9	"						20	D
Copper	174	0.99	"		172			1.57	20	D, B
Lead	5.09	0.99	"						20	D
Nickel	7.80	0.99	"						20	D
Selenium	2.51	0.99	"						20	D
Silver	ND	2.0	"						20	D
Vanadium	315	0.99	"						20	D
Zinc	53.6	9.9	"		53.0			1.24	20	D

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Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224
Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Duplicate (0905005-DUP2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	ND	0.99	mg/kg dry wt.		0.673				20	D
Barium	265	0.99	"		227			15.5	20	D
Cadmium	0.229	0.49	"		ND				20	D
Chromium	7.39	2.0	"		7.80			5.39	20	D
Cobalt	54.7	4.9	"						20	R1, D
Copper	304	0.99	"						20	D, B
Lead	4.99	0.99	"		5.33			6.51	20	D
Nickel	8.89	0.99	"						20	D
Selenium	0.631	0.99	"		0.778			20.8	20	R3, D
Silver	ND	2.0	"		ND				20	D
Vanadium	98.5	0.99	"						20	D
Zinc	96.5	9.9	"						20	D
Duplicate (0905005-DUP3)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	1.35	0.99	mg/kg dry wt.		1.39			2.61	20	D
Barium	42.2	0.99	"						20	D
Cadmium	ND	0.49	"						20	D
Chromium	28.8	2.0	"						20	D
Cobalt	11.7	4.9	"						20	D
Copper	174	0.99	"		172			1.57	20	D, B
Lead	5.09	0.99	"						20	D
Nickel	7.80	0.99	"						20	D
Selenium	2.51	0.99	"						20	D
Silver	ND	2.0	"						20	D
Vanadium	315	0.99	"						20	D
Zinc	53.6	9.9	"		53.0			1.24	20	D
Duplicate (0905005-DUP4)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	ND	0.99	mg/kg dry wt.		0.673				20	D
Barium	272	0.99	"		227			17.9	20	D
Cadmium	ND	0.49	"		ND				20	D
Chromium	7.66	2.0	"		7.80			1.82	20	D
Cobalt	56.4	4.9	"						20	R1, D
Copper	309	0.99	"						20	D, B

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Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Duplicate (0905005-DUP4)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Lead	4.81	0.99	mg/kg dry wt.		5.33			10.1	20	D
Nickel	8.92	0.99	"						20	D
Selenium	0.738	0.99	"		0.778			5.28	20	D
Silver	ND	2.0	"		ND				20	D
Vanadium	104	0.99	"						20	D
Zinc	96.5	9.9	"						20	D
Matrix Spike (0905005-MS1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.51	0.98	mg/kg dry wt.	9.847	1.39	82.4	70-130			D
Barium	54.9	0.98	"	9.847		557	70-130			D
Cadmium	9.31	0.49	"	9.847		94.6	70-130			D
Chromium	40.7	2.0	"	9.847		413	70-130			D
Cobalt	22.3	4.9	"	9.847		226	70-130			D
Copper	183	0.98	"	9.847	172	121	70-130			D, B
Lead	14.8	0.98	"	9.847		151	70-130			D
Nickel	17.9	0.98	"	9.847		182	70-130			D
Selenium	10.8	0.98	"	9.847		110	70-130			D
Silver	4.52	2.0	"	4.924		91.9	70-130			D
Vanadium	340	0.98	"	9.847		NR	70-130			M1, D
Zinc	64.0	9.8	"	9.847	53.0	112	70-130			D
Matrix Spike (0905005-MS2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	10.5	0.99	mg/kg dry wt.	9.905	0.673	98.9	70-130			D
Barium	225	0.99	"	9.905	227	NR	70-130			D
Cadmium	9.78	0.50	"	9.905	ND	98.7	70-130			D
Chromium	17.1	2.0	"	9.905	7.80	93.8	70-130			D
Cobalt	49.8	5.0	"	9.905		503	70-130			M1, D
Copper	305	0.99	"	9.905		NR	70-130			M1, D, B
Lead	14.1	0.99	"	9.905	5.33	88.2	70-130			D
Nickel	19.2	0.99	"	9.905		194	70-130			D
Selenium	9.58	0.99	"	9.905	0.778	88.8	70-130			D
Silver	4.87	2.0	"	4.952	ND	98.3	70-130			D
Vanadium	105	0.99	"	9.905		NR	70-130			D
Zinc	104	9.9	"	9.905		NR	70-130			D

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Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Matrix Spike (0905005-MS3)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.51	0.98	mg/kg dry wt.	9.847	1.39	82.4	70-130			D
Barium	54.9	0.98	"	9.847		557	70-130			D
Cadmium	9.31	0.49	"	9.847		94.6	70-130			D
Chromium	40.7	2.0	"	9.847		413	70-130			D
Cobalt	22.3	4.9	"	9.847		226	70-130			D
Copper	183	0.98	"	9.847	172	121	70-130			D, B
Lead	14.8	0.98	"	9.847		151	70-130			D
Nickel	17.9	0.98	"	9.847		182	70-130			D
Selenium	10.8	0.98	"	9.847		110	70-130			D
Silver	4.52	2.0	"	4.924		91.9	70-130			D
Vanadium	340	0.98	"	9.847		NR	70-130			D
Zinc	64.0	9.8	"	9.847	53.0	112	70-130			D
Matrix Spike (0905005-MS4)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	10.4	0.99	mg/kg dry wt.	9.905	0.673	98.5	70-130			D
Barium	233	0.99	"	9.905	227	59.5	70-130			D
Cadmium	9.22	0.50	"	9.905	ND	93.1	70-130			D
Chromium	17.8	2.0	"	9.905	7.80	101	70-130			D
Cobalt	49.9	5.0	"	9.905		503	70-130			D
Copper	304	0.99	"	9.905		NR	70-130			D, B
Lead	14.2	0.99	"	9.905	5.33	89.3	70-130			D
Nickel	18.9	0.99	"	9.905		191	70-130			D
Selenium	9.35	0.99	"	9.905	0.778	86.5	70-130			D
Silver	4.74	2.0	"	4.952	ND	95.7	70-130			D
Vanadium	110	0.99	"	9.905		NR	70-130			D
Zinc	104	9.9	"	9.905		NR	70-130			D
Matrix Spike Dup (0905005-MSD1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.02	0.99	mg/kg dry wt.	9.884	1.39	77.2	70-130	5.22	20	D
Barium	50.8	0.99	"	9.884		514	70-130	7.77	20	D
Cadmium	9.09	0.49	"	9.884		91.9	70-130	2.48	20	D
Chromium	40.8	2.0	"	9.884		413	70-130	0.342	20	D
Cobalt	20.4	4.9	"	9.884		206	70-130	8.76	20	D
Copper	181	0.99	"	9.884	172	95.9	70-130	1.35	20	D, B

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Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224
Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Matrix Spike Dup (0905005-MSD1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Lead	14.5	0.99	mg/kg dry wt.	9.884		147	70-130	2.24	20	D
Nickel	18.3	0.99	"	9.884		185	70-130	1.85	20	D
Selenium	10.2	0.99	"	9.884		103	70-130	5.61	20	D
Silver	4.39	2.0	"	4.942		88.9	70-130	2.93	20	D
Vanadium	337	0.99	"	9.884		NR	70-130	0.971	20	M1, D
Zinc	62.7	9.9	"	9.884	53.0	98.2	70-130	2.12	20	D
Matrix Spike Dup (0905005-MSD2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	9.62	0.99	mg/kg dry wt.	9.923	0.673	90.1	70-130	8.52	20	D
Barium	229	0.99	"	9.923	227	16.7	70-130	1.68	20	M1, D
Cadmium	9.56	0.50	"	9.923	ND	96.3	70-130	2.22	20	D
Chromium	18.0	2.0	"	9.923	7.80	103	70-130	5.36	20	D
Cobalt	50.7	5.0	"	9.923		511	70-130	1.74	20	M1, D
Copper	303	0.99	"	9.923		NR	70-130	0.827	20	M1, D, B
Lead	14.1	0.99	"	9.923	5.33	88.2	70-130	0.124	20	D
Nickel	18.0	0.99	"	9.923		182	70-130	6.52	20	D
Selenium	9.53	0.99	"	9.923	0.778	88.2	70-130	0.486	20	D
Silver	4.82	2.0	"	4.961	ND	97.1	70-130	0.985	20	D
Vanadium	105	0.99	"	9.923		NR	70-130	0.0397	20	D
Zinc	102	9.9	"	9.923		NR	70-130	1.94	20	M1, D
Matrix Spike Dup (0905005-MSD3)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.02	0.99	mg/kg dry wt.	9.884	1.39	77.2	70-130	5.22	20	D
Barium	50.8	0.99	"	9.884		514	70-130	7.77	20	D
Cadmium	9.09	0.49	"	9.884		91.9	70-130	2.48	20	D
Chromium	40.8	2.0	"	9.884		413	70-130	0.342	20	D
Cobalt	20.4	4.9	"	9.884		206	70-130	8.76	20	D
Copper	181	0.99	"	9.884	172	95.9	70-130	1.35	20	D, B
Lead	14.5	0.99	"	9.884		147	70-130	2.24	20	D
Nickel	18.3	0.99	"	9.884		185	70-130	1.85	20	D
Selenium	10.2	0.99	"	9.884		103	70-130	5.61	20	D
Silver	4.39	2.0	"	4.942		88.9	70-130	2.93	20	D
Vanadium	337	0.99	"	9.884		NR	70-130	0.971	20	D
Zinc	62.7	9.9	"	9.884	53.0	98.2	70-130	2.12	20	D

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Baltimore Division
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Fax: 410-633-6553
www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Matrix Spike Dup (0905005-MSD4)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.90	0.99	mg/kg dry wt.	9.923	0.673	93.0	70-130	5.19	20	D
Barium	230	0.99	"	9.923	227	32.1	70-130	1.17	20	D
Cadmium	9.20	0.50	"	9.923	ND	92.7	70-130	0.246	20	D
Chromium	18.3	2.0	"	9.923	7.80	106	70-130	2.73	20	D
Cobalt	51.3	5.0	"	9.923		517	70-130	2.91	20	D
Copper	304	0.99	"	9.923		NR	70-130	0.214	20	D, B
Lead	14.3	0.99	"	9.923	5.33	90.2	70-130	0.698	20	D
Nickel	17.7	0.99	"	9.923		178	70-130	6.69	20	D
Selenium	9.86	0.99	"	9.923	0.778	91.5	70-130	5.36	20	D
Silver	4.67	2.0	"	4.961	ND	94.2	70-130	1.42	20	D
Vanadium	113	0.99	"	9.923		NR	70-130	3.07	20	D
Zinc	102	9.9	"	9.923		NR	70-130	1.35	20	D
Post Spike (0905005-PS1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	28.6		ug/L	2000	28.0	0.0324	75-125			D
Barium	847		"	2000		42.3	75-125			D
Cadmium	-0.211		"	2000			75-125			D
Chromium	608		"	2000		30.4	75-125			D
Cobalt	224		"	2000		11.2	75-125			D
Copper	3430		"	2000	3450	NR	75-125			D, B
Lead	102		"	2000		5.10	75-125			D
Nickel	160		"	2000		8.00	75-125			D
Selenium	49.4		"	2000		2.47	75-125			D
Silver	-1.24		"	1000			75-125			D
Vanadium	6310		"	2000		315	75-125			D
Zinc	1050		"	2000	1070	NR	75-125			D
Post Spike (0905005-PS2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	2080		ug/L	2000	13.6	103	75-125			D
Barium	6660		"	2000	4580	104	75-125			D
Cadmium	1980		"	2000	-0.141	98.8	75-125			D
Chromium	2270		"	2000	157	105	75-125			D
Cobalt	2980		"	2000		149	75-125			D
Copper	8190		"	2000		409	75-125			D, B
Lead	2050		"	2000	107	97.3	75-125			D
Nickel	2180		"	2000		109	75-125			D

Microbac Laboratories, Inc., Baltimore Division

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Lewis B. Gunn III For Michael D. Arbaugh, Customer Services Manager

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Post Spike (0905005-PS2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Selenium	2130		ug/L	2000	15.7	106	75-125			D
Silver	898		"	1000	0.282	89.8	75-125			D
Vanadium	4240		"	2000		212	75-125			D
Zinc	4210		"	2000		211	75-125			D
Post Spike (0905005-PS4)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	11.5		ug/L	2000	13.6	NR	75-125			D
Barium	4580		"	2000	4580	NR	75-125			D
Cadmium	-0.295		"	2000	-0.141	0.00705	75-125			D
Chromium	156		"	2000	157	NR	75-125			D
Cobalt	818		"	2000		40.9	75-125			D
Copper	6290		"	2000		314	75-125			D, B
Lead	106		"	2000	107	NR	75-125			D
Nickel	167		"	2000		8.35	75-125			D
Selenium	14.8		"	2000	15.7	NR	75-125			D
Silver	-0.0810		"	1000	0.282	NR	75-125			D
Vanadium	2110		"	2000		105	75-125			D
Zinc	1930		"	2000		96.5	75-125			D
Post Spike (0905005-PS5)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	2090		ug/L	2000	28.0	103	75-125			D
Barium	2730		"	2000		137	75-125			D
Cadmium	1930		"	2000		96.7	75-125			D
Chromium	2760		"	2000		138	75-125			D
Cobalt	2360		"	2000		118	75-125			D
Copper	5570		"	2000	3450	106	75-125			D, B
Lead	2110		"	2000		106	75-125			D
Nickel	2180		"	2000		109	75-125			D
Selenium	2140		"	2000		107	75-125			D
Silver	882		"	1000		88.2	75-125			D
Vanadium	8480		"	2000		424	75-125			D
Zinc	3300		"	2000	1070	112	75-125			D

Microbac Laboratories, Inc., Baltimore Division

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Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Post Spike (0905005-PS6)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	2080		ug/L	2000	13.6	103	75-125			D
Barium	6660		"	2000	4580	104	75-125			D
Cadmium	1980		"	2000	-0.141	98.8	75-125			D
Chromium	2270		"	2000	157	105	75-125			D
Cobalt	2980		"	2000		149	75-125			D
Copper	8190		"	2000		409	75-125			D, B
Lead	2050		"	2000	107	97.3	75-125			D
Nickel	2180		"	2000		109	75-125			D
Selenium	2130		"	2000	15.7	106	75-125			D
Silver	898		"	1000	0.282	89.8	75-125			D
Vanadium	4240		"	2000		212	75-125			D
Zinc	4210		"	2000		211	75-125			D

Microbac Laboratories, Inc., Baltimore Division

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CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0420
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: GW/Soil	Reported: 02/10/2009 14:40
APG, MD 21010-5422	Project Manager: Data	

Notes and Definitions

R3	Sample Duplicate RPD was out of acceptance limits. The result concentration was within 5 times the reporting limit and the difference was less than the reporting limit.
R1	Sample Duplicate RPD was out of acceptance limits.
M1	The matrix spike recovery was out of acceptance limits. The post digestion spike recovery was acceptable.
D	Sample Diluted
B2	Target analyte detected in method blank at or above reporting limit. Concentration found in the samples was 20 times the concentration found in the method blank.
B1	Target analyte detected in method blank at or above reporting limit.
B	Analyte is found in method blank.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Certifications

Below is a list of certifications maintained by Microbac Laboratories, Inc. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. A complete list of individual analytes pursuant to each certification below is available upon request.

- A2LA (Microbiology): 410.02
- A2LA (Environmental): 410.01
- AIHA (ELLAP): 100491
- Maryland (Drinking Water): 109
- NELAC (NY): 11158
- Pennsylvania: 68-00339/004
- USDA: S-53726
- Virginia (Drinking Water): 00152

Microbac Laboratories, Inc., Baltimore Division

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Lewis B. Gunn III For Michael D. Arbaugh, Customer Services Manager

Cooler Receipt Log

Cooler ID: Default Cooler

Cooler Temp: 2.10 °C

Custody Seals Intact:	Yes	COC/Labels Agree:	Yes
Containers Intact:	Yes	Correct Preservation:	Yes
Received On Ice:	Yes	Correct Number of Containers Received:	Yes
Radiation Scan Acceptable:	Yes	VOAs Without Headspace:	Yes
COC Present:	Yes	Sufficient Sample Volume:	Yes

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Pick-Up / Work / Delivery Order
Generated by: SMELSERBA

09A0420

Section I - Contract/Project Information

Contract Information

Pickup Order: **1411/1**

DLS WO#: 33571 Batch: 3179
Contractor Code: GAS HBN: 214639
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 31

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38-38
Client Name: Mr. David Jones
JONO: 97HR41
SUBJONO: 0995
DLS WO#: 33571
DLS Profile#: 37066

Pick-Up/Work/Delivery Order Approved by: Geraldine Miles/GM Jan H. Taylor
(Signature of USACHPPM-EOR)

USACHPPM called for pickup: Geraldine Miles
(Caller's Name)

1/20/09@~0930hrs/H. Taylor
(Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: [signature]
(Signature of laboratory courier)

1/20/09 1335
(Date/Time of pick-up)

Number of samples received intact: All 31
(#/All)

Number of samples received broken: 0
(#/None)

Data package received by at CHPPM: Antoinette Green

Delivery Data: email
(Means of Delivery - UPS/FedEx)

2-2-09
Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	Acodes Assigned: GAS0180	GAS0147	GAS0148	GAS0153	GAS0181	GAS0361	GAS0363	GAS0742	GAS0774	GAS0775	GAS0776	GAS0776DW	GAS0779	GAS0782	GAS0783
33571001	73SB24-01	SO	1	1			1						1				
33571002	73SB24-09	SO	1	1			1						1				
33571005	73SB091-00	SO				1											
33571006	73SB092-00	SO				1											
33571007	73SB101-00	SO					1										
33571008	73SB102-00	SO					1										
33571009	73SB121-00	SO	1				1										
33571010	73SB122-00	SO	1				1										
33571011	73SB331-00	SO							1				1				
33571012	73SB332-00	SO							1				1				
33571013	73SB341-00	SO							1				1				
33571014	73SB342-00	SO							1				1				
33571015	73SB351-00	SO			1		1	1									
33571016	73SB352-00	SO			1		1	1									
33571017	73SB361-00	SO			1		1	1									
33571018	73SB362-00	SO			1		1	1									
33571019	73SB362A-00	SO			1		1	1									
33571020	73SB211-00	SO	1														
33571021	73SB212-00	SO	1														
33571022	73SB231-00	SO	1		1		1	1									
33571023	73SB232-00	SO	1		1		1	1									
33571024	73SB232A-00	SO	1		1		1	1									
33571025	73SB241-00	SO	1				1						1				
33571026	73SB242-00	SO	1				1						1				
33571027	73SB243-00	SO	1				1						1				
33571028	73SB244-00	SO	1				1						1				
33571029	73SB245-00	SO	1				1						1				

| | | |

GAS2092	Mercury (Hg) EPA 7471		16
	Procedure Description	EPA 7471	

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Standard

Batch # 3179

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 1/16/09 to SML. This is SML's Internal Chain of Custody.

Profile: 37066 - 0995
Workorder #: 33571
Queue: GAS
Location: NAPR-Cp Moscrip
Jono: 97HR41
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip-37066
Workorder ID: 099516
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes:

Chain Of

Total Samples: 31 **Total Containers:** 31

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
33571001	33571001-2	73SB24-01	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	13-Jan-2009 10:10 AM	13-Feb-2009
ACodes: GAS2092 : Mercury (Hg) EPA 7471 GAS2147 : Arsenic (As) GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)										
33571002	33571002-2	73SB24-09	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	13-Jan-2009 10:45 AM	13-Feb-2009
ACodes: GAS2092 : Mercury (Hg) EPA 7471 GAS2147 : Arsenic (As) GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)										
33571005	33571005-1	73SB091-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 10:25 AM	13-Feb-2009
ACodes: GAS2153 : Nickel (Ni)										
33571006	33571006-1	73SB092-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 10:30 AM	13-Feb-2009
ACodes: GAS2153 : Nickel (Ni)										
33571007	33571007-1	73SB101-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 10:00 AM	13-Feb-2009
ACodes: GAS2181 : Zinc (Zn)										

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

33571008	33571008-1	73SB102-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 10:20 AM	13-Feb-2009

ACodes:
GAS2181 : Zinc (Zn)

33571009	33571009-1	73SB121-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 11:00 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn)

33571010	33571010-1	73SB122-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 11:10 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn)

33571011	33571011-1	73SB331-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 04:00 PM	13-Feb-2009

ACodes:
GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

33571012	33571012-1	73SB332-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 03:30 PM	13-Feb-2009

ACodes:
GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

33571013	33571013-1	73SB341-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 05:00 PM	13-Feb-2009

ACodes:
GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

33571014	33571014-1	73SB342-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 04:30 PM	13-Feb-2009

ACodes:
GAS2363 : (Vanadium (V) GAS776 : Copper (Cu)

33571015	33571015-1	73SB351-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 09:20 AM	13-Feb-2009

ACodes:
GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571016	33571016-1	73SB352-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 09:15 AM	13-Feb-2009

ACodes:
GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571017	33571017-1	73SB361-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 09:45 AM	13-Feb-2009

ACodes:
GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571018	33571018-1	73SB362-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 09:55 AM	13-Feb-2009

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

ACodes:
GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571019	33571019-1	73SB362A-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:16 AM	15-Jan-2009 09:55 AM	13-Feb-2009

ACodes:
GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571020	33571020-1	73SB211-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 11:00 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471

33571021	33571021-1	73SB212-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 11:10 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471

33571022	33571022-1	73SB231-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 10:35 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571023	33571023-1	73SB232-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 10:45 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571024	33571024-1	73SB232A-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 10:45 AM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2148 : Chromium (Cr) GAS2181 : Zinc (Zn) GAS2361 : Cobalt (Co)

33571025	33571025-2	73SB241-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 03:15 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571026	33571026-2	73SB242-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 03:00 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571027	33571027-2	73SB243-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 01:45 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571028	33571028-2	73SB244-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 01:15 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

Chain Of Custody

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

33571029	33571029-2	73SB245-00	SAMPLE	SO	Soil	6.0	degrees C	15-Jan-2009 10:15 AM	15-Jan-2009 02:30 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571030	33571030-2	73SB246-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 02:15 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571031	33571031-2	73SB246A-00	SAMPLE	SO	Soil	6.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 02:15 PM	13-Feb-2009

ACodes:
GAS2092 : Mercury (Hg) EPA 7471 GAS2181 : Zinc (Zn) GAS776 : Copper (Cu)

33571032	33571032-3	73ER-09	SAMPLE	GW	Water (Ground	12.0	degrees C	16-Jan-2009 10:15 AM	14-Jan-2009 05:30 PM	13-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS776W : Copper (Cu) GAS779 : Nickel (Ni) GAS782 : Vanadium (V)
GAS783 : Zinc (Zn)

33571033	33571033-3	73ER-10	SAMPLE	GW	Water (Ground	12.0	degrees C	16-Jan-2009 10:15 AM	15-Jan-2009 04:00 PM	13-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS774 : Chromium (Cr) GAS775 : Cobalt (Co) GAS776W : Copper (Cu)
GAS783 : Zinc (Zn)

Chain of Custody

Total Samples: 31	Total Containers: 31

Samples Received By: [signature] Date Received: 1/20/09
Document Reviewed By: Christina Moorer Initials: CM Date Reviewed: 20 Jan 09
Document Quality Review By: [signature] Date Reviewed:
Samples Approved For Distribution: Yes ✓ No ___ Initials: JM Date Approved: ↓

USACHPPM
Readiness thru Health

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
33571001	73SB24-01	33571001-2	SO
33571005	73SB091-00	33571005-1	SO
33571007	73SB101-00	33571007-1	SO
33571009	73SB121-00	33571009-1	SO
33571011	73SB331-00	33571011-1	SO
33571013	73SB341-00	33571013-1	SO
33571015	73SB351-00	33571015-1	SO
33571017	73SB361-00	33571017-1	SO
33571019	73SB362A-00	33571019-1	SO
33571021	73SB212-00	33571021-1	SO
33571023	73SB232-00	33571023-1	SO
33571025	73SB241-00	33571025-2	SO
33571027	73SB243-00	33571027-2	SO
33571029	73SB245-00	33571029-2	SO
33571031	73SB246A-00	33571031-2	SO
33571033	73ER-10	33571033-3	GW

HSN	Customer Sample Id	Container Id	Mx
33571002	73SB24-09	33571002-2	SO
33571006	73SB092-00	33571006-1	SO
33571008	73SB102-00	33571008-1	SO
33571010	73SB122-00	33571010-1	SO
33571012	73SB332-00	33571012-1	SO
33571014	73SB342-00	33571014-1	SO
33571016	73SB352-00	33571016-1	SO
33571018	73SB362-00	33571018-1	SO
33571020	73SB211-00	33571020-1	SO
33571022	73SB231-00	33571022-1	SO
33571024	73SB232A-00	33571024-1	SO
33571026	73SB242-00	33571026-2	SO
33571028	73SB244-00	33571028-2	SO
33571030	73SB246-00	33571030-2	SO
33571032	73ER-09	33571032-3	GW

Original Custody

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

Total Samples: 31 | Total Containers: 31

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	From refrigerator	1/20/09 @ 1145	See SML's Comments	1/20/09 @ 1145	For sample numbering
		1/20/09 @ 1210	See SML's Comments JM	1/20/09 @ 1210	Returned to holding refrigerator in room #0202
	From refrigerator	1/20/09 1310	See SML's Comments	1/20/09 1310	

Chain Of Custody

Remarks:

LIDS Form 235 LIMS, 02 Feb 2003

NR=Not Reported.

USACHPPM Readiness thru Health

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip-37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
33571001		1		
33571002		1		
33571005		1		
33571006		1		
33571007		1		
33571008		1		
33571009		1		
33571010		1		
33571011		1		
33571012		1		
33571013		1		
33571014		1		
33571015		1		
33571016		1		
33571017		1		
33571018		1		
33571019		1		
33571020		1		
33571021		1		
33571022		1		
33571023		1		
33571024		1		
33571025		1		
33571026		1		
33571027		1		
33571028		1		
33571029		1		
33571030		1		
33571031		1		
33571032		1		
33571033		1		

NR=Not Reported.

USACHPPM
Readiness thru Health

Profile: 37066 - 0995	Description: NAPR CMS-Cp Moscrip~37066
Workorder #: 33571	Workorder ID: 099516
Queue: GAS	Customer: Program 38

Total Samples: 31	Total Containers: 31

Chain Of Custody

NR=Not Reported.

DIRECTORATE OF LABORATORY SCIENCES
CONTRACT DATA TECHNICAL REVIEW

PROJECT OFFICER: David Jones **DIVISION/TEAM:** _____

INSTALLATION: NAPR - Cp Moscrip **CONTRACT LAB:** Gascoyne

PROJECT NO: Program 38 **LIMS W.O. NO:** 33574

DLS TECHNICAL REVIEW OF YOUR CONTRACT DATA PACKAGE HAS BEEN COMPLETED. THE FOLLOWING ACTION HAS BEEN TAKEN:

✓ **DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE AS SUBMITTED.**

_____ **DATA PACKAGE RELEASED FOLLOWING TECHNICAL REVIEW. DATA PACKAGE IS TECHNICALLY ACCEPTABLE WITH COMMENTS NOTED BELOW.**

_____ **OTHER.**

COMMENTS/ NARRATIVE:

REVIEWED BY: Elizabeth P Burrow
DATE: 12 Feb 09

LIDS 2.0 **Feb 06**

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

COVER LETTER

Heidi Taylor
USACHPPM-Metals
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201
APG, MD 21010-5422

February 11, 2009
Report No.: 09A0424

RE: GW/Soil

The report of analyses contains test results for samples received at Microbac Laboratories, Inc., Baltimore Division on 01/20/2009 13:35.

The enclosed results were obtained from and applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report has been reviewed and meet the applicable project and certification specific requirements, unless otherwise noted.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories, Inc.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

This Data Package contains the following:

- This Cover Page
- Sample Summary
- Case Narrative
- Test Results
- QC Summary
- Notes and Definitions
- Cooler Receipt Log
- Chain of Custody
- Data

Final report reviewed by: Peter B. Kelly For Michael D. Arbaugh/Customer Services Manager

2/11/2009
Report issue date

All samples received in proper condition and results conform to ISO 17025 standards unless otherwise noted.

If we have not met or exceeded your expectations, please contact the Director or Trevor Boyce, President at tboyce@microbac.com or Robert Morgan, Chief Operation Officer, at rmorgan@microbac.com.

Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

SAMPLE SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
33574001 73 1DW-03	09A0424-01	Soil	Grab	01/16/2009 15:30	01/20/2009 13:35
33574002 73 1DW-04 Dissolved	09A0424-02	Ground Water	Grab	01/16/2009 15:15	01/20/2009 13:35
33574003 73 MW 02 Dissolved	09A0424-03	Ground Water	Grab	01/16/2009 11:15	01/20/2009 13:35
33574005 73 MW 03 Dissolved	09A0424-04	Ground Water	Grab	01/16/2009 10:20	01/20/2009 13:35
33574007 73 MW 03A Dissolved	09A0424-05	Ground Water	Grab	01/16/2009 10:20	01/20/2009 13:35
33574008 73FB-04	09A0424-06	Ground Water	Grab	01/16/2009 14:00	01/20/2009 13:35
33574009 73 FB-05	09A0424-07	Ground Water	Grab	01/16/2009 14:30	01/20/2009 13:35
33574010 73 FB-06	09A0424-08	Ground Water	Grab	01/16/2009 15:00	01/20/2009 13:35
33574013 73 FB-06A	09A0424-09	Ground Water	Grab	01/16/2009 15:00	01/20/2009 13:35

Microbac Laboratories, Inc., Baltimore Division

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Microbac Laboratories, Inc.
Baltimore Division
2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: 37073-0995 Project Manager: Heidi Taylor	Report: 09A0424 Reported: 02/11/2009 08:41

CASE NARRATIVE

Nine samples (1 Soil, 8 ground waters) were transported to Microbac Laboratories, Inc., Baltimore Division via laboratory courier and were relinquished to lab personnel in the sample control department for log-in. The sample containers were checked and were noted to be in satisfactory condition.

Requested test parameters performed by Microbac Laboratories, Inc., Baltimore Division:

· Metals analysis, using EPA SW-846 methodology

References:

Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Office of Solid Waste and Emergency Response, USEPA, Wash.,DC, November 1986; Final Update I, July 1992 Final Update II, September 1994 Final Update III, December 1996

All laboratory quality control parameters were met with the following exceptions:

1. The method blank in batch 0904079 contained 0.00063mg/L Cadmium and 0.0024mg/L Lead. Detectable results were footnoted.

2. The 1mg/L linearity check for Barium was 111%. All results were within the calibration curve.

3. The Matrix Spike/Matrix Spike Duplicate in Bateh 0905005 were out of acceptance limits. The Post Digestion Spike recovery was acceeptable.

Notes:

1. Batch 0904079: EPA 6020 analysis for total and dissolved metals for the ground water samples; Batch 0905005: EPA 6020 analysis of the solid sample; Batch 0904078: EPA 6010 analysis for Vanadium in the groud water samples; Batch 0905043: Hg soil and Batch 0904101 Hg in ground waters.

Microbac Laboratories, Inc., Baltimore Division

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Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574001 73 1DW-03

09A0424-01 (Soil) Sampled: 01/16/2009 15:30; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	76.16	0.05	% by Weight	012309 1000	012609 0000	LCR	SM (20) 2540G	
Mercury, Total by EPA 7000 Series Methods								
Mercury	0.082	0.032	mg/kg dry	012809 1148	012909 1136	APS	SW846 7471A	D
Metals, Total by EPA 6000/7000 Series Methods								
Arsenic	ND	0.99	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Barium	230	0.99	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Cadmium	ND	0.50	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Chromium	7.8	2.0	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Lead	5.3	0.99	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Selenium	ND	0.99	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D
Silver	ND	2.0	mg/kg dry wt.	012609 1002	012709 2220	PRM	EPA 6020	D

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Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: 37073-0995 Project Manager: Heidi Taylor	Report: 09A0424 Reported: 02/11/2009 08:41

33574002 73 1DW-04 Dissolved

09A0424-02 (Ground Water) Sampled: 01/16/2009 15:15; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Dissolved by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1559	APS	EPA 245.1	
Metals, Dissolved by EPA 200 Series Methods								
Arsenic	ND	0.0050	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	D
Barium	**0.032**	0.0050	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	D
Cadmium	**0.00060**	0.00050	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	B1, D, B
Chromium	**0.0028**	0.0025	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	D
Lead	**0.0023**	0.0020	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	B1, D, B
Selenium	ND	0.0050	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	D
Silver	ND	0.0020	mg/L	012209 1528	012909 1418	PRM	EPA 200.8/6020	D

Microbac Laboratories, Inc., Baltimore Division

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Baltimore Division

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Fax: 410-633-6553
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CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574003 73 MW 02 Dissolved

09A0424-03 (Ground Water) Sampled: 01/16/2009 11:15; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Metals, Dissolved by EPA 200 Series Methods								
Arsenic	**0.031**	0.0050	mg/L	012209 1528	012909 1422	PRM	EPA 200.8/6020	D
Copper	**0.061**	0.0020	mg/L	012209 1528	012909 1422	PRM	EPA 200.8/6020	D
Nickel	**0.13**	0.0050	mg/L	012209 1528	012909 1422	PRM	EPA 200.8/6020	D
Silver	**0.0052**	0.0020	mg/L	012209 1528	012909 1422	PRM	EPA 200.8/6020	D

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Microbac Laboratories, Inc.

Baltimore Division

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Fax: 410-633-6553
www.microbac.com

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USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574005 73 MW 03 Dissolved

09A0424-04 (Ground Water) Sampled: 01/16/2009 10:20; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Dissolved by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1603	APS	EPA 245.1	
Metals, Dissolved by EPA 200 Series Methods								
Arsenic	**0.028**	0.0050	mg/L	012209 1528	012909 1425	PRM	EPA 200.8/6020	D
Copper	**0.12**	0.0020	mg/L	012209 1528	012909 1425	PRM	EPA 200.8/6020	D
Nickel	**0.073**	0.0050	mg/L	012209 1528	012909 1425	PRM	EPA 200.8/6020	D
Silver	**0.0036**	0.0020	mg/L	012209 1528	012909 1425	PRM	EPA 200.8/6020	D

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574007 73 MW 03A Dissolved

09A0424-05 (Ground Water) Sampled: 01/16/2009 10:20; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Dissolved by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1605	APS	EPA 245.1	
Metals, Dissolved by EPA 200 Series Methods								
Arsenic	**0.026**	0.0050	mg/L	012209 1528	012909 1429	PRM	EPA 200.8/6020	D
Copper	**0.13**	0.0020	mg/L	012209 1528	012909 1429	PRM	EPA 200.8/6020	D
Nickel	**0.073**	0.0050	mg/L	012209 1528	012909 1429	PRM	EPA 200.8/6020	D
Silver	**0.0037**	0.0020	mg/L	012209 1528	012909 1429	PRM	EPA 200.8/6020	D

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Baltimore Division

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Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574008 73FB-04

09A0424-06 (Ground Water) Sampled: 01/16/2009 14:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1607	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Vanadium	ND	0.0050	mg/L	012209 1523	012309 1557	APS	EPA 200.7/6010B	
Arsenic	ND	0.0050	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Chromium	**0.0031**	0.0025	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Cobalt	ND	0.0050	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Copper	ND	0.0020	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Nickel	ND	0.0050	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Silver	ND	0.0020	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1433	PRM	EPA 200.8/6020	D

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Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: 37073-0995 Project Manager: Heidi Taylor	Report: 09A0424 Reported: 02/11/2009 08:41

33574009 73 FB-05

09A0424-07 (Ground Water) Sampled: 01/16/2009 14:30; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1610	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Vanadium	ND	0.0050	mg/L	012209 1523	012309 1600	APS	EPA 200.7/6010B	
Arsenic	ND	0.0050	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Chromium	0.0029	0.0025	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Cobalt	ND	0.0050	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Copper	ND	0.0020	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Nickel	ND	0.0050	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Silver	ND	0.0020	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1437	PRM	EPA 200.8/6020	D

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Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

33574010 73 FB-06

09A0424-08 (Ground Water) Sampled: 01/16/2009 15:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1612	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Vanadium	ND	0.0050	mg/L	012209 1523	012309 1638	APS	EPA 200.7/6010B	
Arsenic	ND	0.0050	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Chromium	**0.0031**	0.0025	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Cobalt	ND	0.0050	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Copper	**0.0067**	0.0020	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Nickel	ND	0.0050	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Silver	ND	0.0020	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1441	PRM	EPA 200.8/6020	D

Microbac Laboratories, Inc., Baltimore Division

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Baltimore Division

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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201 APG, MD 21010-5422	Project: GW/Soil Project Number: 37073-0995 Project Manager: Heidi Taylor	Report: 09A0424 Reported: 02/11/2009 08:41

33574013 73 FB-06A

09A0424-09 (Ground Water) Sampled: 01/16/2009 15:00; Type: Grab

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Mercury, Total by EPA 200 Series Methods								
Mercury	ND	0.00020	mg/L	012309 1251	012609 1614	APS	EPA 245.1/7470A	
Metals, Total by EPA 200 Series Methods								
Vanadium	ND	0.0050	mg/L	012209 1523	012309 1641	APS	EPA 200.7/6010B	
Arsenic	ND	0.0050	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Chromium	**0.0026**	0.0025	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Cobalt	ND	0.0050	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Copper	**0.011**	0.0020	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Nickel	ND	0.0050	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Silver	ND	0.0020	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D
Zinc	ND	0.020	mg/L	012209 1528	012909 1444	PRM	EPA 200.8/6020	D

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Peter B. Kelly For Michael D. Arbaugh, Customer Services Manager

Microbac Laboratories, Inc.

