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16 December 2003

Mr. Seth Pelepko
Pennsylvania Department of Environmental Protection (PADEP)
Southeast Regional Office
Lee Park Suite 6010
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Subject: Contract N62472-92-D-1296; CTO No. 0074, Task 6200
Naval Air Station Joint Reserve Base (NASJRB) Willow Grove, PA
IR Site 10 Soil Letter Report to Support No Further Investigation at This Time
Final

Dear Mr. Pelepko:

This Letter Report has been prepared by EA Engineering, Science, and Technology, Inc. (EA) under Contract Number N62472-92-D-1296, as authorized by the Engineering Field Activity Northeast, EFA Northeast, Naval Facilities Engineering Command. EA has prepared this report to support no further investigation at this time for the Installation Restoration (IR) Site 10 soil.

The objective of this letter is to demonstrate that the data presented below for IR Site 10 soil in the areas accessible for characterization is in compliance with PADEP's current calculated Medium Specific Concentrations (MSC) for the regulated substances investigated. This letter does not document that all IR Site 10 soil is in compliance with the current calculated MSCs for all substances known or expected to have been released at IR Site 10 nor does this letter document that all IR Site 10 soil occupying known or suspected areas of concern (AOC) is in compliance with the current calculated MSCs.

Note below that the locations of the soil samples collected in 1997 and the recent soil samples (2003) do not provide coverage for all known AOCs as required for closure based on PADEP Act II guidelines for liability protection. The presence of storage tanks and associated piping constructed after the reported releases placed constraints on access, thereby making completion of an attainment demonstration for each AOC, infeasible at this time. However, historical and current ground-water data suggest that if AOC that are not accessible are above Act 2 standards, they would appear to be relatively limited in extent and, therefore, not likely to represent unacceptable exposures in consideration of current property uses. Current property does not include occupied enclosed spaces in the immediate vicinity of the known jet fuel release area and

large portions of IR Site 10 are capped with asphalt paving material. The historic and current ground-water results are discussed below. Finally, it is expected that NASJRB Willow Grove will remain an active military installation for the foreseeable future, supporting the premise that complete Act 2 demonstrations of attainment for each AOC may be more appropriate at the time of a property transaction or significant change in land use at the IR Site 10 portion of the base. This information provides the basis for a "no further investigation at this time" decision for IR Site 10 soil.

BACKGROUND

The NASJRB is located in Willow Grove, PA in Horsham Township, Montgomery County in southeastern PA, approximately 15 miles northwest of Philadelphia, PA (Figure 1). IR Site 10, the former Navy fuel farm, is located along the north side of Privet Road and immediately south of the Pennsylvania Air National Guard (PAANG) portion of the Air Reserve Station (ARS) at NASJRB. IR Site 10 is bordered by Naval Air Station (NAS) property on the south and east and by ARS property on the north and west (Figure 2). Located to the north of IR Site 10 are ARS buildings. Several other base facilities exist within 1,000 ft of the site. IR Site 10 is approximately 2 acres in area and consists of above ground storage tanks (ASTs), associated aboveground piping, paved parking lots, paved roads, and buildings.

From 1950 to 1991, two partially buried 210,000-gallon (gal) JP-4/JP-5 aviation fuel tanks (Tank Numbers 115 and 116) were located at the former Navy Fuel Farm. A 500-gal underground waste oil tank and an underground diesel fuel tank were also located at the southwestern corner of the site.

In 1986, a spill occurred when Tank No. 115 was overfilled and fuel was released from the vent pipe onto the ground. The event was attributed to faulty gauges that registered less fuel than was actually present. During this same year, a utility trench was excavated along the western boundary of the site, but work discontinued when light non-aqueous phase liquid (LNAPL) was observed floating on the water within the trench. The area where LNAPL was discovered is immediately adjacent to a former dry well.

In March 1989, JP-5 jet fuel was detected emanating from two patches of dead grass on the west side on Tank No. 115. As a result, it was decided to empty and remove the two main fuel tanks (Tank Numbers 115 and 116). Removal of these tanks occurred in 1991. Also during this time, the waste oil and diesel fuel underground storage tanks (USTs) were removed. Inspection of the waste oil tank during removal revealed the tank was not intact as holes up to 1 inch in diameter were reported.

Subsequent to the completion of the removal activities, a new AST system set in a concrete berm was installed to the east of the former tank field location. The Navy installed a vacuum-enhanced LNAPL recovery system in 1998 to include recovery from three existing wells (NFFW-2R, NFFW-14, and NFFW-16).

FIELD METHODOLOGY

The Field Methodology for sampling conducted in May 2003 is provided in Attachment A along with the bore logs. Field activities were in accordance with the PADEP approved "Final Work Plan for Various Fieldwork Efforts, IR Program Site 10 and 11, NASJRB, Willow Grove, PA",

dated March 2003. The Field Methodology attachment includes sampling methodology, decontamination, investigation derived waste, and analytical methodology.

SOIL ANALYTICAL RESULTS

The soil analytical results from the sampling event conducted in September 1997 and the current sampling event conducted in May 2003 are discussed below. The sampling event conducted in 1997 is discussed in detail in the "Final Sampling and Analysis Report for Remedial Action at the Navy Fuel Farm, NASJRB, Willow Grove, PA" dated 11 June 1998, prepared by EA for the Department of the Navy, Northern Division, Naval Facilities Engineering Command. The 1997 methods of collection and analysis are in compliance with the current PADEP Act II regulations. Both sets of soil data will support the request for no further investigation at this time.

September 1997 Analytical Results

In 1997, ten soil samples were collected within and/or adjacent to former release areas (refer to Background Section). These 1997 sample locations are shown on Figure 3. The sample(s) at location NFFSB-5 were collected from within the former release area at former tank 115. The sample(s) at location NFFSB-2 were collected from within the former location of tank 116, however based on previous reports no release was observed at former tank 116. The sample(s) at location NFFSB-1 and NFFSB-3 were located within the area were LNAPL was observed floating on water within a trench (located adjacent to the former dry well as discussed in the Background Section). The sample(s) collected at location NFFSB-4 were approximately 100 ft west from former tank 115. The sample(s) collected at location NFFSB-6 were approximately 50 ft northeast of former tank 115. The remaining sample(s) were collected from locations that were north of the release areas ranging from approximately 200 ft to 600 ft.

The soil samples were analyzed for volatile organic compounds (VOCs). The analytical results were compared to the calculated remediation standard. The remediation standard was selected as per the guidance in the PADEP Act II Technical Guidance Manual, Section II Remediation Standard, Section B Statewide Health Standard, dated 4 May 2002. The guidance states the following for soil samples collected between 0 to 15 ft bgs. The soil standard involves comparing two numerical standards: the direct contact number versus the greater of the two soil-to-groundwater numbers (the generic value versus the 100 X the ground-water MSC). The appropriate standard is the lowest value which is either the direct contact number or the greater of the two soil-to-groundwater numbers. The direct contact number for this site in determining the appropriate standard is the non-residential surface soil (0-2 feet bgs) and nonresidential subsurface soil (2 to 15 ft bgs). The soil-to-groundwater number for this site in determining the appropriate standard is the used aquifer with total dissolved solids less than or equal to 2500 mg/L for non-residential.