Baltimore Division

2101 Van Deman Street • Baltimore, MD 21224

Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Wet Chemistry - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904086 - % Solids										
Blank (0904086-BLK1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK2)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK3)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
Blank (0904086-BLK4)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	ND	0.05	% by Weight							
LCS (0904086-BS1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.04	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.96	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS2)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.03	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.97	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS3)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.04	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.96	0.05	"	100.0		98.0	80-120			
LCS (0904086-BS4)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.03	0.05	% by Weight	2.000		102	80-120			
% Moisture	97.97	0.05	"	100.0		98.0	80-120			
Duplicate (0904086-DUP1)		**Source: 09A0404-05**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	2.26	0.05	% by Weight		2.24			0.917	20	
% Moisture	97.74	0.05	"		97.76			0.0211	20	

Microbac Laboratories, Inc., Baltimore Division

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Baltimore Division
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www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Wet Chemistry - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904086 - % Solids										
Duplicate (0904086-DUP2)		**Source: 09A0415-01**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	91.86	0.05	% by Weight		91.71			0.165	20	
% Moisture	8.14	0.05	"		8.29			1.85	20	
Duplicate (0904086-DUP3)		**Source: 09A0420-07**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	96.17	0.05	% by Weight		96.49			0.337	20	
% Moisture	3.83	0.05	"		3.51			8.85	20	
Duplicate (0904086-DUP4)		**Source: 09A0421-04**		Prepared: 01/23/2009 Analyzed: 01/26/2009						
% Solids	1.79	0.05	% by Weight		1.77			1.18	20	
% Moisture	98.21	0.05	"		98.23			0.0213	20	

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Mercury, Dissolved by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904101 - Metals_Hg_Prep										
Blank (0904101-BLK1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L							
LCS (0904101-BS1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00197	0.00020	mg/L	0.002020		97.6	85-115			
Duplicate (0904101-DUP1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L		ND				20	
Matrix Spike (0904101-MS1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00187	0.00020	mg/L	0.002020	ND	92.5	70-130			
Matrix Spike Dup (0904101-MSD1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00190	0.00020	mg/L	0.002020	ND	93.8	70-130	1.37	20	
Batch M9A2701 - 0904101										
Instrument Blank (M9A2701-IBL1)				Prepared & Analyzed: 01/26/2009						
Mercury	ND	0.00020	ug/L							

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Mercury, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904101 - Metals_Hg_Prep										
Blank (0904101-BLK1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L							
LCS (0904101-BS1)				Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00197	0.00020	mg/L	0.002020		97.6	85-115			
Duplicate (0904101-DUP1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	ND	0.00020	mg/L		ND				20	
Matrix Spike (0904101-MS1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00187	0.00020	mg/L	0.002020	ND	92.5	70-130			
Matrix Spike Dup (0904101-MSD1)		Source: 09A0393-01		Prepared: 01/23/2009 Analyzed: 01/26/2009						
Mercury	0.00190	0.00020	mg/L	0.002020	ND	93.8	70-130	1.37	20	
Batch M9A2701 - 0904101										
Instrument Blank (M9A2701-IBL1)				Prepared & Analyzed: 01/26/2009						
Mercury	ND	0.00020	ug/L							
Batch M9A2901 - 0905043										
Instrument Blank (M9A2901-IBL1)				Prepared & Analyzed: 01/29/2009						
Mercury	ND	0.00020	ug/L							

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904078 - EPA 200.2 ICP										
Blank (0904078-BLK1)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	ND	0.0050	mg/L							
LCS (0904078-BS1)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.948	0.0050	mg/L	1.000		94.8	85-115			
LCS (0904078-BS2)				Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.192	0.0050	mg/L	0.2000		95.8	85-115			
Duplicate (0904078-DUP1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	ND	0.50	mg/L		ND				20	D
Matrix Spike (0904078-MS1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.954	0.0050	mg/L	1.000	ND	95.4	80-120			
Matrix Spike Dup (0904078-MSD1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/23/2009						
Vanadium	0.945	0.0050	mg/L	1.000	ND	94.5	80-120	0.903	20	
Batch 0904079 - EPA 200.2 ICPMS										
Blank (0904079-BLK1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	ND	0.0050	mg/L							D
Chromium	ND	0.0025	"							D
Cobalt	ND	0.0050	"							D
Copper	ND	0.0020	"							D
Nickel	ND	0.0050	"							D
Silver	ND	0.0020	"							D
Zinc	ND	0.020	"							D

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Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904079 - EPA 200.2 ICPMS										
LCS (0904079-BS1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.212	0.0050	mg/L	0.2000		106	85-115			D
Chromium	0.194	0.0025	"	0.2000		96.8	85-115			D
Cobalt	0.206	0.0050	"	0.2000		103	85-115			D
Copper	0.193	0.0020	"	0.2000		96.7	85-115			D
Nickel	0.202	0.0050	"	0.2000		101	85-115			D
Silver	0.0908	0.0020	"	0.1000		90.8	85-115			D
Zinc	0.228	0.020	"	0.2000		114	85-115			D
Duplicate (0904079-DUP1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.00993	0.0050	mg/L		0.00947			4.76	20	D
Chromium	0.00405	0.0025	"		0.00473			15.5	20	D
Cobalt	0.00576	0.0050	"		0.00591			2.59	20	D
Copper	0.0295	0.0020	"		0.0297			0.838	20	D
Nickel	0.0323	0.0050	"		0.0338			4.40	20	D
Silver	0.00197	0.0020	"		0.00194			1.23	20	D
Zinc	0.114	0.020	"		0.114			0.0796	20	D
Matrix Spike (0904079-MS1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.216	0.0050	mg/L	0.2000	0.00947	103	70-130			D
Chromium	0.205	0.0025	"	0.2000	0.00473	100	70-130			D
Cobalt	0.198	0.0050	"	0.2000	0.00591	96.0	70-130			D
Copper	0.206	0.0020	"	0.2000	0.0297	88.0	70-130			D
Nickel	0.225	0.0050	"	0.2000	0.0338	95.8	70-130			D
Silver	0.0848	0.0020	"	0.1000	0.00194	82.8	70-130			D
Zinc	0.287	0.020	"	0.2000	0.114	86.2	70-130			D
Matrix Spike Dup (0904079-MSD1)		Source: 09A0393-01		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.214	0.0050	mg/L	0.2000	0.00947	102	70-130	0.533	20	D
Chromium	0.201	0.0025	"	0.2000	0.00473	98.2	70-130	1.94	20	D
Cobalt	0.196	0.0050	"	0.2000	0.00591	94.9	70-130	1.11	20	D
Copper	0.206	0.0020	"	0.2000	0.0297	88.2	70-130	0.192	20	D
Nickel	0.227	0.0050	"	0.2000	0.0338	96.5	70-130	0.586	20	D
Silver	0.0849	0.0020	"	0.1000	0.00194	83.0	70-130	0.223	20	D
Zinc	0.280	0.020	"	0.2000	0.114	82.9	70-130	2.33	20	D

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Baltimore Division
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www.microbac.com

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch M9A2605 - 0904078										
Instrument Blank (M9A2605-IBL1)				Prepared & Analyzed: 01/23/2009						
Vanadium	ND	0.0050	mg/L							

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Baltimore Division

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Mercury, Total by EPA 7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905043 - Metals_Hg_Prep										
Blank (0905043-BLK1)				Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	ND	0.025	mg/kg wet							D
LCS (0905043-BS1)				Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	6.82	0.24	mg/kg wet	6.240		109	85-115			D
Duplicate (0905043-DUP1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.0153	0.026	mg/kg dry		0.0171			11.2	20	D
Matrix Spike (0905043-MS1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.270	0.026	mg/kg dry	0.2586	0.0171	97.7	70-130			D
Matrix Spike Dup (0905043-MSD1)		Source: 09A0420-07		Prepared: 01/28/2009 Analyzed: 01/29/2009						
Mercury	0.284	0.026	mg/kg dry	0.2610	0.0171	102	70-130	5.22	20	D

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Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Blank (0905005-BLK1)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	0.106	0.020	"							B1, D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D
Blank (0905005-BLK2)				Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	ND	0.020	mg/kg dry wt.							D
Barium	ND	0.020	"							D
Cadmium	ND	0.010	"							D
Chromium	ND	0.040	"							D
Cobalt	ND	0.10	"							D
Copper	ND	0.020	"							D
Lead	ND	0.020	"							D
Nickel	ND	0.020	"							D
Selenium	ND	0.020	"							D
Silver	ND	0.040	"							D
Vanadium	ND	0.020	"							D
Zinc	ND	0.20	"							D
Blank (0905005-BLK3)				Prepared: 01/26/2009 Analyzed: 01/29/2009						
Arsenic	ND	0.0010	mg/kg dry wt.							
Barium	ND	0.0010	"							
Cadmium	ND	0.00050	"							
Chromium	ND	0.0020	"							
Cobalt	ND	0.0050	"							
Copper	ND	0.0010	"							

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Blank (0905005-BLK3)				Prepared: 01/26/2009 Analyzed: 01/29/2009						
Lead	ND	0.0010	mg/kg dry wt.							
Nickel	ND	0.0010	"							
Selenium	ND	0.0010	"							
Silver	ND	0.0020	"							
Vanadium	ND	0.0010	"							
Zinc	ND	0.010	"							
LCS (0905005-BS1)				Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	126	1.0	mg/kg dry wt.	133.0		95.1	80.7-118.9			D
Barium	214	1.0	"	226.0		94.6	82.7-117.1			D
Cadmium	94.1	0.50	"	103.0		91.4	81.9-118.1			D
Chromium	238	2.0	"	219.0		109	81-119.7			D
Cobalt	143	5.0	"	133.0		108	82.2-118.2			D
Copper	154	1.0	"	155.0		99.2	83.3-117.4			D, B
Lead	167	1.0	"	168.0		99.2	81.9-118.3			D
Nickel	117	1.0	"	119.0		98.7	82.6-117.4			D
Selenium	91.9	1.0	"	94.10		97.7	77.6-123			D
Silver	77.4	2.0	"	81.20		95.3	66.4-134.1			D
Vanadium	145	1.0	"	123.0		118	77.4-123.1			D
Zinc	292	10	"	280.0		104	78.9-120.8			D
LCS (0905005-BS2)				Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	132	1.0	mg/kg dry wt.	133.0		99.6	80.7-118.9			D
Barium	208	1.0	"	226.0		92.2	82.7-117.1			D
Cadmium	97.1	0.50	"	103.0		94.3	81.9-118.1			D
Chromium	232	2.0	"	219.0		106	81-119.7			D
Cobalt	145	5.0	"	133.0		109	82.2-118.2			D
Copper	158	1.0	"	155.0		102	83.3-117.4			D, B
Lead	174	1.0	"	168.0		103	81.9-118.3			D
Nickel	122	1.0	"	119.0		102	82.6-117.4			D
Selenium	92.6	1.0	"	94.10		98.4	77.6-123			D
Silver	82.6	2.0	"	81.20		102	66.4-134.1			D
Vanadium	143	1.0	"	123.0		116	77.4-123.1			D
Zinc	275	10	"	280.0		98.2	78.9-120.8			D

Microbac Laboratories, Inc., Baltimore Division

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Baltimore Division
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Phone: 410-633-1800
Fax: 410-633-6553
www.microbac.com

CERTIFICATE OF ANALYSIS

USACHPPM-Metals	Project: GW/Soil	Report: 09A0424
Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Duplicate (0905005-DUP1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	1.35	0.99	mg/kg dry wt.		1.39			2.61	20	D
Barium	42.2	0.99	"						20	D
Cadmium	ND	0.49	"						20	D
Chromium	28.8	2.0	"						20	D
Cobalt	11.7	4.9	"						20	D
Copper	174	0.99	"		172			1.57	20	D, B
Lead	5.09	0.99	"						20	D
Nickel	7.80	0.99	"						20	D
Selenium	2.51	0.99	"						20	D
Silver	ND	2.0	"						20	D
Vanadium	315	0.99	"						20	D
Zinc	53.6	9.9	"		53.0			1.24	20	D
Duplicate (0905005-DUP2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	ND	0.99	mg/kg dry wt.		0.673				20	D
Barium	265	0.99	"		227			15.5	20	D
Cadmium	0.229	0.49	"		ND				20	D
Chromium	7.39	2.0	"		7.80			5.39	20	D
Cobalt	54.7	4.9	"						20	R1, D
Copper	304	0.99	"						20	D, B
Lead	4.99	0.99	"		5.33			6.51	20	D
Nickel	8.89	0.99	"						20	D
Selenium	0.631	0.99	"		0.778			20.8	20	R3, D
Silver	ND	2.0	"		ND				20	D
Vanadium	98.5	0.99	"						20	D
Zinc	96.5	9.9	"						20	D
Duplicate (0905005-DUP3)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Zinc	53.6	9.9	mg/kg dry wt.		53.0			1.24	20	D

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Matrix Spike (0905005-MS1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.51	0.98	mg/kg dry wt.	9.847	1.39	82.4	70-130			D
Barium	54.9	0.98	"	9.847		557	70-130			D
Cadmium	9.31	0.49	"	9.847		94.6	70-130			D
Chromium	40.7	2.0	"	9.847		413	70-130			D
Cobalt	22.3	4.9	"	9.847		226	70-130			D
Copper	183	0.98	"	9.847	172	121	70-130			D, B
Lead	14.8	0.98	"	9.847		151	70-130			D
Nickel	17.9	0.98	"	9.847		182	70-130			D
Selenium	10.8	0.98	"	9.847		110	70-130			D
Silver	4.52	2.0	"	4.924		91.9	70-130			D
Vanadium	340	0.98	"	9.847		NR	70-130			M1, D
Zinc	64.0	9.8	"	9.847	53.0	112	70-130			D
Matrix Spike (0905005-MS2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	10.5	0.99	mg/kg dry wt.	9.905	0.673	98.9	70-130			D
Barium	225	0.99	"	9.905	227	NR	70-130			D
Cadmium	9.78	0.50	"	9.905	ND	98.7	70-130			D
Chromium	17.1	2.0	"	9.905	7.80	93.8	70-130			D
Cobalt	49.8	5.0	"	9.905		503	70-130			M1, D
Copper	305	0.99	"	9.905		NR	70-130			M1, D, B
Lead	14.1	0.99	"	9.905	5.33	88.2	70-130			D
Nickel	19.2	0.99	"	9.905		194	70-130			D
Selenium	9.58	0.99	"	9.905	0.778	88.8	70-130			D
Silver	4.87	2.0	"	4.952	ND	98.3	70-130			D
Vanadium	105	0.99	"	9.905		NR	70-130			D
Zinc	104	9.9	"	9.905		NR	70-130			D
Matrix Spike Dup (0905005-MSD1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Arsenic	9.02	0.99	mg/kg dry wt.	9.884	1.39	77.2	70-130	5.22	20	D
Barium	50.8	0.99	"	9.884		514	70-130	7.77	20	D
Cadmium	9.09	0.49	"	9.884		91.9	70-130	2.48	20	D
Chromium	40.8	2.0	"	9.884		413	70-130	0.342	20	D
Cobalt	20.4	4.9	"	9.884		206	70-130	8.76	20	D
Copper	181	0.99	"	9.884	172	95.9	70-130	1.35	20	D, B

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Total by EPA 6000/7000 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0905005 - EPA 3050B ICPMS										
Matrix Spike Dup (0905005-MSD1)		**Source: 09A0420-01**		Prepared: 01/26/2009 Analyzed: 01/27/2009						
Lead	14.5	0.99	mg/kg dry wt.	9.884		147	70-130	2.24	20	D
Nickel	18.3	0.99	"	9.884		185	70-130	1.85	20	D
Selenium	10.2	0.99	"	9.884		103	70-130	5.61	20	D
Silver	4.39	2.0	"	4.942		88.9	70-130	2.93	20	D
Vanadium	337	0.99	"	9.884		NR	70-130	0.971	20	M1, D
Zinc	62.7	9.9	"	9.884	53.0	98.2	70-130	2.12	20	D
Matrix Spike Dup (0905005-MSD2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	9.62	0.99	mg/kg dry wt.	9.923	0.673	90.1	70-130	8.52	20	D
Barium	229	0.99	"	9.923	227	16.7	70-130	1.68	20	M1, D
Cadmium	9.56	0.50	"	9.923	ND	96.3	70-130	2.22	20	D
Chromium	18.0	2.0	"	9.923	7.80	103	70-130	5.36	20	D
Cobalt	50.7	5.0	"	9.923		511	70-130	1.74	20	M1, D
Copper	303	0.99	"	9.923		NR	70-130	0.827	20	M1, D, B
Lead	14.1	0.99	"	9.923	5.33	88.2	70-130	0.124	20	D
Nickel	18.0	0.99	"	9.923		182	70-130	6.52	20	D
Selenium	9.53	0.99	"	9.923	0.778	88.2	70-130	0.486	20	D
Silver	4.82	2.0	"	4.961	ND	97.1	70-130	0.985	20	D
Vanadium	105	0.99	"	9.923		NR	70-130	0.0397	20	D
Zinc	102	9.9	"	9.923		NR	70-130	1.94	20	M1, D
Post Spike (0905005-PS2)		**Source: 09A0424-01**		Prepared: 01/26/2009 Analyzed: 01/28/2009						
Arsenic	2080		ug/L	2000	13.6	103	75-125			D
Barium	6660		"	2000	4580	104	75-125			D
Cadmium	1980		"	2000	-0.141	98.8	75-125			D
Chromium	2270		"	2000	157	105	75-125			D
Cobalt	2980		"	2000		149	75-125			D
Copper	8190		"	2000		409	75-125			D, B
Lead	2050		"	2000	107	97.3	75-125			D
Nickel	2180		"	2000		109	75-125			D
Selenium	2130		"	2000	15.7	106	75-125			D
Silver	898		"	1000	0.282	89.8	75-125			D
Vanadium	4240		"	2000		212	75-125			D
Zinc	4210		"	2000		211	75-125			D

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Contract #W91ZLK-05-C-0025, Bldg E2100, Rm 201	Project Number: 37073-0995	Reported: 02/11/2009 08:41
APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Dissolved by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904079 - EPA 200.2 ICPMS										
Blank (0904079-BLK1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	ND	0.0050	mg/L							D
Barium	ND	0.0050	"							D
Cadmium	0.000630	0.00050	"							B1, D
Chromium	ND	0.0025	"							D
Copper	ND	0.0020	"							D
Lead	0.00240	0.0020	"							B1, D
Nickel	ND	0.0050	"							D
Selenium	ND	0.0050	"							D
Silver	ND	0.0020	"							D
LCS (0904079-BS1)				Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.212	0.0050	mg/L	0.2000		106	85-115			D
Barium	0.200	0.0050	"	0.2000		99.8	85-115			D
Cadmium	0.197	0.00050	"	0.2000		98.5	85-115			D, B
Chromium	0.194	0.0025	"	0.2000		96.8	85-115			D
Copper	0.193	0.0020	"	0.2000		96.7	85-115			D
Lead	0.200	0.0020	"	0.2000		99.8	85-115			D, B
Nickel	0.202	0.0050	"	0.2000		101	85-115			D
Selenium	0.223	0.0050	"	0.2000		111	85-115			D
Silver	0.0908	0.0020	"	0.1000		90.8	85-115			D
Duplicate (0904079-DUP1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.00993	0.0050	mg/L		0.00947			4.76	20	D
Barium	0.00918	0.0050	"		0.00970			5.44	20	D
Cadmium	0.000614	0.00050	"		0.000654			6.31	20	D, B
Chromium	0.00405	0.0025	"		0.00473			15.5	20	D
Copper	0.0295	0.0020	"		0.0297			0.838	20	D
Lead	0.00248	0.0020	"		0.00241			3.19	20	D, B
Nickel	0.0323	0.0050	"		0.0338			4.40	20	D
Selenium	0.0303	0.0050	"		0.0306			1.09	20	D
Silver	0.00197	0.0020	"		0.00194			1.23	20	D

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Metals, Dissolved by EPA 200 Series Methods - Quality Control Summary

Microbac Laboratories, Inc., Baltimore Division

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0904079 - EPA 200.2 ICPMS										
Matrix Spike (0904079-MS1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.216	0.0050	mg/L	0.2000	0.00947	103	70-130			D
Barium	0.218	0.0050	"	0.2000	0.00970	104	70-130			D
Cadmium	0.176	0.00050	"	0.2000	0.000654	87.6	70-130			D, B
Chromium	0.205	0.0025	"	0.2000	0.00473	100	70-130			D
Copper	0.206	0.0020	"	0.2000	0.0297	88.0	70-130			D
Lead	0.174	0.0020	"	0.2000	0.00241	85.8	70-130			D, B
Nickel	0.225	0.0050	"	0.2000	0.0338	95.8	70-130			D
Selenium	0.246	0.0050	"	0.2000	0.0306	108	70-130			D
Silver	0.0848	0.0020	"	0.1000	0.00194	82.8	70-130			D
Matrix Spike Dup (0904079-MSD1)		**Source: 09A0393-01**		Prepared: 01/22/2009 Analyzed: 01/29/2009						
Arsenic	0.214	0.0050	mg/L	0.2000	0.00947	102	70-130	0.533	20	D
Barium	0.216	0.0050	"	0.2000	0.00970	103	70-130	1.01	20	D
Cadmium	0.174	0.00050	"	0.2000	0.000654	86.5	70-130	1.24	20	D, B
Chromium	0.201	0.0025	"	0.2000	0.00473	98.2	70-130	1.94	20	D
Copper	0.206	0.0020	"	0.2000	0.0297	88.2	70-130	0.192	20	D
Lead	0.168	0.0020	"	0.2000	0.00241	82.8	70-130	3.48	20	D, B
Nickel	0.227	0.0050	"	0.2000	0.0338	96.5	70-130	0.586	20	D
Selenium	0.244	0.0050	"	0.2000	0.0306	107	70-130	0.992	20	D
Silver	0.0849	0.0020	"	0.1000	0.00194	83.0	70-130	0.223	20	D

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APG, MD 21010-5422	Project Manager: Heidi Taylor	

Notes and Definitions

R3	Sample Duplicate RPD was out of acceptance limits. The result concentration was within 5 times the reporting limit and the difference was less than the reporting limit.
R1	Sample Duplicate RPD was out of acceptance limits.
M1	The matrix spike recovery was out of acceptance limits. The post digestion spike recovery was acceptable.
D	Sample Diluted
B1	Target analyte detected in method blank at or above reporting limit.
B	Analyte is found in method blank.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Certifications

Below is a list of certifications maintained by Microbac Laboratories, Inc. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. A complete list of individual analytes pursuant to each certification below is available upon request.

- A2LA (Microbiology): 410.02
- A2LA (Environmental): 410.01
- AIHA (ELLAP): 100491
- Maryland (Drinking Water): 109
- NELAC (NY): 11158
- Pennsylvania: 68-00339/004
- USDA: S-53726
- Virginia (Drinking Water): 00152

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Cooler Receipt Log

Cooler ID: Default Cooler

Cooler Temp: 2.10 °C

Custody Seals Intact:	Yes	COC/Labels Agree:	Yes
Containers Intact:	Yes	Correct Preservation:	Yes
Received On Ice:	Yes	Correct Number of Containers Received:	Yes
Radiation Scan Acceptable:	Yes	VOAs Without Headspace:	Yes
COC Present:	Yes	Sufficient Sample Volume:	Yes

Report ID: HMA0022v1
Sequence: 473516

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5422

Date: 20-Jan-09 12:46:00 PM
Page: 1 of 3

Pick-Up / Work / Delivery Order
Generated by: SMELSERBA

09A0424

Section I - Contract/Project Information

Contract Information

Pickup Order: **1412/1**

DLS WO#: 33574 Batch: 3180
Contractor Code: GAS HBN: 214640
Contract#: W91ZLK-05-C-0025
Contract POC: Mr. Mike Arbaugh
Sent by Team: MET
Priority: Standard
# of Samples: 9

Project Information

Project Site: NAPR-Cp Moscrip
Project #: Program 38–38
Client Name: Mr. David Jones
JONO: 97HR41
SUBJONO: 0995
DLS WO#: 33574
DLS Profile#: 37073

Pick-Up/Work/Delivery Order Approved by: Geraldine Miles for H. Taylor 1/20/09
(Signature of USACHPPMg COR)

USACHPPM called for pickup: Geraldine Miles 1/20/09 @~0930hrs/H. Taylor
(Caller's Name) (Date/Time called)

CONTRACTOR'S ENTRY

Pick-up Order received by: 1/28/09 1335
(Signature of laboratory courier) (Date/Time of pick-up)

Number of samples received intact: All 9 (#/All)
Number of samples received broken: 0 (#/None)

Data package received by at CHPPM: Antoinette Green Delivery Data: email 2-11-09
(Means of Delivery - UPS/FedEx) Date

Note: A copy of this form must be completed and returned for each sample batch and respective sample data package.

Report ID: HRA0191C-ACodes
COC #: 473506

Run Date: 20-Jan-09 11:31
Generated By: CHRISTINA.MOORER

USACHPPM
Readiness thru Health

U.S. Army Center for Health Promotion and Preventive Medicine
Directorate of Laboratory Sciences
Aberdeen Proving Ground, MD 21010-5403
http://chppm-www.apgea.army.mil/dls

Batch # 3180

Standard

Chain Of Custody (COC)

This Chain of Custody is an Addendum to the Original COC submitted on 1/n/09 *to SML. This is SML's internal Chain of Custody.*

Profile: 37073 - 0995
Workorder #: 33574
Queue: GAS
Location: NAPR-Cp Moscrip
Jono: 97HR41
Subjono: 0995
Turn Code: R028 28 Calendar day from receipt

Description: NAPR CMS-Cp Moscrip~37073
Workorder ID: 099517
Customer: Program 38 **POC:** David Jones
Project Number: 38
Notes: MS and MSD for 73 FB-06 not listed on Field COC. Coll. Time on 73 1DW-03 and 04 did not match COC. Used time on container for LIMS log-in. Cont label for 73MW02 did not say dissolved like CoC. Confusion on 73FB05 and 06 samples calrified w/ PO H.Taylor 1/n/09

Total Samples: 9 **Total Containers:** 9

HSN	Container ID	Customer Sample ID	Sample Type	Matrix		Temp		Date/Time Received	Date/Time Collected	Sample Due Date
33574001	33574001-1	73 1DW-03	SAMPLE	SO	Soil	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:30 PM	16-Feb-2009

ACodes:
GAS1717 : %Moisture
GAS2092 : Mercury (Hg) EPA 7471
GAS2147 : Arsenic (As)
GAS2148 : Chromium (Cr)
GAS2149 : Barium (Ba)
GAS2150 : Cadmium (Cd)
GAS2151 : Lead (Pb)
GAS2154 : Silver (Ag)
GAS2180 : Selenium (Se)

33574002	33574002-1	73 1DW-04 Dissolved	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:15 PM	16-Feb-2009

ACodes:
GAS1094 : Selenium (Se)
GAS742 : Mercury (Hg) EPA 7470
GAS770 : Arsenic (As)
GAS771 : Barium (Ba)
GAS773 : Cadmium (Cd)
GAS774 : Chromium (Cr)
GAS777 : Lead (Pb)
GAS780 : Silver (Ag)

33574003	33574003-1	73 MW 02 Dissolved	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 11:15 AM	16-Feb-2009

ACodes:
GAS770 : Arsenic (As)
GAS776W : Copper (Cu)
GAS779 : Nickel (Ni)
GAS780 : Silver (Ag)

33574005	33574005-1	73 MW03 Dissolved	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470
GAS770 : Arsenic (As)
GAS776W : Copper (Cu)
GAS779 : Nickel (Ni)
GAS780 : Silver (Ag)

NR=Not Reported.

Profile: 37073 - 0995	**Description:** NAPR CMS-Cp Moscrip~37073
Workorder #: 33574	**Workorder ID:** 099517
Queue: GAS	**Customer:** Program 38

33574007	33574007-1	73 MW03A Dissolved	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 10:20 AM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS770 : Arsenic (As) GAS776W : Copper (Cu) GAS779 : Nickel (Ni)
GAS780 : Silver (Ag)

33574008	33574008-5	73 FB - 04	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:00 PM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS770 : Arsenic (As) GAS774 : Chromium (Cr) GAS775 : Cobalt (Co)
GAS776W : Copper (Cu) GAS779 : Nickel (Ni) GAS780 : Silver (Ag) GAS782 : Vanadium (V)
GAS783 : Zinc (Zn)

33574009	33574009-5	73 FB - 05	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 02:30 PM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS770 : Arsenic (As) GAS774 : Chromium (Cr) GAS775 : Cobalt (Co)
GAS776W : Copper (Cu) GAS779 : Nickel (Ni) GAS780 : Silver (Ag) GAS782 : Vanadium (V)
GAS783 : Zinc (Zn)

33574010	33574010-5	73 FB - 06	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS770 : Arsenic (As) GAS774 : Chromium (Cr) GAS775 : Cobalt (Co)
GAS776W : Copper (Cu) GAS779 : Nickel (Ni) GAS780 : Silver (Ag) GAS782 : Vanadium (V)
GAS783 : Zinc (Zn)

33574013	33574013-5	73 FB - 08A	SAMPLE	GW	Water (Ground	6.0	degrees C	17-Jan-2009 09:15 AM	16-Jan-2009 03:00 PM	16-Feb-2009

ACodes:
GAS742 : Mercury (Hg) EPA 7470 GAS770 : Arsenic (As) GAS774 : Chromium (Cr) GAS775 : Cobalt (Co)
GAS776W : Copper (Cu) GAS779 : Nickel (Ni) GAS780 : Silver (Ag) GAS782 : Vanadium (V)
GAS783 : Zinc (Zn)

Chain of Custody

Total Samples: 9	**Total Containers:** 9

Samples Received By:		**Date Received:**	1/20/09
Document Reviewed By: Christina Moorer	**Initials:**	**Date Reviewed:**	20 Jan 09
Document Quality Review By:		**Date Reviewed:**	
Samples Approved For Distribution: Yes ✓ No ___	**Initials:** JM	**Date Approved:**	

Profile: 37073 - 0995
Workorder #: 33574
Queue: GAS

Description: NAPR CMS-Cp Moscrip~37073
Workorder ID: 099517
Customer: Program 38

CHAIN OF CUSTODY RECORD

HSN	Customer Sample Id	Container Id	Mx
33574001	73 1DW-03	33574001-1	SO
33574003	73 MW 02 Dissolved	33574003-1	GW
33574007	73 MW03A Dissolved	33574007-1	GW
33574009	73 FB - 05	33574009-5	GW
33574013	73 FB - 06A	33574013-5	GW

HSN	Customer Sample Id	Container Id	Mx
33574002	73 1DW-04 Dissolved	33574002-1	GW
33574005	73 MW03 Dissolved	33574005-1	GW
33574008	73 FB - 04	33574008-5	GW
33574010	73 FB - 06	33574010-5	GW

Total Samples: 9

Total Containers: 9

Lab	Relinquished By	Date/Time	Received By	Date/Time	Comments
	From refrigerator	1/17/09 1050		1/17/09 1050	For Sample Numbering
		1/17/09 1130	See SML's Comments	1/17/09 1130	Returned to holding refrigerator in room #0202.
	From refrigerator	1/20/09 1340		1/20/09 1340	

Remarks:

USACHPPM
Readiness thru Health

Profile: 37073 - 0995	Description: NAPR CMS-Cp Moscrip~37073
Workorder #: 33574	Workorder ID: 099517
Queue: GAS	Customer: Program 38

SAMPLE DISPOSAL RECORD

HSN	Date Of Disposal	Number Of Containers	Signature	Remarks
33574001		1		
33574002		1		
33574003		1		
33574005		1		
33574007		1		
33574008		1		
33574009		1		
33574010		1		
33574013		1		

Total Samples: 9 | Total Containers: 9

Chain of Custody

NR=Not Reported.

Section II - Acodes Assigned to The Samples

DLS Number	Field ID	Matrix	GAS1004	GAS1717	GAS2092	GAS2147	GAS2148	GAS2149	GAS2150	GAS2151	GAS2154	GAS2160	GAS742	GAS770	GAS771	GAS773	GAS774	GAS775	GAS776W	GAS777	GAS779	GAS780	GAS782	GAS783
33574001	73 1DW-03	SO		1	1	1	1	1	1	1	1	1												
33574002	73 1DW-04 Dissolved	GW	1										1	1	1	1	1			1		1		
33574003	73 MW 02 Dissolved	GW												1					1		1	1		
33574005	73 MW03 Dissolved	GW											1	1					1		1	1		
33574007	73 MW03A Dissolved	GW											1	1					1		1	1		
33574008	73 FB - 04	GW											1	1			1	1	1		1	1	1	1
33574009	73 FB - 05	GW											1	1			1	1	1		1	1	1	1
33574010	73 FB - 06	GW											1	1			1	1	1		1	1	1	1
33574013	73 FB - 06A	GW											1	1			1	1	1		1	1	1	1

Section III - Acode Descriptions / Matrix Code Desciptions

Acodes on the Report

ACODE	ACODE Description		Quantity
GAS770	Arsenic (As)		8
	Procedure Description	EPA 6020	
GAS1717	%Moisture		1
	Procedure Description	EPA 160.3	
GAS2092	Mercury (Hg) EPA 7471		1
	Procedure Description	EPA 7471	
GAS2147	Arsenic (As)		1
	Procedure Description	EPA 6020	
GAS2148	Chromium (Cr)		1
	Procedure Description	EPA 6020	
GAS2149	Barium (Ba)		1
	Procedure Description	EPA 6020	
GAS2150	Cadmium (Cd)		1
	Procedure Description	EPA 6020	

Matrix types included in this Report

Matrix	Matrix code	Quantity
Soil	SO	1
Water (Ground water)	GW	8

GAS2151	Lead (Pb)		1
	Procedure Description	EPA 6020	
GAS2154	Silver (Ag)		1
	Procedure Description	EPA 6020	
GAS1094	Selenium (Se)		1
	Procedure Description	EPA 6020	
GAS742	Mercury (Hg) EPA 7470		7
	Procedure Description	EPA 7470	
GAS783	Zinc (Zn)		4
	Procedure Description	EPA 6020	
GAS771	Barium (Ba)		1
	Procedure Description	EPA 6020	
GAS773	Cadmium (Cd)		1
	Procedure Description	EPA 6020	
GAS774	Chromium (Cr)		5
	Procedure Description	EPA 6020	
GAS775	Cobalt (Co)		4
	Procedure Description	EPA 6020	
GAS776W	Copper (Cu)		7
	Procedure Description	EPA 6020	
GAS777	Lead (Pb)		1
	Procedure Description	EPA 6020	
GAS779	Nickel (Ni)		7
	Procedure Description	EPA 6020	
GAS780	Silver (Ag)		8
	Procedure Description	EPA 6020	
GAS782	Vanadium (V)		4
	Procedure Description	EPA 6020	
GAS2180	Selenium (Se)		1
	Procedure Description	EPA 6020	

Cooler Receipt Form / Sample Acceptance & Noncompliance Form

Number of Coolers Received: 2
Client: CSACRPW
Form Completed By: JD

Receipt Date / Time: 1/24/01 1535
Work Order #

Shipper: ☒ Microbac ☐ Client ☐ UPS ☐ FedEx
Custody Tape Intact: YES / NO / NA
Containers Intact: YES / NO
Sample Received on Ice or refrigerated: YES / NO
Temperature: 2.1 °C or
Infrared (IR)Temperature: _____ °C

Radiation Scan: ☒ Negative or _____ mR/hr
Chain of Custody Present with shipment: YES / NO
Sample Bottle IDs agree with COC: YES / NO
Preservation requirements met: YES / NO / Not Checked
Correct Number of Containers / Sample Volume: YES / No (If No. contact client immediately)
Headspace in container: YES / NO / NA
Type of Sample: Water Soil Wipes Oil Filter Solid Sludge Food Other

Container Type / Quantity:

A - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
B - ___ Unpreserved ___ H2SO4 13 HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
C - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
D - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
E - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
H - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
K - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
L - ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
M- ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
W- ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
V- ___ Unpreserved ___ HCl ___ HCl / Ascorbic Acid ___ HCl / NaTHIO **(Checked at time of Analysis)**
F - ___ Unpreserved ___ NaTHIO**(Checked at time of Analysis)**
S - ___ Unpreserved ___ NaTHIO **(Checked at time of Analysis)**
SN- ___ Unpreserved ___ NaTHIO ___ NaTHIO/EDTA**(Checked at time of Analysis)**
J- ___ Unpreserved

5 filters ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
30-oz ___ Unpreserved ___ H2SO4 ___ HNO3 ___ HCl ___ NaOH ___ NaOH/Ascorbic Acid ___ Other(_____)
glass

Describe preservation requirements not met:

All Acid preserved <2 pH *NaOH preserved >12 pH* *All others >2 and <10 (usually 4-8)*

Sample ID: _____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID: _____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID: _____ H_2SO_4 HNO_3 NaOH _____ mls added
Sample ID: _____ H_2SO_4 HNO_3 NaOH _____ mls added

H_2SO_4 – Sulfuric Acid, HNO_3 – Nitric Acid, NaOH – Sodium Hydroxide, ASC – Ascorbic Acid, NaTHIO – Sodium Thiosulfate

Describe Anomalies: _____

Contact information / Summary of Actions:

Date / Time: _____ Contact: _____ Contact By: _____
Comments: _____

APPENDIX F
FATE AND TRANSPORT ALGORITHM FOR ECOLOGICAL PARAMETERS

Development of Fate and Transport Parameter Datasets for Use in Environmental Health Risk Assessments

Version 4

March 21, 2007

US Army Center for Health Promotion and Preventive Medicine
Environmental Health Risk Assessment Program
Aberdeen Proving Ground, Maryland

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Authors
Matthew J. McAtee
Hsieng-Ye Chang

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1. PURPOSE

This document describes a standing operating procedure (SOP) for the development of substance-specific data for the fate and transport parameters (F&T parameters) identified in Table 1. The document has been revised from a previous version. Section 10 describes the substantive revisions.

2. PARAMETERS

F&T parameters are chemical/physical properties, biological partition coefficients (biotransfer factors), and related factors relevant to exposure assessment. F&T parameters are used in risk assessments to model the concentrations of substances in various environmental media and living tissues.

This document contains a compilation of F&T parameters from different risk assessment methodology (or guidance) documents published by the U.S. Environmental Protection Agency (EPA) and other agencies. The F&T parameters addressed in this SOP include all of the parameters that are needed to conduct human health and ecological health risk assessments using the EPA combustion facility risk assessment guidance documents:

- Final Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities (HHRAP) (EPA 2005a-b).

- Peer Review Draft, Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities (SLERAP) (EPA 1999b-d).

The methods used to develop values for F&T parameters that are not addressed by the HHRAP and SLERAP are derived from other sources, including other EPA guidance documents where appropriate.

Values for the F&T parameters are typically generated using one of three procedures. First, they may only be generated directly from source documents. Second, they may be generated directly from source documents, but when source documents do not provide values, then they may be estimated using specified equations in this document. Last, they may only be estimated using specified equations that include other parameters in this document as inputs.

3. GENERAL APPROACH TO DEVELOPING PARAMETER VALUES

Parameter values are generated by using a decision logic process that incorporates a parameter-specific hierarchy of sources and methods for the majority of substances. Using each parameter-specific hierarchy, a parameter value is developed for each substance using a step-wise process. The source or method identified in each step is exhausted before moving to the next step in the hierarchy. The general method for generating values for F&T parameters is summarized in the following three steps. However, the detailed methods sections do include some exceptions.

In addition, the parameter-specific methods for F&T parameters addressed in the EPA combustion guidance (EPA 2005a-b, 1999b-d) are largely based on an integration of those two EPA guidance documents. The integration required the resolution of discrepancies and the provision of additional detail.