The confirmatory surface and subsurface soil analytical results from the 1997 sampling event are below the current calculated MSCs as shown on Table 1 and Table 2, respectively. In addition, the surface and subsurface soil screening results from the 1997 sampling event are below the current calculated MSC as shown on Table 3 and Table 4, respectively.

May 2003 Analytical Results

Figure 4 provides the sample locations of the May 2003 sampling event. During the drilling of five borings for the installation of five monitoring wells, a surface and subsurface soil sample was collected from each of these borings. The boring locations 10MW24, 10MW26, and 10MW25 surround the release areas approximately 350 feet to the north, east, and west, respectively. The remaining 2 borings are located approximately 1400 feet to the east of the former release areas. Attachment A provides the field methodology of this sampling event.

Table 5 and Table 6 provides the surface and subsurface soil results for metals in comparison with the calculated MSCs, respectively. None of the metal results were above the calculated MSCs.

Table 7 and Table 8 provides the surface and subsurface soil results for SVOCs in comparison with the calculated MSCs, respectively. None of the SVOC results were above the calculated MSCs.

Table 9 and Table 10 provides the surface and subsurface soil results for VOCs in comparison with the calculated MSCs, respectively. None of the VOC results were above the calculated MSCs.

Table 11, 12, and 13 provides the QC analytical results.

Environmental Data Services, Inc, of Concord, NH validated the May 2003 laboratory data according to U.S. EPA Region III's data validation procedures: "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Organic Data Review, Multimedia, Multi-Concentration", dated September 1994 and "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", dated April 1993. The validation packet is provided in the enclosed Attachment B. The Validation Packet includes summary pages of the data validation and the attached laboratory tables with written validation corrections. Note that the tables discussed in the Analytical Results section reflect the validation packet.

GROUND-WATER ANALYTICAL RESULTS

The 1993, 1997, and May to June 2003 ground-water sampling results are discussed to support attainment of soil at IR Site 10 for AOCs that were not accessible to collect soil samples. In addition, the ground-water samples results discussed below show that 1,2-Dibromoethane (EDB) was not detected above the method detection limit or the applicable MSC. This helps support the soil samples collected in 2003 since EDB was lower than the method detection limit in the 2003 soil samples. In addition, the PADEP Practical Quantitation Limit (PQL) is also lower than the method detection limit and equal to the MSC in the 2003 soil sample. Therefore, EDB was not characterized at the appropriate level of sensitivity in the 2003 soil samples. This was because a percent solid correction had to be made by the lab in order to analyze the 2003 soil samples. The ground-water sample locations from 1993 and 1997 in relation to the soil samples collected in 1997 are shown on Figure 3. The 2003 ground-water sample locations are shown on Figure 3 and 4. The 2003 ground-water samples that were collected at the same location as the 2003 soil samples are shown on Figure 4.

The ground-water samples collected in 1993 and 1997 were analyzed for the appropriate VOCs. The ground-water samples collected in May and June 2003 were analyzed for Metals, SVOCs, and VOCs. The remediation standard was selected as per the guidance in the PADEP Act II Technical Guidance Manual, Section II Remediation Standard, Section B Statewide Health Standard, dated 4 May 2002. The ground-water results (1993, 1997, and 2003) were compared to the MSC for ground water using the Non-Residential values for a used aquifer with TDS =<2,500 mg/L.

June 1993 Analytical Results

Figure 3 provides the ground-water sample locations for 1993.

Table 14 provides the ground-water results for VOCs in comparison with the appropriate MSCs. Benzene was above the applicable MSC in 8 of the 13 monitoring wells that were sampled.

September 1997 Analytical Results

Figure 3 provides the ground-water sample locations for 1997.

Table 15 provides the ground-water results for the VOCs in comparison with the appropriate MSCs. Benzene was above the applicable MSC in 3 of the 10 monitoring wells that were sampled. Note these benzene results were qualified as diluted or exceeding the instrument calibration range. Naphthalene was above the applicable MSC in 3 of the 10 monitoring wells. Note these naphthalene results were also qualified as diluted or exceeding the instrument calibration range. The remaining VOCs above the applicable MSC are not associated with the type of releases that occurred on the site.

May and June 2003 Analytical Results

Figure 3 and 4 provides the ground-water sample locations for May and June 2003.

Table 16 provides the ground-water results for the Metals in comparison with the appropriate MSCs. Lead was above the applicable MSC in 2 of the 24 monitoring wells that were sampled. The remaining Metals above the applicable MSC are not associated with the type of releases that occurred on the site.

Table 17 provides the ground-water results for the SVOCs in comparison with the appropriate MSCs. The TCL SVOCs above the applicable MSC are not associated with the type of releases that occurred on the site.

Table 18 provides the ground-water results for the VOCs in comparison with the appropriate MSCs. Benzene was above the applicable MSC in 1 of the 24 monitoring wells sampled.

Table 19, 20, and 21 provides the QC analytical results.

Environmental Data Services, Inc, of Concord, NH validated the May and June 2003 laboratory data according to U.S. EPA Region III's data validation procedures: "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Organic Data Review, Multimedia,

Multi-Concentration", dated September 1994 and "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", dated April 1993. Note that the tables discussed in the Ground-water Analytical Results section reflect the validation packet.

CONCLUSIONS

According to the 1997 and 2003 ground-water and soil analytical data, there is no evidence that significant volumes of soil at IR Site 10 exceed the PADEP standards. In conclusion, the IR Site 10 soil that was accessible does not provide a source of contaminants to ground water or a threat to human health or the environment. In addition, the ground-water samples results from 1993, 1997, and May to June 2003 support the assertion that any potential remaining areas of soil impact are limited. Therefore, a no further investigation at this time is requested. Note that if the data in the report were sufficient to suggest that all IR Site 10 soil at all AOCs was in compliance with the Act 2 MSCs, PADEP would be able to entertain an Act 2 demonstration of attainment as opposed to a "no further investigation at this time" decision.