Table 1 – Fate and Transport Parameters Included in this SOP

Parameter Label, Definition, and Default Units		**
Chemical/physical properties		
MW	Molecular weight [g/mol]	1°
T_m	Melting point temperature [Kelvin]	
BP	Boiling point temperature [°C]	
Vp	Vapor pressure at 25°C (298 K) [atm]	1°
S	Aqueous solubility [mg/L]	1°
H	Henry's law constant [atm-m^3/mol]	
Fv	Fraction of air concentration in the vapor phase [unitless]	
p°_L	Liquid phase vapor pressure [atm]	
p°_S	Solid phase vapor pressure [atm]	
D_a	Diffusivity in air [cm^2/s]	
D_w	Diffusivity in water [cm^2/s]	
Abiotic partition coefficients and related parameters		
Vdv	Dry deposition velocity [cm/s]	
K_{ow}	Octanol/water partition coefficient [unitless]	1°
$\log K_{ow}$	Logarithm of the octanol/water partition coefficient [unitless]	
K_{oc}	Soil organic carbon-water partition coefficient [mL/g]	
$\log K_{oc}$	Logarithm of the soil organic carbon-water partition coefficient [mL/g]	
Kd_s	Soil-water partition coefficient [cm^3/g]	
Kd_{sw}	Suspended sediment-surface water partition coefficient [L/kg]	
Kd_{bs}	Bottom sediment-sediment pore water partition coefficient [cm^3/g]	
ksg	Soil loss constant due to degradation [1/yr]	
$t_{1/2}$	Half-life in soil [yr]	1°
ER	Soil enrichment ratio [unitless]	
Partition coefficients and related parameters for humans		
f_1	Fraction of ingested substance stored in body fat of mothers [unitless]	
f_4	Fraction of ingested substance that is absorbed by the body [unitless]	
h_{human}	Half-life in adult humans [days]	
ABSd	Dermal absorption fraction from soil to skin [proportion]	
Kp	Dermal permeability coefficient of a substance in water [cm/hr]	
FA	Fraction of substance absorbed from dermal contact with water [unitless]	
t_{sc}/τ_{event}	Desquamation rate to lag time ratio [day/(hr/event)]	
B	Dimensionless ratio of the permeability coefficient of a substance through the stratum corneum relative to its permeability coefficient across the viable epidermis [unitless]	
c	2nd lag time correlation coefficient (Flynn's data) for dermal contact with a substance in water [unitless]	
d	1st lag time correlation coefficient (Flynn's data) for dermal contact with a substance in water [unitless]	
Kpv	Dermal permeability coefficient of a substance in vapor [cm/hr]	

Parameter Label, Definition, and Default Units		**
Partition coefficients and related parameters for plants		
Fw	Fraction of wet deposition that adheres to plant surfaces [unitless]	
RCF	Root concentration factor [(µg/g DW plant)/(µg/mL soil water)]	
$Br_{rootveg}$	Plant-soil bioconcentration factor for root vegetables [(µg/g DW plant)/(µg/g soil)]	
Br_{ag}	Plant-soil bioconcentration factor for aboveground produce [(µg/g DW plant)/(µg/g soil)]	
$Br_{forage/silage}$	Plant-soil bioconcentration factor for forage and silage [(µg/g DW plant)/(µg/g soil)]	
Br_{grain}	Plant-soil bioconcentration factor for grain [(µg/g DW plant)/(µg/g soil)]	
Br_{tp}	Plant-soil bioconcentration factor for terrestrial plants [(mg/kg DW plant)/(mg/kg DW soil)]	
Bv_{ag}	Air-to-plant biotransfer factor for aboveground produce [(µg/g DW plant)/(µg/g air)]	
$Bv_{forage/silage}$	Air-to-plant biotransfer factor for forage and silage [(µg/g DW plant)/(µg/g air)]	
Bv_{tp}	Air-to-plant biotransfer factor for terrestrial plants [(µg/g DW plant)/(µg/g air)]	
$VG_{rootveg}$	Empirical correction factor for belowground produce [unitless]	
VG_{agp}	Empirical correction factor for aboveground produce [unitless]	
VG_{agf}	Empirical correction factor for aboveground forage [unitless]	
VG_{ags}	Empirical correction factor for aboveground silage [unitless]	
Bs	Soil bioavailability factor [unitless]	
BCF_{sav}	Bioconcentration factor for sediment to aquatic vegetation [(mg/kg DW tissue)/(mg/kg DW sediment)]	
$BCF_{w\text{-}al}$	Bioconcentration factor for water to algae [(mg/kg WW tissue)/(mg dissolved/L water)]	
Partition coefficients and related parameters for animals		
Ba_{beef}	Biotransfer factor for beef [day/kg FW tissue]	
Ba_{fat}	Biotransfer factor for fat [day/kg FW tissue]	
Ba_{milk}	Biotransfer factor for dairy milk [day/kg FW tissue]	
Ba_{pork}	Biotransfer factor for pork [day/kg FW tissue]	
$Ba_{chicken}$	Biotransfer factor for chicken meat [day/kg FW tissue]	
Ba_{egg}	Biotransfer factor for chicken eggs [day/kg FW tissue]	
Ba_{deer}	Biotransfer factor for deer meat [day/kg FW tissue]	
Ba_{turkey}	Biotransfer factor for turkey [day/kg FW tissue]	
Ba_{mammal}	Biotransfer factor for mammals [day/kg FW tissue]	
Ba_{bird}	Biotransfer factor for birds [day/kg FW tissue]	
Ba_{goat}	Biotransfer factor for goat [day/kg FW tissue]	
Ba_{game}	Biotransfer factor for wild game [day/kg FW tissue]	
Ba_{fowl}	Biotransfer factor for wild fowl [day/kg FW tissue]	
MF	Livestock and game metabolism factor [unitless]	
BCF_{ti}	Bioconcentration factor for terrestrial invertebrates [unitless]	
BCF_{bi}	Bioconcentration factor for benthic invertebrates [unitless]	
BSAF	Biota sediment accumulation factor for gamefish [unitless]	
$BCF_{gamefish}$	Bioconcentration factor for gamefish [L/kg FW tissue]	
BCF_{TLfish}	Bioconcentration factor for trophic level fish [L/kg FW tissue]	
$BAF_{gamefish}$	Bioaccumulation factor for gamefish [L/kg FW tissue]	

Parameter Label, Definition, and Default Units		**
BEF	Bioaccumulation equivalency factor [unitless]	
FCM_2	Food-chain multiplier for trophic level 2 [unitless]	
FCM_3	Food-chain multiplier for trophic level 3 [unitless]	
FCM_4	Food-chain multiplier for trophic level 4 [unitless]	

** Parameters with a gray box are needed to implement the current HHRAP and SLERAP protocols for combustion sources. Other parameters (without the gray box) are used in other risk assessment protocols.
The five primary parameters are indicated (1°) and can be used to calculate estimates of many of the other parameters (see Section 3.2 for more detail).

1. First, a parameter value for a substance is obtained from the HHRAP Hazardous Waste Companion Database, a Microsoft Access™ File (HHRAP Database) (EPA 2005b). The HHRAP Database updates and replaces the hard-copy listing of chemical-specific parameter values found in Appendix A of the 1998 Peer Review Draft HHRAP (EPA 1998). EPA states on their website that periodic updates to the HHRAP Database will be posted on the webpage.

2. If a value is not found in the HHRAP Database, then a value is developed using parameter-specific hierarchies described in HHRAP Appendix A-2, Chemical-Specific Parameter Values, Pages A-2-1 through A-2-33 (HHRAP Hierarchy) (EPA 2005a).

3. Other sources may be used for certain parameters when the above steps fail to generate a value.

Some of the parameter values vary depending upon ambient temperature and pressure conditions at the time of measurement. The default approach to developing the dataset is to use data that are relevant at standard reference conditions of temperature and pressure—25°C and 1 atm. In those cases where a single source indicates more than one value for the same parameter, values which are at reference conditions are chosen preferentially. If more than one value is provided from a source at reference conditions, then an average of those values is used. If the source provides no values at reference conditions, then values at near reference conditions (e.g., ± 5°C) may be acceptable. If the provided values are not at near reference conditions, then no value should be selected from that source.

3.1 Primary Sources

The primary sources of information used for generating values for F&T parameters are listed here.

- EPA human health and ecological combustion facility guidance database and data tables (HHRAP and SLERAP) (EPA 2005a-b, 1999b-d).
- EPA Superfund Chemical Data Matrix (SCDM) (EPA 2004a).
- Syracuse Research Corporation (SRC) CHEMFATE Database (CHEMFATE) (SRC 2005).
- SRC PHYSPROP Database (PHYSPROP) (SRC 2004).
- The CRC Handbook (Lide 2003, 2006).
- The Merck Index (O'Neil and Smith 2001, 2005).
- Hazardous Substances Data Bank (HSDB) (USNLM 2004).
- A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides through Agriculture (Baes et al. 1984)

3.1.1 *EPA Human Health & Ecological Combustion Guidance*

The HHRAP (EPA 2005a-b) was developed to provide a set of "user-friendly" procedures for performing risk assessments for combustion facilities, as well as to provide a data source needed to complete those procedures. The HHRAP simplifies the exposure assessment task by standardizing many of the exposure assessment components and their inputs. The HHRAP is the primary guidance used to complete the development of the F&T parameters for substances.

The SLERAP (EPA 1999b-d), similar to the HHRAP, was developed as a "user-friendly set of procedures for performing risk assessments", including a process to obtain and evaluate various types of technical information that will enable a risk assessor to perform a risk assessment. A national guidance created to consolidate information presented in other guidance documents; it outlines a multipathway screening approach that is based on "reasonable, protective assumptions" about the ecological receptors. Additionally the guidance provides: (1) example food webs; (2) example measurement receptor natural history information; (3) fate and transport data, bioconcentration factors, and toxicity reference values for 38 substances.

3.1.2 *Superfund Chemical Data Matrix (SCDM)*

The SCDM (EPA 2004a) is a source for some chemical/physical properties, biotransfer factors, and health benchmark values. The values in the SCDM are applied when evaluating potential National Priorities List (NPL) sites using the Hazard Ranking System (HRS) under the Superfund Program. The chemical/physical properties and biotransfer factors are part of the "HRS mathematical equation for determining the relative threat posed by a hazardous waste site and reflect hazardous substance characteristics." The health benchmarks are limits developed by or used in other EPA regulatory programs. The SCDM contains values for substances that are frequently found at sites evaluated using the HRS.

EPA released an updated SCDM on January 28, 2004 (EPA 2004a). It contains many revisions to the HRS factor values and benchmarks. These revisions were needed because the SCDM procedures used to assign HRS factor values and benchmarks were updated and because revisions to pertinent standards and criteria for substances were made.

3.1.3 *SRC CHEMFATE Database*

CHEMFATE is one of several sub-databases comprising the Syracuse Research Corporation (SRC) environmental fate database (EFDB). In November 1979, SRC initiated the EFDB under the sponsorship of the EPA. The EFDB is a free on-line database that was developed, and is maintained, by SRC and is comprised of several interrelated databases: DATALOG, CHEMFATE, BIOLOG, and BIODEG. The databases share a Chemical Abstract Service Registry Number (CASRN) file including over 20,000 chemicals with preferred name and formula, and a bibliographic file containing full references. CHEMFATE contains 25 categories of environmental fate and physical/chemical property information on commercially important chemical substances. CHEMFATE contains 17,260 records on 1,728 chemicals (SRC 2005).

3.1.4 *SRC PHYSPROP Database*

The Physical Properties Database (PHYSPROP) is a free on-line database of chemical structures, names and physical properties for over 25,250 chemicals. The properties in the database are collected from various sources, and include experimental, extrapolated, and estimated values. The database was started

as a database of physical properties for substances being evaluated by SRC for the Hazardous Substances Data Bank (HSDB) and was compiled by SRC over the last twenty years. Since that time, PHYSPROP was also used as a repository for physical and chemical property data that were used to develop estimation methods for the EPI Suite™ software (owned by the EPA). The PHYSPROP on-line database is continually updated (SRC 2004).

3.1.5 *The CRC Handbook*

The CRC Handbook (Lide 2003, 2006) provides all types of data commonly encountered by physical scientists, engineers, R&D professionals, and students. The CRC Handbook is an accurate, reliable, and current resource for properties data for inorganic and organic compounds. The source includes a wide variety of information covering a wide range of information: basic constants, units, and conversion factors; symbols, terminology, and nomenclature; physical and properties elements and organic and inorganic substances; thermochemistry, electrochemistry, and kinetics; fluid properties; biochemistry analytical chemistry; molecular structure and spectroscopy, atomic, molecular, and optical physics; nuclear and particle physics; properties of solids and polymers; geophysics, astronomy, and acoustics; practical laboratory data; and health and safety information.

The CRC Handbook is available in CD-ROM (Lide 2006) and in hard copy (Lide 2003). Use of the CD-ROM is preferred because less errors will be made. This is because substances can be more easily searched for and found using the CASRN or the name, and found values can be cut and pasted directly from the source to an interim database.

3.1.6 *The Merck Index*

The Merck Index (13th ed.)(O'Neil and Smith 2001) contains a diverse collection of over 10,000 articles (monographs) on individual substances. More than 4,000 articles are devoted to a wide variety of drugs and pharmaceuticals, over 2,000 describe common organic chemicals and laboratory reagents, and another 2,000 cover naturally occurring substances and plants. An additional 1,000 articles focus on the elements and inorganic chemicals. The monographs contain a wide variety of information on each substance including CASRN, chemical formula and structure, chemical and physical properties, biological and pharmacological information, derivatives information, alternate names and/or trademarks, usage information and literature references. The Merck Index is available in CD-ROM and in hard copy.

The Merck Index is available in CD-ROM (O'Neil and Smith 2005) and in hard copy (O'Neil and Smith 2001). Use of the CD-ROM is preferred because less errors will be made. This is because substances can be more easily searched for and found using the CASRN or the name, and found values can be cut and pasted directly from the source to an interim database.

3.1.7 *Hazardous Substances Data Bank (HSDB)*

Both chemical/physical properties and biotransfer factors can be found in the US National Library of Medicine's (USNLM) Hazardous Substances Data Bank (HSDB®) (USNLM 2004). The HSDB is a data file that is part of the USNLM Toxicology Data Network (TOXNET®). The HSDB is a broad, peer-reviewed, database which contains data for more than 4500 substances. Information is included in the areas of "toxicity, environmental fate, human exposure, chemical safety, waste disposal, emergency handling, and regulatory core requirements." The data contained in the HSDB is referenced and derived from a collection of books, government documents, reports and preferred primary journal literature (USNLM 2004).

3.1.8 *A Review and Analysis of Parameters for Assessing Transport of Environmentally Released Radionuclides through Agriculture*

This source document (Baes et al. 1984) depicts the quantification of nuclide transport through agricultural systems. Parameters describing soil-to-plant uptake for vegetative and non-vegetative growth, ingestion-to-milk transfer, ingestion-to-meat transfer for beef and the soil-water distribution coefficient are noted in this source. Baes et al. assume that variability among isotopes of the same element is insignificant when compared to the variability which is found among different elements. Therefore, it designates values for each element. When the algorithm indicates that Baes et al. should be consulted for inorganics or metals values, then the appropriate figure of the periodic table should be consulted. Within the periodic table figures, the parameter value which is listed with each specific element should be used.

3.2 Primary Parameters

When possible, values for primary parameters should be generated first, since they are needed to calculate many of the other parameters. The primary parameters are:

- Molecular Weight (*MW*) — used in the equations for Henry's Law Constant (H), diffusivity in air (D_a) and diffusivity in water (D_w)
- Vapor Pressure (*Vp*) — used in the equation for H
- Solubility (*S*) — used in the equation for H
- *n*-octanol/water partition coefficient (K_{ow}) or the logarithm of K_{ow} (log K_{ow}) — used in numerous equations and in rules for selecting appropriate values for some parameters
- Half-life of Substance in Soil ($t_{½}$) — used in the *ksg* equation

3.3 Data Gaps and Null Values

After exhausting each of the steps identified in the parameter-specific sections below, a null value (meaning no value at all) can still be the end result. This type of null value is considered a "data gap." However, there are three types of null values:

- Data gap: The value is a true data gap (DG) because all steps in the hierarchy have been exhausted and the information is simply not available from the sources and methods contained in this document. In this case the "null" value is a true missing value and it can be referenced with a code, such as "9999".
- Source-provided null: The selected source in the hierarchy specifically defines the value for the substance as "null". In this case, the "null" value is referenced with the source where the "null" decision is provided.
- Parameter is not needed or not applicable for a substance: The parameter is not needed (NN) for modeling the substance or the parameter is not applicable (NA) to the substance. In this case, the "null" value can be referenced with a code, such as "7777".

4. PARAMETER-SPECIFIC ALGORITHMS: CHEMICAL/PHYSICAL PROPERTIES

The following subsections provide the specific methods used to generate values for each parameter. When no value is developed after all steps in the parameter-specific algorithm are exhausted, the parameter value is determined to be "missing" (or "null") for that substance.

4.1 Molecular Weight (*MW*)

4.1.1 *Background*

The molecular weight (*MW*) of a substance is defined as the sum of atomic weights of all atoms in the substance's molecule. *MW* is expressed in units of grams per mole (g/mol). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

4.1.2 *Method*

1. HHRAP Database (EPA 2005b).
2. The SCDM (EPA 2004a).
3. CHEMFATE Database (SRC 2005).
4. PHYSPROP Database (SRC 2004).
5. The CRC Handbook (Lide 2003, 2006).
6. The Merck Index (O'Neil and Smith 2001, 2005).
7. The HSDB® (USNLM 2004).

4.2 Melting Point Temperature (T_m)

4.2.1 *Background*

Melting point (T_m) is the temperature of the substance at which the solid state of the substance undergoes a phase change to a liquid phase. T_m is expressed in Kelvin (K). At ambient temperatures and at an atmospheric pressure of 1 atmosphere, substances are either in a solid or liquid state. The parameter units in the source are checked to determine if a unit conversion is necessary before using the value. If the source provides a range of values for the substance, the mean (average) of the values is estimated and used.

4.2.2 *Method*

1. HHRAP Database (EPA 2005b).
2. The SCDM (EPA 2004a).

3. CHEMFATE Database (SRC 2005).

4. PHYSPROP Database (SRC 2006b).

5. The CRC Handbook (Lide 2003, 2006).

6. The Merck Index (O'Neil and Smith 2001, 2005).

4.3 Boiling Point Temperature (*BP*)

4.3.1 *Background*

The boiling point (*BP*) is the temperature at which the vapor pressure of a liquid is equal to the pressure of the surrounding gases. Another way of expressing this is the boiling point of a substance is the temperature at which it can change its state from a liquid to a gas throughout the bulk of the liquid. The boiling point is useful as a relative measure of the volatility of a substance. The lower the boiling point the more volatile the chemical. The boiling point will vary with the pressure of the surrounding gases. Boiling point temperatures are normally provided at standard pressure (i.e., 760 mm Hg or 1 atmosphere) and care should be taken to ensure that the boiling point data from a source is expressed at the standard pressure.

4.3.2 *Method*

The algorithm hierarchy for finding a value is provided below. The default unit of measure for *BP* is Celsius (°C) and values provided in other units must be converted.

1. The Merck Index (O'Neil and Smith 2001, 2005)

2. The CRC Handbook (Lide 2003, 2006)

3. Groundwater Chemicals Desk Reference (Montgomery and Welkom 1991).

4. The HSDB® (USNLM 2004)

5. ChemIDPlus Advanced (USNLM 2004)

4.4 Vapor Pressure (*Vp*)

4.4.1 *Background*

The vapor pressure (*Vp*) of a substance is defined as the pressure exerted by the vapor (gas) of a substance when it is under equilibrium conditions at 25°C (298 K). It is expressed in units of atmospheres (atm). It provides a semi-quantitative rate at which it will volatilize from soil and/or water.

The parameter units in the source are checked to determine if a unit conversion is necessary before using the value. The source must also be checked to ensure that the value provided is at 25°C (298 K). Values which are not at or near reference conditions (25°C or 298 K) should not be used (see Section 3).

4.4.2 *Method*

Null values are assigned for metals that are not in the HHRAP. Values are not provided for metals by the HHRAP because metals are considered nonvolatile at ambient temperatures and generally insoluble in water (except as some weak acids) (EPA 2005a).

For all other substances:

1. HHRAP Database (EPA 2005b).
2. The SCDM (EPA 2004a).
3. CHEMFATE Database (SRC 2006a).
4. PHYSPROP Database (SRC 2006b).
5. The CRC Handbook (Lide 2003, 2006).
6. The HSDB® (USNLM 2004).

If *Vp* remains null after implementing the above hierarchy, and a value must be generated, methods for estimating *Vp* for organics are available to fill data gaps. The HHRAP recommends methods in Handbook of Chemical Property Estimation Methods (Lyman et al. 1990) to estimate a value. Methods from that source can be used, but require additional input parameters and other chemical knowledge, so if used, a chemist will implement the method. This will be applied on a case-by-case basis for chemicals that are deemed necessary.

Note that the HHRAP identifies The Merck Index (O'Neil and Smith 2001, 2005) as a source for *Vp* data, but the Merck Index does not contain this data.

4.5 Aqueous Solubility (*S*)

4.5.1 *Background*

The aqueous solubility (*S*) of a substance is defined as the saturated concentration of the substance in water at a given temperature and pressure, usually at soil/water temperatures and atmospheric pressure (Montgomery and Welkom 1991). It is expressed in units of milligrams per liter (mg/L).

The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

4.5.2 *Method*

1. HHRAP Database (EPA 2005b).
2. The SCDM (EPA 2004a).
3. CHEMFATE Database (SRC 2005).
4. PHYSPROP Database (SRC 2006b).

5. Lange's Handbook of Chemistry (Dean 2002).

6. The HSDB® (USNLM 2004).

If *S* remains null after implementing the above hierarchy, and a value must be generated, methods for estimating *S* for organics are available to fill data gaps. The HHRAP recommends methods in Handbook of Chemical Property Estimation Methods (Lyman et al. 1990) to estimate a value. Methods from that source can be used, but require additional input parameters and other chemical knowledge, so if used, a chemist will implement the method. This will be applied on a case-by-case basis for chemicals that are deemed necessary.

4.6 Henry's Law Constant (*H*)

4.6.1 *Background*

Henry's Law constant (*H*), also referred to as the air-water partition coefficient, is defined as the ratio of the partial pressure of a substance in air to the concentration of the substance in water at a given temperature under equilibrium conditions. Henry's Law constant values can generally be measured, calculated from the theoretical equation defining the constant, or estimated from the substance structure. However, experimental and estimated *H* values from literature reports are temperature-dependent and difficult to measure, are generally obtained from various literature sources that use different experimental and estimation methods, and are only available for a limited number of substances. Henry's Law constant is expressed in units of atmospheres cubic meters per mole (atm-m^3/mol). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

4.6.2 *Method*

Null values are assigned for metals, other than mercury and mercuric compounds, including those that are not in the HHRAP. The HHRAP states that *H* is zero because *Vp* is zero due to the nonvolatile nature of metals, and *S* is also zero. However, null values are more appropriate than zero values.

For all other substances:

1. HHRAP Database (EPA 2005b).

2. The SCDM (EPA 2004a).

3. CHEMFATE Database (SRC 2005).

4. PHYSPROP Database (SRC 2006b).

5. Calculate using Equation 1, Handbook of Chemical Property Estimation Methods (Lyman et al. 1990).

Equation 1 – Henry's Law Constant (*H*) for Organics

$$H = \frac{Vp \cdot MW}{S}$$

H = Henry's Law constant (atm·m^3/mol)
Vp = Vapor pressure (atm) at 25 °C (298 K)
MW = Molecular weight (g/mol)
S = Solubility in water (mg substance/L)

Source: HHRAP (EPA 2005a, Lyman et al. 1990).

4.7 Fraction of Air Concentration in the Vapor Phase (*Fv*), Liquid Phase Vapor Pressure (p°_L), and Solid Phase Vapor Pressure (p°_S)

4.7.1 *Background*

Substance emissions to the environment occur in the vapor or the particle phase. In general, most metals and organic substances with very low volatility are assumed to occur only in the particle phase. Organic substances occur as either only vapor phase (an *Fv* of 1.0) or with a portion of the vapor condensed onto the surface of particulates (e.g., particle-bound organic substances). Substances which are assumed to be present in the particulate phase and not in the vapor phase have an *Fv* of 0. The *Fv* is a unitless parameter and ranges in value from 0 to 1.

The liquid phase vapor pressure (p°_L) and solid phase vapor pressure (p°_S) are required to estimate *Fv* when an *Fv* value is not found in the sources provided. The p°_L represents the vapor pressure of substances that are liquid at ambient temperature (25 °C). The p°_S represents the vapor pressure of organic substances that are solid at ambient temperature (25 °C). These parameters are expressed in units of atmospheres (atm).

The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

4.7.2 *Method*

A value of zero for the *Fv* is assigned for metals, other than chromium, mercury and mercuric compounds, including those substances that are not in the HHRAP. Chromium, mercury and mercuric compounds can be found in the HHRAP Database. Metals are assumed to be present in the particulate phase and not in the vapor phase (i.e., *Vp* = 0), and so are assigned *Fv* values of zero (EPA 2005a, EPA 1994).

All final values of *Fv* are rounded to three decimal places as is done in the HHRAP Database. Values are presented in numeric format, not scientific notation.

For all other substances:

1. HHRAP Database (EPA 2005b).

2. For organic substances that are liquid at ambient temperatures (i.e., $T_m < 298$ K) and the p°_L is known, Equation 2 is used to calculate an *Fv*. If the substance is a liquid at ambient temperature (i.e., $T_m < 298$ K) then $p°_L$ is the vapor pressure (*Vp*) of the liquid substance at 25° C (298 K). Equation 2 requires the *Vp* (or $p°_L$ for these substances) to calculate an *Fv*. The $p°_S$ is not applicable for these substances and $p°_S$ is referenced as not needed.

3. For organic substances that are solid at ambient temperature (i.e., $T_m \geq 298$) and the p°_S is known, Equations 3B is used to calculate the p°_L. Equations 3B requires the substances melting point temperature (T_m) to calculate the p°_L. Then Equation 2 is used to calculate an *Fv*. If the substance is a solid at ambient temperature (i.e., $T_m \geq 298$ K) the *Vp* of the solid is also the $p°_S$ for that substance.

Equation 2 – Fraction of Pollutant Air Concentration in the Vapor Phase (*Fv*)

$$Fv = 1 - \frac{c \cdot S_T}{p°_L + c \cdot S_T}$$

Fv	= Fraction of Pollutant Air Concentration in the Vapor Phase
c	= Junge constant = 1.7E-04 (atm-cm)
S_T	= Whitby's average surface area of particulates (aerosols) (3.5E-06 cm^2/cm^3 air for background and local sources)
$c \cdot S_T$	= 5.95E-10 (atm)
p°_L	= Liquid phase vapor pressure of substance (atm)

Source: HHRAP (EPA 2005a, Section A2-2.5, Table B-1-1; Junge 1977).

Equations 3A and 3B – Liquid Phase Vapor Pressure of Substance Calculated from Solid Phase Vapor Pressure of Substance (p°_L to p°_S)

(A) $$ln\left(\frac{p^\circ_L}{p^\circ_S}\right) = \frac{\Delta S_f}{R} \cdot \frac{(MP - T)}{T}$$

(B) $$p^\circ_L = p^\circ_S \cdot exp\left(\frac{\Delta S_f}{R} \cdot \frac{(MP - T)}{T}\right)$$

$$= p^\circ_S \cdot exp\left(6.79 \cdot \frac{(MP - T)}{T}\right)$$

ln	= Natural logarithm
p°_L	= Liquid phase vapor pressure of substance (atm)
p°_S	= Solid phase vapor pressure of substance (atm)
ΔS_f	= Entropy of fusion (unitless)
R	= Universal ideal gas constant [(atm-m^3)/(mole x K)]
$\Delta S_f / R$	= 6.79 (unitless)
MP(or T_m)	= Melting point temperature of substance (K); HHRAP uses the T_m notation.
T	= Ambient temperature = 298 K (25°C)

Source: HHRAP (EPA 2005a, Table B-1-1, Bidleman 1988). Equations 3B was derived from Equation 2 and Equations 3A.

4.8 Diffusivity in Air (D_a) and Water (D_w)

4.8.1 *Background*

Diffusivity in air (D_a) and water (D_w), also called diffusion coefficients, are used to calculate the liquid or gas phase transfer of a substance into a waterbody. Diffusivity is expressed in units of squared centimeters per second (cm^2/s). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

4.8.2 *Method*

Null values are assigned for metals, other than chromium, mercury and mercuric compounds, including those that are not in the HHRAP. Chromium, mercury and mercuric compounds can be found in the HHRAP Database.

For all other substances:

1. HHRAP Database (EPA 2005b).

2. WATER9 (EPA 2004b).

3. Calculate using Equation 4 – 6; HHRAP (EPA 2005a).

Equation 4 – Default Equation for Diffusivity in Air (D_a)

$$D_a = \frac{1.9}{MW^{(2/3)}}$$

Da = Diffusivity of substance in air (cm2/s)
MW = Molecular weight (g/mol)

Source: HHRAP (EPA 2005a, Mercury Study Report to Congress, Volume III, EPA 1997a).

Equation 5 – Default Equation for Diffusivity in Water (D_w)

$$D_w = \frac{22 \times 10^{-5}}{MW^{(2/3)}}$$

D_w = Diffusivity of substance in water (cm^2/s)
MW = Molecular weight (g/mol)

Source: HHRAP (EPA 2005a, Mercury Study Report to Congress, Volume III, EPA 1997a).

Equation 6 – Diffusivity in Air (D_a) for Dioxins and Furans

$$\frac{D_x}{D_y} = \left(\frac{MW_y}{MW_x}\right)^{0.5}$$

$D_{x,y}$ = Diffusivities in air (D_a) of congeners x and y (cm^2/s)
$MW_{x,y}$ = Molecular weights of congeners x and y (g/mol)

Instruction: Values for dioxin congeners, calculate using the D_a value and MW for 2, 3, 7, 8-TCDD. Values for furans are calculated using the D_a value and MW for 2, 3, 7, 8-TCDF.

Source: HHRAP (EPA 2005a, Estimating Exposure to Dioxin-Like Compounds, EPA 2000).

5. PARAMETER-SPECIFIC ALGORITHMS: ABIOTIC PARTITION COEFFICIENTS AND RELATED PARAMETERS

The following subsections provide the specific methods used to generate values for each parameter. When no value is developed after all steps in the parameter-specific algorithm are exhausted, the parameter value is determined to be "missing" (or "null") for that substance.

5.1 Dry Deposition Velocity (*Vdv*)

5.1.1 *Background*

Dry deposition velocity (*Vdv*) is used in the estimation of soil concentration due to deposition, when implementing the Peer Review Draft HHRAP and SLERAP (EPA 1998, 1999b-d). *Vdv* is expressed in units of centimeters per second (cm/s). In final HHRAP (EPA 2005a), *Vdv* is directly estimated in the air dispersion model, thus the *Vdv* is not needed as a default input parameter.

5.1.2 *Method*

The Peer Review Draft HHRAP (EPA 1998) default value of 3 is assigned to all substances. There is great uncertainty associated with this parameter. The recommended default value is based on the median dry deposition velocity for HNO_3. HNO_3 is considered the most similar to the substances recommended for consideration in the HHRAP (EPA 1998, Table B-1-1).

5.2 Octanol/Water Partition Coefficient (K_{ow}) and Logarithm (log K_{ow})

5.2.1 *Background*

The *n*-octanol/water partition coefficient (K_{ow}) is defined as the ratio of the solute concentration in the water-saturated *n*-octanol phase to the solute concentration in the *n*-octanol-saturated water phase (Montgomery and Welkom 1991). K_{ow} is a unitless parameter.

The following K_{ow} parameters are optional for derivation of Ba_{beef} and Ba_{milk} values (see Section 8.1.2 for more detail).

- K_{ow}^{n} *n*-octanol/water partition coefficient for the neutral species
- K_{ow}^{i} *n*-octanol/water partition coefficient for the ionized species
- *wKow* weighted *n*-octanol/water partition coefficient based on the neutral species fraction

5.2.2 *Method*

1. HHRAP Database (EPA 2005b).
2. The SCDM (EPA 2004a).
3. CHEMFATE Database (SRC 2005).
4. PHYSPROP Database (SRC 2004).
5. The CRC Handbook (Lide 2003, 2006).

6. The HSDB® (USNLM 2004).

Null values are assigned to inorganic substances (including metals) not found in the above sources. Some sources provide a K_{ow} and some provide a log K_{ow}. Both parameters must be compiled under this algorithm. If the K_{ow} is provided by the source, this value must be converted to the log K_{ow}. This is done with a simple conversion by taking the log of each K_{ow} value. If the log K_{ow} is provided by the source, this value must be converted to the K_{ow}. This is done with a simple conversion by taking the antilog of the log K_{ow} value. The source of the original value is referenced.

5.3 Soil Organic Carbon-Water Partition Coefficient (K_{oc}) and Logarithm (log K_{oc})

5.3.1 *Background*

The soil organic carbon-water partition coefficient (K_{oc}), also called the organic carbon normalized soil sorption coefficient, is defined as the ratio of adsorbed substance per unit weight of organic carbon to the aqueous solute concentration (Montgomery and Welkom 1991). The K_{oc} is expressed in units of mL water/g soil.

5.3.2 *Method*

Values for K_{oc} for ionizing organic substances and non-ionizing organic substances are developed differently due to their different partitioning properties. Ionizing substances contain functional groups that ionize under specific pH conditions, which impact the K_{oc} values. The following table provides a limited list of organic substances as classified by the HHRAP (EPA 2005a).

Null values are assigned for metals and mercuric compounds including those that are not in the HHRAP. The prevalent assumption is that organic carbon in soils does not play a major role in metal partitioning in soil and sediments (EPA 2005a). When a source provides multiple values for K_{oc} based on pH, the value for the pH of 7 is selected for use. If a value is not provided for a pH of 7, then the value for the pH closest to 7 (e.g., 6.8) is selected.

For all other substances:

1. HHRAP Database (EPA 2005b).

2. Ionizing substances: Soil Screening Guidance: Technical Background Document and User's Guide (EPA 1996).

3. Non-ionizing organic substances: Soil Screening Guidance: Technical Background Document and User's Guide (EPA 1996). For non-ionizing substances, when a substance is not included in the EPA 1996 source, correlation equations provided in that source are used to calculate a value (see Equation 7 - 9).

Table 2 – Selected Lists of Ionizing and Non-Ionizing Organic Substances

Ionizing Organic Substances
Includes amines, carboxylic acids, and phenols

Organic acids		Organic bases
2,4,6-trichlorophenol	2-chlorophenol	n-nitroso-di-n-propylamine
pentachlorophenol	phenol	n-nitrosodiphenylamine
2,3,4,5-tetrachlorophenol	2,4-dimethylphenol	4-chloroaniline
2,3,4,6-tetrachlorophenol	2-methylphenol	
2,4,5-trichlorophenol	2,4-dinitrophenol	
2,4-dichlorophenol	benzoic acid	

Non-ionizing Organic Substances
Most other organic substances not listed above, including volatile organic substances, chlorinated pesticides, polynuclear aromatic hydrocarbons (PAHs), and phthalates.

Source: HHRAP (EPA 2005a).

Equation 7 – Correlation Equation for Soil Organic Carbon-Water Partition Coefficient (K_{oc}) for Most Semi-Volatile Non-ionizing Organic Substances

$$K_{oc} = 10^{[0.00028+(0.983\cdot(\log Kow))]}$$

K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, Soil Screening Guidance: Technical Background Document and User's Guide, 1996).

Equation 8 – Correlation Equation for Soil Organic Carbon-Water Partition Coefficient (K_{oc}) for Volatile Non-ionizing Organics Chlorinated Benzenes, and Certain Chlorinated Pesticides

$$K_{oc} = 10^{[0.0784+(0.7919\cdot(\log Kow))]}$$

K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a; Soil Screening Guidance: Technical Background Document and User's Guide, 1996).

Equation 9 – Correlation Equation for Soil Organic Carbon-Water Partition Coefficient (K_{oc}) for Dioxins and Furans

$$K_{oc} = 10^{(\log Kow)-0.21}$$

K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, Karickhoff et al. 1979).

Some of the sources in the hierarchy above provide a K_{oc} and some provide the log K_{oc}. Both parameters are compiled under this algorithm. If the K_{oc} is provided by the source, this value must be converted to the log K_{oc}. This is done with a simple conversion by taking the log of each K_{oc} value. If the log K_{oc} is provided by the source, this value must be converted to the K_{oc}. This is done with a simple conversion by taking the antilog of the log K_{oc} value. The source of the original value must be referenced.

5.4 Partition Coefficients for Soil-Water (Kd_s), Suspended Sediment-Surface Water (Kd_{sw}), and Bottom Sediment-Sediment Pore Water (Kd_{bs})

5.4.1 *Background*

Partition coefficients (*Kd* terms) describe the partitioning of a substance between sorbing material, such as soil, soil pore-water, surface water, suspended solids, and bed sediments. For organic substances, *Kd* has been estimated to be a function of the organic-carbon partition coefficient and the fraction of organic carbon in the partitioning media. For metals, *Kd* is assumed to be independent of the organic carbon in the partitioning media and, therefore, partitioning is similar in all sorbing media.

The soil-water partition coefficient (Kd_s) describes the partitioning of a substance between soil pore-water and soil particles, and strongly influences the release and movement of a substance into the subsurface soils and underlying aquifer. The Kd_s is expressed in units of centimeters cubed per gram (cm^3/g).

The suspended sediment-surface water partition coefficient (Kd_{sw}) coefficient describes the partitioning of a substance between surface water and suspended solids or sediments. The Kd_{sw} is expressed in units of liters per kilogram (L/kg).

The bed sediment-sediment pore-water partition coefficient (Kd_{bs}) coefficient describes the partitioning of a substance between the bed sediments and bed sediment pore-water. The Kd_{bs} is expressed in units of centimeters cubed per gram (cm^3/g).

When a source provides multiple values for a *Kd* term based on pH, the value for the pH of 7 is selected for use. If a value is not provided for a pH of 7, then the value for the pH closest to 7 (e.g., 6.8) is selected. The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

5.4.2 *Method*

1. *Kd* terms from the HHRAP Database (EPA 2005b).

2. Kd_s for all other substances:

   a. The SCDM (EPA 2004a) – Appendix A. Data is listed by substance and can be searched by substance name or by CASRN. In this source the Kd_s is found in the section in each substance table titled "MOBILITY" and the Kd_s is labeled "Distrib Coef".

   b. Soil Screening Guidance: Technical Background Document and User's Guide, (EPA 1996).

   c. Baes et al. (1984) – Figure 2.31. This figure is in a periodic table format, so the periodic symbol of the substance must be known when finding the value.

   d. RTI (1996).

3. For the remaining organic substances *Kd* terms are calculated using Equation 10, Equation 11, or Equation 12 based on the fraction of organic carbon (f_{oc}) in the soil, benthic sediment, or suspended sediments (EPA 1993a), which preceded the current combustion guidance (EPA 2005a). Soil organic carbon is assumed to be the dominant sorbing component in soils and sediments.

4. For metals, including those that are not in the HHRAP: *Kd* terms are governed by factors other than organic carbon, such as pH, redox, iron content, cation exchange capacity, and ion-chemistry. Therefore, *Kd* values for metals cannot be calculated using the same correlation equations specified for organic substances. Instead, *Kd* values for the metals must be obtained directly from Soil Screening Guidance: Technical Background Document and User's Guide (EPA 1996). This source provides values that are based on pH, and are estimated using the geochemical speciation model MINTEQ2 (EPA 2005a).

Equation 10 – Correlation Equation for Soil-water Partition Coefficient (Kd_s) for Organic Substances

$$Kd_s = f_{oc,s} \cdot K_{oc}$$

Kd_s = Soil-water partition coefficient (cm^3/g)
$f_{oc,s}$ = Fraction of organic carbon in soil (unitless)
K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)

Source: HHRAP (EPA 2005a, Review Draft Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions, 1993a).

Based on the HHRAP (EPA 2005a), the default $f_{oc,s}$ is 0.01 is used, which is the mid-range value between 0.002 and 0.024 for soils.

Equation 11 – Correlation Equation for Suspended Sediment-surface water Partition Coefficient (Kd_{sw}) for Organic Substances

$$Kd_{sw} = f_{oc,sw} \cdot K_{oc}$$

Kd_{sw} = Suspended sediment-surface water partition coefficient (L/kg)
$f_{oc,sw}$ = Fraction of organic carbon in suspended sediment (unitless)
K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)

Source: HHRAP (EPA 2005a, Review Draft Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions, 1993a).

Based on the HHRAP (EPA 2005a), the default $f_{oc,sw}$ is 0.075 is used, which is the mid-range value between 0.05 and 0.1 for suspended sediments.

Equation 12 – Correlation Equation for Bed sediment-sediment pore-water Partition Coefficient (Kd_{bs}) for Organic Substances

$$Kd_{bs} = f_{oc,bs} \cdot K_{oc}$$

Kd_{bs} = Bed sediment-sediment pore-water partition coefficient (cm^3/g)
$f_{oc,bs}$ = Fraction of organic carbon in bed sediment (unitless)
K_{oc} = Soil organic carbon-water partition coefficient (mL water/g soil)

Source: HHRAP (EPA 2005a, Review Draft Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustor Emissions, 1993a).

Based on the HHRAP (EPA 2005a), the default $f_{oc,bs}$ is 0.04 is used, which is the mid-range value between 0.03 and 0.05 for bed sediments.

5.5 Soil Loss Constant Due to Degradation (*ksg*) and Soil Half-life ($t_{1/2}$)

5.5.1 *Background*

Soil loss constant due to degradation (*ksg*) reflects loss of a substance from the soil by processes other than leaching. The HHRAP states that *ksg* is ideally the sum of all biotic and abiotic mechanisms of degradation, except for leaching. However, literature sources "do not provide sufficient data for all such mechanisms, especially for soil" (EPA 2005a, Appendix A-2, Section A2-2.11). Degradation rates in the soil media include biotic and abiotic mechanisms of transformation. Abiotic degradation includes photolysis, hydrolysis, and redox reactions. Hydrolysis and redox reactions can be significant abiotic mechanisms in soil (EPA 1990). The *ksg* is expressed in units of an inverse year (yr^{-1}, or 1/yr).

The half-life of a substance in soil ($t_{1/2}$) is required to calculate the soil loss constant due to degradation (*ksg*) when a *ksg* value is not found in the sources provided. The units for $t_{1/2}$ required for

Equation 13 are year (yr). The value from the Howard et al. (1991) must be converted before use in the equation because the value is expressed in days in that source.

When a *ksg* value is found in the source provided, $t_{1/2}$ is not needed to estimate a *ksg* value for that substance and $t_{1/2}$ is therefore referenced as "7777".

The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

5.5.2 *Method for ksg*

Null values are assigned to all metals, including elemental mercury, mercuric chloride, and methyl mercury. Metals are transformed, but not degraded, by such mechanisms and, therefore, *ksg* values are not applicable to metals (EPA 2005a).

For all other substances for *ksg*:

1. HHRAP Database (EPA 2005b).

2. Calculate using Equation 13; HHRAP (EPA 2005a).

Equation 13 – Soil Loss Constant Due to Degradation (*ksg*)

$$ksg = \frac{0.693}{t_{1/2}}$$

Ksg = Soil loss constant due to degradation (yr^{-1})
$t_{1/2}$ = Half-life of substance in soil (yr)

Source: HHRAP (EPA 2005a).

5.5.3 *Method for $t_{1/2}$*

Values for half-life in soil are generated from the following sources:

1. For organic substances other than dioxins, furans, and polychlorinated biphenyls:

    a. The Handbook of Environmental Degradation Rates (Howard et al. 1991, EPA 2005a). High-end values from the source are selected so as to be consistent with the HHRAP.

    b. The HSDB® (USNLM 2004). The HSDB can be searched by substance name or by CASRN. The number of data categories is quite large and varied. In the HSDB the half-life in soil, if available in the substance record, can be found in the category Environmental Fate & Exposure, subcategory Environmental Fate, and then in "TERRESTRIAL FATE." The user should also check in the category Chemical/Physical

Properties to see if half-life in soil is listed as an entry in the record. Search for the term "half-life" on the page, determine if the study is a soil study for the substance and then cut and paste the value into the interim database. If more than one half-life in soil value is provided from the same study, the average of the values should be taken.

2. For all congeners of dioxin, furan and polychlorinated biphenyls: 0.0277 yr^{-1} or 25 years (EPA 2000, 2005a).

5.6 Soil Enrichment Ratio (*ER*)

5.6.1 *Background*

Soil enrichment ratio (*ER*) is unitless parameter that accounts for differing amounts of soil erosion based on concentrations of organic substances in the soil.

5.6.2 *Method*

In the absence of site-specific data, the HHRAP (EPA 2005a, Table B-4-11) recommends the following default values:

1. For organic substances: 3
2. For inorganic substances: 1

6. PARAMETER-SPECIFIC ALGORITHMS: PARTITION COEFFICIENTS AND RELATED PARAMETERS FOR HUMANS

The following subsections provide the specific methods used to generate values for each parameter. When no value is developed after all steps in the parameter-specific algorithm are exhausted, the parameter value is determined to be "missing" (or "null") for that substance.

6.1 Fraction of Ingested Substance Stored in Body Fat of Mothers (f_1)

6.1.1 *Background*

The parameter f_1 represents the fraction of an ingested substance that is stored in the body fat of mothers. It is expressed as a proportion and is unitless. This parameter is used to model substance concentrations in mother's breast milk.

6.1.2 *Method*

1. A value of 0.9 is assigned to 2,3,7,8-TCDD and for the dioxin TEQ (EPA 2005a, Table C-3-1). This value can be used with TEFs to address dioxin and furan congeners and dioxin-like PCBs in the risk assessment.

2. Null values are assigned to all other substances and are referenced as not needed "7777". This parameter only applies to dioxins, furans, and dioxin-like PCBs, when following the HHRAP (EPA 2005a).

6.2 Fraction of Ingested Substance Absorbed by the Body (f_4)

6.2.1 *Background*

The parameter f_4 represents the fraction of an ingested substance that is absorbed by the body. It is expressed as a proportion and is, therefore, unitless. This parameter is used to model substance concentrations in mother's breast milk.

6.2.2 *Method*

1. A value of 0.9 is assigned to 2,3,7,8-TCDD and for the dioxin TEQ (EPA 2005a, Table C-3-2). This value can be used with TEFs to address dioxins, furans, and dioxin-like PCBs in the risk assessment.

2. Null values are assigned to all other substances and are referenced as not needed "7777". This parameter only applies to dioxins, furans, and dioxin-like PCBs, when following the HHRAP (EPA 2005a).

6.3 Half-life of a Substance in Humans (h_{human})

6.3.1 *Background*

Half-life in humans (h_{human}) represents the half-life of dioxins and furans in the human tissue. This parameter is used to estimate the concentration of a substance in human tissues (e.g., breast milk). Half-life in humans (h_{human}) is expressed in units of time (i.e., days). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

6.3.2 *Method*

1. A value of 2,555 days is assigned to 2,3,7,8-TCDD and for the dioxin TEQ (EPA 2005a, Table C-3-1). This value can be used to address dioxins, furans, and dioxin-like PCBs in the risk assessment.

2. Null values are assigned to all other substances and are referenced as not needed "7777". This parameter only applies to dioxins, furans, and dioxin-like PCBs, when following the HHRAP (EPA 2005a).

6.4 Dermal Absorption Fraction from Soil to Skin (*ABSd*)

6.4.1 *Background*

The dermal absorption fraction (*ABSd*) is used to estimate the amount of substance absorbed through the skin from contact with contaminated soil. This parameter is expressed as a fraction of the amount of substance on the skin that is absorbed, so is unitless. The *ABSd* is affected by various factors such as soil particle size or soil layer on the skin. Values that are expressed as a percent absorbed must first be converted to a fraction by dividing by 100 before inserting into the EPA equation for estimating the dermal dose from soil contact.

The EPA provides substance-specific *ABSd* values, and recommends default values for substances with no *ABSd* (EPA 2004c, EPA 2004d). Although substance-specific *ABSd* values were derived from studies based on 24-hour exposure events, the EPA states these values should not be adjusted for time (EPA 2004c). Instead, site-specific conditions should be accounted for by adjusting the exposure frequency and exposure duration (EPA 2004c). *ABSd* values for chemical warfare agents (CWA) are also available but are expressed as an absorption rate (CHPPM 1999). Unlike EPA recommended substance-specific defaults, *ABSd* rates for CWAs were derived from an empirical relationship developed by Fiserova-Bergorova (1990). Since the absorption rates are in units of percent per hour, they must be adjusted for event duration.

6.4.2 *Method*

1. Use the substance-specific values presented in Table 3.

2. Check EPA's website for additional *ABSd* values. If values are presented in percent, convert to a fraction by dividing by 100.
   http://www.epa.gov/oswer/riskassessment/ragse/index.htm

3. Substances with no value from the above sources:

- Semi-volatile organic substances: 0.1
- Volatile organic substances: null
- Inorganic substances: null

Table 3 – *ABSd* Values Expressed as Fraction Absorbed per Exposure Event

Substances Provided by EPA*	24-hr Event	CWA**	1-Hr Event
Arsenic	0.03	GB	0.0035 per hour
Cadmium	0.001	GA	0.0026 per hour
Chlordane	0.04	GD	0.0078 per hour
2,4-Dichlorophenoxyacetic acid	0.05	VX	0.0027 per hour
DDT	0.03	HD	0.0070 per hour
TCDD and other dioxins	0.03***		
Lindane	0.04		
Benzo(a)pyrene and other PAHs	0.13		
Aroclors 1254 and 1242, and other PCBs	0.14		
Pentachlorophenol	0.25		
Hexahdro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.015		
Thiodiglycol	0.0075		
Trinitrobenzene	0.019		
2,4-Dinitrotoluene (2,4-DNT)	0.102		
2,6-Dinitrotoluene (2,6-DNT)	0.099		
2-Amino-4,6-dinitrotoluene	0.006		
4-Amino-2,6-dinitrotoluene	0.009		
2,4-Diamino-6-nitrotoluene	0.011		
2,6-Diamino-4-nitrotolene	0.005		
Trinitrotoluene (TNT)	0.032		
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.006		
N-methyl-N,2,4,6-tetranitrobenzamine (tetryl)	0.00065		

* Exhibit 3-4 in EPA 2004c and EPA 2004d (values converted to fraction from percent, if necessary)
** Values for chemical warfare agents (CWA) are provided in CHPPM 1999, but are expressed on a per-hour basis.
*** If the soil organic carbon content is greater than 10%, then the *ABSd* = 0.001 for TCDD and other dioxins (EPA 2004c). Note that the HHRAP default fraction organic carbon in soil is 1% (EPA 2005a, page A-2-13).

6.5 Dermal Permeability Coefficient from Water (*Kp*)

6.5.1 *Background*

The dermal permeability coefficient (*Kp*) represents the rate at which a substance in water penetrates the skin. Generally expressed in units of centimeters per hour (cm/hr), *Kp* is used only when estimating dermal exposure from contact with substances in water (EPA 2004c).

6.5.2 *Method*

For organic substances, the Dermal Risk Assessment Guidance recommends that tabulated values of predicted *Kp* from Appendix B be used in conjunction with EPA's equations for estimating dermal uptake

of substances in water (EPA 2004c). Even though these *Kp* values were estimated from octanol-water partition coefficients (K_{ow}) and molecular weights (*MW*) that may differ from those derived following this algorithm's approaches, this algorithm adopts EPA's recommended *Kp* values when they are provided. Values of K_{ow} and *MW* generated from this algorithm are not expected to vary greatly from those used by the EPA. Additionally, using EPA-derived *Kp* values reduces uncertainties inherent in models recommended by the EPA because the models were derived from empirical data using specific assumptions. The EPA notes *Kp* values estimated from its recommended empirical relationship may underestimate or overestimate substances that fall outside the "Effective Prediction Domain" (EPD) (EPA 2004c).

1. Organic substances (in order):

    a. Exhibit B-3 (EPA 2004c). EPA includes *Kp* values outside the EPD in this table and identifies them with an asterisk. *Kp* values are also listed in a spreadsheet provided by the EPA, available at the following:
    http://www.epa.gov/oswer/riskassessment/ragse/pdf/org04_01.xls

    b. Calculate using Equation 14.

    c. Null values are assigned if *Kp* cannot be calculated because required input parameters for Equation 14 are not available.

2. For inorganic substances:

    a. Select values in Table 4.

    b. A default value of 0.001 is assigned if no substance-specific *Kp* value is available.

Equation 14 – Empirical Predictive Correlation for Permeability Coefficient (*Kp*) of Organic Substances

$$Kp = 10^{-2.80 + 0.66 \cdot log\ Kow - 0.0056 \cdot MW}$$

Kp = Predicted permeability coefficient (cm/hr)
K_{ow} = Octanol-water partition coefficient (unitless)
MW = Molecular weight (g/mol)

Source: Equation 3.8 of the Dermal Risk Assessment Guidance (EPA 2004c). Equation 14 is modified from the Dermal Risk Assessment Guidance where *Kp* is expressed as "log *Kp*".

This model for *Kp* is technical valid when a substance is within the Effective Prediction Domain (EFD) (see next section). However, at this time the EPA does not suggest excluding such calculated *Kp* values for substances outside the EPD. However, as the agency receives additional data, the EPD range may shift; therefore, the EPA advises users to check for updates (EPA 2004c).

Table 4 – Water Permeability Coefficients (*Kp*) for Inorganic Substances

Inorganic Substance	Water Permeability Coefficient (cm/hr)
Cadmium	0.001
Chromium (+6)	0.002
Chromium (+3)	0.001
Cobalt	0.0004
Lead	0.0001
Mercury (+2)	0.001
Methyl mercury	0.001
Mercury vapor	0.24
Nickel	0.0002
Potassium	0.002
Silver	0.0006
Zinc	0.0006

Source: Dermal Risk Assessment Guidance (EPA 2004c).

6.6 Fraction Absorbed from Dermal Contact with Water (*FA*)

6.6.1 *Background*

The fraction absorbed (*FA*) modifies the amount of substance available for absorption by accounting for loss due to natural shedding of the outer skin layer (desquamation) (EPA 2004c). The current EPA model estimates a total dose dissolved into the skin at the end of an exposure (EPA 2004c). This could potentially overestimate the amount of substance available for absorption, and is particularly true of substances that are either highly lipophilic or have a long lag-time (EPA 2004c). The EPA has shown that under normal desquamation rates (about 14 days), only substances with a relatively high octanol-water partition coefficient (log K_{ow} greater than 3.5), or those with a relatively long lag-time (greater than 10 hours) would be affected by loss due to desquamation (EPA 2004c). This means for most substances, the *FA* value will be close to 1.

6.6.2 *Method*

1. *FA* is not needed for inorganic substances (EPA 2004c) so their values are null and then referenced as not needed "7777."

2. For organic substances, select a value from the 209 tabulated values provided in Exhibit B-3 of the Dermal Risk Assessment Guidance (EPA 2004c). These values of *FA* are also listed in a spreadsheet available at: http://www.epa.gov/oswer/riskassessment/ragse/pdf/org04_01.xls

   These provided values were extrapolated by the EPA from Exhibit A-5 in their guidance using substance-specific parameters which may differ from those recommended in this algorithm. However, because the EPA recommends that *FA* values be reported to the nearest one significant figure, discrepancies in substance-specific input parameters are not expected to generate significant differences in *FA* values.

3. *FA* values of 1 are assigned to all other organic substances which fall within the following Effective Prediction Domain (EFD) (EPA 2004c).

Equation 15 – Effective Prediction Domain (EFD) associated with dermal permeability coefficients

$$-0.06831 \le \left[\left(5.103 \times 10^{-4} \cdot MW\right) + \left(0.05616 \cdot log\, K_{ow}\right)\right] \le 0.5577 \qquad \textbf{(A)}$$

$$-0.3010 \le \left[\left(-5.103 \times 10^{-4} \cdot MW\right) + \left(0.05616 \cdot log\, K_{ow}\right)\right] \le 0.1758 \qquad \textbf{(B)}$$

K_{ow} = *n*-octanol/water partition coefficient (unitless)
MW = Molecular weight (g/mol)

Source: Dermal guidance (EPA 2004c, equations 3.9 and 3.10). The constants 5.103 x 10^{-4} and -5.103 x 10^{-4} are corrected versions of those that appear in the guidance (we confirmed their accuracy by evaluating the EPA spreadsheet available on-line).

4. *FA* values for all other organic substances which fall outside the EFD are extrapolated from Exhibit A-5 (EPA 2004c) according to the following steps.

    a. Use the calculated value of the desquamation rate to lag time ratio (t_{sc}/τ_{event}), rounded to the nearest significant digit, to look up the correct location on bottom x-axis of Exhibit A-5. Note the bottom x-axis that represents t_{sc}/τ_{event} is on the logarithmic scale so tick marks are not evenly spaced.

    b. Use the calculated value of the dimensionless skin permeability coefficient (*B*), rounded to the nearest significant digit, to look up the correct location on the y-axis of Exhibit A-5. Select the *B* curve that is closest to what was calculated. Locate the calculated t_{sc}/τ_{event} along the x-axis, and trace vertically until you intersect the *B* curve. From that intersection, trace horizontally to find the corresponding *FA* value on the y-axis. EPA states *FA* should be rounded to the nearest one significant figure (EPA 2004c).

5. Null values are assigned to organic substances if *FA* values cannot be extrapolated because necessary parameter values are not available.

6.7 Desquamation Rate to Lag Time Ratio (t_{sc}/τ_{event})

6.7.1 *Background*

The ratio of the desquamation rate to lag time is needed so values of *FA* (previous section) can be extrapolated from Exhibit A-5 of the dermal guidance (EPA 2004c). The desquamation rate (t_{sc}), also referred to as the stratum corneum turnover rate and is expressed in units of time (i.e., days). The normal desquamation rate, in which the skin's stratum corneum is completely replaced, generally takes about 14 days (EPA 2004c).

Lag time per event (τ_{event}) refers to the time it takes a substance to travel across the stratum corneum, expressed on a dermal contact event basis. This chemical-specific parameter has units of time per event (i.e., hrs/event). Substances that are not highly lipophilic but have a long lag time may be removed by desquamation before they are absorbed, resulting in a lower absorbed dose.

6.7.2 *Method*

1. For inorganic substances, this parameter is not needed and null values are assigned.

2. For organic substances, the ratio is derived using Equation 16 (EPA 2004c). Null values are assigned if the molecular weight is not available.

Equation 16 – Desquamation Rate to Lag Time Ratio (t_{sc}/τ_{event})

$$t_{sc}/\tau_{event} = 336\ hr \Big/ \left(\frac{l_{sc}}{6 \times 10^{(-2.80-0.0056 \cdot MW)}} \right)$$

t_{sc}/τ_{event} = Desquamation rate to lag time ratio (day/hr/event)
l_{sc} = Apparent thickness of stratum corneum (cm)
MW = Molecular weight (g/mol)

Source: Dermal guidance (EPA 2004c). This equation combines the guidance method into a single equation to represent the ratio that forms the x-axis of Exhibit A-5 of the dermal guidance. This form of the equation is only applicable when the desquamation rate (t_{sc}) is 14 days (or 336 hours), as suggested in the guidance. The denominator represents τ_{event}, which is a combination of equations A.3 and A.4 from the guidance. The guidance default value of l_{sc} is 0.001 cm.

6.8 Dimensionless skin permeability ratio (*B*)

6.8.1 *Background*

This parameter (*B*) is defined as the ratio of a substance's permeability coefficient through the stratum corneum (uppermost layer of the skin) to that substance's permeability coefficient through the viable epidermis (layer beneath the stratum corneum) (EPA 2004c). This parameter is needed for estimating the amount of organic substance absorbed through the skin from contact with water, and used only for long-term exposures (EPA 2004c). Since it is a ratio of two permeability coefficients (cm/hr), *B* has no units.

6.8.2 *Method*

1. For organic substances, calculate *B* using Equation 17; EPA 2004c, Equation A.1. Null values are assigned if *B* cannot be calculated because required input parameters are not available.

2. All other substances are referenced as not needed "7777". This parameter only applies to organic substances when following EPA guidance (EPA 2004c).

Equation 17 – Dimensionless Skin Permeability Ratio (*B*)

$$B = Kp \cdot \frac{\sqrt{MW}}{2.6}$$

B = Dimensionless skin permeability ratio (unitless)
Kp = Dermal permeability coefficient in water (cm/hr)
MW = Molecular weight (g/mol)

Source: Dermal Risk Assessment Guidance (EPA 2004c, equation A.1).

6.9 1st and 2nd Lag Time Correlation Coefficients (Flynn's Data) (*d* and *c*)

6.9.1 *Background*

The 1st lag-time correlation coefficient (*d*) and the 2nd lag-time correlation coefficient (*c*) are substance-specific parameters derived from a set of experimental data compiled by Flynn to provide a relationship between a substance's permeability coefficient, and its molecular weight and octanol-water partition coefficient (EPA 2004c). These unitless coefficients are only used when estimating the dermal dose from contact with water (EPA 2004c). They play a role in the estimation of the time to reach steady state partitioning between water and the skin.

6.9.2 *Method for d (1st coefficient)*

1. For organic substances, calculate *d* using Equation 18; EPA 2004c, Equation A.7. Null values are assigned if *d* cannot be calculated because required input parameters are not available.

2. All other substances are referenced as not needed "7777". This parameter only applies to organic substances when following EPA guidance (EPA 2004c).

Equation 18 – 1st Lag Time Correlation Coefficient (*d*)

$$d = \frac{2 \cdot (1 + B)^2}{\pi} - c$$

d = 1st lag time correlation coefficient derived from the Flynn data set (unitless)
B = Dimensionless skin permeability ratio (unitless)
c = 2nd lag time correlation coefficient derived from the Flynn data set (unitless)
π = Pi (unitless)

Source: Dermal Risk Assessment Guidance (EPA 2004c, equation A.7).

6.9.3 *Method for c (2nd coefficient)*

1. For organic substances, calculate *c* using Equation 19; EPA 2004c, Equation A.8. Null values are assigned if *c* cannot be calculated because required input parameters are not available.

2. All other substances are referenced as not needed "7777". This parameter only applies to organic substances, when following EPA guidance (EPA 2004c).

Equation 19 – 2nd Lag Time Correlation Coefficient (*c*)

$$c = \frac{1 + 3 \cdot B + 3 \cdot B^2}{3 \cdot (1 + B)}$$

c = 2nd lag time correlation coefficient derived from the Flynn data set (unitless)
B = Dimensionless skin permeability ratio (unitless)

Source: Dermal Risk Assessment Guidance (EPA 2004c, equation A.8).

6.10 Dermal Permeability Coefficient from Vapor (*Kpv*)

6.10.1 *Background*

The dermal permeability coefficient (*Kpv*) measures the rate at which a substance in the vapor or gaseous form is absorbed by the skin (EPA 1992). Units of *Kpv* are typically expressed in centimeters per hour (cm/hr).

6.10.2 *Method*

Currently, substance-specific *Kpv* values, and methods for estimating *Kpv*, are still limited. The Dermal Exposure Assessment (DEA) document (EPA 1992) provides a regression equation that relies on a substance's fat/air partition coefficient ($K_{f/a}$) to estimate *Kpv* values; however, values of $K_{f/a}$, generally derived in experimental studies, are difficult to locate.

1. Select *Kpv* values listed in Table 5.

2. Null values are assigned to all other substances unless this exposure pathway has been determined to be inappropriate for a substance (e.g., substance is not expected to be in the vapor phase except at extremely high temperatures where human contact is unlikely).

Table 5 – Dermal Permeability Coefficients (*Kpv*) for Exposure to Vapors

Substance	*Kpv* (cm/hr)	Substance	*Kpv* (cm/hr)
1,1,1,2-Tetrachloroethane	1.01	cis-1,2-Dichloroethylene	0.073
1,1,1-Trichloroethane	0.090	Cyclohexane	0.077
1,1,1-Trifluoro-2-bromo-2-chloroethane	0.051	Dibromomethane	0.350
1,1,1-Trifluoro-2-chloroethane	<0.01	Dichloromethane	0.020
1,1,2,2-Tetrachloroethane	1.81	Diethyl ether	<0.01
1,1,2-Trichloroethane	0.666	Difluoromethane	<0.01
1,1-Dichloroethane	0.042	Fluorochloromethane	<0.01
1,1-Dichloroethylene	<0.01	Hexachloroethane	1.59
1,2-Dibromoethane	0.559	Isoflurane	0.010
1,2-Dichloroethane	0.130	Isoprene	<0.01
1,2-Dichloropropane	0.206	Isopropyl bromide	0.039
1-Bromo-2-chloroethane	0.431	Methyl chloride	<0.01
1-Chloropropane	0.019	m-xylene	0.872
1-Nitropropane	0.209	n-Heptane	0.147
2,2,4-Trimethylpentane	0.105	n-Hexane	0.039
2,3,4-Trimethylpentane	0.179	n-Propyl bromide	0.077
2-Chloropropane	<0.01	o-xylene	0.881
2-Nitropropane	0.03	Pentachloroethane	1.98
Allyl chloride	0.011	p-xylene	0.818
Benzene	0.206	Styrene	1.665
Bromochloromethane	0.121	Tetrachloroethylene	0.764
Carbon tetrachloride	0.137	Toluene	0.462
Chlorobenzene	0.587	trans-1,2-Dichloroethylene	0.034
Chlorodibromomethane	0.901	Trichloroethylene	0.233
Chloroethane	<0.01	Vinyl bromide	<0.01
Chloroform	0.061	Vinyl chloride	<0.01

Source: Dermal Exposure Assessment: Principles and Applications (EPA 1992).

Note: At this time, CHPPM does not attempt to locate fat/air partition coefficients ($K_{f/a}$) for organic substances. However, if during the conduct of a specific risk assessment, and a $K_{f/a}$ value becomes available for an organic compound that is not already included in Table 5, then use of Equation 20 can be considered in order to generate a *Kpv* for the project. Note, however, that the equation is applicable to substances with a $K_{f/a}$ value between 98.1 – 3,476 (EPA 1992).

Equation 20 – Regression Equation for Estimating the Dermal Permeability Coefficient (*Kpv*) for Exposure to Vapor

$$Kpv = \left(K_{f/a} \cdot 0.00049\right) - 0.385$$

Kpv = Dermal permeability coefficient for vapor exposures (cm/hr)
$K_{f/a}$ = Fat/air partition coefficient (unitless)

Source: DEA (EPA 1992).
The equation is applicable to substances with $K_{f/a}$ values between 98.1 – 3,476

7. PARAMETER-SPECIFIC ALGORITHMS: PARTITION COEFFICIENTS AND RELATED PARAMETERS FOR PLANTS

The following subsections provide the specific methods used to generate values for each parameter. When no value is developed after all steps in the parameter-specific algorithm are exhausted, the parameter value is determined to be "missing" (or "null") for that substance.

7.1 Fraction of Substance Wet Deposition that Adheres to Plant Surfaces (*Fw*)

7.1.1 *Background*

The fraction of substance wet deposition that adheres to plant surfaces (*Fw*), a unitless parameter, is required to estimate plant concentrations due to air deposition. *Fw* accounts for the portion of the substance that adheres to the plant surface from the wet deposition phase of the substance deposition.

7.1.2 *Method*

The HHRAP Appendix B, Table B-2-7 (EPA 2005a), and other similar tables, provide the following for assignment of the *Fw* parameter values. The HHRAP states that anions have an *Fw* value of 0.2 and that cations and most organic substances have an *Fw* value of 0.6. The guidance does not address inorganic substances specifically (other than if they happen to be an anion or a cation), nor does the HHRAP address neutral inorganic compounds (neither anionic nor cationic).

1. A value of 0.2 is assigned to the following three organic anionic substances.

    - 4-Chloroaniline (CASRN 106-47-8)
    - n-Nitrosodiphenylamine (CASRN 86-30-6)
    - n-Nitrosodi-n-propylamine (CASRN 621-64-7)

2. A value of 0.6 is assigned to all other substances.

7.2 Root Concentration Factor (*RCF*)

7.2.1 *Background*

The root concentration factor (*RCF*) represents the ratio of the substanceconcentration in the edible root of the plant to the substance concentration in the soil water. *RCF* is used in the estimation of the belowground transfer of a substance from soil to a root vegetable ($Br_{rootveg}$). *RCF* is expressed in units of microgram per gram dry weight of plant per microgram per gram soil water (µg/g DW plant)/(µg/mL soil water). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

7.2.2 *Method*

Null values are assigned to all metals, including mercuric compounds. No *RCF* values are available in published literature (EPA 2005a).

For all other substances:

3. HHRAP Database (EPA 2005b).

4. For substances with a log *Kow* value of 2.0 or higher: Calculate using Equation 21; modified from the HHRAP (EPA 2005a, Briggs et al. 1982).

   The HHRAP (EPA 2005a) states that the equation estimates a value in fresh weight (FW) units. In the HHRAP Database, the value is then converted to DW units using a moisture content of 87 percent in root vegetables citing the Exposure Factors Handbook, Food Ingestion Factors (EPA 1997b) and Food Value of Portions Commonly Used (Pennington 1994).

5. For substances with a log K_{ow} value of less than 2.0: Calculate using Equation 22; modified from the HHRAP (EPA 2005a, Briggs et al. 1982).

Equation 21 – Root Concentration Factor (*RCF*) for Substances with a log K_{ow} of 2.0 or Higher

$$RCF = 10^{[(0.77 \cdot (\log Kow)) - 1.52]}$$

RCF = Root concentration factor (µg/g dry weight (DW) plant)/(µg/mL soil-water)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, modified from "Relationships Between Lipophilicity and Root Uptake and Translocation of Nonionized Chemicals by Barley," Briggs et al. 1982).

Equation 22 – Root Concentration Factor (*RCF*) for Substances with a log K_{ow} Less than 2.0

$$RCF = 10^{[((0.77 \cdot (\log Kow)) - 1.52) + 0.82}$$

RCF = Root concentration factor (µg/g dry weight (DW) plant)/(µg/mL soil-water)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, modified from "Relationships Between Lipophilicity and Root Uptake and Translocation of Nonionized Chemicals by Barley," Briggs et al. 1982).

7.3 Plant-Soil Bioconcentration Factor for Root Vegetables ($Br_{rootveg}$)

7.3.1 *Background*

The plant-soil bioconcentration factor ($Br_{rootveg}$) represents the ratio of transferred substance (concentration) in the plant to the substance concentration in the soil. This proportion of substance in the produce is used in the equation to estimate the concentration of each substance in the root vegetable. $Br_{rootveg}$ is expressed in units of microgram per gram dry weight of plant per microgram per gram soil (µg/g DW plant)/(µg/g soil). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

7.3.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For remaining organic substances, calculate using Equation 23; HHRAP (EPA 2005a, EPA 1995a).

Equation 23 – Plant-Soil Bioconcentration Factor in Root Vegetables ($Br_{rootveg}$)

$$Br_{rootveg} = \frac{RCF}{Kd_s}$$

$Br_{rootveg}$ = Plant-soil bioconcentration factor in root vegetables (µg-g DW plant/µg-g soil)
RCF = Root concentration factor (µg-g DW plant/µg-mL soil-water)
Kd_s = Substance soil-water partition coefficient (cm^3/g)

Source: HHRAP (EPA 2005a; Development of Human Health-Based and Ecologically-Based Exit Criteria for the Hazardous Waste Identification Project, EPA 1995a).

3. For metals other than those in the HHRAP Database, use the dry weight (DW) basis values for nonvegetative (reproductive) growth from Review and Analysis of Parameters and Assessing Transport of Environmentally Released Radionuclides Through Agriculture, Figure 2.2 (Baes et al. 1984).

7.4 Plant-Soil Bioconcentration Factors for Aboveground Produce (Br_{ag}), Forage and Silage ($Br_{forage/silage}$), and Grain (Br_{grain})

7.4.1 *Background*

The plant-soil bioconcentration factors for aboveground produce (Br_{ag}), for forage and silage ($Br_{forage/silage}$), and for grain (Br_{grain}) represent the ratio of transferred substance (concentration) in the plant to the substance concentration in the soil for these types of edible plants. This proportion of substance in the produce is used in the equation to estimate the concentration of each substance in each edible plant. The notation for these parameters has been modified from the HHRAP (EPA 2005a) in order to improve clarity. These parameters are expressed in units of microgram per gram dry weight of plant per microgram per gram soil (µg/g DW plant) / (µg/g soil). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

Algorithm Notation	HHRAP Notation

Br_{ag} =	Br_{ag}
$Br_{forage/silage}$ =	Br_{forage}
Br_{grain} =	Br_{grain} (metals)
	Br_{forage} (organic substances)

7.4.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For remaining organic substances, calculate using Equation 24; Bioconcentration of Organics in Beef, Milk, and Vegetation (Travis et al. 1988) to calculate values on a DW basis.

Equation 24 – Plant-Soil Bioconcentration Factor for Aboveground Produce (Br_{ag}), Forage and Silage ($Br_{forage/silage}$), and Grain (Br_{grain})

$$Br_x = 10^{(1.588-0.578\cdot(\log Kow))}$$

Br_x = Plant-soil bioconcentration factor for aboveground produce, forage and silage, or grain (µg-g DW plant/µg-g soil)

K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, Bioconcentration of Organics in Beef, Milk, and Vegetation, Travis et al. 1988).

3. For metals other than those in the HHRAP Database, use the dry weight (DW) basis values for nonvegetative (reproductive) growth from Review and Analysis of Parameters and Assessing Transport of Environmentally Released Radionuclides Through Agriculture, Figure 2.2 (Baes et al. 1984).

7.5 Soil-to-Plant Bioconcentration Factor for Terrestrial Plants (Br_{tp})

7.5.1 *Background*

Terrestrial plants are defined here as wild (and domesticated) plants that are consumed by wild animals, which are assessed in an ecological risk assessment. Thus, the terrestrial plants are a different exposure point than domesticated plants (e.g., crops) assessed in human health risk assessments.

The plant-to-soil bioconcentration factor accounts for plant uptake of substances from soil. Data for a variety of plants and food crops were used to determine recommended BCF values. The Br_{tp} is expressed in units of milligram per kilogram dry weight of plant over milligram per kilogram dry weight soil (mg/kg DW plant)/(mg/kg DW soil). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

After comparing the HHRAP guidance on the Br_{ag} and the SLERAP guidance on the $Br_{tp,}$ it was determined that the guidance for these two parameters is the same for organic substances.

7.5.2 *Method*

1. For organics, the same approach is used as the Br_{ag} parameter. Though the units for the Br_{tp} and Br_{ag} differ slightly, no unit conversion is needed.

2. For inorganic substances, values are generated from Table C-2 from the SLERAP (EPA 1999d).

3. For other inorganic substances not found in the above source, then values are generated using the following two sources (in order), which is consistent with the SLERAP (EPA 1999d).

   - High-end (90th percentile) uptake factors from Oak Ridge National Laboratory (ORNL 1998a), Table 1 and Table D-1.

   - Values from Baes et al. (1984).

     The *Bv* values from Baes are used, not the *Br* values. *Bv* is the soil-to-plant concentration factor for plant parts usually associated with vegetative functions (leaves, stems, straw, etc.) and is a unitless parameter.
     The *Bv* values are taken from Figure 2.1. Figure 2.1 is a periodic table format, so the periodic symbol of the substance must be known when finding the value.

7.6 Air-to-Plant Biotransfer Factors for Aboveground Produce (Bv_{ag}) and Forage and Silage ($Bv_{forage/silage}$)

7.6.1 *Background*

The air-to-plant bioconcentration factors for aboveground produce (Bv_{ag}) and for forage and silage ($Bv_{forage/silage}$) represent the ratio of transferred substance (concentration) in the plant to the substance concentration in the air. This proportion of substance in the produce is used in the equation to estimate the concentration of a substance in the edible part of the plant. The notation for these parameters has been modified from the HHRAP (EPA 2005a) in order to improve clarity. These parameters are expressed in units of microgram per gram dry weight of plant per microgram per gram air (µg/g DW plant)/(µg/g air). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

Algorithm Notation	HHRAP Notation
Bv_{ag} =	Bv_{ag}
$Bv_{forage/silage}$ =	Bv_{forage}

7.6.2 *Method*

1. For all metals and inorganics (except for mercury) values of zero are assigned, based on the guidance for metals provided in the HHRAP (EPA 2005a).

2. For organic substances and mercury, the HHRAP Database (EPA 2005b).

3. For the remaining organic substances, calculate using Equation 25B; HHRAP (EPA 2005a, Bacci et al. 1992, Bacci et al. 1990). The HHRAP (EPA 2005a), page A-2-21, states that *Bv* values provided in the HHRAP Database were calculated using the Bacci equations and then were

reduced by a factor of 100 for all organic substances, other than the 17 dioxin-like dioxins and furans. This factor of 100 was added to the second equation.

Equation 25 – Correlation Equations for Air-to-Plant Biotransfer Factor for Aboveground Produce and Forage (Bv_{ag} and $Bv_{forage/silage}$)

(A) $$\log B_{vol} = (1.065 \cdot (\log K_{ow})) - (\log\left(\frac{H}{RT}\right)) - 1.654$$

(B) $$Bv = \frac{\left(\frac{\rho_{air} \cdot B_{vol}}{(1 - f_{water}) \cdot \rho_{forage}}\right)}{100}$$

B_{vol} = Volumetric air-to-plant biotransfer factor (FW basis)
Bv = Mass-based air-to-plant biotransfer factor (DW basis)
f_{water} = 0.85 (fraction of forage that is water (Macrady and Maggard 1993)
H = Henry's Law constant (atm-m^3/mol)
K_{ow} = *n*-octanol/water partition coefficient (unitless)
ρ_{air} = 1.19 (g/L) (Weast 1981)
ρ_{forage} = 770 (g/L) (Macrady and Maggard 1993)
R = Gas constant of 8.2057459E-05 [(atm-m^3)/(mol-°K)]
T = Working temperature (°K), set as 298.1 °K

Source: HHRAP (EPA 2005a, "Chlorinated Dioxins: Volatilization from Soils and Bioconcentration in Plant Leaves" (Bacci et al. 1992). Equation B is a modified version of that presented in the HHRAP, where the factor of 100 is included here (see text).

7.7 Plant Biotransfer Factor for Terrestrial Plants (Bv_{tp})

7.7.1 *Background*

Terrestrial plants are defined here as wild (and domesticated) plants that are consumed by wild animals, which are assessed in an ecological risk assessment. Thus, the terrestrial plants are a different exposure point than domesticated plants (e.g., crops) assessed in human health risk assessments.

The air-to-plant biotransfer factor (Bv_{tp}) is unitless and is defined as the ratio of substance concentrations to exposed aboveground plant parts to the substance concentration in air.

7.7.2 *Method*

After comparing the HHRAP guidance on the Bv_{ag} and the SLERAP guidance on the $Bv_{tp,}$ it was determined that the guidance for these two parameters is the same except for the Lorber and Pinsky source for dioxins and furans is 1999 in the SLERAP and it is 1995 in the HHRAP.