Sincerely,

Maria J. Magilton
Project Scientist

Katherine Sheedy
Project Manager

Paul Caprio, PG
Senior Geologist

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
JOHN PAUL CAPRIO
GEOLOGIST
NO. 2495-G

EA Project No.: 29600.74, Task 6200

cc: E. Boyle, EFA Northeast
J. Dale, EFA Northeast

FIGURES

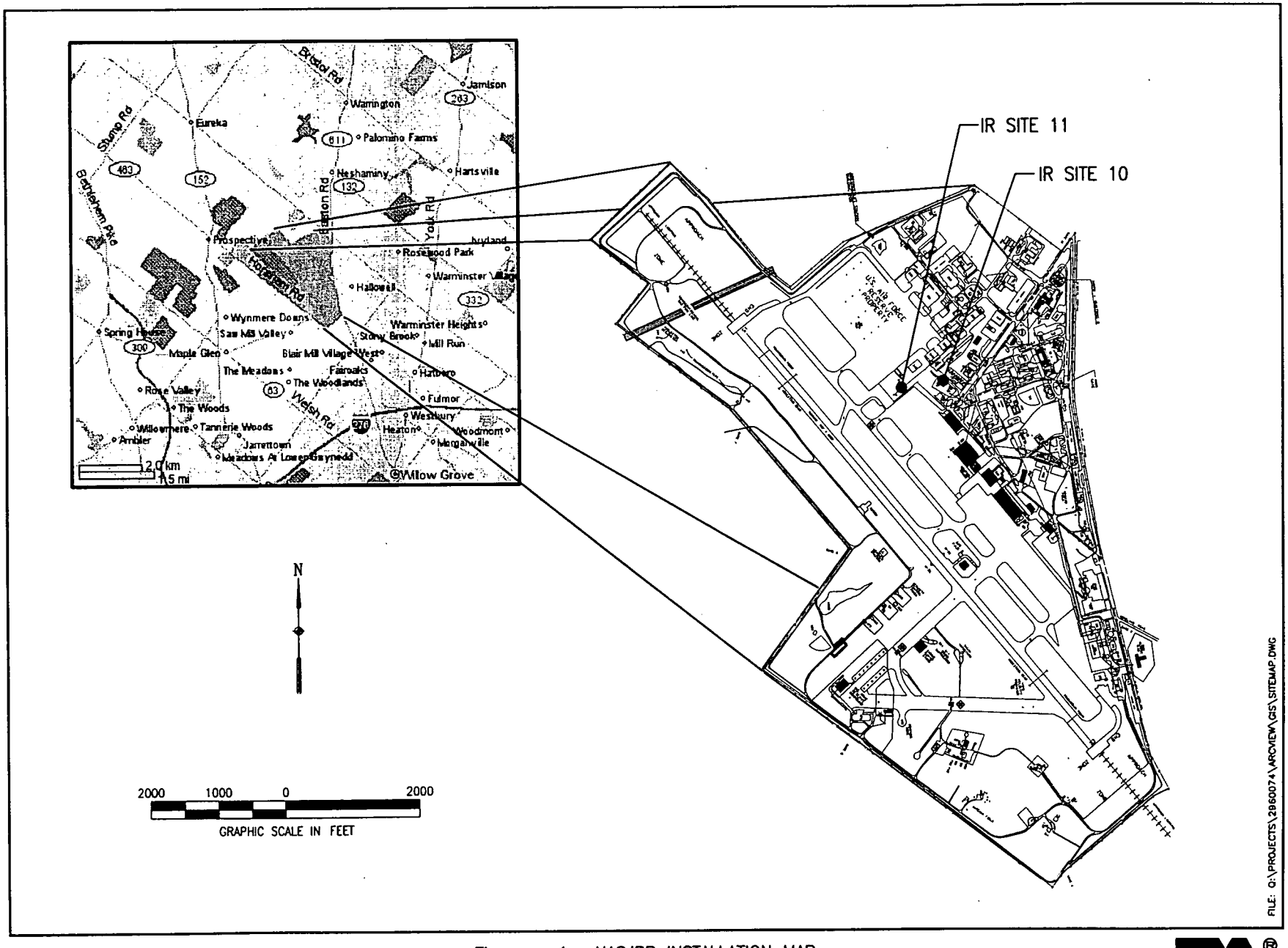


Figure 1. NASJRB INSTALLATION MAP

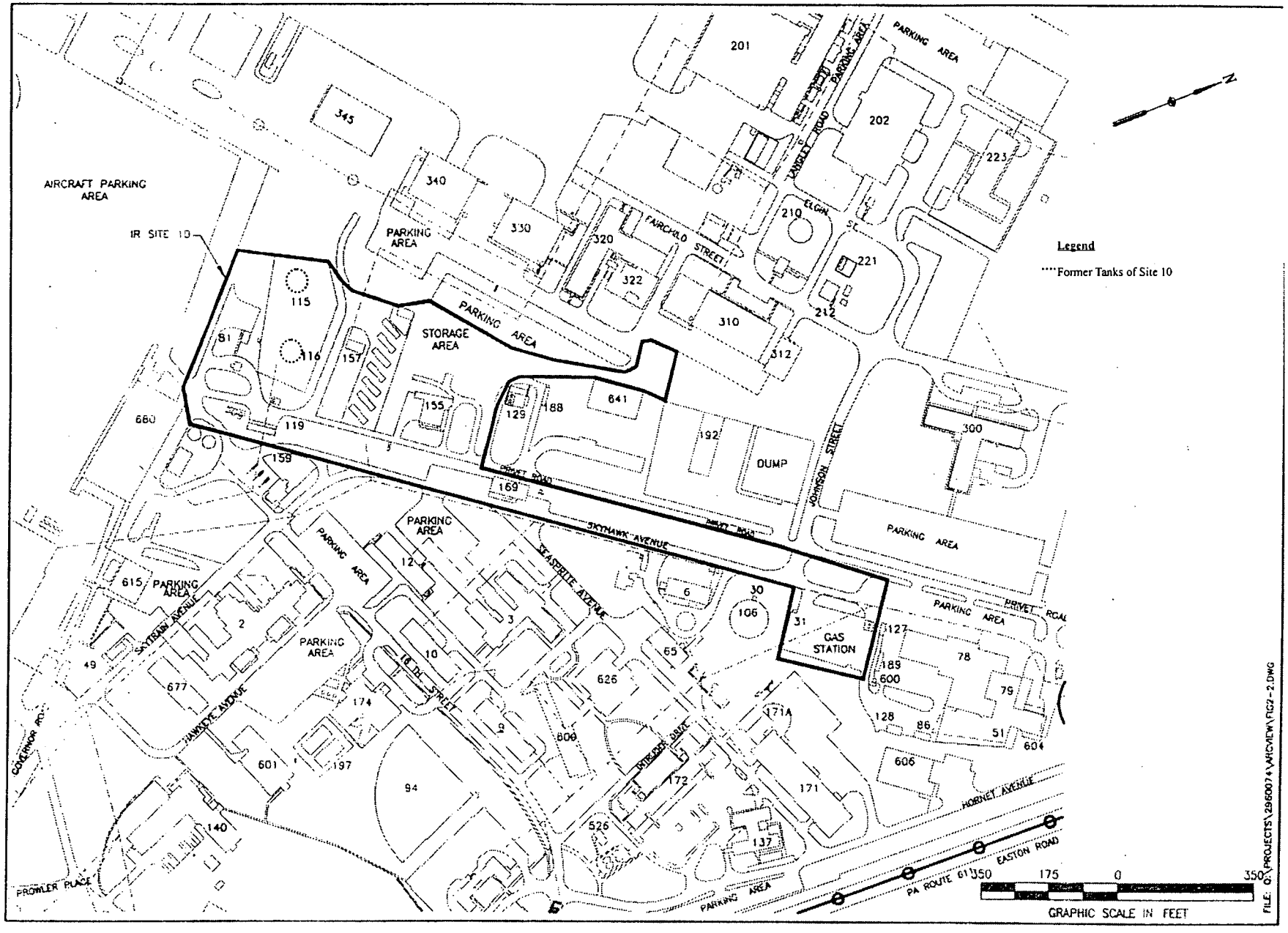
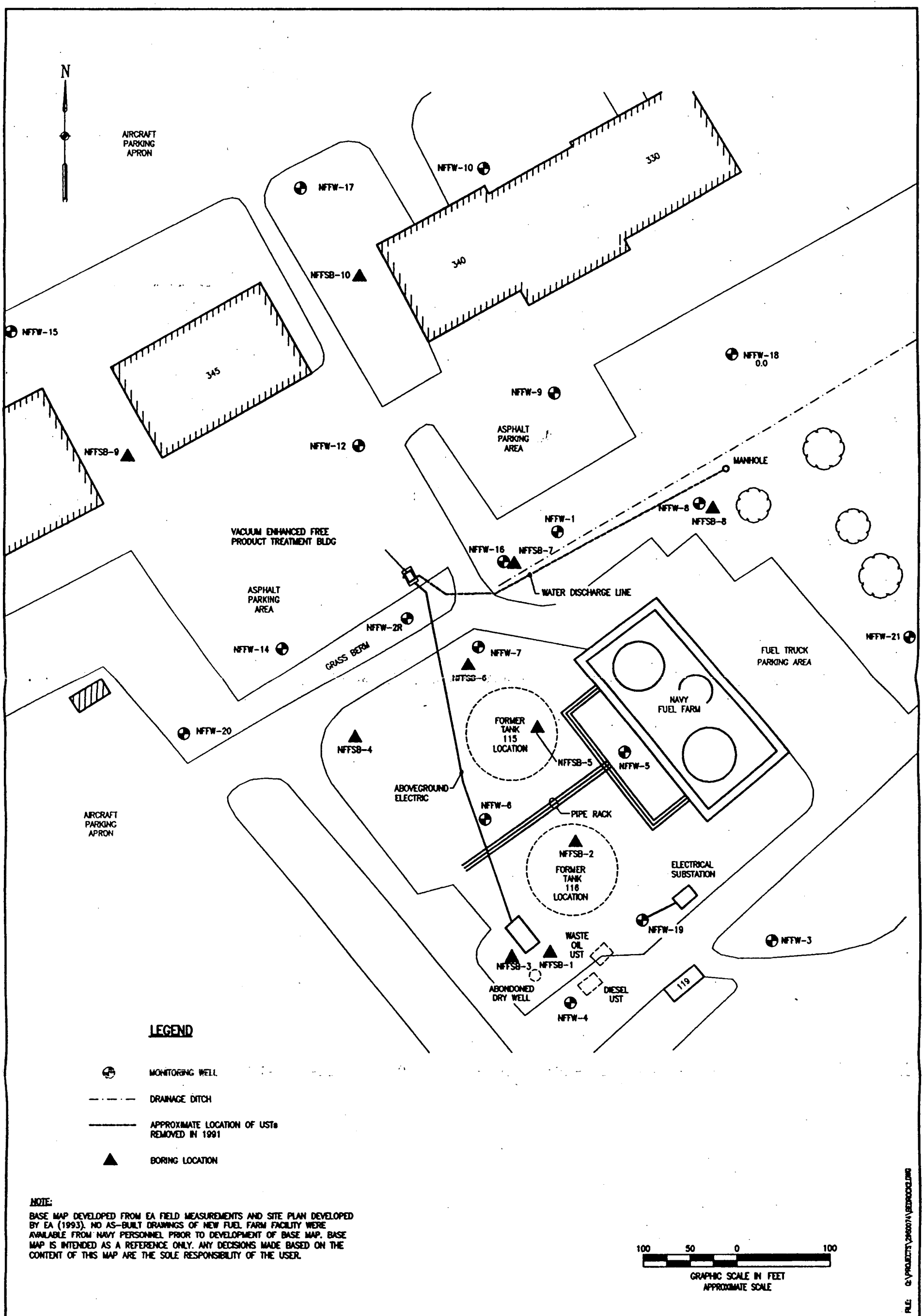


Figure 2. IR SITE 10 LOCATION



NOTE:
BASE MAP DEVELOPED FROM EA FIELD MEASUREMENTS AND SITE PLAN DEVELOPED BY EA (1993). NO AS-BUILT DRAWINGS OF NEW FUEL FARM FACILITY WERE AVAILABLE FROM NAVY PERSONNEL PRIOR TO DEVELOPMENT OF BASE MAP. BASE MAP IS INTENDED AS A REFERENCE ONLY. ANY DECISIONS MADE BASED ON THE CONTENT OF THIS MAP ARE THE SOLE RESPONSIBILITY OF THE USER.

FILE: Q:\PROJECTS\29600.74\BEDROCK2.DWG

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

NAVY FUEL FARM FACILITY
NAVAL AIR STATION JOINT RESERVE BASE
WILLOW GROVE, PENNSYLVANIA

DIRECT-PUSH SOIL SAMPLING LOCATIONS

PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE	PROJECT NO.	FILE NAME	DRAWING NO.	FIGURE
CR	SHD	CJV/DWM	CR	6-10-98	AS SHOWN	29600.74	BEDROCK2	-	3