For Bv_{tp}, the same approach is used for the Bv_{ag} parameter values. The units for both of these parameters are the same and are expressed in units of microgram per gram dry weight of plant per microgram per gram air (µg/g DW plant)/(µg/g air). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

7.8 Empirical Correction Factor for Belowground Produce ($VG_{rootveg}$)

7.8.1 *Background*

The empirical correction factor for belowground produce ($VG_{rootveg}$) is a unitless correction factor that reduces the belowground produce concentration to better approximate the transfer of substances into the parts of belowground produce typically consumed by humans. The term is used in equations that estimate belowground produce substance concentrations due to root uptake from soil. EPA states that this factor is used "because of the protective outer skin, size, and shape of bulky produce, the transfer of lipophilic substances to the center of the produce is not likely. In addition, typical preparation techniques, such as washing, peeling, and cooking, will further reduce [substance] residues." (EPA 2005a, Table B-2-10).

7.8.2 *Method*

1. A value of 0.01 is assigned to organic substances with a log $K_{ow} > 4$ (EPA 2005a).
2. A value of 1.0 is assigned to organic substances with a log $K_{ow} \leq 4$ (EPA 2005a).
3. Null values are assigned to all inorganic substances (EPA 2005a).

7.9 Empirical Correction Factor for Aboveground Produce (VG_{agp})

7.9.1 *Background*

The empirical correction factor for aboveground produce (VG_{agp}) is a unitless correction factor that reduces the aboveground produce concentration to better approximate the transfer of substances into leafy vegetation rather than into bulkier aboveground produce, such as apples (EPA 2005a, Table B-2-8). The term is used to estimate aboveground produce substance concentrations due to air-to-plant transfer.

7.9.2 *Method*

1. A value of 0.01 is assigned to organic substances with a log $K_{ow} > 4$ (EPA 2005a).
2. A value of 1.0 is assigned to organic substances with a log $K_{ow} \leq 4$ (EPA 2005a).
3. Null values are assigned to all inorganic substances (EPA 2005a).

7.10 Empirical Correction Factor for Aboveground Forage (VG_{agf})

7.10.1 *Background*

The empirical correction factor for aboveground forage (VG_{agf}) is a unitless empirical correction factor that reduces the aboveground forage concentration to better approximate the transfer of substances into leafy vegetation used for forage, rather than into bulkier aboveground produce, such as apples (EPA

2005a, Table B-3-8). The term is used to estimate aboveground forage substance concentrations due to air-to-plant transfer.

7.10.2 *Method*

1. A value of 1.0 is assigned to all organic substances (EPA 2005a).

2. Null values are assigned to all inorganic substances (EPA 2005a).

7.11 Empirical Correction Factor for Aboveground Silage (VG_{ags})

7.11.1 *Background*

The empirical correction factor for aboveground forage (VG_{ags}) is a unitless correction factor that reduces the aboveground silage concentration to better approximate the transfer of substances into bulky vegetation parts used for silage, rather than into leafier parts of plants (EPA 2005a, Table B-3-8). The term is used to estimate aboveground silage substance concentrations due to air-to-plant transfer.

7.11.2 *Method*

1. A value of 0.5 is assigned to all organic substances (EPA 2005a).

2. Null values are assigned to all inorganic substances (EPA 2005a).

7.12 Soil Bioavailability Factor (*Bs*)

7.12.1 *Background*

The soil bioavailability factor (*Bs*) is the ratio between the biotransfer factor for soil and the biotransfer factor for vegetation for a given substance. The efficiency of the transfer of a substance from soil may differ from the transfer from plants for some substances. Transfer from soil that is lower than that from plants would give a *Bs* of less than one. Soil transfer that is equal to or greater than that from plants would give a *Bs* equal to or greater than one. *Bs* is expressed as unitless because the units for the two biotransfer factors cancel out.

7.12.2 *Method*

All substances are assigned a value of 1.0. The HHRAP states that there is not enough data on bioavailability from soil, so this default value is recommended for all substances until more data becomes available for this parameter (EPA 2005a, Table B-3-10).

7.13 Bioconcentration Factor for Sediment-to-Aquatic Vegetation (BCF_{sav})

7.13.1 *Background*

The sediment-to-aquatic vegetation bioconcentration factor (BCF_{sav}) is unitless and accounts for plant uptake of substances from sediments. The BCF_{sav} is calculated using laboratory and field measured values, and the data set used to calculate them is based on soil-to-plant bioconcentration studies.

7.13.2 *Method*

1. SLERAP Appendix C, Table C-2 (EPA 1999d).

2. For inorganic substances not found in the above source, values are generated from Baes et al. (1984).

   - The *Bv* values from Baes are used, not the *Br* values. *Bv* is the soil-to-plant concentration factor for plant parts usually associated with vegetative functions (leaves, stems, straw, etc.) and is a unitless parameter.
   - The *Bv* values are taken from Figure 2.1. Figure 2.1 is a periodic table format, so the periodic symbol of the substance must be known when finding the value.

3. For organics not found in the above source, values are calculated by taking the antilog of the result from the following Travis and Arms (1988) regression equation.

Equation 26 – Bioconcentration Factor for Sediment-to-Aquatic Vegetation (BCF_{sav})

$$BCF_{sav} = 10^{1.588-0.578\cdot(\log Kow)}$$

BCF = Sediment-to-aquatic vegetation bioconcentration factor (unitless)
K_{ow} = *n*-octanol-water partition coefficient of the substance (unitless)

Source: SLERAP (EPA 1999b-d).

7.14 Bioconcentration Factor for Water-to-Algae ($BCF_{w\text{-}al}$)

7.14.1 *Background*

The water-to-algae bioconcentration factor ($BCF_{w\text{-}al}$) accounts for algae uptake of substances from the water. The reported values are presented as the amount of substance in algae divided by the amount of substance in water or [(mg substance/kg wet tissue)/(mg dissolved substance/L water)]. The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

7.14.2 *Method*

For all substances:

1. SLERAP Appendix C, Table C-4 (EPA 1999d).

2. For inorganic substances and metals not found in the above source, null values are assigned.

3. For organics not found in the above source, values are calculated by taking the antilog of the result from the regression equation (Equation 27) by Southworth et al. (1978).

Equation 27 – Bioconcentration Factor for Water-to-Algae ($BCF_{w\text{-}al}$)

$$BCF_{w-al} = 10^{(0.819 \cdot \log Kow) - 1.146}$$

BCF_{w-al} = Bioconcentration factor for water to algae (L/kg FW)
K_{ow} = *n*-octanol-water partition coefficient (unitless)

Source: Southworth et al. (1978).

8. PARAMETER-SPECIFIC ALGORITHMS: PARTITION COEFFICIENTS AND RELATED PARAMETERS FOR ANIMALS

The following subsections provide the specific methods used to generate values for each parameter. When no value is developed after all steps in the parameter-specific algorithm are exhausted, the parameter value is determined to be "missing" (or "null") for that substance.

8.1 Biotransfer Factors for Beef (Ba_{beef}) and Dairy Milk (Ba_{milk})

8.1.1 *Background*

The biotransfer factor for beef and milk (Ba_{beef} and Ba_{milk}) is the ratio of the substance concentration in fresh weight (FW) in beef or milk to the daily intake of the substance by beef and dairy cows. These factors are expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.1.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For remaining inorganic substances not found in the above source, assign values obtained from Review and Analysis of Parameters and Assessing Transport of Environmentally Released Radionuclides Through Agriculture, Figure 2.25 for beef and Figure 2.24 for milk (Baes et al. 1984).

3. For all remaining organic substances, values are calculated using Equation 28A–C; HHRAP (EPA 2005a, RTI 2005). For remaining organic substances having a log K_{ow} between -0.67 and 8.2, calculate using substance-specific log *Kow* values. For organic substances having a log K_{ow} value less than -0.67, Ba_{beef} and Ba_{milk} values are calculated using a log K_{ow} value of -0.67. For organic substances having a log K_{ow} value greater than 8.2, Ba_{beef} and Ba_{milk} are calculated using a log K_{ow} value of 8.2.

Equation 28 – Biotransfer Factor for Beef (Ba_{beef}) and Milk (Ba_{milk}) for Organic Substances

(A) $$log\ Ba_{fat} = [(-0.099 \cdot (log\ K_{ow})^2) + (1.07 \cdot (log\ Kow))] - 3.56$$

(B) $$Ba_{beef} = 10^{(log\ Ba_{fat})} \cdot 0.19$$

(C) $$Ba_{milk} = 10^{(log\ Ba_{fat})} \cdot 0.04$$

Ba_{fat} = Biotransfer factor for fat (day/kg FW tissue)
Ba_{beef} = Biotransfer factor for beef (day/kg FW tissue)
Ba_{milk} = Biotransfer factor for milk (day/kg FW tissue)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a, RTI 2005).

For remaining ionizing organic substances (organic acids) (see Table 2), if Ba_{beef} and Ba_{milk} remain null after implementing the above hierarchy, then a value can be generated using methods in *Methodology for Predicting Cattle Biotransfer Factors* (RTI 2005). By default, values are not generated using these methods. The need to fill these data gaps is a project-specific decision and should be made on a case-by-case basis for ionizing organic substances (organic acids). The RTI methods require additional input parameters and other chemical knowledge, so a chemist should implement the method. The method is summarized below.

For ionizing organic substances (organic acids), the Ba_{beef} and Ba_{milk} may be calculated using Equation 28B and C with a weighted K_{ow} (HHRAP, EPA 2005a). The K_{ow} is weighted based on the fraction of the substance present in the neutral species (*FracNeutral*) using Equation 29. The *FracNeutral* is estimated using Equation 30.

Equation 29 – Weighted K_{ow} for Organic Acids

$$wK_{ow} = K_{ow}^{n} \cdot FracNeutral + K_{ow}^{i} \cdot (1 - FracNeutral)$$

wK_{ow} = *n*-octanol/water partition coefficient (unitless) weighted based on the fraction of the substance present in the neutral species
K_{ow}^{n} = *n*-octanol/water partition coefficient (unitless) for the neutral species
FracNeutral = fraction of neutral species present in organic acid (unitless)
K_{ow}^{i} = *n*-octanol/water partition coefficient (unitless) for the ionized species

Source: HHRAP (EPA 2005a), Section A2-2.13.1.

Equation 30 – *FracNeutral* for Organic Acids

$$FracNeutral = \frac{[HA]}{[HA] - [A-]}$$

$$= 1 + [(10pH) - pKa]$$

FracNeutral = fraction of neutral species present in organic acid (unitless)
[HA] = equilibrium concentration of organic acid (mol/L)
[A-] = equilibrium concentration of anion (mol/L)
pKa = acid dissociation constant (unitless)

Source: HHRAP (EPA 2005a), Section A2-2.13.1; Lee et al., 1990.

8.2 Biotransfer Factor for Pork (Ba_{pork})

8.2.1 *Background*

The biotransfer factor for pork meat (Ba_{pork}) is the ratio of the substance concentration in fresh weight (FW) in pork meat to the daily intake of the substance by hogs. These factors are expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.2.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For all remaining organic substances, values are calculate using Equation 31; HHRAP (EPA 2005a, RTI 2005). For remaining organic substances having a log K_{ow} between -0.67 and 8.2, calculate using substance-specific log *Kow* values. For organic substances having a log K_{ow} value less than -0.67 Ba_{pork} is calculated using a log K_{ow} value of -0.67. For organic substances having a log K_{ow} value greater than 8.2, Ba_{pork} is calculated using a log K_{ow} value of 8.2.

Equation 31 – Biotransfer Factor for Pork for Organic Substances (Ba_{pork})

$$Ba_{pork} = 10^{(\log Ba_{fat})} \cdot 0.23$$

Ba_{pork} = Biotransfer factor for pork (day/kg FW tissue)
Ba_{fat} = Biotransfer factor for fat (day/kg FW tissue)

Source: HHRAP (EPA 2005a).

3. For remaining inorganic substances not included in the HHRAP Database, the HHRAP (EPA 2005a) states that no data are available in the literature to calculate Ba_{pork} values.

8.3 Biotransfer Factors for Chicken Meat ($Ba_{chicken}$) and Chicken Eggs (Ba_{egg})

8.3.1 *Background*

The biotransfer factors for chicken meat and eggs ($Ba_{chicken}$ and Ba_{egg}) are ratios of the substance concentration in fresh weight (FW) in meat or eggs to the daily intake of the substance by chickens (EPA 2005a). These factors are expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.3.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For all remaining organic substances, values are calculate using Equation 32 and 33; HHRAP (EPA 2005a, RTI 2005). For remaining organic substances having a log K_{ow} between -0.67 and 8.2, calculate using substance-specific log *Kow* values. For organic substances having a log K_{ow} value less than -0.67, $Ba_{chicken}$ and Ba_{egg} are calculated using a log K_{ow} value of -0.67. For organic substances having a log K_{ow} value greater than 8.2, $Ba_{chicken}$ and Ba_{egg} are calculated using a log K_{ow} value of 8.2.

Equation 32 – Biotransfer Factor for Chicken Meat for Organic Substances ($Ba_{chicken}$)

$$Ba_{chicken} = 10^{(\log Ba_{fat})} \cdot 0.14$$

$Ba_{chicken}$ = Biotransfer factor for chicken meat (day/kg FW)
Ba_{fat} = Biotransfer factor for fat (day/kg FW tissue)

Source: HHRAP (EPA 2005a).

Equation 33 – Biotransfer Factor for Chicken Eggs for Organic Substances (Ba_{egg})

$$Ba_{egg} = 10^{(\log Ba_{fat})} \cdot 0.08$$

Ba_{egg} = Biotransfer factor for chicken eggs (day/kg FW)
Ba_{fat} = Biotransfer factor for fat (day/kg FW tissue)

Source: HHRAP (EPA 2005a).

3. For remaining inorganic substances not included in the HHRAP Database, the HHRAP (EPA 2005a) states that no data are available in the literature to calculate $Ba_{chicken}$ and Ba_{egg} values.

8.4 Biotransfer Factor for Deer (Ba_{deer})

8.4.1 *Background*

The biotransfer factor for deer (Ba_{deer}) is the ratio of the substance concentration in fresh weight (FW) in deer meat to the daily intake of the substance by deer. These factors are expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

As ruminants, deer are not unlike cattle. It is therefore reasonable to assume they may have similar physiological processes that could yield similar biotransfer factors. Unlike beef, however, deer meat does not undergo marbling with fat, and deer fat is unpalatable. Therefore, it is likely to be trimmed rather than consumed. Therefore, the biotransfer factors for edible venison (Ba_{deer}) can be derived by adjusting the biotransfer factor for beef (Ba_{beef}) by accounting for differences in fat content.

8.4.2 *Method*

Calculate values for all organic and inorganic substances using Equation 34 (CHPPM 2003). The parameter value is considered missing for a substance if the equation returns a null value because Ba_{beef} is null.

Equation 34 – Biotransfer Factor for Deer (Ba_{deer})

$$Ba_{deer} = Ba_{beef} \cdot \frac{f_{lipid/deer}}{f_{lipid/beef}}$$

Ba_{deer} = Biotransfer factor for deer meat (i.e., venison) (day/kg FW)
Ba_{beef} = Biotransfer factor for beef (day/kg FW)
$f_{lipid/deer}$ = Fraction of deer meat that is lipid (i.e., fat) (unitless)
$f_{lipid/beef}$ = Fraction of beef that is lipid (i.e., fat) (unitless)

Source: ANCDF risk assessment (CHPPM 2003).
Default values for the f_{lipid} terms are 0.029 ($f_{lipid/deer}$) and 0.144 ($f_{lipid/beef}$) (IT Corporation 2000).

8.5 Biotransfer Factor for Turkey (Ba_{turkey})

8.5.1 *Background*

The biotransfer factor for wild turkey (Ba_{turkey}) is the ratio of the substance concentration in fresh weight (FW) in wild turkey meat to the daily intake of the substance by wild turkey. These factors are expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

As predominantly ground-dwelling avians, turkeys are not unlike chickens. It is therefore reasonable to assume they may have similar physiological processes that could yield similar biotransfer factors (*Ba*). Biotransfer factors for edible wild turkey meat (Ba_{turkey}) can be derived by adjusting the biotransfer factor for chicken by accounting for differences in fat content of cooked meat.

8.5.2 *Method*

Calculate values for all organic and inorganic substances using Equation 35 (CHPPM 2003). The parameter value is considered missing for a substance if the equation returns a null value because $Ba_{chicken}$ is null.

Equation 35 – Biotransfer Factor for Wild Turkey (Ba_{turkey})

$$Ba_{turkey} = Ba_{chicken} \cdot \frac{f_{lipid\,/\,turkey}}{f_{lipid\,/\,chicken}}$$

Ba_{turkey} = Biotransfer factor for wild turkey meat (day/kg FW)
$Ba_{chicken}$ = Biotransfer factor for chicken meat (day/kg FW)
$f_{lipid/turkey}$ = Fraction of turkey meat that is lipid (i.e., fat) (unitless)
$f_{lipid/chicken}$ = Fraction of chicken meat that is lipid (i.e., fat) (unitless)

Source: ANCDF risk assessment (CHPPM 2003).
Default values for the f_{lipid} terms are 0.0497 ($f_{lipid/turkey}$) and 0.0741 ($f_{lipid/chicken}$) (Exposure Factors Handbook, EPA 1997b).

8.6 Biotransfer Factors for Mammals (Ba_{mammal})

8.6.1 *Background*

This parameter is an ecological health risk assessment biotransfer factor for mammalian receptors (Ba_{mammal}), which is defined as the ratio of a compound concentration in fresh (wet) weight animal tissue to the daily intake of a compound by the animal through the ingestion of food items and media (i.e., soil, sediment, and surface water). Biotransfer factors, in conjunction with receptor-specific ingestion rates, can be used to calculate food-item- and media-to-animal bioconcentration factors (BCFs). The Ba_{mammal} is reported in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.6.2 *Method*

The Ba_{beef} values generated using the method in Section 8.1 are used as surrogate data.

8.7 Biotransfer Factors for Birds (Ba_{bird})

8.7.1 *Background*

This parameter is an ecological health risk assessment biotransfer factor for avian receptors (Ba_{bird}), which is defined as the ratio of a compound concentration in fresh (wet) weight animal tissue to the daily intake of a compound by the animal through the ingestion of food items and media (i.e., soil, sediment, and surface water). Biotransfer factors, in conjunction with receptor-specific ingestion rates, can be used to calculate food-item- and media-to-animal bioconcentration factors (*BCFs*) The Ba_{bird} is reported in units of day per kilogram of fresh weight tissue (day/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.7.2 *Method*

The $Ba_{chicken}$ values generated using the method in Section 8.3 are used as surrogate data.

8.8 Biotransfer Factors for Goats (Ba_{goat})

8.8.1 *Background*

The biotransfer factor for goat (Ba_{goat}) is the ratio of the substance concentration in fresh weight (FW) in mutton to the daily intake of the substance by goats. This factor is expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue).

8.8.2 *Method*

Calculate values for all organic and inorganic substances using Equation 36. The parameter value is considered missing for a substance if the equation returns a null value because Ba_{beef} is null.

Equation 36 – Biotransfer Factor for Mutton (Ba_{goat})

$$Ba_{goat} = Ba_{beef} \cdot \frac{f_{lipid\,/\,goat}}{f_{lipid\,/\,beef}}$$

Ba_{goat} = Biotransfer factor for mutton (day/kg FW)
Ba_{beef} = Biotransfer factor for beef (day/kg FW)
$f_{lipid/goat}$ = Fraction of mutton that is lipid (i.e., fat) (unitless)
$f_{lipid/beef}$ = Fraction of beef that is lipid (i.e., fat) (unitless)

Default values for the f_{lipid} terms are 0.12 ($f_{lipid/goat}$) (Skeen 2006) and 0.19 ($f_{lipid/beef}$) (HHRAP; EPA 2005a).

8.9 Biotransfer Factors for Wild Game (Ba_{game})

8.9.1 *Background*

The biotransfer factor for wild game (Ba_{game}) is the ratio of the substance concentration in the tissue of the wild game, in fresh weight (FW), to the daily intake of the substance by the wild game. The Ba_{game} is expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue).

8.9.2 *Method*

Values of Ba_{game} can differ depending on the wild game. Due to the varied nature of how "wild game" can be defined across risk assessment projects, a default definition is required for this document. The approach articulated in the Umatilla Risk Assessment Work Plan (RAWP)(ODEQ 2004) is used as the default approach, where wild game refers to a collection of game such as rabbit or venison, which are consumed by Native Americans. Consistent with the RAWP, Ba_{beef} values generated using the method in Section 8.1 are used as surrogate data for Ba_{game}.

8.10 Biotransfer Factors for Wild Fowl (Ba_{fowl})

8.10.1 *Background*

The biotransfer factor for wild fowl (Ba_{fowl}) is the ratio of the substance concentration in wild fowl meat, in fresh weight (FW), to the daily intake of the substance by wild fowl. This factor is expressed in units of day per kilogram of fresh weight tissue (day/kg FW tissue).

8.10.2 *Method*

The $Ba_{chicken}$ values generated using the method in Section 8.3 are used as surrogate data.

8.11 Livestock and Game Metabolism Factor (*MF*)

8.11.1 *Background*

The livestock and game metabolism factor (*MF*) accounts for animal metabolism and excretion of a substance. The *MF* is a unitless parameter used to model the substance concentration in beef, milk and pork.

8.11.2 *Method*

The HHRAP Appendix B, Table B-3-10 (EPA 2005a), and other similar tables, specify the *MF* parameter values.

1. A value of 0.01 is assigned to Bis(2-ethylhexyl)phthalate (CASRN 117-81-7).

2. A value of 1.0 is assigned to all other organic and all inorganic substances.

8.12 Bioconcentration Factor for Terrestrial Invertebrates (BCF_{ti})

8.12.1 *Background*

The bioconcentration factor for terrestrial invertebrates (BCF_{ti}) is unitless (see paragraph below) and accounts for terrestrial invertebrate uptake of substances from the soil. The BCF_{ti} is calculated using laboratory and field measured values, and the data set used to calculate them is based on soil-to-plant bioconcentration studies.

While this parameter is unitless, it does technically have units which cancel out. Also, the units for this parameter can vary according to the information source; however, the exposure model that uses these values accounts for this difference. The parameter units in the source should be checked to determine if a unit conversion is necessary. The alternative units are as follows:

1. (mg substance/kg FW tissue) / (mg substance/kg DW soil)
2. (mg substance/kg DW tissue) / (mg substance/kg DW soil)
3. Empirically unitless

8.12.2 *Method*

1. For inorganic substances, high-end (90th percentile) uptake factors from Sample et al. (1998, Table 11). Values from this source are reported in units of (mg substance/kg DW tissue) / (mg substance/kg DW soil).

2. For remaining inorganic substances and organic substances, SLERAP Appendix C, Table C-1 (EPA 1999d). Values from this source are reported in units of (mg substance/kg FW tissue) / (mg substance/kg DW soil).

3. For other organic substances, calculate using Equation 37 developed by Connell and Markwell (1990), which is appropriate for a log K_{ow} range of 1.0 to 6.5. Values from this source are empirically unitless.

Equation 37 – Bioconcentration Factor for Terrestrial Invertebrates (BCF_{ti}) for Organics

$$BCF_{ti} = \frac{Y_l \cdot log\ K_{ow}^{\ b-a}}{x \cdot f_{oc}} \qquad \text{where: } 1 \le \log K_{ow} \le 6.5$$

BCF_{ti}	= Bioconcentration factor for terrestrial invertebrate (unitless)
Y_l	= Terrestrial invertebrate lipid content (unitless) = 0.02
K_{ow}	= *n*-octanol-water partition coefficient (unitless)
b-a	= Nonlinearity constant = 0.05
x	= Proportionality constant = 0.66
f_{oc}	= Site-specific fraction of organic carbon in soil (unitless)

Source: Connell and Markwell (1990).
Based on the SLERAP (EPA 1999c, Page A-2-13), the default f_{oc} is 0.01 is used.

8.13 Bioconcentration Factor for Benthic Invertebrates (BCF_{bi})

8.13.1 *Background*

The bioconcentration factor for benthic invertebrates (BCF_{bi}) is unitless (see paragraph below) and accounts for benthic invertebrate uptake of substances from the sediment.

While this parameter is unitless, it does technically have units which cancel out. Also, the units for this parameter can vary according to the information source; however, the exposure model that uses these values accounts for this difference. The parameter units in the source should be checked to determine if a unit conversion is necessary. The alternative units are as follows:

1. (mg substance/kg FW tissue) / (mg substance/kg DW soil)
2. (mg substance/kg DW tissue) / (mg substance/kg DW soil)

8.13.2 *Method*

1. For inorganic substances, high-end (90th percentile) uptake factors from Oak Ridge National Laboratory (ORNL 1998b, Table 2). Values from this source are reported in units of (mg substance/kg DW tissue) / (mg substance/kg DW soil).

2. For other inorganic substances and organic substances, SLERAP Appendix C, Table C-6 (EPA 1999d). Values from this source are reported in units of (mg substance/kg FW tissue) / (mg substance/kg DW soil).

3. For other organic substances, calculate using Equation 38 from SLERAP (1999d) and Southworth et al. (1978).

Equation 38 – Bioconcentration Factor for Benthic Invertebrates (BCF_{bi}) for Organics

$$BCF_{bi} = anti\,log[(0.819 \cdot log\,K_{ow}) - 1.146]$$

BCF_{bi} = Bioconcentration factor for benthic invertebrates (unitless)
K_{ow} = *n*-octanol-water partition coefficient (unitless)

Source: SLERAP (1999d), Southworth et al. (1978).

8.14 Biota-Sediment Accumulation Factor (*BSAF*)

8.14.1 *Background*

The fish biota-sediment accumulation factor (*BSAF*) accounts for the transfer of dioxins, furans and PCBs from the bottom sediment of a waterbody to the lipid (fat) of fish. This pathway addresses bioaccumulation of significantly lipophilic substances within the food chain. EPA (2000) recommends using *BSAF* for modeling of dioxin-like compounds, including PCBs, because of their lipophilic nature.

For dioxins, furans and PCBs, the HHRAP Database includes *BSAF* values instead of bioaccumulation factor (*BAF*) values for fish (EPA 2005a). The *BSAF* is expressed as a unitless parameter.

8.14.2 *Method*

Null values are assigned to all substances other than dioxins, furans and PCBs (EPA 2005a). For dioxins, furans and PCBs: HHRAP Database (EPA 2005b).

8.15 Bioconcentration Factor for Gamefish ($BCF_{gamefish}$)

8.15.1 *Background*

The gamefish bioconcentration factor ($BCF_{gamefish}$) is the ratio of the substance concentration in gamefish to the substance concentration in the water column where the fish live. The $BCF_{gamefish}$ is expressed in units of liters per kilogram fresh weight tissue (L/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value. This factor accounts for uptake of a substance by fish primarily from passing the water over the gills. In the HHRAP, $BCF_{gamefish}$ values were derived for the modeling of fish concentrations for chemicals with a log K_{ow} of less than 4 and for all metals, other than lead and mercury as cited in EPA (1995b) (EPA 2005a). $BCF_{gamefish}$ values for substances with a log K_{ow} of 4 or greater are used to generate $BAF_{gamefish}$ values for most substances.

8.15.2 *Method*

1. HHRAP Database (EPA 2005b).

2. For all other substances calculate using Equation 39 or Equation 40. Equations are chosen depending upon the substance's ionic state (see Table 2) and log K_{ow} (EPA 2005a, Meylan et al. 1999).

Equation 39 – Nonionic Substances: Bioconcentration Factor for Gamefish ($BCF_{gamefish}$)

(A) log K_{ow} less than 1 $$BCF_{gamefish} = 10^{0.50}$$

(B) log K_{ow} from 1 to 7 $$BCF_{gamefish} = 10^{[0.77 \cdot \log K_{ow} - 0.70 + \sum Correction\ Factors]}$$

(C) log K_{ow} greater than 7 to 10.5 $$BCF_{gamefish} = 10^{[-1.37 \cdot \log K_{ow} + 14.4 + \sum Correction\ Factors]}$$

(D) log K_{ow} greater than 10.5 $$BCF_{gamefish} = 10^{0.50}$$

$BCF_{gamefish}$ = Bioconcentration factor for gamefish (L/kg FW)
K_{ow} = *n*-octanol/water partition coefficient (unitless)
CorrectionFactors = For purposes of this algorithm, the correction factors' sum is assumed to be "missing" (i.e., a null value) (see text below).

Source: HHRAP (EPA 2005a, Meylan et al. 1999). The equations for substances with a log K_{ow} between 1 and 7, requires the use of a sum of correction factors. The correction factors are provided in Table 6 and they vary based on chemical category (Meylan et al. 1999). The correction factors can be used, but the selection of the appropriate factor requires sufficient chemical knowledge. Therefore, if used, a

chemist should implement the method. These correction factors are applied on a case-by-case, project-specific basis for chemicals for which the method is deemed necessary.

Equation 40 – Ionic Substances: Bioconcentration Factor for Gamefish ($BCF_{gamefish}$)

(A) log K_{ow} less than 5 $BCF_{gamefish} = 10^{0.50}$

(B) log K_{ow} from 5 to 6 $BCF_{gamefish} = 10^{0.75}$

(C) log K_{ow} from greater than 6 to 7 $BCF_{gamefish} = 10^{1.75}$

(D) log K_{ow} from greater than 7 to 9 $BCF_{gamefish} = 10^{1.00}$

(E) log K_{ow} greater than 9 $BCF_{gamefish} = 10^{0.50}$

$BCF_{gamefish}$ = Bioconcentration factor for gamefish (L/kg FW)
K_{ow} = *n*-octanol/water partition coefficient (unitless)

Source: HHRAP (EPA 2005a), (Meylan et al. 1999).

Table 6 – Correction Factors for Use in $BCF_{gamefish}$ Equation 39

$BCF_{gamefish}$ Correction Factor	Value
Compounds with an aromatic *s*-triazine ring (three compounds)	-0.32
Compounds containing an aromatic alcohol (e.g., phenol) with two or more halogens attached to aromatic ring (17 compounds)	-0.40
Compounds containing an aromatic ring with a *tert*-butyl group in a position ortho to an –OH group (e.g., *tert-butyl ortho*-phenol) (six compounds)	-0.45
Compounds containing an aromatic ring and an aliphatic alcohol in the form of –CH–OH (e.g., benzyl alcohol) (four compounds)	-0.65
Phosphate ester, O=P(O–R)(O–R)(O–R), where R is carbon (one R can be H) (18 compounds)	-0.78
Ketone with one or more aromatic connections (18 compounds)	-0.84
Nonionic compounds with an alkyl chain containing 8 or more –CH2– groups (13 compounds)	-1.00 (log K_{ow} of 4–6) -1.50 (log K_{ow} of 6–10)
Compounds containing a cyclopropyl ester of the form cyclopropyl–C(5O)–O– (e.g., permethrins) (six compounds)	-1.65

$BCF_{gamefish}$ Correction Factor	Value
Compounds containing a phenanthrene ring (four compounds)	+0.48
Multiply halogenated biphenyls and polyaromatics containing only aromatic carbons and halogens (e.g., PCBs) (19 compounds)	+0.62
Organometallic compounds containing tin or mercury (12 compounds)	+1.40

Source: Meylan et al. (1999) used a database of 694 BCF values when they came up with the methodology for the BCF. They did not specify the 694 substances, only the source of the substances as such: Measured BCF values were obtained primarily from the EPA online AQUIRE database; a large database of BCF values collected by the Japanese Chemicals Inspection and Testing Institute (CITI), the HSDB; and sources referenced in the SRC Environmental Fate Data Base (EFDB).

8.16 Bioconcentration Factor for Trophic Level Fish (BCF_{TLfish})

8.16.1 *Background*

Trophic level fish is a term that refers to various types of fish that may be consumed by wild animals, as opposed to humans. Fish that are consumed by humans are referred to as gamefish (see above section).

The bioconcentration factor for trophic level fish (BCF_{TLfish}) accounts for fish uptake of substances from the water. Experimental data for a variety of marine and freshwater fish are used to determine recommended BCF_{TLfish} values. The BCF_{TLfish} is expressed in units of liters per kilogram fresh weight tissue (L/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

8.16.2 *Method*

1. SLERAP Appendix C, Table C-5 (EPA 1999d).

2. For substances not found in the SLERAP, BCF_{TLfish} values are derived from a regression equation provided in Water Quality Guidance for the Great Lakes System and Correction (EPA 1993b), which describes the bioconcentration of various chemicals in fish during flow-through exposure experiments. Equation 41 is used to compute the value.

Equation 41 – Bioconcentration Factor for Trophic Level Fish for Organics (BCF_{TLfish})

$$BCF_{TLfish} = 10^{(0.79 \cdot \log Kow) - 0.40}$$

BCF_{TLfish} = Bioconcentration factor for trophic level fish (L/kg FW)
K_{ow} = *n*-octanol-water partition coefficient (unitless)

Source: Water Quality Guidance for the Great Lakes System and Correction (EPA 1993b).

8.17 Bioaccumulation Factor for Gamefish ($BAF_{gamefish}$)

8.17.1 *Background*

The gamefish bioaccumulation factor ($BAF_{gamefish}$) is the ratio of the substance concentration in gamefish to the substance concentration in the waterbody where the gamefish lives. The $BAF_{gamefish}$ is expressed in units of liters per kilogram fresh weight tissue (L/kg FW tissue). The parameter units in the source are checked to determine if a unit conversion is necessary before using the value.

This factor accounts for uptake of substances by fish from water and sediments passing the over the gills and from consumption of various foods such as plankton, daphnids, and other fish. The $BAF_{gamefish}$ values are used for lead, mercury, and mercuric compounds and for organic substances with a log K_{ow} of greater than or equal to 4 (except for dioxins, furans, polychlorinated biphenyls). When substances have a log K_{ow} greater than or equal to 4, the substances significantly partition into the suspended sediment organic carbon of the water column. Because of this, *BAF* values should be based on total water column concentrations that include both the dissolved and suspended phases.

8.17.2 *Method*

1. HHRAP Database (EPA 2005b).

2. Null values are assigned to organic substances not included in the HHRAP Database with log $K_{ow} < 4.0$. The HHRAP (EPA 2005a) states that in these cases a *BCF* is more applicable than a *BAF* because these substances do not tend to bioaccumulate.

3. Null values are assigned to all metals and inorganics not included in the HHRAP Database.

4. For organic substances not included in the HHRAP Database with a log $K_{ow} \geq 4$, calculate values using Equation 42.

Equation 42 – Bioaccumulation Factor for Gamefish ($BAF_{gamefish}$)

$$BAF_{gamefish} = BCF_{gamefish} \cdot FCM_4$$

$BAF_{gamefish}$ = Bioaccumulation factor for gamefish (L/kg FW tissue)
$BCF_{gamefish}$ = Bioconcentration factor for gamefish (L/kg FW tissue)
FCM_4 = Food chain multiplier for trophic level 4 (unitless)

Source: HHRAP (EPA 2005a).

8.18 Bioaccumulation Equivalency Factor (*BEF*)

8.18.1 *Background*

Modeling the exposure of dioxins and furans through the food web requires the quantification of bioaccumulation potential; however, measured bioaccumulation data specific to each congener is limited. Therefore, *BEFs*, which measure congener bioaccumulation potential relative to 2,3,7,8-TCDD, are used to calculate mammal and bird *BCFs* for those particular substances. *BEFs* are unitless parameters.

8.18.2 *Method*

For all dioxin and furan congers:

1. SLERAP (EPA 1999b, Table 2-4).

2. For congeners not found in the SLERAP, Equation 43 is used.

Null values are assigned to all other substances and are referenced with the source which defines them as such. This parameter only applies to dioxins, furans, and dioxin-like PCBs, when following the HHRAP (EPA 2005a).

Equation 43 – Bioaccumulation Equivalency Factor for Dioxin and Furan Congeners (BEF_x)

$$BEF_x = \frac{BSAF_x}{BSAF_{TCDD}}$$

BEF_x = Bioaccumulation equivalency factor for dioxin/furan congener *x* (unitless)
$BSAF_x$ = Biota-sediment accumulation factor for dioxin/furan congener *x* (unitless)
$BSAF_{TCDD}$ = Biota-sediment accumulation factor for 2,3,7,8-TCDD (unitless)

Source: SLERAP (EPA 1999b).

8.19 Food-Chain Multipliers for Fish & Other Wildlife (FCM_2, FCM_3, FCM_4)

8.19.1 *Background*

The food chain multipliers for three trophic levels (FCM_2, FCM_3, FCM_4) are unitless parameters that account for substance biomagnification in the food chain. For fish, the term is used in modeling a substance concentration in fish with the appropriate trophic level of fish ingested by an ecological receptor being specified. For wildlife, the term is used in modeling a substance concentration in food items that are ingested by guild specific (i.e., herbivores, omnivores) mammalian and bird receptors. A *FCM* ratio is applied to each animal food item ingested to account for the increase in substance concentration. *FCMs* can be obtained by dividing the bioaccumulation factor (*BAF*) by substance specific K_{ow} values.

In the EPA guidance (EPA 1995c), the *FCMs* were derived based on the percent lipid content in fish and on the percentage of each diet item consumed by the fish species selected for the study. The *FCMs* were developed assuming no metabolism of a substance. Thus, for substances where metabolism may occur (i.e., some PAHs), the substance concentration in fish ingested by an ecological receptor may be overestimated. For wildlife, this fish-based approach to calculate concentrations in terrestrial wildlife tissue is used due to the lack of other available guidance.

8.19.2 *Method*

The source for selecting *FCMs* is Table 2 of the Water Quality Guidance for the Great Lakes System (EPA 1995c). The SLERAP adopted the FCMs directly from this table, which is duplicated below as

Table 7.

The FCMs are provided based on the substance log K_{ow} for each of the three trophic levels. The guidance (EPA 1995c) only provides FCM values for log K_{ow} values ranging from 2.0 to 9.0. For the log K_{ow} values that range from 3.0 to 9.0, the values are provided in increments of tenths (i.e., 3.0, 3.1, 3.2, etc.). For substances with a log K_{ow} value below 3.0, the source only provides FCMs for substances with a log K_{ow} of 2.0 and 2.5.

The following method is used to make specific *FCM* assignments:

1. For substances without a log K_{ow} value, FCM values of 1 are assigned.

2. For substances with log K_{ow} values of 1.4 or less (rounded to the nearest tenths), FCM values of 1 are assigned.

3. For substances with log K_{ow} values from 1.5 to 1.9 (rounded to the nearest tenths), FCMs for a log K_{ow} of 2.0 are used.

4. For log K_{ow} values from 2.0 to 2.9, we select the FCMs based on the substances rounded log K_{ow} value (rounded to the nearest tenth). We assign the FCMs for log K_{ow} values of 2.0, 2.5, or 3.0 based on which the rounded log K_{ow} is nearest to.

5. For log K_{ow} values from 3.0 to 9.0 (rounded to the nearest tenths), we select the FCMs based on the substances rounded log K_{ow} value.

6. For log K_{ow} values from 9.1 or higher (rounded to the nearest tenths), FCMs for a log K_{ow} of 9.0 are used.

Table 7 – Food-Chain Multipliers for Trophic Levels 2, 3 and 4

Log K_{ow}	Trophic Levels		
	2	3	4
2.0	1.0	1.005	1.0
2.5	1.0	1.010	1.002
3.0	1.0	1.028	1.007
3.1	1.0	1.034	1.007
3.2	1.0	1.042	1.009
3.3	1.0	1.053	1.012
3.4	1.0	1.067	1.014
3.5	1.0	1.083	1.019
3.6	1.0	1.103	1.023
3.7	1.0	1.128	1.033
3.8	1.0	1.161	1.042
3.9	1.0	1.202	1.054
4.0	1.0	1.253	1.072
4.1	1.0	1.315	1.096
4.2	1.0	1.380	1.130
4.3	1.0	1.491	1.178
4.4	1.0	1.614	1.242
4.5	1.0	1.766	1.334
4.6	1.0	1.950	1.459
4.7	1.0	2.175	1.633
4.8	1.0	2.452	1.871
4.9	1.0	2.780	2.193
5.0	1.0	3.181	2.612
5.1	1.0	3.643	3.162
5.2	1.0	4.188	3.873
5.3	1.0	4.803	4.742
5.4	1.0	5.502	5.821
5.5	1.0	6.266	7.079
5.6	1.0	7.096	8.551
5.7	1.0	7.962	10.209
5.8	1.0	8.841	12.050
5.9	1.0	9.716	13.964
6.0	1.0	10.556	15.996
6.1	1.0	11.337	17.783
6.2	1.0	12.064	19.907
6.3	1.0	12.691	21.677
6.4	1.0	13.228	23.281
6.5	1.0	13.662	24.604
6.6	1.0	13.980	25.654
6.7	1.0	14.223	26.363
6.8	1.0	14.355	26.669
6.9	1.0	14.388	26.669
7.0	1.0	14.305	26.242
7.1	1.0	14.142	25.468
7.2	1.0	13.852	24.322
7.3	1.0	13.474	22.856
7.4	1.0	12.987	21.038
7.5	1.0	12.517	18.967
7.6	1.0	11.708	16.749
7.7	1.0	10.914	14.388
7.8	1.0	10.069	12.050
7.9	1.0	9.162	9.840
8.0	1.0	8.222	7.798
8.1	1.0	7.278	6.012
8.2	1.0	6.361	4.519
8.3	1.0	5.489	3.311
8.4	1.0	4.683	2.371
8.5	1.0	3.949	1.663
8.6	1.0	3.296	1.146
8.7	1.0	2.732	0.778
8.8	1.0	2.246	0.521
8.9	1.0	1.837	0.345
9.0	1.0	1.493	0.226

Source: Great Lakes Water Quality Initiative, Technical Support Document for the Procedure to Determine Bioaccumulation Factors (EPA 1995c).

8.20 Bioconcentration Factors for Mammals and Birds Ingesting Terrestrial Plants, Submerged Aquatic Vegetation, Water, and Soil/Sediment

8.20.1 *Background*

The bioconcentration factors for these exposure points to herbivorous or omnivorous mammals and birds are unitless parameters and are based in part on biotransfer factors (*Ba* values)(EPA 1999d). These bioconcentration factors include the following, where the indexes are: terrestrial plants (*tp*), submerged aquatic vegetation (*sav*), water (*w*), soil/sediment (*s*), herbivorous mammal or bird (*hm* or *hb*), and omnivorous mammal or bird (*om* or *ob*).

$BCF_{tp\text{-}hm}$	$BCF_{sav\text{-}hm}$	$BCF_{s\text{-}hm}$	$BCF_{w\text{-}hm}$
$BCF_{tp\text{-}hb}$	$BCF_{sav\text{-}hb}$	$BCF_{s\text{-}hb}$	$BCF_{w\text{-}hb}$
$BCF_{tp\text{-}om}$	$BCF_{sav\text{-}om}$	$BCF_{s\text{-}om}$	$BCF_{w\text{-}om}$
$BCF_{tp\text{-}ob}$	$BCF_{sav\text{-}ob}$	$BCF_{s\text{-}ob}$	$BCF_{w\text{-}ob}$

8.20.2 *Method*

Values for these parameters are not generated as part of project input data sets. These *BCF* values for wildlife are calculated by multiplying the appropriate biotransfer factor (Ba_{mammal} or Ba_{bird}) by the food-specific ingestion rate of the receptor being assessed in the risk assessment. For dioxins and furans, bioaccumulation equivalency factors (*BEFs*) are also used in the calculation.

Since these *BCF* values are not solely substance-specific, depending also on ingestion rate values used in the risk assessment, values for these parameters are not generated as part of project input data datasets. Rather they must be calculated within the project's exposure assessment model. The substance-specific input data needed for these calculations (Ba_{mammal}, Ba_{bird}, and *BEF*) is covered within this algorithm.

9. SPECIAL CONSIDERATIONS FOR SPECIFIC SUBSTANCES

9.1 Inorganic Substances

9.1.1 *Mixtures (or total recoverable forms of inorganic elements)*

Often environmental sampling data for metals and related inorganic substances reports the total recoverable forms of the element, rather than a single chemical form that can be accurately attached to a specific Chemical Abstract Service Registry Number (CASRN). In these cases, the assignment of the appropriate F&T parameter values should be based on the most appropriate chemical match between the environmental data and the physicochemical property data for similar chemical forms. The default approach used here is to adopt data found for the elemental forms of the inorganic substance, which is consistent with the HHRAP (EPA 2005a). However, project-specific protocols may require deviation from this approach.

9.1.2 *Metals*

Many of the parameter-specific methods for generating data for substances are unique to metals, as compared to other inorganics and organic substances. In some cases, the sources of data use the term "metals" to refer to only a subset of all metals (e.g., heavy metals). In other cases, it is not known whether the source means all metals or just a subset. This can cause confusion when trying to develop a standardized approach across different sources and terminologies.

In broad terms, the elements of the periodic table are classified as either Metals, Metalloids, or Nonmetals based on their ionizing and bonding properties.[1] There are 94 elemental metals subcategorized into six series (see following table). The nine elements on either side of the periodic table stair-step line that is between the Poor metals and the Nonmetals have properties somewhere in between those of metals and nonmetals. These nine elements are also sometimes referred to as semi-metals or metalloids [Boron (B), Aluminum (Al), Silicon (Si), Germanium (Ge) , Arsenic (As), Antimony (Sb), Tellurium (Te), Polonium (Po), and Astatine (At)].

When the term "metal" is used in this algorithm document (unless otherwise specified in the parameter-specific section), it is meant to refer to any and all of the metals in the following table when the substance record is either:

- the elemental form,
- the total recoverable form (e.g., Cadmium compounds), or
- an inorganic substance containing a metal (Aluminum oxide, Iron chloride).

[1] http://en.wikipedia.org/wiki/Metal

Table 8 – List of Metals

Alkali metals	Alkaline earth metals	Transitions metals		Rare earth metals		Poor metals
				Lanthanide series	Actinide series	
Cesium (Cs)	**Barium** (Ba)	**Bohrium** (Bh)	**Palladium** (Pd)	**Cerium** (Ce)	**Actinium** (Ac)	**Aluminum** (Al)
Francium (Fr)	**Beryllium** (Be)	**Cadmium** (Cd)	**Platinum** (Pt)	**Dysprosium** (Dy)	**Americium** (Am)	**Antimony** (Sb)
Lithium (Li)	**Calcium** (Ca)	**Chromium** (Cr)	**Rhenium** (Re)	**Erbium** (Er)	**Berkelium** (Bk)	**Bismuth** (Bi)
Potassium (K)	**Magnesium** (Mg)	**Cobalt** (Co)	**Rhodium** (Rh)	**Europium** (Eu)	**Californium** (Cf)	**Gallium** (Ga)
Rubidium (Rb)	**Radium** (Ra)	**Copper** (Cu)	**Roentgenium** (Rg)	**Gadolinium** (Gd)	**Curium** (Cm)	**Germanium** (Ge)
Sodium (Na)	**Strontium** (Sr)	**Darmstadtium** (Ds)	**Ruthenium** (Ru)	**Holmium** (Ho)	**Einsteinium** (Es)	**Indium** (In)
		Dubnium (Db)	**Rutherfordium** (Rf)	**Lanthanum** (La)	**Fermium** (Fm)	**Lead** (Pb)
		Gold (Au)	**Scandium** (Sc)	**Lutetium** (Lu)	**Lawrencium** (Lr)	**Thallium** (Tl)
		Hafnium (Hf)	**Seaborgium** (Sg)	**Neodymium** (Nd)	**Mendelevium** (Md)	**Tin** (Sn)
		Hassium (Hs)	**Silver** (Ag)	**Praseodymium** (Pr)	**Neptunium** (Np)	**Polonium** (Po)
		Iridium (Ir)	**Tantalum** (Ta)	**Promethium** (Pm)	**Nobelium** (No)	**Ununtrium** (Uut)
		Iron (Fe)	**Technetium** (Tc)	**Samarium** (Sm)	**Plutonium** (Pu)	**Ununquadium** (Uuq)
		Manganese (Mn)	**Titanium** (Ti)	**Terbium** (Tb)	**Protactinium** (Pa)	**Ununpentium** (Uup)
		Meitnerium (Mt)	**Tungsten** (W)	**Thulium** (Tm)	**Thorium** (Th)	**Ununhexium** (Uuh)
		Mercury (Hg)	**Ununbium** (Uub)	**Ytterbium** (Yb)	**Uranium** (U)	
		Molybdenum (Mo)	**Vanadium** (V)			
		Nickel (Ni)	**Yttrium** (Y)			
		Niobium (Nb)	**Zinc** (Zn)			
		Osmium (Os)	**Zirconium** (Zr)			

9.2 Polychlorinated Dioxin, Furan, and Biphenyl Homologues

Environmental sampling data for polychlorinated dibenzo(p)dioxins (PCDD), polychlorinated dibenzofurans (PCDF), and polychlorinated biphenyls (PCBs) can sometimes be reported as homologue groups, rather than specific congeners or specific mixtures. Determining the most appropriate F&T parameter values for these homologue groups will usually depend on specific project conditions. However, the default approach is to research parameter values from available information reported for the homologue group as a whole, rather than for a representative congener within the group.

Table 9 – PCDD, PCDF, PCB Homologues

CASRN	Homologue
41903-57-5	Tetrachlorodibenzo-p-dioxin
36088-22-9	Pentachlorodibenzo-p-dioxin
34465-46-8	Hexachlorodibenzo-p-dioxin
37871-00-4	Heptachlorodibenzo-p-dioxin
30402-14-3	Tetrachlorodibenzofuran
30402-15-4	Pentachlorodibenzofuran
55684-94-1	Hexachlorodibenzofuran
38998-75-3	Heptachlorodibenzofuran
27323-18-8	Monochlorobiphenyl
25512-42-9	Dichlorobiphenyl
25323-68-6	Trichlorobiphenyl
26914-33-0	Tetrachlorobiphenyl
25429-29-2	Pentachlorobiphenyl
26601-64-9	Hexachlorobiphenyl
28655-71-2	Heptachlorobiphenyl
55722-26-4	Octachlorobiphenyl
53742-07-7	Nonachlorobiphenyl
2051-24-3	Decachlorobiphenyl

9.3 Dioxin-Like Toxicity Equivalents

Risk assessment datasets often contain substance records for dioxin-like toxicity equivalents (TEQ), where all relevant congeners are scaled relative to 2,3,7,8-Tetrachlorinateddibenzo-p-dioxin. The typical TEQ mixtures are often expressed as either 2,3,7,8-TCDD TEQ and/or PCB TEQ. In these cases, F&T parameter values are not needed for the TEQ record, because the fate-and-transport of the congeners are modeled independently and then their concentrations are combined into the TEQ record using their toxicity equivalence factors (TEFs).

In some cases, however, the emissions or other sampling data for the individual congeners are not available and environmental data is only available for the total dioxin-like mixture. In these cases, F&T parameter values for a surrogate dioxin-like compound are applied to the mixture.

9.4 Specific Mixtures of Polychlorinated Biphenyls

In risk assessment datasets, the noncancer hazards and non-dioxin-like cancer risks posed by Polychlorinated biphenyls (PCBs) are typically assessed as specific mixtures, such as Aroclor 1254 or as generic mixtures such as those found in the following table. This is in contrast to the use of the TEQ approach to assessing dioxin-like cancer risk (see above section).

F&T parameter values for the following substances should be based on the specific chemical mixture and CASRN. Based on guidance in the HHRAP (EPA 2005a), values for Aroclor 1254 are used for 0-072*, which is the generic record for when the mixture contains congeners with 5 or more chlorines in more than 0.5 percent of the total PCB mixture. Values for Aroclor 1016 are used for 0-073*, which is the generic record for when the mixture contains congeners with 5 or more chlorines in less than 0.5 percent of the total PCB mixture.

Table 10 – Specific PCB Mixtures for Assessing Non-Dioxin Like Effects

CASRN	PCB Mixture
0-072*	PCB Mixture (non-dioxin like, 5+ chlorines)
0-073*	PCB Mixture (non-dioxin like, 1-4 chlorines)
1336-36-3	Polychlorinated biphenyls
11096-82-5	Aroclor 1260
11097-69-1	Aroclor 1254
11100-14-4	Aroclor 1268
11104-28-2	Aroclor 1221
11141-16-5	Aroclor 1232
12672-29-6	Aroclor 1248
12674-11-2	Aroclor 1016
37324-23-5	Aroclor 1262
53469-21-9	Aroclor 1242

* CHPPM database code when a CASRN is not available.

9.5 Chemical Agents

Unless otherwise stated in each parameter-specific section, the following data source hierarchy is used for F&T parameter values for the chemical agents:

1. Munro et al (1999).
2. CHPPM (1999).

10. SUMMARY OF CHANGES SINCE THE LAST VERSION

Substantive changes made to the document since the last version (Version 3.1, January 10, 2007) are identified below.

- **Bioconcentration and accumulation factors for gamefish ($BCF_{gamefish}$) and $BAF_{gamefish}$)**

The previous version did not correctly reflect the HHRAP guidance (EPA 2005a) and was corrected for these parameters.

- **Fraction absorbed from dermal contact with water (*FA*) and the desquamation rate to lag time ratio (t_{sc}/τ_{event})**

The previous version did not include a section for the desquamation rate to lag time ratio (t_{sc}/τ_{event}), which is needed in order to look up values for the fraction absorbed from dermal contact with water (*FA*). A section for the t_{sc}/τ_{event} ratio was added to the document and the *FA* section was significantly revised in order to improve clarity and to refer to the calculated t_{sc}/τ_{event} ratio.

- **Air-to-plant biotransfer factors for aboveground produce (Bv_{ag}) and forage/silage ($Bv_{forage/silage}$)**

The method description was edited in order to clarify the implementation of the HHRAP guidance (EPA 2005a) for metals and other inorganics.

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APPENDIX G

ProUCL RAW OUTPUT

General UCL Statistics for Full Data Sets
User Selected Options
From File H:\Camp Moscrip\proucl input.wst
Full Precision OFF
Confidence Coefficient 95%
Number of Bootstrap Operations 2000

Methyl iodide

General Statistics

Number of Valid Observations	24	Number of Distinct Observations	4
Number of Missing Values	24		

Raw Statistics		Log-transformed Statistics	
Minimum	5	Minimum of Log Data	1.609
Maximum	22	Maximum of Log Data	3.091
Mean	6.5	Mean of log Data	1.803
Median	6	SD of log Data	0.32
SD	3.514		
Coefficient of Variation	0.541		
Skewness	4.135		

Warning: There are only 4 Distinct Values in this data
There are insufficient Distinct Values to perform some GOF tests and bootstrap methods.

Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values to compute bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10-15 or more observations for accurate and meaningful bootstrap results.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.396	Shapiro Wilk Test Statistic	0.525
Shapiro Wilk Critical Value	0.916	Shapiro Wilk Critical Value	0.916
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	7.729	95% H-UCL	7.218
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	8.214
95% Adjusted-CLT UCL	8.327	97.5% Chebyshev (MVUE) UCL	9.012
95% Modified-t UCL	7.83	99% Chebyshev (MVUE) UCL	10.58

Gamma Distribution Test Data Distribution
k star (bias corrected) 6.509 Data do not follow a Discernable Distribution (0.05)

Theta Star 0.999
MLE of Mean 6.5
MLE of Standard Deviation 2.548
nu star 312.4
Approximate Chi Square Value (.05) 272.5 Nonparametric Statistics
Adjusted Level of Significance 0.0392 95% CLT UCL 7.68
Adjusted Chi Square Value 269.9 95% Jackknife UCL 7.729
95% Standard Bootstrap UCL 7.672
Anderson-Darling Test Statistic 4.767 95% Bootstrap-t UCL 13.12
Anderson-Darling 5% Critical Value 0.745 95% Hall's Bootstrap UCL
14.37
Kolmogorov-Smirnov Test Statistic 0.453 95% Percentile Bootstrap UCL
7.792
Kolmogorov-Smirnov 5% Critical Value 0.178 95% BCA Bootstrap UCL
8.708
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
9.627
97.5% Chebyshev(Mean, Sd) UCL 10.98
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 13.64
95% Approximate Gamma UCL 7.453
95% Adjusted Gamma UCL 7.525

Potential UCL to Use Use 95% Student's-t UCL 7.729
or 95% Modified-t UCL 7.83

<u>Acenaphthylene</u>

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 26
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.63 Minimum of Log Data -0.462
Maximum 720 Maximum of Log Data 6.579
Mean 57.31 Mean of log Data 2.283
Median 12 SD of log Data 1.977
SD 135.1
Coefficient of Variation 2.358
Skewness 4.238

Relevant UCL Statistics

Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.458 Shapiro Wilk Test Statistic 0.93
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 98.51 95% H-UCL 270.5
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 181.9
95% Adjusted-CLT UCL 117 97.5% Chebyshev (MVUE) UCL 235.2
95% Modified-t UCL 101.6 99% Chebyshev (MVUE) UCL 339.7

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.362 Data appear Lognormal at 5% Significance Level
Theta Star 158.5
MLE of Mean 57.31
MLE of Standard Deviation 95.31
nu star 22.41
Approximate Chi Square Value (.05) 12.65 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 97.23
Adjusted Chi Square Value 12.24 95% Jackknife UCL 98.51
95% Standard Bootstrap UCL 97.02
Anderson-Darling Test Statistic 1.66 95% Bootstrap-t UCL 161.3
Anderson-Darling 5% Critical Value 0.837 95% Hall's Bootstrap UCL 235.1
Kolmogorov-Smirnov Test Statistic 0.209 95% Percentile Bootstrap UCL
101.4
Kolmogorov-Smirnov 5% Critical Value 0.169 95% BCA Bootstrap UCL
124.3
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
163.1
97.5% Chebyshev(Mean, Sd) UCL 208.9
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 298.8
95% Approximate Gamma UCL 101.5
95% Adjusted Gamma UCL 104.9

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 163.1

<u>Benzo[a]anthracene</u>

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 28
Number of Missing Values 17

Raw Statistics Log-transformed Statistics

Minimum 0.81 Minimum of Log Data -0.211
Maximum 4000 Maximum of Log Data 8.294
Mean 242.8 Mean of log Data 3.647
Median 37 SD of log Data 1.905
SD 725.2
Coefficient of Variation 2.987
Skewness 4.965

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.351 Shapiro Wilk Test Statistic 0.982
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 463.8 95% H-UCL 843.2
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 611.2
95% Adjusted-CLT UCL 581.1 97.5% Chebyshev (MVUE) UCL 787.4
95% Modified-t UCL 483.2 99% Chebyshev (MVUE) UCL 1134

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.349 Data appear Lognormal at 5% Significance Level
Theta Star 696
MLE of Mean 242.8
MLE of Standard Deviation 411.1
nu star 21.63
Approximate Chi Square Value (.05) 12.06 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 457
Adjusted Chi Square Value 11.66 95% Jackknife UCL 463.8
95% Standard Bootstrap UCL 453.7
Anderson-Darling Test Statistic 1.882 95% Bootstrap-t UCL 1165
Anderson-Darling 5% Critical Value 0.84 95% Hall's Bootstrap UCL 1199
Kolmogorov-Smirnov Test Statistic 0.212 95% Percentile Bootstrap UCL
483.3
Kolmogorov-Smirnov 5% Critical Value 0.17 95% BCA Bootstrap UCL 648.3
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
810.5
97.5% Chebyshev(Mean, Sd) UCL 1056
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 1539
95% Approximate Gamma UCL 435.4
95% Adjusted Gamma UCL 450.2

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 810.5

Benzo[a]pyrene

General Statistics
Number of Valid Observations 40 Number of Distinct Observations 37
Number of Missing Values 8

Raw Statistics Log-transformed Statistics
Minimum 1.2 Minimum of Log Data 0.182
Maximum 3400 Maximum of Log Data 8.132
Mean 275.2 Mean of log Data 4.338
Median 67.5 SD of log Data 1.814
SD 553.1
Coefficient of Variation 2.01
Skewness 4.872

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.472 Shapiro Wilk Test Statistic 0.958
Shapiro Wilk Critical Value 0.94 Shapiro Wilk Critical Value 0.94
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 422.5 95% H-UCL 1097
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 978.2
95% Adjusted-CLT UCL 491 97.5% Chebyshev (MVUE) UCL 1246
95% Modified-t UCL 433.7 99% Chebyshev (MVUE) UCL 1772

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.476 Data appear Lognormal at 5% Significance Level
Theta Star 577.9
MLE of Mean 275.2
MLE of Standard Deviation 398.8
nu star 38.09
Approximate Chi Square Value (.05) 24.96 Nonparametric Statistics
Adjusted Level of Significance 0.044 95% CLT UCL 419
Adjusted Chi Square Value 24.56 95% Jackknife UCL 422.5
95% Standard Bootstrap UCL 415.2
Anderson-Darling Test Statistic 0.973 95% Bootstrap-t UCL 625.1
Anderson-Darling 5% Critical Value 0.814 95% Hall's Bootstrap UCL 1004
Kolmogorov-Smirnov Test Statistic 0.153 95% Percentile Bootstrap UCL
430.8
Kolmogorov-Smirnov 5% Critical Value 0.148 95% BCA Bootstrap UCL
516.9
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
656.4

97.5% Chebyshev(Mean, Sd) UCL 821.3
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 1145
95% Approximate Gamma UCL 420
95% Adjusted Gamma UCL 426.8

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 656.4

Benzo[b]fluoranthene

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 28
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 2.2 Minimum of Log Data 0.788
Maximum 4800 Maximum of Log Data 8.476
Mean 372.6 Mean of log Data 4.466
Median 79 SD of log Data 1.691
SD 908.3
Coefficient of Variation 2.438
Skewness 4.274

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.433 Shapiro Wilk Test Statistic 0.983
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 649.5 95% H-UCL 1023
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 896.6
95% Adjusted-CLT UCL 774.8 97.5% Chebyshev (MVUE) UCL 1142
95% Modified-t UCL 670.4 99% Chebyshev (MVUE) UCL 1625

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.423 Data appear Lognormal at 5% Significance Level
Theta Star 880.3
MLE of Mean 372.6
MLE of Standard Deviation 572.7
nu star 26.24
Approximate Chi Square Value (.05) 15.57 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 641
Adjusted Chi Square Value 15.11 95% Jackknife UCL 649.5

95% Standard Bootstrap UCL 641.4
Anderson-Darling Test Statistic 1.694 95% Bootstrap-t UCL 1267
Anderson-Darling 5% Critical Value 0.822 95% Hall's Bootstrap UCL 1643
Kolmogorov-Smirnov Test Statistic 0.207 95% Percentile Bootstrap UCL
663.7
Kolmogorov-Smirnov 5% Critical Value 0.168 95% BCA Bootstrap UCL
852.4
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
1084
97.5% Chebyshev(Mean, Sd) UCL 1391
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 1996
95% Approximate Gamma UCL 628.2
95% Adjusted Gamma UCL 647.2

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 1084

Benzo[g,h,i]perylene

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 28
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.84 Minimum of Log Data -0.174
Maximum 1800 Maximum of Log Data 7.496
Mean 133.5 Mean of log Data 3.382
Median 22 SD of log Data 1.689
SD 338.2
Coefficient of Variation 2.533
Skewness 4.374

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.419 Shapiro Wilk Test Statistic 0.975
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 236.6 95% H-UCL 344.4
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 302.4
95% Adjusted-CLT UCL 284.4 97.5% Chebyshev (MVUE) UCL 385.2
95% Modified-t UCL 244.6 99% Chebyshev (MVUE) UCL 547.9

Gamma Distribution Test Data Distribution

k star (bias corrected) 0.41 Data appear Lognormal at 5% Significance Level
Theta Star 325.6
MLE of Mean 133.5
MLE of Standard Deviation 208.5
nu star 25.43
Approximate Chi Square Value (.05) 14.94 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 233.4
Adjusted Chi Square Value 14.49 95% Jackknife UCL 236.6
95% Standard Bootstrap UCL 234.1
Anderson-Darling Test Statistic 1.981 95% Bootstrap-t UCL 488.6
Anderson-Darling 5% Critical Value 0.825 95% Hall's Bootstrap UCL 586.3
Kolmogorov-Smirnov Test Statistic 0.208 95% Percentile Bootstrap UCL
244
Kolmogorov-Smirnov 5% Critical Value 0.168 95% BCA Bootstrap UCL
293.6
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
398.3
97.5% Chebyshev(Mean, Sd) UCL 512.9
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 737.9
95% Approximate Gamma UCL 227.3
95% Adjusted Gamma UCL 234.3

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 398.3

<u>Benzo[k]fluoranthene</u>

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 29
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.77 Minimum of Log Data -0.261
Maximum 1900 Maximum of Log Data 7.55
Mean 171.5 Mean of log Data 3.629
Median 29 SD of log Data 1.784
SD 377.1
Coefficient of Variation 2.199
Skewness 3.725

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.494 Shapiro Wilk Test Statistic 0.97
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 286.4 95% H-UCL 576
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 467.7
95% Adjusted-CLT UCL 331.3 97.5% Chebyshev (MVUE) UCL 598.9
95% Modified-t UCL 294 99% Chebyshev (MVUE) UCL 856.7

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.409 Data appear Lognormal at 5% Significance Level
Theta Star 418.9
MLE of Mean 171.5
MLE of Standard Deviation 268
nu star 25.38
Approximate Chi Square Value (.05) 14.9 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 282.9
Adjusted Chi Square Value 14.45 95% Jackknife UCL 286.4
95% Standard Bootstrap UCL 283.2
Anderson-Darling Test Statistic 1.685 95% Bootstrap-t UCL 465.4
Anderson-Darling 5% Critical Value 0.826 95% Hall's Bootstrap UCL 737.9
Kolmogorov-Smirnov Test Statistic 0.228 95% Percentile Bootstrap UCL
287.8
Kolmogorov-Smirnov 5% Critical Value 0.168 95% BCA Bootstrap UCL
337.1
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
466.7
97.5% Chebyshev(Mean, Sd) UCL 594.4
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 845.3
95% Approximate Gamma UCL 292
95% Adjusted Gamma UCL 301

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 466.7

<u>Dibenz[a,h]anthracene</u>

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 28
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.78 Minimum of Log Data -0.248
Maximum 560 Maximum of Log Data 6.328
Mean 39.37 Mean of log Data 2.146
Median 5.5 SD of log Data 1.637
SD 103.5
Coefficient of Variation 2.63

Skewness 4.583

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.402 Shapiro Wilk Test Statistic 0.938
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 70.94 95% H-UCL 86.9
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 79.3
95% Adjusted-CLT UCL 86.32 97.5% Chebyshev (MVUE) UCL 100.7
95% Modified-t UCL 73.49 99% Chebyshev (MVUE) UCL 142.8

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.407 Data appear Lognormal at 5% Significance Level
Theta Star 96.82
MLE of Mean 39.37
MLE of Standard Deviation 61.74
nu star 25.21
Approximate Chi Square Value (.05) 14.77 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 69.96
Adjusted Chi Square Value 14.33 95% Jackknife UCL 70.94
95% Standard Bootstrap UCL 68.47
Anderson-Darling Test Statistic 2.25 95% Bootstrap-t UCL 146.8
Anderson-Darling 5% Critical Value 0.826 95% Hall's Bootstrap UCL 176.7
Kolmogorov-Smirnov Test Statistic 0.222 95% Percentile Bootstrap UCL
74.02
Kolmogorov-Smirnov 5% Critical Value 0.168 95% BCA Bootstrap UCL
92.19
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
120.4
97.5% Chebyshev(Mean, Sd) UCL 155.5
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 224.4
95% Approximate Gamma UCL 67.19
95% Adjusted Gamma UCL 69.28

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 120.4

Indeno[1,2,3-cd]pyrene

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 26

Number of Missing Values 17

Raw Statistics		Log-transformed Statistics	
Minimum	0.73	Minimum of Log Data	-0.315
Maximum	1700	Maximum of Log Data	7.438
Mean	123.6	Mean of log Data	3.297
Median	20	SD of log Data	1.697
SD	317.1		
Coefficient of Variation	2.566		
Skewness	4.463		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.413	Shapiro Wilk Test Statistic	0.978
Shapiro Wilk Critical Value	0.929	Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	220.2	95% H-UCL	323.4
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	282.1
95% Adjusted-CLT UCL	266	97.5% Chebyshev (MVUE) UCL	359.5
95% Modified-t UCL	227.8	99% Chebyshev (MVUE) UCL	511.6

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.408	Data appear Lognormal at 5% Significance Level
Theta Star	302.6	
MLE of Mean	123.6	
MLE of Standard Deviation	193.4	
nu star	25.32	
Approximate Chi Square Value (.05)	14.85	Nonparametric Statistics
Adjusted Level of Significance	0.0413	95% CLT UCL 217.2
Adjusted Chi Square Value	14.41	95% Jackknife UCL 220.2
		95% Standard Bootstrap UCL 213.8
Anderson-Darling Test Statistic	1.915	95% Bootstrap-t UCL 447.9
Anderson-Darling 5% Critical Value	0.826	95% Hall's Bootstrap UCL 547.9
Kolmogorov-Smirnov Test Statistic	0.208	95% Percentile Bootstrap UCL 228
Kolmogorov-Smirnov 5% Critical Value	0.168	95% BCA Bootstrap UCL 285.3
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 371.8
		97.5% Chebyshev(Mean, Sd) UCL 479.3
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 690.3
95% Approximate Gamma UCL	210.6	
95% Adjusted Gamma UCL	217.1	

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 371.8

Phenanthrene

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 29
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.78 Minimum of Log Data -0.248
Maximum 450 Maximum of Log Data 6.109
Mean 48.95 Mean of log Data 2.589
Median 8.1 SD of log Data 1.632
SD 93.12
Coefficient of Variation 1.902
Skewness 3.148

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.565 Shapiro Wilk Test Statistic 0.951
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 77.34 95% H-UCL 133.6
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 122.4
95% Adjusted-CLT UCL 86.57 97.5% Chebyshev (MVUE) UCL 155.4
95% Modified-t UCL 78.92 99% Chebyshev (MVUE) UCL 220.1

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.464 Data appear Lognormal at 5% Significance Level
Theta Star 105.6
MLE of Mean 48.95
MLE of Standard Deviation 71.89
nu star 28.75
Approximate Chi Square Value (.05) 17.52 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 76.46
Adjusted Chi Square Value 17.03 95% Jackknife UCL 77.34
95% Standard Bootstrap UCL 76.21
Anderson-Darling Test Statistic 1.732 95% Bootstrap-t UCL 103.3
Anderson-Darling 5% Critical Value 0.812 95% Hall's Bootstrap UCL 104.5
Kolmogorov-Smirnov Test Statistic 0.228 95% Percentile Bootstrap UCL
76.64

Kolmogorov-Smirnov 5% Critical Value 0.167 95% BCA Bootstrap UCL
90.74
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
121.9
97.5% Chebyshev(Mean, Sd) UCL 153.4
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 215.4
95% Approximate Gamma UCL 80.36
95% Adjusted Gamma UCL 82.67

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 121.9

<u>Bis(2-ethylhexyl)phthalate</u>

General Statistics
Number of Valid Observations 25 Number of Distinct Observations 19
Number of Missing Values 23

Raw Statistics Log-transformed Statistics
Minimum 120 Minimum of Log Data 4.787
Maximum 2900 Maximum of Log Data 7.972
Mean 1279 Mean of log Data 6.805
Median 890 SD of log Data 0.923
SD 978.2
Coefficient of Variation 0.765
Skewness 0.637

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.861 Shapiro Wilk Test Statistic 0.942
Shapiro Wilk Critical Value 0.918 Shapiro Wilk Critical Value 0.918
Data not Normal at 5% Significance Level Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 1614 95% H-UCL 2172
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 2568
95% Adjusted-CLT UCL 1628 97.5% Chebyshev (MVUE) UCL 3095
95% Modified-t UCL 1618 99% Chebyshev (MVUE) UCL 4130

Gamma Distribution Test Data Distribution
k star (bias corrected) 1.417 Data appear Gamma Distributed at 5% Significance Level

Theta Star 902.9
MLE of Mean 1279
MLE of Standard Deviation 1075

nu star 70.84
Approximate Chi Square Value (.05) 52.46 Nonparametric Statistics
Adjusted Level of Significance 0.0395 95% CLT UCL 1601
Adjusted Chi Square Value 51.38 95% Jackknife UCL 1614
95% Standard Bootstrap UCL 1599
Anderson-Darling Test Statistic 0.471 95% Bootstrap-t UCL 1659
Anderson-Darling 5% Critical Value 0.761 95% Hall's Bootstrap UCL 1607
Kolmogorov-Smirnov Test Statistic 0.116 95% Percentile Bootstrap UCL
1600
Kolmogorov-Smirnov 5% Critical Value 0.178 95% BCA Bootstrap UCL
1632
Data appear Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
2132
97.5% Chebyshev(Mean, Sd) UCL 2501
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 3226
95% Approximate Gamma UCL 1727
95% Adjusted Gamma UCL 1764

Potential UCL to Use Use 95% Approximate Gamma UCL 1727

<u>Aroclor 1248</u>

General Statistics
Number of Valid Observations 3 Number of Distinct Observations 3

Warning: This data set only has 3 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable aroclor 1248 was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

<u>Aroclor 1254</u>

General Statistics
Number of Valid Observations 27 Number of Distinct Observations 20
Number of Missing Values 21

Raw Statistics Log-transformed Statistics
Minimum 12.1 Minimum of Log Data 2.493
Maximum 8400 Maximum of Log Data 9.036
Mean 496.5 Mean of log Data 3.775
Median 18.4 SD of log Data 1.609
SD 1748
Coefficient of Variation 3.521
Skewness 4.136

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.31 Shapiro Wilk Test Statistic 0.655
Shapiro Wilk Critical Value 0.923 Shapiro Wilk Critical Value 0.923
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 1070 95% H-UCL 466.7
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 390.8
95% Adjusted-CLT UCL 1336 97.5% Chebyshev (MVUE) UCL 497.5
95% Modified-t UCL 1115 99% Chebyshev (MVUE) UCL 706.9

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.279 Data do not follow a Discernable Distribution (0.05)

Theta Star 1781
MLE of Mean 496.5
MLE of Standard Deviation 940.4
nu star 15.05
Approximate Chi Square Value (.05) 7.296 Nonparametric Statistics
Adjusted Level of Significance 0.0401 95% CLT UCL 1050
Adjusted Chi Square Value 6.952 95% Jackknife UCL 1070
95% Standard Bootstrap UCL 1028
Anderson-Darling Test Statistic 6.264 95% Bootstrap-t UCL 19644
Anderson-Darling 5% Critical Value 0.859 95% Hall's Bootstrap UCL 11181
Kolmogorov-Smirnov Test Statistic 0.363 95% Percentile Bootstrap UCL
1103
Kolmogorov-Smirnov 5% Critical Value 0.183 95% BCA Bootstrap UCL
1425
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
1963
97.5% Chebyshev(Mean, Sd) UCL 2597
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 3844
95% Approximate Gamma UCL 1024
95% Adjusted Gamma UCL 1075

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 3844

Aroclor 1260

General Statistics
Number of Valid Observations 27 Number of Distinct Observations 24
Number of Missing Values 21

Raw Statistics Log-transformed Statistics
Minimum 9.05 Minimum of Log Data 2.203
Maximum 8400 Maximum of Log Data 9.036
Mean 509.9 Mean of log Data 3.757
Median 18.1 SD of log Data 1.728
SD 1746
Coefficient of Variation 3.424
Skewness 4.125

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.323 Shapiro Wilk Test Statistic 0.742
Shapiro Wilk Critical Value 0.923 Shapiro Wilk Critical Value 0.923
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 1083 95% H-UCL 645
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 483.3
95% Adjusted-CLT UCL 1348 97.5% Chebyshev (MVUE) UCL 619.3
95% Modified-t UCL 1128 99% Chebyshev (MVUE) UCL 886.5

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.275 Data do not follow a Discernable Distribution (0.05)

Theta Star 1856
MLE of Mean 509.9
MLE of Standard Deviation 972.8
nu star 14.84
Approximate Chi Square Value (.05) 7.148 Nonparametric Statistics
Adjusted Level of Significance 0.0401 95% CLT UCL 1063
Adjusted Chi Square Value 6.808 95% Jackknife UCL 1083
95% Standard Bootstrap UCL 1046
Anderson-Darling Test Statistic 5.332 95% Bootstrap-t UCL 10437
Anderson-Darling 5% Critical Value 0.861 95% Hall's Bootstrap UCL 8033

Kolmogorov-Smirnov Test Statistic 0.369 95% Percentile Bootstrap UCL
1116
Kolmogorov-Smirnov 5% Critical Value 0.183 95% BCA Bootstrap UCL
1573
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
1975
97.5% Chebyshev(Mean, Sd) UCL 2608
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 3853
95% Approximate Gamma UCL 1058
95% Adjusted Gamma UCL 1111

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 3853

Chlordane

General Statistics
Number of Valid Observations 33 Number of Distinct Observations 21
Number of Missing Values 15

Raw Statistics		Log-transformed Statistics	
Minimum	1.7	Minimum of Log Data	0.531
Maximum	9800	Maximum of Log Data	9.19
Mean	611.7	Mean of log Data	3.901
Median	40	SD of log Data	1.711
SD	2198		
Coefficient of Variation	3.594		
Skewness	3.892		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.293	Shapiro Wilk Test Statistic	0.812
Shapiro Wilk Critical Value	0.931	Shapiro Wilk Critical Value	0.931
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1260	95% H-UCL	600.1
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	525.8
95% Adjusted-CLT UCL	1518	97.5% Chebyshev (MVUE) UCL	669.5
95% Modified-t UCL	1303	99% Chebyshev (MVUE) UCL	951.7

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.273	Data do not follow a Discernable Distribution (0.05)

Theta Star 2244

MLE of Mean 611.7
MLE of Standard Deviation 1172
nu star 17.99
Approximate Chi Square Value (.05) 9.385 Nonparametric Statistics
Adjusted Level of Significance 0.0419 95% CLT UCL 1241
Adjusted Chi Square Value 9.064 95% Jackknife UCL 1260
95% Standard Bootstrap UCL 1229
Anderson-Darling Test Statistic 6.478 95% Bootstrap-t UCL 14630
Anderson-Darling 5% Critical Value 0.865 95% Hall's Bootstrap UCL 13118
Kolmogorov-Smirnov Test Statistic 0.365 95% Percentile Bootstrap UCL
1236
Kolmogorov-Smirnov 5% Critical Value 0.167 95% BCA Bootstrap UCL
1642
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
2280
97.5% Chebyshev(Mean, Sd) UCL 3001
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 4419
95% Approximate Gamma UCL 1173
95% Adjusted Gamma UCL 1214

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 4419

<u>Dieldrin</u>

General Statistics
Number of Valid Observations 16 Number of Distinct Observations 13
Number of Missing Values 32