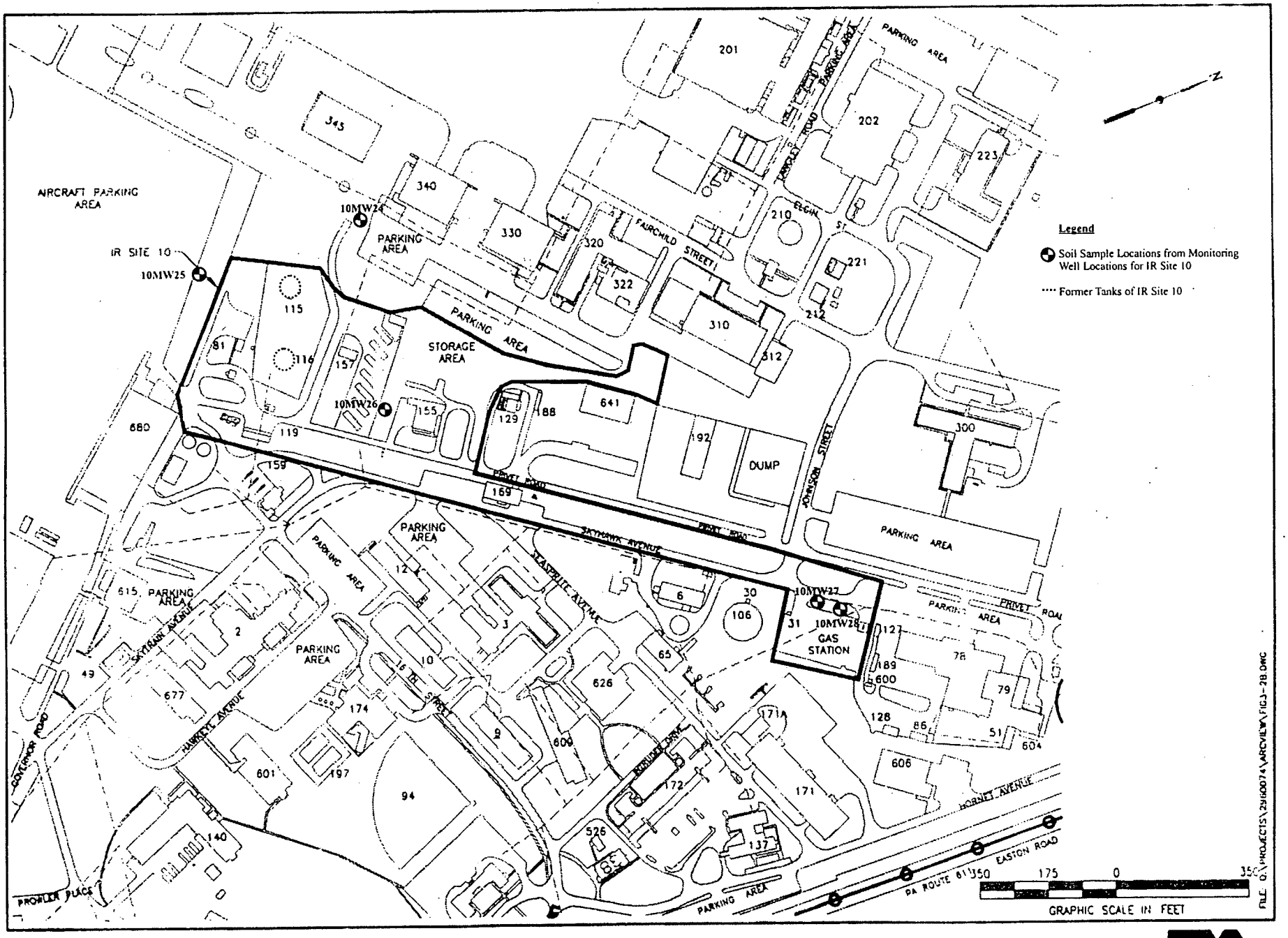


Figure 4. SOIL SAMPLE LOCATIONS FOR NASJRB IR SITE 10.

TABLES

IR Site 10 NASJRB, Willow Grove, PA

Surface Soil Analytical Summary

Sample ID Depth Sample Date Units	mg/kg	NFFW-SB-9 2 ft 9/8/97 mg/kg
VOC	*MSC	
Dichlorodifluoromethane	100/E	<0.006
**Chloromethane	0.3	<0.006
**Vinyl Chloride	0.2	<0.006
**Bromomethane	1	<0.006
**Chloroethane	90	<0.006
Trichlorofluoromethane	200	<0.006
**1,1-Dichloroethene	0.7	<0.006
**Methylene Chloride	0.5	0.002 J
**trans-1,2-Dichloroethene	10	<0.006
**1,1-Dichloroethane	11	<0.006
2,2-Dichloropropane	NC	<0.006
**cis-1,2-Dichloroethene	7	<0.006
**Chloroform	10	<0.006
Bromochloromethane	9	<0.006
**1,1,1-Trichloroethane	20	<0.006
1,1-Dichloropropene	NC	<0.006
**Carbon Tetrachloride	0.5	<0.006
**1,2-Dichloroethane	0.5	<0.006
**Benzene	0.5	<0.006
**Trichloroethene	0.5	<0.006
**1,2-Dichloropropane	0.5	<0.006
**Bromodichloromethane	10	<0.006
Dibromomethane	20	<0.006
**Toluene	100	<0.006
**1,1,2-Trichloroethane	0.5	<0.006
**1,2-Dibromoethane (EDB)	0.005	<0.006
1,3-Dichloropropane	NC	<0.006
**Tetrachloroethene	0.5	<0.006
Chlorodibromomethane	10	<0.006
**Chlorobenzene	10	<0.006
1,1,1,2-Tetrachloroethane	18 E	<0.006
**Ethylbenzene	70	<0.006
**m&p Xylenes	***1000	<0.006
**0-Xylene	***1000	<0.006
**Styrene	24 E	<0.006
**Bromoform	10	<0.006
**Isopropylbenzene	1,600 E	<0.006
**1,1,2,2-Tetrachloroethane	0.03	<0.006
1,2,3-Trichloropropane	0.82	<0.006
n-Propylbenzene	780 E	<0.006
Bromobenzene	NC	<0.006
1,3,5-Trimethylbenzene	6.2 E	<0.006
2-Chlorotoluene	NC	<0.006
4-Chlorotoluene	NC	<0.006
tert-Butylbenzene	740 E	<0.006
1,2,4-Trimethylbenzene	20 E	<0.006
sec-Butylbenzene	960 E	<0.006
p-Isopropyltoluene	NC	<0.006
1,3-Dichlorobenzene	61 E	<0.006
1,2,3-Trimethylbenzene	NC	<0.006
1,4-Dichlorobenzene	10 E	<0.006
n-Butylbenzene	2600 E	<0.006
1,2-Dichlorobenzene	60	<0.006
1,2-Dibromo-3-chloropropane	0.02	<0.006
1,2,4-Trichlorobenzene	27 E	<0.006
Hexachlorobutadiene	1.2 E	<0.006
Napthalene	25 E	<0.006
1,2,3-Trichlorobenzene	NC	<0.006

*MSC-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Surface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

E for MSC- Number calculated by the soil to groundwater equation in Section 250.308

**- These constituents were also part of the VOC analysis conducted in 2003

***- Calculated MSC for Total Xylenes

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

NC- No Criteria

D- Diluted

N- Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling events.

J- Analyte present. Reported value may not be accurate or precise (estimated value).

Concentrations above calculated *MSC are bolded and shaded.