Raw Statistics Log-transformed Statistics
Minimum 0.73 Minimum of Log Data -0.315
Maximum 980 Maximum of Log Data 6.888
Mean 119.1 Mean of log Data 2.129
Median 6.7 SD of log Data 2.02
SD 309.8
Coefficient of Variation 2.602
Skewness 2.542

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.421 Shapiro Wilk Test Statistic 0.794
Shapiro Wilk Critical Value 0.887 Shapiro Wilk Critical Value 0.887
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution

95% Student's-t UCL 254.9 95% H-UCL 679.6
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 171.3
95% Adjusted-CLT UCL 299.1 97.5% Chebyshev (MVUE) UCL 224.7
95% Modified-t UCL 263.1 99% Chebyshev (MVUE) UCL 329.5

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.257 Data do not follow a Discernable Distribution (0.05)

Theta Star 462.8
MLE of Mean 119.1
MLE of Standard Deviation 234.7
nu star 8.233
Approximate Chi Square Value (.05) 2.87 Nonparametric Statistics
Adjusted Level of Significance 0.0335 95% CLT UCL 246.5
Adjusted Chi Square Value 2.522 95% Jackknife UCL 254.9
95% Standard Bootstrap UCL 241
Anderson-Darling Test Statistic 2.967 95% Bootstrap-t UCL 8327
Anderson-Darling 5% Critical Value 0.852 95% Hall's Bootstrap UCL 3783
Kolmogorov-Smirnov Test Statistic 0.414 95% Percentile Bootstrap UCL
242.3
Kolmogorov-Smirnov 5% Critical Value 0.235 95% BCA Bootstrap UCL
292.2
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
456.7
97.5% Chebyshev(Mean, Sd) UCL 602.8
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 889.8
95% Approximate Gamma UCL 341.5
95% Adjusted Gamma UCL 388.7

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 889.8

<u>Heptachlor</u>

General Statistics
Number of Valid Observations 12 Number of Distinct Observations 10
Number of Missing Values 36

Raw Statistics Log-transformed Statistics
Minimum 0.37 Minimum of Log Data -0.994
Maximum 480 Maximum of Log Data 6.174
Mean 43.27 Mean of log Data 1.022
Median 0.885 SD of log Data 1.99
SD 137.6
Coefficient of Variation 3.18
Skewness 3.457

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.351 Shapiro Wilk Test Statistic 0.788
Shapiro Wilk Critical Value 0.859 Shapiro Wilk Critical Value 0.859
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 114.6 95% H-UCL 389.5
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 52.12
95% Adjusted-CLT UCL 151 97.5% Chebyshev (MVUE) UCL 68.6
95% Modified-t UCL 121.2 99% Chebyshev (MVUE) UCL 101

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.249 Data do not follow a Discernable Distribution (0.05)

Theta Star 174
MLE of Mean 43.27
MLE of Standard Deviation 86.77
nu star 5.968
Approximate Chi Square Value (.05) 1.624 Nonparametric Statistics
Adjusted Level of Significance 0.029 95% CLT UCL 108.6
Adjusted Chi Square Value 1.304 95% Jackknife UCL 114.6
95% Standard Bootstrap UCL 106.5
Anderson-Darling Test Statistic 2.248 95% Bootstrap-t UCL 2312
Anderson-Darling 5% Critical Value 0.842 95% Hall's Bootstrap UCL 1569
Kolmogorov-Smirnov Test Statistic 0.325 95% Percentile Bootstrap UCL
121.9
Kolmogorov-Smirnov 5% Critical Value 0.268 95% BCA Bootstrap UCL
163.4
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
216.4
97.5% Chebyshev(Mean, Sd) UCL 291.4
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 438.5
95% Approximate Gamma UCL 159.1
95% Adjusted Gamma UCL 198.1

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 438.5

<u>Heptachlor epoxide</u>

General Statistics
Number of Valid Observations 24 Number of Distinct Observations 17
Number of Missing Values 24

Raw Statistics Log-transformed Statistics
Minimum 0.79 Minimum of Log Data -0.236
Maximum 480 Maximum of Log Data 6.174
Mean 22.62 Mean of log Data 0.712
Median 0.92 SD of log Data 1.469
SD 97.5
Coefficient of Variation 4.31
Skewness 4.887

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.233 Shapiro Wilk Test Statistic 0.66
Shapiro Wilk Critical Value 0.916 Shapiro Wilk Critical Value 0.916
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 56.73 95% H-UCL 16.12
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 14.33
95% Adjusted-CLT UCL 76.57 97.5% Chebyshev (MVUE) UCL 18.14
95% Modified-t UCL 60.04 99% Chebyshev (MVUE) UCL 25.63

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.28 Data do not follow a Discernable Distribution (0.05)
Theta Star 80.75
MLE of Mean 22.62
MLE of Standard Deviation 42.74
nu star 13.44
Approximate Chi Square Value (.05) 6.193 Nonparametric Statistics
Adjusted Level of Significance 0.0392 95% CLT UCL 55.35
Adjusted Chi Square Value 5.849 95% Jackknife UCL 56.73
95% Standard Bootstrap UCL 53.58
Anderson-Darling Test Statistic 5.711 95% Bootstrap-t UCL 1056
Anderson-Darling 5% Critical Value 0.856 95% Hall's Bootstrap UCL 586.2
Kolmogorov-Smirnov Test Statistic 0.352 95% Percentile Bootstrap UCL
62.27
Kolmogorov-Smirnov 5% Critical Value 0.194 95% BCA Bootstrap UCL
101.7
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
109.4
97.5% Chebyshev(Mean, Sd) UCL 146.9
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 220.6
95% Approximate Gamma UCL 49.1
95% Adjusted Gamma UCL 52

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 220.6

Kepone

General Statistics
Number of Valid Observations 24 Number of Distinct Observations 17
Number of Missing Values 24

Raw Statistics Log-transformed Statistics
Minimum 2.8 Minimum of Log Data 1.03
Maximum 4000 Maximum of Log Data 8.294
Mean 183.8 Mean of log Data 2.76
Median 9.4 SD of log Data 1.42
SD 813.1
Coefficient of Variation 4.423
Skewness 4.895

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.225 Shapiro Wilk Test Statistic 0.695
Shapiro Wilk Critical Value 0.916 Shapiro Wilk Critical Value 0.916
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 468.3 95% H-UCL 109.9
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 101.6
95% Adjusted-CLT UCL 634 97.5% Chebyshev (MVUE) UCL 128.2
95% Modified-t UCL 495.9 99% Chebyshev (MVUE) UCL 180.4

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.276 Data do not follow a Discernable Distribution (0.05)

Theta Star 666.3
MLE of Mean 183.8
MLE of Standard Deviation 350
nu star 13.24
Approximate Chi Square Value (.05) 6.056 Nonparametric Statistics
Adjusted Level of Significance 0.0392 95% CLT UCL 456.8
Adjusted Chi Square Value 5.716 95% Jackknife UCL 468.3
95% Standard Bootstrap UCL 445.3
Anderson-Darling Test Statistic 5.963 95% Bootstrap-t UCL 10862
Anderson-Darling 5% Critical Value 0.858 95% Hall's Bootstrap UCL 7559
Kolmogorov-Smirnov Test Statistic 0.384 95% Percentile Bootstrap UCL
514.8

Kolmogorov-Smirnov 5% Critical Value 0.194 95% BCA Bootstrap UCL
685.1
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
907.2
97.5% Chebyshev(Mean, Sd) UCL 1220
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 1835
95% Approximate Gamma UCL 401.9
95% Adjusted Gamma UCL 425.8

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 1835

<u>p,p'-DDD</u>

General Statistics
Number of Valid Observations 15 Number of Distinct Observations 13
Number of Missing Values 33

Raw Statistics Log-transformed Statistics
Minimum 1.4 Minimum of Log Data 0.336
Maximum 5500 Maximum of Log Data 8.613
Mean 426.4 Mean of log Data 2.317
Median 6.3 SD of log Data 2.359
SD 1419
Coefficient of Variation 3.327
Skewness 3.743

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.343 Shapiro Wilk Test Statistic 0.753
Shapiro Wilk Critical Value 0.881 Shapiro Wilk Critical Value 0.881
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 1072 95% H-UCL 4545
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 398.8
95% Adjusted-CLT UCL 1407 97.5% Chebyshev (MVUE) UCL 528.2
95% Modified-t UCL 1131 99% Chebyshev (MVUE) UCL 782.5

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.202 Data do not follow a Discernable Distribution (0.05)

Theta Star 2108
MLE of Mean 426.4
MLE of Standard Deviation 948.1

nu star 6.068
Approximate Chi Square Value (.05) 1.675 Nonparametric Statistics
Adjusted Level of Significance 0.0324 95% CLT UCL 1029
Adjusted Chi Square Value 1.408 95% Jackknife UCL 1072
95% Standard Bootstrap UCL 1019
Anderson-Darling Test Statistic 3.023 95% Bootstrap-t UCL 107036
Anderson-Darling 5% Critical Value 0.878 95% Hall's Bootstrap UCL 49278
Kolmogorov-Smirnov Test Statistic 0.444 95% Percentile Bootstrap UCL
1157
Kolmogorov-Smirnov 5% Critical Value 0.245 95% BCA Bootstrap UCL
1579
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
2023
97.5% Chebyshev(Mean, Sd) UCL 2714
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 4071
95% Approximate Gamma UCL 1545
95% Adjusted Gamma UCL 1838

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 4071

<u>p,p'-DDE</u>

General Statistics
Number of Valid Observations 30 Number of Distinct Observations 28
Number of Missing Values 18

Raw Statistics Log-transformed Statistics
Minimum 0.47 Minimum of Log Data -0.755
Maximum 9600 Maximum of Log Data 9.17
Mean 502.5 Mean of log Data 2.246
Median 6.65 SD of log Data 2.411
SD 1919
Coefficient of Variation 3.82
Skewness 4.304

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.295 Shapiro Wilk Test Statistic 0.875
Shapiro Wilk Critical Value 0.927 Shapiro Wilk Critical Value 0.927
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 1098 95% H-UCL 1352
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 461.9

95% Adjusted-CLT UCL 1373 97.5% Chebyshev (MVUE) UCL 606.8
95% Modified-t UCL 1144 99% Chebyshev (MVUE) UCL 891.4

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.191 Data do not follow a Discernable Distribution (0.05)

Theta Star 2636
MLE of Mean 502.5
MLE of Standard Deviation 1151
nu star 11.44
Approximate Chi Square Value (.05) 4.859 Nonparametric Statistics
Adjusted Level of Significance 0.041 95% CLT UCL 1079
Adjusted Chi Square Value 4.613 95% Jackknife UCL 1098
95% Standard Bootstrap UCL 1066
Anderson-Darling Test Statistic 5.218 95% Bootstrap-t UCL 13807
Anderson-Darling 5% Critical Value 0.904 95% Hall's Bootstrap UCL 15323
Kolmogorov-Smirnov Test Statistic 0.35 95% Percentile Bootstrap UCL 1137
Kolmogorov-Smirnov 5% Critical Value 0.178 95% BCA Bootstrap UCL
1624
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
2030
97.5% Chebyshev(Mean, Sd) UCL 2691
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 3989
95% Approximate Gamma UCL 1183
95% Adjusted Gamma UCL 1246

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 3989

<u>p,p'-DDT</u>

General Statistics
Number of Valid Observations 31 Number of Distinct Observations 30
Number of Missing Values 17

Raw Statistics Log-transformed Statistics
Minimum 0.61 Minimum of Log Data -0.494
Maximum 77000 Maximum of Log Data 11.25
Mean 2673 Mean of log Data 2.141
Median 4.9 SD of log Data 2.642
SD 13827
Coefficient of Variation 5.174
Skewness 5.528

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test

Shapiro Wilk Test Statistic 0.203 Shapiro Wilk Test Statistic 0.823
Shapiro Wilk Critical Value 0.929 Shapiro Wilk Critical Value 0.929
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 6888 95% H-UCL 2842
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 725
95% Adjusted-CLT UCL 9392 97.5% Chebyshev (MVUE) UCL 957.7
95% Modified-t UCL 7299 99% Chebyshev (MVUE) UCL 1415

Gamma Distribution Test Data Distribution
k star (bias corrected) 0.144 Data do not follow a Discernable Distribution (0.05)

Theta Star 18561
MLE of Mean 2673
MLE of Standard Deviation 7043
nu star 8.927
Approximate Chi Square Value (.05) 3.283 Nonparametric Statistics
Adjusted Level of Significance 0.0413 95% CLT UCL 6758
Adjusted Chi Square Value 3.095 95% Jackknife UCL 6888
95% Standard Bootstrap UCL 6654
Anderson-Darling Test Statistic 6.896 95% Bootstrap-t UCL 1190270
Anderson-Darling 5% Critical Value 0.931 95% Hall's Bootstrap UCL 755043
Kolmogorov-Smirnov Test Statistic 0.393 95% Percentile Bootstrap UCL
7631
Kolmogorov-Smirnov 5% Critical Value 0.177 95% BCA Bootstrap UCL
10293
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
13498
97.5% Chebyshev(Mean, Sd) UCL 18182
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 27382
95% Approximate Gamma UCL 7267
95% Adjusted Gamma UCL 7709

Potential UCL to Use Use 99% Chebyshev (Mean, Sd) UCL 27382

<u>Arsenic</u>

General Statistics
Number of Valid Observations 43 Number of Distinct Observations 32
Number of Missing Values 24

Raw Statistics		Log-transformed Statistics	
Minimum	1	Minimum of Log Data	0
Maximum	12	Maximum of Log Data	2.485
Mean	5.907	Mean of log Data	1.611
Median	5.9	SD of log Data	0.627
SD	3.07		
Coefficient of Variation	0.52		
Skewness	0.275		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.947	Shapiro Wilk Test Statistic	0.932
Shapiro Wilk Critical Value	0.943	Shapiro Wilk Critical Value	0.943
Data appear Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	6.694	95% H-UCL	7.397
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	8.779
95% Adjusted-CLT UCL	6.698	97.5% Chebyshev (MVUE) UCL	9.954
95% Modified-t UCL	6.698	99% Chebyshev (MVUE) UCL	12.26

Gamma Distribution Test		Data Distribution
k star (bias corrected)	2.978	Data appear Normal at 5% Significance Level
Theta Star	1.984	
MLE of Mean	5.907	
MLE of Standard Deviation	3.423	
nu star	256.1	
Approximate Chi Square Value (.05)	220.1	Nonparametric Statistics
Adjusted Level of Significance	0.0444	95% CLT UCL 6.677
Adjusted Chi Square Value	218.9	95% Jackknife UCL 6.694
		95% Standard Bootstrap UCL 6.665
Anderson-Darling Test Statistic	0.548	95% Bootstrap-t UCL 6.707
Anderson-Darling 5% Critical Value	0.755	95% Hall's Bootstrap UCL 6.674
Kolmogorov-Smirnov Test Statistic	0.119	95% Percentile Bootstrap UCL 6.626
Kolmogorov-Smirnov 5% Critical Value	0.136	95% BCA Bootstrap UCL 6.693
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 7.948
		97.5% Chebyshev(Mean, Sd) UCL 8.831
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 10.57
95% Approximate Gamma UCL	6.875	
95% Adjusted Gamma UCL	6.911	

Potential UCL to Use Use 95% Student's-t UCL 6.694

Cobalt

General Statistics
Number of Valid Observations 53 Number of Distinct Observations 32
Number of Missing Values 22

Raw Statistics Log-transformed Statistics
Minimum 4.9 Minimum of Log Data 1.589
Maximum 290 Maximum of Log Data 5.67
Mean 28.12 Mean of log Data 2.996
Median 18 SD of log Data 0.702
SD 40.46
Coefficient of Variation 1.439
Skewness 5.521

Relevant UCL Statistics
Normal Distribution Test Lognormal Distribution Test
Lilliefors Test Statistic 0.312 Lilliefors Test Statistic 0.127
Lilliefors Critical Value 0.122 Lilliefors Critical Value 0.122
Data not Normal at 5% Significance Level Data not Lognormal at 5% Significance Level

Assuming Normal Distribution Assuming Lognormal Distribution
95% Student's-t UCL 37.43 95% H-UCL 31.19
95% UCLs (Adjusted for Skewness) 95% Chebyshev (MVUE) UCL 37.18
95% Adjusted-CLT UCL 41.76 97.5% Chebyshev (MVUE) UCL 42.25
95% Modified-t UCL 38.13 99% Chebyshev (MVUE) UCL 52.21

Gamma Distribution Test Data Distribution
k star (bias corrected) 1.537 Data do not follow a Discernable Distribution (0.05)

Theta Star 18.29
MLE of Mean 28.12
MLE of Standard Deviation 22.68
nu star 162.9
Approximate Chi Square Value (.05) 134.4 Nonparametric Statistics
Adjusted Level of Significance 0.0455 95% CLT UCL 37.26
Adjusted Chi Square Value 133.7 95% Jackknife UCL 37.43
95% Standard Bootstrap UCL 37.05
Anderson-Darling Test Statistic 3.392 95% Bootstrap-t UCL 50.95
Anderson-Darling 5% Critical Value 0.767 95% Hall's Bootstrap UCL
71.85

Kolmogorov-Smirnov Test Statistic 0.208 95% Percentile Bootstrap UCL
38.12
Kolmogorov-Smirnov 5% Critical Value 0.124 95% BCA Bootstrap UCL
43.5
Data not Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL
52.34
97.5% Chebyshev(Mean, Sd) UCL 62.83
Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 83.42
95% Approximate Gamma UCL 34.08
95% Adjusted Gamma UCL 34.27

Potential UCL to Use Use 95% Chebyshev (Mean, Sd) UCL 52.34

APPENDIX H
HUMAN HEALTH RISK CALCULATIONS AND CAO CALCULATIONS

Table H-1.Future Resident Risk Calculations.

Receptor	Adult Resident																								
Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}	Absorbed Dose (nc) (Dermal Intake)	Absorbed Dose (c) (Dermal Intake)	Incidental Soil Ingestion Intake (nc)	Incidental Soil Ingestion Intake (c)	RfDo	CSFo	Hqdermsoil	CANC RISKdermsoil	Hqoralsoil	CANC RISKoralsoil	Total HQ	Total CANC RISK
Acenaphthylene	0.16	100	350	24	1	70	8760	25550	0.10	0.07	5700	1.1417E-09	8.91E-08	3.06E-08	2.23E-07	7.66E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1248	10.21	100	350	24	1	70	8760	25550	0.14	0.07	5700	1.00029E-07	7.81E-06	2.68E-06	1.40E-05	4.79E-06	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1254	3.26	100	350	24	1	70	8760	25550	0.14	0.07	5700	3.19186E-08	2.49E-06	8.54E-07	4.46E-06	1.53E-06	2.00E-05	2.00E+00	0.12	1.71E-06	0.22	3.06E-06	0.35	4.77E-06
Aroclor 1260	3.26	100	350	24	1	70	8760	25550	0.14	0.07	5700	3.19872E-08	2.50E-06	8.56E-07	4.47E-06	1.53E-06	NA	2.00E+00	0.00	1.71E-06	0.00	3.07E-06	0.00	4.78E-06
Arsenic	6.57	100	350	24	1	70	8760	25550	0.03	0.07	5700	1.38054E-08	1.08E-06	3.70E-07	9.01E-06	3.09E-06	3.00E-04	1.50E+00	0.00	5.54E-07	0.03	4.63E-06	0.03	5.19E-06
Benzo[a]anthracene	0.81	100	350	24	1	70	8760	25550	0.13	0.07	5700	7.37555E-09	5.76E-07	1.97E-07	1.11E-06	3.81E-07	NA	7.30E-01	0.00	1.44E-07	0.00	2.78E-07	0.00	4.22E-07
Benzo[a]pyrene	0.66	100	350	24	1	70	8760	25550	0.13	0.07	5700	5.97324E-09	4.66E-07	1.60E-07	8.99E-07	5.68E-07	NA	7.30E+00	0.00	1.17E-06	0.00	2.25E-06	0.00	3.42E-06
Benzo[b]fluoranthene	1.08	100	350	24	1	70	8760	25550	0.13	0.07	5700	9.8644E-09	7.70E-07	2.64E-07	1.48E-06	5.09E-07	NA	7.30E-01	0.00	1.93E-07	0.00	3.72E-07	0.00	5.64E-07
Benzo[g,h,i]perylene	0.40	100	350	24	1	70	8760	25550	0.13	0.07	5700	3.62453E-09	2.83E-07	9.70E-08	5.46E-07	1.87E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Benzo[k]fluoranthene	0.47	100	350	24	1	70	8760	25550	0.13	0.07	5700	4.24697E-09	3.32E-07	1.14E-07	6.39E-07	2.19E-07	NA	7.30E-02	0.00	8.30E-09	0.00	1.60E-08	0.00	2.43E-08
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	100	350	24	1	70	8760	25550	0.10	0.07	5700	1.2089E-08	9.44E-07	3.24E-07	2.37E-06	8.11E-07	2.00E-02	1.40E-02	0.00	4.53E-09	0.00	1.14E-08	0.00	1.59E-08
Chlordane	4.51	100	350	24	1	70	8760	25550	0.04	0.07	5700	1.26364E-08	9.87E-07	3.38E-07	6.18E-06	2.12E-06	5.00E-04	3.50E-01	0.00	1.18E-07	0.01	7.42E-07	0.01	8.60E-07
Dibenz[a,h]anthracene	0.12	100	350	24	1	70	8760	25550	0.13	0.07	5700	1.09564E-09	8.55E-08	2.93E-08	1.65E-07	5.65E-08	NA	7.30E+00	0.00	2.14E-07	0.00	4.13E-07	0.00	6.27E-07
Dieldrin	0.68	100	350	24	1	70	8760	25550	0.10	0.07	5700	4.7908E-09	3.74E-07	1.28E-07	9.38E-07	3.21E-07	5.00E-05	1.60E+01	0.01	2.05E-06	0.02	5.14E-06	0.03	7.20E-06
Heptachlor	0.44	100	350	24	1	70	8760	25550	0.10	0.07	5700	3.0695E-09	2.40E-07	8.22E-08	6.01E-07	2.06E-07	5.00E-04	9.10E+00	0.00	7.48E-07	0.00	1.87E-06	0.00	2.62E-06
Heptachlor epoxide	0.22	100	350	24	1	70	8760	25550	0.10	0.07	5700	1.5442E-09	1.21E-07	4.13E-08	3.02E-07	1.04E-07	1.30E-05	7.30E-01	0.01	3.02E-08	0.02	7.56E-08	0.03	1.06E-07
Indeno[1,2,3-cd]pyrene	0.37	100	350	24	1	70	8760	25550	0.13	0.07	5700	3.38338E-09	2.64E-07	9.06E-08	5.09E-07	1.75E-07	NA	7.30E-01	0.00	6.61E-08	0.00	1.27E-07	0.00	1.94E-07
Kepone	1.84	100	350	24	1	70	8760	25550	0.10	0.07	5700	1.2845E-08	1.00E-06	3.44E-07	2.51E-06	8.62E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Methyl iodide	0.01	100	350	24	1	70	8760	25550	0.10	0.07	5700	5.481E-11	4.28E-09	1.47E-09	1.07E-08	3.68E-09	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
p,p'-DDD	2.92	100	350	24	1	70	8760	25550	0.10	0.07	5700	2.0426E-08	1.59E-06	5.47E-07	4.00E-06	1.37E-06	NA	2.40E-01	0.00	1.31E-07	0.00	3.29E-07	0.00	4.60E-07
p,p'-DDE	3.63	100	350	24	1	70	8760	25550	0.10	0.07	5700	2.5424E-08	1.99E-06	6.81E-07	4.98E-06	1.71E-06	NA	3.40E-01	0.00	2.31E-07	0.00	5.80E-07	0.00	8.11E-07
p,p'-DDT	24.97	100	350	24	1	70	8760	25550	0.03	0.07	5700	5.24412E-08	4.09E-06	1.40E-06	3.42E-05	1.17E-05	5.00E-04	3.40E-01	0.01	4.77E-07	0.07	3.99E-06	0.08	4.47E-06
Phenanthrene	0.12	100	350	24	1	70	8760	25550	0.10	0.07	5700	8.533E-10	6.66E-08	2.28E-08	1.67E-07	5.73E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
																		Total -	1.56E-01	9.56E-06	3.77E-01	2.70E-05	0.53	3.7E-05

Receptor	Child Resident																							
Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}	Absorbed Dose (nc) (Dermal Intake)	Absorbed Dose (c) (Dermal Intake)	Incidental Soil Ingestion Intake (nc)	Incidental Soil Ingestion Intake (c)	RfDo	CSFo	HQdermsoil	CANC RISKdermsoil	Hqoralsoil	CANC RISKoralsoil	Total HQ	Total CANC RISK
Acenaphthylene	0.16	200	350	6	1	15	2190	25550	0.10	0.2	2800	3.262E-09	5.84E-07	5.00E-08	2.09E-06	1.79E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1248	10.21	200	350	6	1	15	2190	25550	0.14	0.2	2800	2.85796E-07	5.12E-05	4.38E-06	1.31E-04	1.12E-05	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1254	3.26	200	350	6	1	15	2190	25550	0.14	0.2	2800	9.1196E-08	1.63E-05	1.40E-06	4.16E-05	3.57E-06	2.00E-05	2.00E+00	0.82	2.80E-06	2.08	7.14E-06	2.90	9.94E-06
Aroclor 1260	3.26	200	350	6	1	15	2190	25550	0.14	0.2	2800	9.1392E-08	1.64E-05	1.40E-06	4.17E-05	3.58E-06	NA	2.00E+00	0.00	2.80E-06	0.00	7.15E-06	0.00	9.96E-06
Arsenic	6.57	200	350	6	1	15	2190	25550	0.03	0.2	2800	3.9444E-08	7.06E-06	6.05E-07	8.41E-05	7.20E-06	3.00E-04	1.50E+00	0.02	9.08E-07	0.28	1.08E-05	0.30	1.17E-05
Benzo[a]anthracene	0.81	200	350	6	1	15	2190	25550	0.13	0.2	2800	2.1073E-08	3.77E-06	3.23E-07	1.04E-05	8.88E-07	NA	7.30E-01	0.00	2.36E-07	0.00	6.48E-07	0.00	8.84E-07
Benzo[a]pyrene	0.66	200	350	6	1	15	2190	25550	0.13	0.2	2800	1.70664E-08	3.05E-06	2.62E-07	8.39E-06	7.19E-07	NA	7.30E+00	0.00	1.91E-06	0.00	5.25E-06	0.00	7.16E-06
Benzo[b]fluoranthene	1.08	200	350	6	1	15	2190	25550	0.13	0.2	2800	2.8184E-08	5.04E-06	4.32E-07	1.39E-05	1.19E-06	NA	7.30E-01	0.00	3.16E-07	0.00	8.67E-07	0.00	1.18E-06
Benzo[g,h,i]perylene	0.40	200	350	6	1	15	2190	25550	0.13	0.2	2800	1.03558E-08	1.85E-06	1.59E-07	5.09E-06	4.36E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Benzo[k]fluoranthene	0.47	200	350	6	1	15	2190	25550	0.13	0.2	2800	1.21342E-08	2.17E-06	1.86E-07	5.97E-06	5.11E-07	NA	7.30E-02	0.00	1.36E-08	0.00	3.73E-08	0.00	5.09E-08
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	200	350	6	1	15	2190	25550	0.10	0.2	2800	3.454E-08	6.18E-06	5.30E-07	2.21E-05	1.89E-06	2.00E-02	1.40E-02	0.00	7.42E-09	0.00	2.65E-08	0.00	3.39E-08
Chlordane	4.51	200	350	6	1	15	2190	25550	0.04	0.2	2800	3.6104E-08	6.46E-06	5.54E-07	5.77E-05	4.95E-06	5.00E-04	3.50E-01	0.01	1.94E-07	0.12	1.73E-06	0.13	1.92E-06
Dibenz[a,h]anthracene	0.12	200	350	6	1	15	2190	25550	0.13	0.2	2800	3.1304E-09	5.60E-07	4.80E-08	1.54E-06	1.32E-07	NA	7.30E+00	0.00	3.51E-07	0.00	9.63E-07	0.00	1.31E-06
Dieldrin	0.68	200	350	6	1	15	2190	25550	0.10	0.2	2800	1.3688E-08	2.45E-06	2.10E-07	8.75E-06	7.50E-07	5.00E-05	1.60E+01	0.05	3.36E-06	0.18	1.20E-05	0.22	1.54E-05
Heptachlor	0.44	200	350	6	1	15	2190	25550	0.10	0.2	2800	8.77E-09	1.57E-06	1.35E-07	5.61E-06	4.81E-07	5.00E-04	9.10E+00	0.00	1.22E-06	0.01	4.37E-06	0.01	5.60E-06
Heptachlor epoxide	0.22	200	350	6	1	15	2190	25550	0.10	0.2	2800	4.412E-09	7.90E-07	6.77E-08	2.82E-06	2.42E-07	1.30E-05	7.30E-01	0.06	4.94E-08	0.22	1.76E-07	0.28	2.26E-07
Indeno[1,2,3-cd]pyrene	0.37	200	350	6	1	15	2190	25550	0.13	0.2	2800	9.6668E-09	1.73E-06	1.48E-07	4.75E-06	4.07E-07	NA	7.30E-01	0.00	1.08E-07	0.00	2.97E-07	0.00	4.06E-07
Kepone	1.84	200	350	6	1	15	2190	25550	0.10	0.2	2800	3.67E-08	6.57E-06	5.63E-07	2.35E-05	2.01E-06	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Methyl iodide	0.01	200	350	6	1	15	2190	25550	0.10	0.2	2800	1.566E-10	2.80E-08	2.40E-09	1.00E-07	8.58E-09	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
p,p'-DDD	2.92	200	350	6	1	15	2190	25550	0.10	0.2	2800	5.836E-08	1.04E-05	8.95E-07	3.73E-05	3.20E-06	NA	2.40E-01	0.00	2.15E-07	0.00	7.67E-07	0.00	9.82E-07
p,p'-DDE	3.63	200	350	6	1	15	2190	25550	0.10	0.2	2800	7.264E-08	1.30E-05	1.11E-06	4.64E-05	3.98E-06	NA	3.40E-01	0.00	3.79E-07	0.00	1.35E-06	0.00	1.73E-06
p,p'-DDT	24.97	200	350	6	1	15	2190	25550	0.03	0.2	2800	1.49832E-07	2.68E-05	2.30E-06	3.19E-04	2.74E-05	5.00E-04	3.40E-01	0.05	7.82E-07	0.64	9.30E-06	0.69	1.01E-05
Phenanthrene	0.12	200	350	6	1	15	2190	25550	0.10	0.2	2800	2.438E-09	4.36E-07	3.74E-08	1.56E-06	1.34E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
																		Total -	1.02E+00	1.57E-05	3.52E+00	6.29E-05	4.54	7.9E-05

Table H-2. Industrial Worker Risk Calculations.

Receptor	Adult Worker											
Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event
Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}
Acenaphthylene	0.16	100	250	25	1	70	9125	25550	0.10	0.2	3300	3.262E-09
Arolchlor 1248	10.21	100	250	25	1	70	9125	25550	0.14	0.2	3300	2.85796E-07
Arolclor 1254	3.26	100	250	25	1	70	9125	25550	0.14	0.2	3300	9.1196E-08
Arolclor 1260	3.26	100	250	25	1	70	9125	25550	0.14	0.2	3300	9.1392E-08
Arsenic	6.57	100	250	25	1	70	9125	25550	0.03	0.2	3300	3.9444E-08
Benzo[a]anthracene	0.81	100	250	25	1	70	9125	25550	0.13	0.2	3300	2.1073E-08
Benzo[a]pyrene	0.66	100	250	25	1	70	9125	25550	0.13	0.2	3300	1.70664E-08
Benzo[b]fluoranthene	1.08	100	250	25	1	70	9125	25550	0.13	0.2	3300	2.8184E-08
Benzo[g,h,i]perylene	0.40	100	250	25	1	70	9125	25550	0.13	0.2	3300	1.03558E-08
Benzo[k]fluoranthene	0.47	100	250	25	1	70	9125	25550	0.13	0.2	3300	1.21342E-08
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	100	250	25	1	70	9125	25550	0.10	0.2	3300	3.454E-08
Chlordane	4.51	100	250	25	1	70	9125	25550	0.04	0.2	3300	3.6104E-08
Dibenz[a,h]anthracene	0.12	100	250	25	1	70	9125	25550	0.13	0.2	3300	3.1304E-09
Dieldrin	0.68	100	250	25	1	70	9125	25550	0.10	0.2	3300	1.3688E-08
Heptachlor	0.44	100	250	25	1	70	9125	25550	0.10	0.2	3300	8.77E-09
Heptachlor epoxide	0.22	100	250	25	1	70	9125	25550	0.10	0.2	3300	4.412E-09
Indeno[1,2,3-cd]pyrene	0.37	100	250	25	1	70	9125	25550	0.13	0.2	3300	9.6668E-09
Kepone	1.84	100	250	25	1	70	9125	25550	0.10	0.2	3300	3.67E-08
Methyl iodide	0.01	100	250	25	1	70	9125	25550	0.10	0.2	3300	1.566E-10
p,p'-DDD	2.92	100	250	25	1	70	9125	25550	0.10	0.2	3300	5.836E-08
p,p'-DDE	3.63	100	250	25	1	70	9125	25550	0.10	0.2	3300	7.264E-08
p,p'-DDT	24.97	100	250	25	1	70	9125	25550	0.03	0.2	3300	1.49832E-07
Phenanthrene	0.12	100	250	25	1	70	9125	25550	0.10	0.2	3300	2.438E-09

Table H-2. Industrial Worker Risk Calculations.

mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Absorbed Dose (nc) (Dermal Intake)	**Absorbed Dose (c) (Dermal Intake)**	**Incidental Soil Ingestion Intake (nc)**	**Incidental Soil Ingestion Intake (c)**	**RfDo**	**CSFo**	**Hqdermsoil**	**CANC RISKdermsoil**	**Hqoralsoil**	**CANC RISKoralsoil**	**Total HQ**	**Total CANC RISK**
1.05E-07	3.76E-08	1.60E-07	5.70E-08	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
9.23E-06	3.30E-06	9.99E-06	3.57E-06	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
2.94E-06	1.05E-06	3.19E-06	1.14E-06	2.00E-05	2.00E+00	**0.15**	**2.10E-06**	**0.16**	**2.28E-06**	**0.31**	**4.38E-06**
2.95E-06	1.05E-06	3.19E-06	1.14E-06	NA	2.00E+00	**0.00**	**2.11E-06**	**0.00**	**2.28E-06**	**0.00**	**4.39E-06**
1.27E-06	4.55E-07	6.43E-06	2.30E-06	3.00E-04	1.50E+00	**0.00**	**6.82E-07**	**0.02**	**3.45E-06**	**0.03**	**4.13E-06**
6.80E-07	2.43E-07	7.93E-07	2.83E-07	NA	7.30E-01	**0.00**	**1.77E-07**	**0.00**	**2.07E-07**	**0.00**	**3.84E-07**
5.51E-07	1.97E-07	6.42E-07	2.29E-07	NA	7.30E+00	**0.00**	**1.44E-06**	**0.00**	**1.67E-06**	**0.00**	**3.11E-06**
9.10E-07	3.25E-07	1.06E-06	3.79E-07	NA	7.30E-01	**0.00**	**2.37E-07**	**0.00**	**2.77E-07**	**0.00**	**5.14E-07**
3.34E-07	1.19E-07	3.90E-07	1.39E-07	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
3.92E-07	1.40E-07	4.57E-07	1.63E-07	NA	7.30E-02	**0.00**	**1.02E-08**	**0.00**	**1.19E-08**	**0.00**	**2.21E-08**
1.12E-06	3.98E-07	1.69E-06	6.04E-07	2.00E-02	1.40E-02	**0.00**	**5.58E-09**	**0.00**	**8.45E-09**	**0.00**	**1.40E-08**
1.17E-06	4.16E-07	4.42E-06	1.58E-06	5.00E-04	3.50E-01	**0.00**	**1.46E-07**	**0.01**	**5.52E-07**	**0.01**	**6.98E-07**
1.01E-07	3.61E-08	1.18E-07	4.21E-08	NA	7.30E+00	**0.00**	**2.64E-07**	**0.00**	**3.07E-07**	**0.00**	**5.71E-07**
4.42E-07	1.58E-07	6.70E-07	2.39E-07	5.00E-05	1.60E+01	**0.01**	**2.53E-06**	**0.01**	**3.83E-06**	**0.02**	**6.35E-06**
2.83E-07	1.01E-07	4.29E-07	1.53E-07	5.00E-04	9.10E+00	**0.00**	**9.20E-07**	**0.00**	**1.39E-06**	**0.00**	**2.31E-06**
1.42E-07	5.09E-08	2.16E-07	7.71E-08	1.30E-05	7.30E-01	**0.01**	**3.71E-08**	**0.02**	**5.63E-08**	**0.03**	**9.34E-08**
3.12E-07	1.11E-07	3.64E-07	1.30E-07	NA	7.30E-01	**0.00**	**8.14E-08**	**0.00**	**9.48E-08**	**0.00**	**1.76E-07**
1.19E-06	4.23E-07	1.80E-06	6.41E-07	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
5.06E-09	1.81E-09	7.66E-09	2.74E-09	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
1.88E-06	6.73E-07	2.86E-06	1.02E-06	NA	2.40E-01	**0.00**	**1.62E-07**	**0.00**	**2.45E-07**	**0.00**	**4.06E-07**
2.35E-06	8.38E-07	3.55E-06	1.27E-06	NA	3.40E-01	**0.00**	**2.85E-07**	**0.00**	**4.32E-07**	**0.00**	**7.16E-07**
4.84E-06	1.73E-06	2.44E-05	8.73E-06	5.00E-04	3.40E-01	**0.01**	**5.87E-07**	**0.05**	**2.97E-06**	**0.06**	**3.55E-06**
7.87E-08	2.81E-08	1.19E-07	4.26E-08	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
					Total -	1.84E-01	1.18E-05	2.69E-01	2.01E-05	4.53E-01	3.18E-05

Table H-3. Construction Worker Risk Calculations.