IR Site 10 NASJRB, Willow Grove, PA

Subsurface Soil Analytical Summary

Sample ID Depth Sample Date Units	mg/kg	NFFW-SB-1 4 ft 9/8/97 mg/kg	NFFW-SB-2 3 ft 9/8/97 mg/kg	NFFW-SB-3 NA 9/8/97 mg/kg	NFFW-SB-4 7.5 ft 9/8/97 mg/kg	NFFW-SB-5 NA 9/8/97 mg/kg	NFFW-DUP-5 (NA) NA 9/8/97 mg/kg	NFFW-SB-6 8 ft 9/8/97 mg/kg	NFFW-SB-7 6 ft 9/8/97 mg/kg	NFFW-SB-8 8 ft 9/8/97 mg/kg	NFFW-SB-10 4 ft 9/8/97 mg/kg
VOC	*MSC										
Dichlorodifluoromethane	100/E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Chloromethane	0.3	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Vinyl Chloride	0.2	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Bromomethane	1	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Chloroethane	90	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Trichlorofluoromethane	200	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,1-Dichloroethene	0.7	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Methylene Chloride	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	0.002 J	0.002 J	0.002 J
**trans-1,2-Dichloroethene	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,1-Dichloroethane	11	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
2,2-Dichloropropane	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**cis-1,2-Dichloroethene	7	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Chloroform	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Bromochloromethane	9	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,1,1-Trichloroethane	20	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,1-Dichloropropene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Carbon Tetrachloride	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,2-Dichloroethane	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Benzene	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Trichloroethene	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,2-Dichloropropane	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Bromodichloromethane	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Dibromomethane	20	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Toluene	100	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,1,2-Trichloroethane	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**1,2-Dibromoethane (EDB)	0.005	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,3-Dichloropropane	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Tetrachloroethene	0.5	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Chlorodibromomethane	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Chlorobenzene	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,1,1,2-Tetrachloroethane	18 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Ethylbenzene	70	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**m&p Xylenes	***1000	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**0-Xylene	***1000	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Styrene	24 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Bromoform	10	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
**Isopropylbenzene	1,600 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.013 JD	<0.006	<0.006	<0.006
**1,1,2,2-Tetrachloroethane	0.03	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2,3-Trichloropropane	0.95	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
n-Propylbenzene	780 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Bromobenzene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,3,5-Trimethylbenzene	6.2 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.061D	<0.006	<0.006	<0.006
2-Chlorotoluene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
4-Chlorotoluene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
tert-Butylbenzene	740 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2,4-Trimethylbenzene	20 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.031D	<0.006	<0.006	<0.006
sec-Butylbenzene	960 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.046 D	<0.006	<0.006	<0.006
p-Isopropyltoluene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.14 D	<0.006	<0.006	<0.006
1,3-Dichlorobenzene	61 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2,3-Trimethylbenzene	20 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.073 N D	<0.006	<0.006	<0.006
1,4-Dichlorobenzene	10 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
n-Butylbenzene	2600 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2-Dichlorobenzene	60	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2-Dibromo-3-chloropropane	0.02	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
1,2,4-Trichlorobenzene	27 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Hexachlorobutadiene	1.2 E	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006
Napthalene	25 E	0.003 J	0.002 J	<0.006	0.003 J	<0.006	<0.006	0.6 D	<0.006	<0.006	<0.006
1,2,3-Trichlorobenzene	NC	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.031	<0.006	<0.006	<0.006

*MSC-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Subsurface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

E for MSC- Number calculated by the soil to groundwater equation in Section 250.308

**- These constituents were also part of the VOC analysis conducted in 2003

***- Calculated MSC for Total Xylenes

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

NC- No Criteria

NA- Not Available

D- Diluted

N- Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling events.

J- Analyte present. Reported value may not be accurate or precise (estimated value).

Concentrations above calculated MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Surface Soil Screening Summary

Sample ID Depth Sample Date Units	mg/kg	NFFW-SB-9 2 ft 9/4/97 mg/kg
VOC	***MSC**	
Methylene Chloride	0.5	<0.001
Trichloroethane	NC	<0.001
Tetrachloroethylene	0.5	<0.001
Total ECD Detectable Compounds	NA	<0.001

***MSC**-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Surface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

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NC- No Criteria

NA- Not Available

J- Analyte present. Reported value may not be accurate or precise (estimated value).

Concentrations above calculated *MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Subsurface Soil Screening Summary

Sample ID Depth Sample Date Units		NFFW-SB-1 4 ft 9/4/97 mg/kg	NFFW-SB-1 7 ft 9/4/97 mg/kg	NFFW-SB-2 3 ft 9/4/97 mg/kg	NFFW-SB-2 6 ft 9/4/97 mg/kg	NFFW-SB-2 9 ft 9/4/97 mg/kg	NFFW-SB-3 3 ft 9/4/97 mg/kg	NFFW-SB-3 5 ft 9/4/97 mg/kg	NFFW-SB-3 (DUPLICATE) 5 ft 9/4/97 mg/kg	NFFW-SB-4 3 ft 9/4/97 mg/kg	NFFW-SB-4 7.5 ft 9/4/97 mg/kg	NFFW-SB-4 9 ft 9/4/97 mg/kg	NFFW-SB-5 3.5 ft 9/4/97 mg/kg	NFFW-SB-5 7.5 ft 9/4/97 mg/kg	NFFW-SB-6 3.5 ft 9/4/97 mg/kg	NFFW-SB-6 8 ft 9/4/97 mg/kg	NFFW-SB-7 4 ft 9/4/97 mg/kg	NFFW-SB-7 6 ft 9/4/97 mg/kg	NFFW-SB-7 (DUPLICATE) 6 ft 9/4/97 mg/kg	NFFW-SB-8 4 ft 9/4/97 mg/kg	NFFW-SB-8 8 ft 9/4/97 mg/kg	NFFW-SB-10 4 ft 9/4/97 mg/kg	NFFW-SB-10 8 ft 9/4/97 mg/kg	NFFW-SB-10 9.5 ft 9/4/97 mg/kg
VOC	*MSC																							
Methylene Chloride	0.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethane	NC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethylene	0.5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00075 J	<0.001	<0.001	<0.001
Total ECD Detectable Compounds	NA	0.0007	<0.001	0.0038	<0.001	<0.001	0.0005 J	0.001	0.001	0.0009 J	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0005 J	0.0005 J	<0.001	<0.001	<0.001	<0.001	<0.001

*MSC-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for
Non-Residential Subsurface Soil or Soil to Groundwater Numeric Values for
Non-Residential Used Aquifers with TDS less than or
equal to 2500 for either 100 X Groundwater MSC or Generic Value

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The associated numerical value is the sample detection limit.

NC- No Criteria

NA- Not Available

J- Analyte present. Reported value may not be accurate or precise (estimated value).

Concentrations above calculated MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Surface Soil Analytical Summary Report

Sample ID Lab Batch Number Sample Date Units	mg/kg	10SB270105 0305L388 5/9/03 mg/kg	10SB280105 0305L388 5/9/03 mg/kg
Metals	***MSC**		
Aluminum	190,000	18,200	20,000
Antimony	27	<0.22 L	<0.26 L
Arsenic	53	4.9	4.3
Barium	8200	58.2	88.2
Beryllium	320	0.69	0.9
Cadmium	38	<0.04	<0.05
Calcium	NC	6,620	596
Chromium	**190	25.9	28.8
Cobalt	200	8.5	8.8
Copper	36,000	10.9	8.7
Iron	190,000	27,300	30,700
Lead	450	11.2	11.1
Magnesium	NC	2,370	2,020
Manganese	190,000	542	530
Mercury	10	<0.02 L	<0.02 L
Nickel	650	14.1	14.8
Potassium	NC	1,320	1,220
Selenium	26	<0.43	<0.5
Silver	84	<0.12	<0.14
Sodium	NC	105	94.8
Thallium	14	<0.46	<0.54
Vanadium	20,000	41.4	43.4
Zinc	12,000	32.5	29.7

Notes:

***MSC**-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Surface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

NC- No Criteria

- Chromium IV calculated MSC

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B- Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

J- Indicates an estimated value.

K- Biased high

L- Biased low

Concentrations above calculated *MSC are bolded and shaded.

IR Site 10 NASJRB, Willow Grove, PA

Subsurface Soil Analytical Summary

Sample ID Lab Batch Number Sample Date Units	mg/kg	10SB240204 0305L323 5/1/03 mg/kg	10SB241214 0305L323 5/1/03 mg/kg	10SB250204 0305L337 5/2/03 mg/kg	10SB250608 0305L337 5/2/03 mg/kg	10DUP01 (10SB250608) 0305L337 5/2/03	10SB260204 0305L337 5/2/03 mg/kg	10SB261416 0305L337 5/2/03 mg/kg	10SB270810 0305L388 5/9/03 mg/kg	10SB280608 0305L388 5/9/03 mg/kg
Metals	***MSC**									
Aluminum	190,000	16,400	10,500	15,300	18,800	23,100	17,700	15,000	20,700	7,930
Antimony	27	<0.29 L	<0.29 L	<0.27 L	<0.28 L	0.28 L	<0.28 L	<0.29 L	<0.25 L	<0.23 L
Arsenic	150	4.8	1.9	3.9	6.3	5	4.7	5.9	2.2	0.9
Barium	8,200	66	127	166	93.2	90.4	69	294	210	46.6
Beryllium	320	0.87 J	1.1 J	1.3	0.95	0.98	0.88	2.6	0.88	0.33
Cadmium	38	<0.05	<0.05	0.09 B	<0.04	<0.04	<0.04	0.06 B	<0.05	<0.04
Calcium	NC	665	528	957	906	892	1,650	1,110	726	186
Total Chromium	**190	24	27.9	26	25.7	23.8	19.8	14.6	22.4	24.5
Cobalt	200	13	9.2	11.2	11	9.5	7	15	10.7	5.5
Copper	36,000	14.3	8.5	7.6 K	14.6 K	21.7 K	15.3 K	33.4 K	3	1
Iron	190,000	26,100	24,600	34,600	27,700	26,500	22,000	27,500	24,400	19,300
Lead	450	8.7	9.4	18.3 J	14.6 J	10.9 J	43.1 J	15.2 J	7.9	4.9
Magnesium	NC	2,540	672	3,440	2,370	2070	2,170	2,400	846	404
Manganese	190,000	412	778	419	421	654	411	1,770	1,730	249
Mercury	10	<0.02	<0.02	<0.02	0.04	0.14	0.11	<0.02	<0.02 L	<0.02 L
Nickel	650	17.5	12.9	17.5	14.8	14	11.3	19.4	13.6	7.7
Potassium	NC	1,060	531	2,980	1,210	1,220	1,220	2,030	778	307
Selenium	26	<0.41 L	<0.41 L	<0.38	0.41	0.57	<0.4	<0.42	<0.48	<0.44
Silver	84	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.14	<0.12
Sodium	NC	185	120	112	83.5	87.2	87.6	88.6	96.3	127
Thallium	14	<0.41	<0.41	<0.38	<0.4	<0.39	<0.4	<0.42	<0.52	0.48 K
Vanadium	72,000	40.3	33.7	34.9	39.9	37	30.4	26.6	33	34.7
Zinc	12,000	37.4	17.5	42.2	37.9	32.3	43.5	56.2	25.5	8.7

Notes:

***MSC**-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Subsurface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

NC- No Criteria

******- Chromium IV calculated MSC

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B- Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

J- Indicates an estimated value.

K- Biased high

L- Biased low

Concentrations above calculated *MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Surface Soil Analytical Summary

Sample ID Batch Number Sample Date Units	mg/kg	10SB270105 0305L388 5/9/03 mg/kg	10SB280105 0305L388 5/9/03 mg/kg
SVOC	*MSC		
	400	<0.41	<0.41
roethyl)ether	0.055	<0.41	<0.41
henol	4.4 E	<0.41	<0.41
robenzene	61 E	<0.41	<0.41
robenzene	10 E	<0.41	<0.41
robenzene	60	<0.41	<0.41
henol	510	<0.41	<0.41
(1-Chloropropane)	NC	<0.41	<0.41
henol	51	<0.41	<0.41
di-n-propylamine	0.037	<0.41	<0.41
oethane	0.56 E	<0.41	<0.41
ene	5.1	<0.41	<0.41
e	10	<0.41	<0.41
nol	82	<0.41	<0.41
ylphenol	200	<0.41	<0.41
roethoxy)methane	NC	<0.41	<0.41
ophenol	2	<0.41	<0.41
lorobenzene	27 E	<0.41	<0.41
ne	25 E	<0.41	<0.41
iline	52 E	<0.41	<0.41
obutadiene	1.2 E	<0.41	<0.41
-methyphenol	NC	<0.41	<0.41
phthalene	8,000 E	<0.41	<0.41
cyclopentadiene	91 E	<0.41	<0.41
lorophenol	8.9 E	<0.41	<0.41
lorophenol	6,100 E	<1	<1
phthalene	18,000 E	<0.41	<0.41
ne	0.58	<1	<1
thalate	NC	<0.41	<0.41
ylene	6,900 E	<0.41	<0.41
oluene	10	<0.41	<0.41
ne	0.58	<1	<1
ene	4,700 E	<0.41	<0.41
phenol	4.1	<1	<1
nol	6	<1	<1
an	NC	<0.41	<0.41
oluene	0.84	<0.41	<0.41
alate	500	<0.41	<0.41
enyl-phenylether	NC	<0.41	<0.41
	3,800 E	<0.41	<0.41
ne	0.58	<1	<1
2-methylphenol	NC	<1	<1
phenylamine (1)	83 E	<0.41	<0.41
enyl-phenylether	NC	<0.41	<0.41
benzene	0.96 E	<0.41	<0.41
ophenol	5 E	<1	<1
ne	10,000 E	<0.41	<0.41
	350 E	<0.41	<0.41
	83 E	<0.41	<0.41
thalate	4,100 E	<0.41	<0.41
ne	3,200 E	0.024 J	<0.41
	2,200 E	0.023 J	<0.41
phthalate	10,000 C	<0.41	<0.41
obenzidine	32 E	<0.41	<0.41
thracene	110 G	<0.41	<0.41
	230 E	<0.41	<0.41
exyl)phthalate	130 E	0.037 J	<0.41
hthalate	10,000 C	<0.41	<0.41
oranthene	110 G	<0.41	<0.41
oranthene	610 E	<0.41	<0.41
rene	11G	<0.41	<0.41
3-cd) pyrene	110 G	<0.41	<0.41
anthracene	11 G	<0.41	<0.41
perylene	180 E	<0.41	<0.41

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or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or
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IR Site 10 NASJRB, Willow Grove, PA