	Receptor	Adult Worker - ingestion/dermal												
	Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event	mg/kg-d
	Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}	Absorbed Dose (nc) (Dermal Intake)
Surface Soil	Acenaphthylene	0.16	330	250	1	1	70	365	25550	0.10	0.3	3300	4.893E-09	1.58E-07
	Aroclor 1248	10.21	330	250	1	1	70	365	25550	0.14	0.3	3300	4.28694E-07	1.38E-05
	Arolclor 1254	3.26	330	250	1	1	70	365	25550	0.14	0.3	3300	1.36794E-07	4.42E-06
	Arolclor 1260	3.26	330	250	1	1	70	365	25550	0.14	0.3	3300	1.37088E-07	4.43E-06
	Arsenic	6.57	330	250	1	1	70	365	25550	0.03	0.3	3300	5.9166E-08	1.91E-06
	Benzo[a]anthracene	0.81	330	250	1	1	70	365	25550	0.13	0.3	3300	3.16095E-08	1.02E-06
	Benzo[a]pyrene	0.66	330	250	1	1	70	365	25550	0.13	0.3	3300	2.55996E-08	8.27E-07
	Benzo[b]fluoranthene	1.08	330	250	1	1	70	365	25550	0.13	0.3	3300	4.2276E-08	1.37E-06
	Benzo[g,h,i]perylene	0.40	330	250	1	1	70	365	25550	0.13	0.3	3300	1.55337E-08	5.02E-07
	Benzo[k]fluoranthene	0.47	330	250	1	1	70	365	25550	0.13	0.3	3300	1.82013E-08	5.88E-07
	Bis(2-ethylhexyl)phthalate (DEHP)	1.73	330	250	1	1	70	365	25550	0.10	0.3	3300	5.181E-08	1.67E-06
	Chlordane	4.51	330	250	1	1	70	365	25550	0.04	0.3	3300	5.4156E-08	1.75E-06
	Dibenz[a,h]anthracene	0.12	330	250	1	1	70	365	25550	0.13	0.3	3300	4.6956E-09	1.52E-07
	Dieldrin	0.68	330	250	1	1	70	365	25550	0.10	0.3	3300	2.0532E-08	6.63E-07
	Heptachlor	0.44	330	250	1	1	70	365	25550	0.10	0.3	3300	1.3155E-08	4.25E-07
	Heptachlor epoxide	0.22	330	250	1	1	70	365	25550	0.10	0.3	3300	6.618E-09	2.14E-07
	Indeno[1,2,3-cd]pyrene	0.37	330	250	1	1	70	365	25550	0.13	0.3	3300	1.45002E-08	4.68E-07
	Kepone	1.84	330	250	1	1	70	365	25550	0.10	0.3	3300	5.505E-08	1.78E-06
	Methyl iodide	0.01	330	250	1	1	70	365	25550	0.10	0.3	3300	2.349E-10	7.58E-09
	p,p'-DDD	2.92	330	250	1	1	70	365	25550	0.10	0.3	3300	8.754E-08	2.83E-06
	p,p'-DDE	3.63	330	250	1	1	70	365	25550	0.10	0.3	3300	1.0896E-07	3.52E-06
	p,p'-DDT	24.97	330	250	1	1	70	365	25550	0.03	0.3	3300	2.24748E-07	7.26E-06
	Phenanthrene	0.12	330	250	1	1	70	365	25550	0.10	0.3	3300	3.657E-09	1.18E-07
Subsurface Soil	Acenaphthylene	0.0018	330	250	1	1	70	365	25550	0.10	0.3	3300	5.4E-11	1.74E-09
	Benzo[a]pyrene	0.18	330	250	1	1	70	365	25550	0.10	0.3	3300	5.4E-09	1.74E-07
	Benzo[g,h,i]perylene	0.04	330	250	1	1	70	365	25550	0.10	0.3	3300	1.29E-09	4.17E-08
	Phenanthrene	0.18	330	250	1	1	70	365	25550	0.10	0.3	3300	5.4E-09	1.74E-07
	Bis(2-ethylhexyl)phthalate (DEHP)	0.15	330	250	1	1	70	365	25550	0.10	0.3	3300	4.5E-09	1.45E-07
	Endrin	1.10	330	250	1	1	70	365	25550	0.10	0.3	3300	0.000000033	1.07E-06
	Heptachlor epoxide	0.09	330	250	1	1	70	365	25550	0.10	0.3	3300	2.73E-09	8.82E-08
	Kepone	0.77	330	250	1	1	70	365	25550	0.10	0.3	3300	2.31E-08	7.46E-07
	p,p'-DDE	3.10	330	250	1	1	70	365	25550	0.10	0.3	3300	0.000000093	3.00E-06
	p,p'-DDT	14.00	330	250	1	1	70	365	25550	0.10	0.3	3300	0.00000042	1.36E-05

	Receptor	Adult Worker - Groundwater dermal												
	Risk	mg/cm3	mg/cm2-event	cm2	events/day	days/year	years	kg	Days	Days		cm/hr		
	Compound	Cw	DAevent	SA	EV	EF	ED	BW	AT (nc)	AT (canc)	FA	Kp	τ_{event}	t_{event}
Groundwater	Bis(2-ethylhexyl)phthalate	1.10E-04	4.89E-05	3300	1	250	1	70	365	25550	0.80	2.50E-02	16.64	4.00E+00
	Arsenic	1.28E-05	5.12E-08	3300	1	250	1	70	365	25550		1.00E-03	16.64	4.00E+00
	Selenium	6.16E-05	2.46E-07	3300	1	250	1	70	365	25550		1.00E-03	16.64	4.00E+00
	Thallium	4.00E-06	1.60E-08	3300	1	250	1	70	365	25550		1.00E-03	16.64	4.00E+00

	Dermal Parameters								
	MW	Kp	B	Dsc	Isc	τevent	tevent	t*	DAevent (nc)
Bis(2-ethylhexyl)phthalate	390.54	2.50E-02	1.90E-01	1.03E-08	1.00E-03	1.62E+01	4.00E+00	3.88E+01	4.89E-05
Arsenic	74.92	1.00E-03					4.00E+00		5.12E-08
Selenium	78.96	1.00E-03					4.00E+00		2.46E-07
Thallium	204.38	1.00E-03					4.00E+00		1.60E-08

Table H-3. Construction Worker Risk Calculations.

mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Absorbed Dose (c) (Dermal Intake)	**Incidental Soil Ingestion Intake (nc)**	**Incidental Soil Ingestion Intake (c)**	**RfDo**	**CSFo**	**Hqdermsoil**	**CANC RISKdermsoil**	**Hqoralsoil**	**CANC RISKoralsoil**	**Total HQ**	**Total CANC RISK**
2.26E-09	5.27E-07	7.52E-09	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
1.98E-07	3.30E-05	4.71E-07	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
6.31E-08	1.05E-05	1.50E-07	2.00E-05	2.00E+00	**0.22**	**1.26E-07**	**0.53**	**3.00E-07**	**0.75**	**4.27E-07**
6.32E-08	1.05E-05	1.51E-07	NA	2.00E+00	**0.00**	**1.26E-07**	**0.00**	**3.01E-07**	**0.00**	**4.28E-07**
2.73E-08	2.12E-05	3.03E-07	3.00E-04	1.50E+00	**0.01**	**4.09E-08**	**0.07**	**4.55E-07**	**0.08**	**4.96E-07**
1.46E-08	2.62E-06	3.74E-08	NA	7.30E-01	**0.00**	**1.06E-08**	**0.00**	**2.73E-08**	**0.00**	**3.79E-08**
1.18E-08	2.12E-06	3.03E-08	NA	7.30E+00	**0.00**	**8.62E-08**	**0.00**	**2.21E-07**	**0.00**	**3.07E-07**
1.95E-08	3.50E-06	5.00E-08	NA	7.30E-01	**0.00**	**1.42E-08**	**0.00**	**3.65E-08**	**0.00**	**5.07E-08**
7.17E-09	1.29E-06	1.84E-08	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
8.40E-09	1.51E-06	2.15E-08	NA	7.30E-02	**0.00**	**6.13E-10**	**0.00**	**1.57E-09**	**0.00**	**2.18E-09**
2.39E-08	5.58E-06	7.97E-08	2.00E-02	1.40E-02	**0.00**	**3.35E-10**	**0.00**	**1.12E-09**	**0.00**	**1.45E-09**
2.50E-08	1.46E-05	2.08E-07	5.00E-04	3.50E-01	**0.00**	**8.74E-09**	**0.03**	**7.29E-08**	**0.03**	**8.16E-08**
2.17E-09	3.89E-07	5.55E-09	NA	7.30E+00	**0.00**	**1.58E-08**	**0.00**	**4.05E-08**	**0.00**	**5.64E-08**
9.47E-09	2.21E-06	3.16E-08	5.00E-05	1.60E+01	**0.01**	**1.52E-07**	**0.04**	**5.05E-07**	**0.06**	**6.57E-07**
6.07E-09	1.42E-06	2.02E-08	5.00E-04	9.10E+00	**0.00**	**5.52E-08**	**0.00**	**1.84E-07**	**0.00**	**2.39E-07**
3.05E-09	7.12E-07	1.02E-08	1.30E-05	7.30E-01	**0.02**	**2.23E-09**	**0.05**	**7.43E-09**	**0.07**	**9.66E-09**
6.69E-09	1.20E-06	1.72E-08	NA	7.30E-01	**0.00**	**4.88E-09**	**0.00**	**1.25E-08**	**0.00**	**1.74E-08**
2.54E-08	5.93E-06	8.46E-08	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
1.08E-10	2.53E-08	3.61E-10	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
4.04E-08	9.42E-06	1.35E-07	NA	2.40E-01	**0.00**	**9.69E-09**	**0.00**	**3.23E-08**	**0.00**	**4.20E-08**
5.03E-08	1.17E-05	1.68E-07	NA	3.40E-01	**0.00**	**1.71E-08**	**0.00**	**5.70E-08**	**0.00**	**7.41E-08**
1.04E-07	8.06E-05	1.15E-06	5.00E-04	3.40E-01	**0.01**	**3.52E-08**	**0.16**	**3.92E-07**	**0.18**	**4.27E-07**
1.69E-09	3.94E-07	5.62E-09	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
				Total -	**2.76E-01**	**7.06E-07**	**8.89E-01**	**2.65E-06**	**1.16E+00**	**3.35E-06**
2.49E-11	5.81E-09	8.30E-11	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
2.49E-09	5.81E-07	8.30E-09	NA	7.30E+00	**0.00**	**1.82E-08**	**0.00**	**6.06E-08**	**0.00**	**7.88E-08**
5.95E-10	1.39E-07	1.98E-09	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
2.49E-09	5.81E-07	8.30E-09	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
2.08E-09	4.84E-07	6.92E-09	2.00E-02	1.40E-02	**0.00**	**2.91E-11**	**0.00**	**9.69E-11**	**0.00**	**1.26E-10**
1.52E-08	3.55E-06	5.07E-08	3.00E-04	NA	**0.00**	**0.00E+00**	**0.01**	**0.00E+00**	**0.02**	**0.00E+00**
1.26E-09	2.94E-07	4.20E-09	1.30E-05	9.10E+00	**0.01**	**1.15E-08**	**0.02**	**3.82E-08**	**0.03**	**4.97E-08**
1.07E-08	2.49E-06	3.55E-08	NA	NA	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**	**0.00**	**0.00E+00**
4.29E-08	1.00E-05	1.43E-07	NA	3.40E-01	**0.00**	**1.46E-08**	**0.00**	**4.86E-08**	**0.00**	**6.32E-08**
1.94E-07	4.52E-05	6.46E-07	5.00E-04	3.40E-01	**0.03**	**6.59E-08**	**0.09**	**2.20E-07**	**0.12**	**2.85E-07**
				Total -	**3.75E-02**	**1.10E-07**	**1.25E-01**	**3.67E-07**	**1.62E-01**	**4.77E-07**

0.65

		mg/kg-d	(mg/kg-d)-1	mg/kg-day			
t*	**B**	**RfDo**	**CSFo**	**DAD (nc)**	**DAD (canc)**	**HQ**	**Risk**
3.88E+01	2.00E-01	2.00E-02	1.40E-02	**1.58E-03**	**2.26E-05**	**7.89E-02**	**3.16E-07**
3.99E+01		3.00E-04	1.50E+00	**1.65E-06**	**2.36E-08**	**5.51E-03**	**3.54E-08**
3.99E+01		5.00E-03	NA	**7.96E-06**	**1.14E-07**	**1.59E-03**	**NA**
3.99E+01		6.50E-05	NA	**5.17E-07**	**7.38E-09**	**7.95E-03**	**NA**
					Total -	9.40E-02	3.51E-07

Table H-4. Trespasser Risk Calulations.

Receptor	Adult Trespasser																							
Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}	Absorbed Dose (nc) (Dermal Intake)	Absorbed Dose (c) (Dermal Intake)	Incidental Soil Ingestion Intake (nc)	Incidental Soil Ingestion Intake (c)	RfDo	CSFo	Hqdermsoil	CANC RISKdermsoil	Hqoralsoil	CANC RISKoralsoil	Total HQ	Total CANC RISK
Acenaphthylene	0.16	100	52	24	1	70	8760	25550	0.10	0.07	5700	1.1417E-09	1.32E-08	4.54E-09	3.32E-08	1.14E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1248	10.21	100	52	24	1	70	8760	25550	0.14	0.07	5700	1.00029E-07	1.16E-06	3.98E-07	2.08E-06	7.12E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1254	3.26	100	52	24	1	70	8760	25550	0.14	0.07	5700	3.19186E-08	3.70E-07	1.27E-07	6.63E-07	2.27E-07	2.00E-05	2.00E+00	0.02	2.54E-07	0.03	4.55E-07	0.05	7.08E-07
Aroclor 1260	3.26	100	52	24	1	70	8760	25550	0.14	0.07	5700	3.19872E-08	3.71E-07	1.27E-07	6.64E-07	2.28E-07	NA	2.00E+00	0.00	2.54E-07	0.00	4.56E-07	0.00	7.10E-07
Arsenic	6.57	100	52	24	1	70	8760	25550	0.03	0.07	5700	1.38054E-08	1.60E-07	5.49E-08	1.34E-06	4.59E-07	3.00E-04	1.50E+00	0.00	8.24E-08	0.00	6.88E-07	0.00	7.70E-07
Benzo[a]anthracene	0.81	100	52	24	1	70	8760	25550	0.13	0.07	5700	7.37555E-09	8.56E-08	2.93E-08	1.65E-07	5.66E-08	NA	7.30E-01	0.00	2.14E-08	0.00	4.13E-08	0.00	6.27E-08
Benzo[a]pyrene	0.66	100	52	24	1	70	8760	25550	0.13	0.07	5700	5.97324E-09	6.93E-08	2.38E-08	1.34E-07	4.58E-08	NA	7.30E+00	0.00	1.73E-07	0.00	3.34E-07	0.00	5.08E-07
Benzo[b]fluoranthene	1.08	100	52	24	1	70	8760	25550	0.13	0.07	5700	9.8644E-09	1.14E-07	3.92E-08	2.21E-07	7.56E-08	NA	7.30E-01	0.00	2.86E-08	0.00	5.52E-08	0.00	8.39E-08
Benzo[g,h,i]perylene	0.40	100	52	24	1	70	8760	25550	0.13	0.07	5700	3.62453E-09	4.20E-08	1.44E-08	8.11E-08	2.78E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Benzo[k]fluoranthene	0.47	100	52	24	1	70	8760	25550	0.13	0.07	5700	4.24697E-09	4.93E-08	1.69E-08	9.50E-08	3.26E-08	NA	7.30E-02	0.00	1.23E-09	0.00	2.38E-09	0.00	3.61E-09
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	100	52	24	1	70	8760	25550	0.10	0.07	5700	1.2089E-08	1.40E-07	4.81E-08	3.51E-07	1.21E-07	2.00E-02	1.40E-02	0.00	6.73E-10	0.00	1.69E-09	0.00	2.36E-09
Chlordane	4.51	100	52	24	1	70	8760	25550	0.04	0.07	5700	1.26364E-08	1.47E-07	5.03E-08	9.18E-07	3.15E-07	5.00E-04	3.50E-01	0.00	1.76E-08	0.00	1.10E-07	0.00	1.28E-07
Dibenz[a,h]anthracene	0.12	100	52	24	1	70	8760	25550	0.13	0.07	5700	1.09564E-09	1.27E-08	4.36E-09	2.45E-08	8.40E-09	NA	7.30E+00	0.00	3.18E-08	0.00	6.13E-08	0.00	9.31E-08
Dieldrin	0.68	100	52	24	1	70	8760	25550	0.10	0.07	5700	4.7908E-09	5.56E-08	1.91E-08	1.39E-07	4.78E-08	5.00E-05	1.60E+01	0.00	3.05E-07	0.00	7.64E-07	0.00	1.07E-06
Heptachlor	0.44	100	52	24	1	70	8760	25550	0.10	0.07	5700	3.0695E-09	3.56E-08	1.22E-08	8.92E-08	3.06E-08	5.00E-04	9.10E+00	0.00	1.11E-07	0.00	2.78E-07	0.00	3.90E-07
Heptachlor epoxide	0.22	100	52	24	1	70	8760	25550	0.10	0.07	5700	1.5442E-09	1.79E-08	6.14E-09	4.49E-08	1.54E-08	1.30E-05	7.30E-01	0.00	4.48E-09	0.00	1.12E-08	0.00	1.57E-08
Indeno[1,2,3-cd]pyrene	0.37	100	52	24	1	70	8760	25550	0.13	0.07	5700	3.38338E-09	3.92E-08	1.35E-08	7.57E-08	2.59E-08	NA	7.30E-01	0.00	9.82E-09	0.00	1.89E-08	0.00	2.88E-08
Kepone	1.84	100	52	24	1	70	8760	25550	0.10	0.07	5700	1.2845E-08	1.49E-07	5.11E-08	3.73E-07	1.28E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Methyl iodide	0.01	100	52	24	1	70	8760	25550	0.10	0.07	5700	5.481E-11	6.36E-10	2.18E-10	1.59E-09	5.46E-10	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
p,p'-DDD	2.92	100	52	24	1	70	8760	25550	0.10	0.07	5700	2.0426E-08	2.37E-07	8.12E-08	5.94E-07	2.04E-07	NA	2.40E-01	0.00	1.95E-08	0.00	4.89E-08	0.00	6.84E-08
p,p'-DDE	3.63	100	52	24	1	70	8760	25550	0.10	0.07	5700	2.5424E-08	2.95E-07	1.01E-07	7.39E-07	2.53E-07	NA	3.40E-01	0.00	3.44E-08	0.00	8.62E-08	0.00	1.21E-07
p,p'-DDT	24.97	100	52	24	1	70	8760	25550	0.03	0.07	5700	5.24412E-08	6.08E-07	2.09E-07	5.08E-06	1.74E-06	5.00E-04	3.40E-01	0.00	7.09E-08	0.01	5.92E-07	0.01	6.63E-07
Phenanthrene	0.12	100	52	24	1	70	8760	25550	0.10	0.07	5700	8.533E-10	9.90E-09	3.39E-09	2.48E-08	8.51E-09	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
																		Total -	2.31E-02	1.42E-06	5.60E-02	4.00E-06	7.92E-02	5.43E-06

Receptor	Youth Trespasser																							
Risk	mg/kg	mg/day	days/yr	years	events/day	kg	days	days	unitless	mg/cm2	cm2/day	mg/cm^2-event	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	mg/kg-d	(mg/kg-d)-1	unitless	unitless	unitless	unitless	unitless	unitless
Compound	Soil EPC	Ingestion Rate	Exposure Frequency	Exposure Duration	Event Frequency	body weight	averaging time (nc)	averaging time (canc)	Absorbtion Factor	Adherence Factor	skin surface area avail.soil	DA_{event}	Absorbed Dose (nc) (Dermal Intake)	Absorbed Dose (c) (Dermal Intake)	Incidental Soil Ingestion Intake (nc)	Incidental Soil Ingestion Intake (c)	RfDo	CSFo	Hqdermsoil	CANC RISKdermsoil	Hqoralsoil	CANC RISKoralsoil	Total HQ	Total CANC RISK
Acenaphthylene	0.16	100	52	11	1	45	4015	25550	0.10	0.2	3200	3.262E-09	3.30E-08	5.19E-09	5.16E-08	8.11E-09	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1248	10.21	100	52	11	1	45	4015	25550	0.14	0.2	3200	2.85796E-07	2.90E-06	4.55E-07	3.23E-06	5.08E-07	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Aroclor 1254	3.26	100	52	11	1	45	4015	25550	0.14	0.2	3200	9.1196E-08	9.24E-07	1.45E-07	1.03E-06	1.62E-07	2.00E-05	2.00E+00	0.05	2.90E-07	0.05	3.24E-07	0.10	6.14E-07
Aroclor 1260	3.26	100	52	11	1	45	4015	25550	0.14	0.2	3200	9.1392E-08	9.26E-07	1.45E-07	1.03E-06	1.62E-07	NA	2.00E+00	0.00	2.91E-07	0.00	3.25E-07	0.00	6.16E-07
Arsenic	6.57	100	52	11	1	45	4015	25550	0.03	0.2	3200	3.9444E-08	4.00E-07	6.28E-08	2.08E-06	3.27E-07	3.00E-04	1.50E+00	0.00	9.42E-08	0.01	4.91E-07	0.01	5.85E-07
Benzo[a]anthracene	0.81	100	52	11	1	45	4015	25550	0.13	0.2	3200	2.1073E-08	2.13E-07	3.35E-08	2.57E-07	4.03E-08	NA	7.30E-01	0.00	2.45E-08	0.00	2.94E-08	0.00	5.39E-08
Benzo[a]pyrene	0.66	100	52	11	1	45	4015	25550	0.13	0.2	3200	1.70664E-08	1.73E-07	2.72E-08	2.08E-07	3.27E-08	NA	7.30E+00	0.00	1.98E-07	0.00	2.38E-07	0.00	4.37E-07
Benzo[b]fluoranthene	1.08	100	52	11	1	45	4015	25550	0.13	0.2	3200	2.8184E-08	2.86E-07	4.49E-08	3.43E-07	5.39E-08	NA	7.30E-01	0.00	3.28E-08	0.00	3.94E-08	0.00	7.21E-08
Benzo[g,h,i]perylene	0.40	100	52	11	1	45	4015	25550	0.13	0.2	3200	1.03558E-08	1.05E-07	1.65E-08	1.26E-07	1.98E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Benzo[k]fluoranthene	0.47	100	52	11	1	45	4015	25550	0.13	0.2	3200	1.21342E-08	1.23E-07	1.93E-08	1.48E-07	2.32E-08	NA	7.30E-02	0.00	1.41E-09	0.00	1.69E-09	0.00	3.11E-09
Bis(2-ethylhexyl)phthalate (DEHP)	1.73	100	52	11	1	45	4015	25550	0.10	0.2	3200	3.454E-08	3.50E-07	5.50E-08	5.47E-07	8.59E-08	2.00E-02	1.40E-02	0.00	7.70E-10	0.00	1.20E-09	0.00	1.97E-09
Chlordane	4.51	100	52	11	1	45	4015	25550	0.04	0.2	3200	3.6104E-08	3.66E-07	5.75E-08	1.43E-06	2.25E-07	5.00E-04	3.50E-01	0.00	2.01E-08	0.00	7.86E-08	0.00	9.87E-08
Dibenz[a,h]anthracene	0.12	100	52	11	1	45	4015	25550	0.13	0.2	3200	3.1304E-09	3.17E-08	4.98E-09	3.81E-08	5.99E-09	NA	7.30E+00	0.00	3.64E-08	0.00	4.37E-08	0.00	8.01E-08
Dieldrin	0.68	100	52	11	1	45	4015	25550	0.10	0.2	3200	1.3688E-08	1.39E-07	2.18E-08	2.17E-07	3.40E-08	5.00E-05	1.60E+01	0.00	3.49E-07	0.00	5.45E-07	0.01	8.93E-07
Heptachlor	0.44	100	52	11	1	45	4015	25550	0.10	0.2	3200	8.77E-09	8.88E-08	1.40E-08	1.39E-07	2.18E-08	5.00E-04	9.10E+00	0.00	1.27E-07	0.00	1.99E-07	0.00	3.26E-07
Heptachlor epoxide	0.22	100	52	11	1	45	4015	25550	0.10	0.2	3200	4.412E-09	4.47E-08	7.02E-09	6.98E-08	1.10E-08	1.30E-05	7.30E-01	0.00	5.13E-09	0.01	8.01E-09	0.01	1.31E-08
Indeno[1,2,3-cd]pyrene	0.37	100	52	11	1	45	4015	25550	0.13	0.2	3200	9.6668E-09	9.79E-08	1.54E-08	1.18E-07	1.85E-08	NA	7.30E-01	0.00	1.12E-08	0.00	1.35E-08	0.00	2.47E-08
Kepone	1.84	100	52	11	1	45	4015	25550	0.10	0.2	3200	3.67E-08	3.72E-07	5.84E-08	5.81E-07	9.13E-08	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
Methyl iodide	0.01	100	52	11	1	45	4015	25550	0.10	0.2	3200	1.566E-10	1.59E-09	2.49E-10	2.48E-09	3.90E-10	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
p,p'-DDD	2.92	100	52	11	1	45	4015	25550	0.10	0.2	3200	5.836E-08	5.91E-07	9.29E-08	9.24E-07	1.45E-07	NA	2.40E-01	0.00	2.23E-08	0.00	3.48E-08	0.00	5.71E-08
p,p'-DDE	3.63	100	52	11	1	45	4015	25550	0.10	0.2	3200	7.264E-08	7.36E-07	1.16E-07	1.15E-06	1.81E-07	NA	3.40E-01	0.00	3.93E-08	0.00	6.14E-08	0.00	1.01E-07
p,p'-DDT	24.97	100	52	11	1	45	4015	25550	0.03	0.2	3200	1.49832E-07	1.52E-06	2.39E-07	7.91E-06	1.24E-06	5.00E-04	3.40E-01	0.00	8.11E-08	0.02	4.22E-07	0.02	5.04E-07
Phenanthrene	0.12	100	52	11	1	45	4015	25550	0.10	0.2	3200	2.438E-09	2.47E-08	3.88E-09	3.86E-08	6.06E-09	NA	NA	0.00	0.00E+00	0.00	0.00E+00	0.00	0.00E+00
																		Total -	5.77E-02	1.62E-06	8.72E-02	2.86E-06	1.45E-01	4.48E-06

CAO Calculations.

	Target Levels		Toxicity Reference Data				Common Values					Soil Ingestion		Dermal Absorbtion from Soil				NonCancer Level	Cancer Level	Corrective Action Objective (mg/kg)	CAO (ug/kg)
Compound	TR	THQ	RfD(oral)		CSF(oral)		EF	ED	BW	AT(canc)	AT(nc)	IR	FI	SA	AF	ABS	CF				
Arochlor 1254	1.00E-06	1.0	2.00E-05		2.00E+00		250	1	70	25550	365	330	1	3300	0.30	0.140	1.00E-06	4.36E+00	7.63E+00	**4.4**	4.36E+03

APPENIDIX I

JOHNSON AND ETTINGER VAPOR INTRUSION

MODEL TABLES

Compound: Carbon Disulfide

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [X]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [ ]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
75150		Carbon disulfide

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater emperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	213	SIC	34	

ENTER Vadose zone SCS soil type (used to estimat soil vapor permeability)	OR	ENTER User-defined vandose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
SIC			SIC	1.38	0.481	0.216

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for oncarcinogens THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for ncarcinoger AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
0.000001	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

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ABC

Diffusivity in air, D_a (cm²/s)	Diffusivity in water, D_w (cm²/s)	Henry's law constant at reference temperature, H (atm-m³/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical emperature T_C (°K)	Organic carbon partition coefficient, K_{oc} (cm³/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
0.104	0.00001	0.0302238	25	6391	319	552	45.7	1185	0	0.7

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm³/cm³)	Vadose zone effective total fluid saturation, S_{te} (cm³/cm³)	Vadose zone soil intrinsic permeability, k_i (cm²)	Vadose zone soil relative air permeability, k_{rg} (cm²)	Vadose zone soil effective vapor permeability, k_v (cm²)	Thickness o capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm³/cm³)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm³/cm³)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm³/cm³)	Floor-wall seam perimeter, X_{crack} (cm)
198	0.265	0.28378378	1.54388E-09	0.84398509	1.303E-09	192.3077	0.481	0.057355	0.423645	4000

Bldg. ventilation rate, $Q_{building}$ (cm³/s)	Area of enclosed space below grade, A_B (cm²)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ve. groundwat temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ve. groundwate temperature, H_{TS} (atm-m³/mol)	Henry's law constant at e. groundwa emperature H'_{TS} (unitless)	Vapor viscosity at ave. soil emperature μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm²/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm²/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm²/s)
16944	1000000	0.0004	15	6490.57174	0.04166348	1.653003	0.000183	0.0053972	3.45E-05	3.55332E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm³/s)	Crack effective diffusion coefficient, D^{crack} (cm²/s)	Area of crack, A_{crack} (cm²)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m³)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
198	15	1653.00252	0.1	1.25705767	0.00539715	400	337.9106	9.272E-06	0.015326	NA	0.7

END

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., oncarcinoge (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	66683.711	66683.7107	1185000	66683.7107

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, oncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

Compound: Toluene

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [X]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES [ ]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
108883		Toluene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	213	SIC	34	

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
SIC			SIC	1.38	0.481	0.216

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
0.000001	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

I-3

ABC

Diffusivity in air, D_a (cm²/s)	Diffusivity in water, D_w (cm²/s)	Henry's law constant at reference temperature, H (atm-m³/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature T_C (°K)	Organic carbon partition coefficient, K_{oc} (cm³/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
0.087	0.0000086	0.0066233	25	7930	383.78	591.79	182	526	0	0.4

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm³/cm³)	Vadose zone effective total fluid saturation, S_{te} (cm³/cm³)	Vadose zone soil intrinsic permeability, k_i (cm²)	Vadose zone soil relative air permeability, k_{rg} (cm²)	Vadose zone soil effective vapor permeability, k_v (cm²)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm³/cm³)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm³/cm³)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm³/cm³)	Floor-wall seam perimeter, X_{crack} (cm)
198	0.265	0.28378378	1.54388E-09	0.84398509	1.303E-09	192.3077	0.481	0.057355	0.423645	4000

Bldg. ventilation rate, $Q_{building}$ (cm³/s)	Area of enclosed space below grade, A_B (cm²)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m³/mol)	Henry's law constant at ave. groundwater temperature H'_{TS} (unitless)	Vapor viscosity at average soil temperature μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm²/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm²/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm²/s)
16944	1000000	0.0004	15	8888.73547	0.01027991	0.407857	0.000183	0.0045153	3.28E-05	3.38073E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm³/s)	Crack effective diffusion coefficient, D^{crack} (cm²/s)	Area of crack, A_{crack} (cm²)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m³)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
198	15	407.856556	0.1	1.25705767	0.00451535	400	1053.546	8.873E-06	0.003619	NA	0.4

END

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	161376.07	161376.073	526000	161376.073

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

Compound: Naphthalene

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES:

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
91203		Naphthalene

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	213	SIC	34	

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm²)	ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density ρ_b^V (g/cm³)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm³/cm³)
SIC			SIC	1.38	0.481	0.216

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
0.000001	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

I-4

ABC

Diffusivity in air, D_a (cm²/s)	Diffusivity in water, D_w (cm²/s)	Henry's law constant at reference temperature, H (atm-m³/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical temperature T_C (°K)	Organic carbon partition coefficient, K_{oc} (cm³/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
0.059	0.0000075	0.00048179	25	10373	491.14	748.4	2000	31	0	0.003

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm³/cm³)	Vadose zone effective total fluid saturation, S_{te} (cm³/cm³)	Vadose zone soil intrinsic permeability, k_i (cm²)	Vadose zone soil relative air permeability, k_{rg} (cm²)	Vadose zone soil effective vapor permeability, k_v (cm²)	Thickness of capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm³/cm³)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm³/cm³)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm³/cm³)	Floor-wall seam perimeter, X_{crack} (cm)
198	0.265	0.28378378	1.54388E-09	0.84398509	1.303E-09	192.3077	0.481	0.057355	0.423645	4000

Bldg. ventilation rate, $Q_{building}$ (cm³/s)	Area of enclosed space below grade, A_B (cm²)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, H_{TS} (atm-m³/mol)	Henry's law constant at ave. groundwater temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm²/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm²/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm²/s)
16944	1000000	0.0004	15	12662.3029	0.00090119	0.035755	0.000183	0.0030673	7.07E-05	7.26967E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} (µg/m³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm³/s)	Crack effective diffusion coefficient, D^{crack} (cm²/s)	Area of crack, A_{crack} (cm²)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m³)	Unit risk factor, URF (µg/m³)⁻¹	Reference conc., RfC (mg/m³)
198	15	35.7549613	0.1	1.25705767	0.00306727	400	28162.56	1.677E-05	0.0006	NA	0.003

END

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	7304.4618	7304.46183	31000	7304.46183

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:

MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

Compound: Mercury

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
7439976		Mercury (elemental)

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater emperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
15	213	SIC	34	

ENTER Vadose zone SCS soil type (used to estimat soil vapor permeability)	OR	ENTER User-defined vandose zone/adose zone soil vapor permeability, k_v (cm^2)	ENTER SCS soil type	ENTER adose zone soil dry bulk density ρ_b^V (g/cm^3)	ENTER adose zone soil total porosity, n^V (unitless)	ENTER adose zone oil water-filled porosity, θ_w^V (cm^3/cm^3)
SIC			SIC	1.38	0.481	0.216

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for oncarcinogens THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for ncarcinoger AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
0.000001	1	70	25	25	250

Used to calculate risk-based groundwater concentration.

I-5
ABC

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (°K)	Critical emperature T_C (°K)	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
0.0307	0.0000063	0.01072636	25	14127	629.88	1750	52	20	0	0.0003

END

Listed value of Koc is actually value of Kd for mercury.

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Thickness o capillary zone, L_{cz} (cm)	Total porosity in capillary zone, n_{cz} (cm^3/cm^3)	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm^3/cm^3)	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm^3/cm^3)	Floor-wall seam perimeter, X_{crack} (cm)
198	0.265	0.28378378	1.54388E-09	0.84398509	1.303E-09	192.3077	0.481	0.057355	0.423645	4000

Bldg. ventilation rate, $Q_{building}$ (cm^3/s)	Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ve. groundwat temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ve. groundwate temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at . groundwa emperature H'_{TS} (unitless)	Vapor viscosity at ave. soil emperature μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)
16944	1000000	0.0004	15	15241.8237	0.02279401	0.904354	0.000183	0.0015933	1.15E-05	1.18089E-05

Diffusion path length, L_d (cm)	Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
198	15	904.354419	0.1	1.25705767	0.00159333	400	3.68E+08	3.36E-06	0.003039	NA	0.0003

END

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., oncarcinoge (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	144.12497	144.124967	20000	144.124967

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, oncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

Acetone - Subsurface Soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
67641		Acetone

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	7,255	5.54E-05	2.20E-03	1.83E-04	6.57E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	1.15E-03	1.39E+01	0.10	1.26E+00	6.57E-03	4.00E+02	1.19E+02	7.42E-05	1.03E-03

Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)
NA	3.5E-01

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	4.95E+05	4.95E+05	1.58E+08	4.95E+05

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

2-methylnaphthalene - subsurface soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
91576		2-Methylnaphthalene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type used to estimate soil vapor permeability	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	15,923	1.14E-03	4.51E-02	1.83E-04	2.71E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	5.62E+00	7.78E+00	0.10	1.26E+00	2.71E-03	4.00E+02	1.07E+05	7.27E-05	5.66E-04

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	7.0E-02

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	1.81E+05	1.81E+05	1.42E+05	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

Acenaphthalene - subsurface soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
83329		Acenaphthene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	15,827	3.38E-04	1.34E-02	1.83E-04	2.20E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	1.42E+01	9.37E-01	0.10	1.26E+00	2.20E-03	4.00E+02	1.60E+06	7.23E-05	6.78E-05

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	2.1E-01

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	4.52E+06	4.52E+06	5.11E+04	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

Benzo(b)fluoranthene - subsurface soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES [X]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES [ ]

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
205992		Benzo(b)fluoranthene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	25,205	3.85E-04	1.53E-02	1.83E-04	1.18E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	2.46E+03	6.21E-03	0.10	1.26E+00	1.18E-03	4.00E+02	3.49E+11	7.08E-05	4.40E-07

Unit risk factor, URF $(µg/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
2.1E-04	NA

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
4.45E+04	NA	4.45E+04	3.69E+03	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

Chrysene - Subsurface Soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
218019		Chrysene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	24,102	3.11E-04	1.23E-02	1.83E-04	1.30E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	7.96E+02	1.55E-02	0.10	1.26E+00	1.30E-03	4.00E+02	3.14E+10	7.11E-05	1.10E-06

Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)
2.1E-06	NA

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
1.78E+06	NA	1.78E+06	5.02E+03	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

Fluorene - Subsurface Soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
86737		Fluorene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	15,987	1.40E-04	5.55E-03	1.83E-04	1.92E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	2.76E+01	2.00E-01	0.10	1.26E+00	1.92E-03	4.00E+02	1.27E+07	7.21E-05	1.44E-05

Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.4E-01

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	1.42E+07	1.42E+07	5.50E+04	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

Naphthalene - Subsurface Soil

SL-SCREEN
Version 3.1; 02/04

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES [X]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES [ ]

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
91203		Naphthalene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type selected to estimate soil vapor permeability	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	12,662	9.01E-04	3.58E-02	1.83E-04	3.07E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	4.00E+00	8.59E+00	0.10	1.26E+00	3.07E-03	4.00E+02	2.82E+04	7.28E-05	6.26E-04

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
NA	3.0E-03

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	7.00E+03	7.00E+03	1.29E+05	7.00E+03

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.

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CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES [X]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES [ ]

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
129000		Pyrene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	20,384	3.01E-05	1.19E-03	1.83E-04	1.57E-03	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	2.10E+02	5.68E-03	0.10	1.26E+00	1.57E-03	4.00E+02	4.88E+08	7.16E-05	4.07E-07

Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)
NA	1.1E-01

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	3.77E+08	3.77E+08	2.84E+05	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.

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CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
57749		Chlordane

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	19,320	1.26E-04	5.00E-03	1.83E-04	6.35E-04	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	2.40E+02	2.08E-02	0.10	1.26E+00	6.35E-04	4.00E+02	3.04E+21	6.81E-05	1.42E-06

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
1.0E-04	7.0E-04

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
2.88E+04	7.21E+05	2.88E+04	1.34E+04	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.

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CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES: X

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES:

ENTER Chemical CAS No. (numbers only no dashes)	ENTER Initial soil conc., C_R (µg/kg)	Chemical
72559		DDE

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type used to estimate soil vapor permeability	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	60	34	SIC		

MORE ↓

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Vadose zone soil organic carbon fraction, f_{oc}^V (unitless)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
SIC	1.38	0.481	0.216	0.002	

MORE ↓

ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)
70	25	25	250	1.0E-06	1

Used to calculate risk-based soil concentration.

END

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Initial soil concentration used, C_R (µg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
45	0.265	0.284	1.54E-09	0.844	1.30E-09	4,000	1.00E+00	1.69E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature H_{TS} atm-m^3/mol	Henry's law constant at ave. soil temperature H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	4.00E-04	15	21,733	6.14E-05	2.43E-03	1.83E-04	8.11E-04	45

Convection path length, L_p (cm)	Soil-water partition coefficient, K_d (cm^3/g)	Source vapor conc., C_{source} (µg/m^3)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
15	8.94E+03	2.72E-04	0.10	1.26E+00	8.11E-04	4.00E+02	6.87E+16	6.93E-05	1.89E-08

Unit risk factor, URF (µg/m^3)$^{-1}$	Reference conc., RfC (mg/m^3)
9.7E-05	NA

RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C_{sat} (µg/kg)	Final indoor exposure soil conc., (µg/kg)
2.23E+06	NA	2.23E+06	1.07E+06	NOC

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	NA

MESSAGE SUMMARY BELOW:
MESSAGE: The values of Csource and Cbuilding on the INTERCALCS worksheet are based on unity and do not represent actual values.
NOC = NOT OF CONCERN. The contaminant is a solid at the soil temperature and not of concern for this pathway.
MESSAGE: Risk/HQ or risk-based soil concentration is based on a route-to-route extrapolation.