Subsurface Soil Analytical Summary

Sample ID Lab Batch Number Sample Date Units	mg/kg	10SB240204 0305L323 5/1/03 mg/kg	10SB241214 0305L323 5/1/03 mg/kg	10SB250204 0305L337 5/2/03 mg/kg	10SB250608 0305L337 5/2/03 mg/kg	10DUP01 (10SB250608) 0305L337 5/2/03 mg/kg	10SB260204 0305L337 5/2/03 mg/kg	10SB261416 0305L337 5/2/03 mg/kg	10SB270810 0305L388 5/9/03 mg/kg	10SB280608 0305L388 5/9/03 mg/kg
SVOC	*MSC									
Phenol	400	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
bis(2-Chloroethyl)ether	0.055	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2-Chlorophenol	4.4 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
1,3-Dichlorobenzene	61 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
1,4-Dichlorobenzene	10 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
1,2-Dichlorobenzene	60	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2-Methylphenol	510	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,2'-oxybis(1-Chloropropane)	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
4-Methylphenol	51	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
N-Nitroso-di-n-propylamine	0.037	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Hexachloroethane	0.56 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Nitrobenzene	5.1	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Isophorone	10	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2-Nitrophenol	82	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4-Dimethylphenol	200	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
bis(2-Chloroethoxy)methane	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4-Dichlorophenol	2	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
1,2,4-Trichlorobenzene	27 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Naphthalene	25 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
4-Chloroaniline	52 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Hexachlorobutadiene	1.2 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
4-Chloro-3-methyphenol	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2-Methylnaphthalene	8,000 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Hexachlorocyclopentadiene	91 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4,6-Trichlorophenol	8.9 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4,5-Trichlorophenol	6,100 E	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
2-Chloronaphthalene	18,000 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2-Nitroaniline	0.58	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
Dimethylphthalate	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Acenalphthylene	6,900 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,6-Dinitrotoluene	10	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
3-Nitroaniline	0.58	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
Acenaphthene	4,700 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4-Dinitrophenol	4.1	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
4-Nitrophenol	6	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
Dibenzofuran	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
2,4-Dinitrotoluene	0.84	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Diethylphthalate	500	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	0.022 B	<0.41	<0.37
4-Chlorophenyl-phenylether	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Fluorene	3,800 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
4-Nitroaniline	0.58	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
4,6-Dinitro-2-methylphenol	NC	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
N-Nitrosodiphenylamine (1)	83 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
4-Bromophenyl-phenylether	NC	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Hexachlorobenzene	0.96 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Pentachlorophenol	5 E	<1	<0.98	<0.94	<0.99	<1	<0.94	<1	<1	<0.92
Phenanthrene	10,000 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Anthracene	350 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Carbazole	83 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Di-n-butylphthalate	4,100 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Fluoranthene	3,200 E	<0.4	<0.39	<0.38	0.037 J	0.031 J	0.031 J	<0.4	<0.41	<0.37
Pyrene	2,200 E	<0.4	<0.39	<0.38	0.027 J	0.029 J	0.031 J	<0.4	<0.41	<0.37
Butylbenzylphthalate	10,000 C	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
3,3'-Dichlorobenzidine	32 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Banzo(a)anthracene	320 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Chrysene	230 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
bis(2-Ethylhexyl)phthalate	130 E	0.021 J	<0.39	0.019 J	<0.4	0.038 J	0.04 J	<0.4	0.068 J	<0.37
Di-n-octyl phthalate	10,000 C	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Benzo(b)fluoranthene	170 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Benzo(k)fluoranthene	610 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Benzo(a)pyrene	46 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Indeno(1,2,3-cd) pyrene	28,000 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Dibenz(a,h)anthracene	160 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37
Benzo(g,h,i)perylene	180 E	<0.4	<0.39	<0.38	<0.4	<0.4	<0.38	<0.4	<0.41	<0.37

*MSC-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Subsurface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

NC- No Criteria

C- Cap

E- Number calculated by the soil to groundwater equation in Section 250.308

B- This flag is used when the analyte is found in the associated blank as well as the sample. It indicates possible/probable blank contamination.

J- Indicates an estimated value

Concentrations above calculated MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Surface Soil Analytical Summary

Sample ID Lab Batch Number Sample Date Units	mg/kg	10SB270105 0305L388 5/9/03 mg/kg	10SB280105 0305L388 5/9/03 mg/kg
VOC	*MSC		
Chloromethane	0.3	<0.013	<0.014
Bromomethane	1	<0.013	<0.014
Vinyl Chloride	0.2	<0.013	<0.014
Chloroethane	90	<0.013	<0.014
Methylene Chloride	0.5	<0.006	<0.007
Acetone	1000	0.044	0.021
Carbon Disulfide	410	<0.006	<0.007
1,1-Dichloroethene	0.7	<0.006	<0.007
1,1-Dichloroethane	11	<0.006	<0.007
1,2-Dichloroethene (total)	**7/10	<0.006	<0.007
Chloroform	10	<0.006	<0.007
1,2-Dichloroethane	0.5	<0.006	<0.007
2-Butanone	580	<0.013	<0.014
1,1,1-Trichloroethane	20	<0.006	<0.007
Carbon Tetrachloride	0.5	<0.006	<0.007
Bromodichloromethane	10	<0.006	<0.007
1,2-Dichloropropane	0.5	<0.006	<0.007
cis-1,3-Dichloropropene	2.6	<0.006	<0.007
Trichloroethene	0.5	<0.006	<0.007
Dibromochloromethane	NC	<0.006	<0.007
1,1,2-Trichloroethane	0.5	<0.006	<0.007
Benzene	0.5	<0.006	<0.007
Trans-1,3-Dichloropropene	2.6	<0.006	<0.007
Bromoform	10	<0.006	<0.007
4-Methyl-2-pentanone	41	<0.013	<0.014
2-Hexanone	NC	<0.013	<0.014
Tetrachloroethene	0.5	<0.006	<0.007
1,1,2,2-Tetrachloroethane	0.03	<0.006	<0.007
Toluene	100	<0.006	<0.007
Chlorobenzene	10	<0.006	<0.007
Ethylbenzene	70	<0.006	<0.007
Styrene	24 E	<0.006	<0.007
Xylene (total)	1,000	<0.006	<0.007
1,2-Dibromoethane	0.005	<0.006	<0.007
Isopropylbenzene	1,600 E	<0.006	<0.007

Notes:

***MSC**-calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Surface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

**7- cis and 10-trans

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

NC- No Criteria

E- Number calculated by the soil to groundwater equation in Section 250.308

Concentrations above calculated MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Subsurface Soil Analytical Summary

Sample ID Lab Batch Number Sample Date Units	mg/kg	10SB240204 0305L323 5/1/03 mg/kg	10SB241214 0305L323 5/1/03 mg/kg	10SB250204 0305L337 5/2/03 mg/kg	10SB250608 0305L337 5/2/03 mg/kg	10DUP01 (10SB250608) 0305L337 5/2/03 mg/kg	10SB260204 0305L337 5/2/03 mg/kg	10SB261416 0305L337 5/2/03 mg/kg	10SB270810 0305L388 5/9/03 mg/kg	10SB280608 0305L388 5/9/03 mg/kg
VOC	***MSC**									
Chloromethane	0.3	<0.011	<0.014	<0.011	<0.011	<0.014	<0.011	<0.012	<0.013	<0.014
Bromomethane	1	<0.011	<0.014	<0.011	<0.011	<0.014	<0.011	<0.012	<0.013	<0.014
Vinyl Chloride	0.2	<0.011	<0.014	<0.011	<0.011	<0.014	<0.011	<0.012	<0.013	<0.014
Chloroethane	90	<0.011	<0.014	<0.011	<0.011	<0.014	<0.011	<0.012	<0.013	<0.014
Methylene Chloride	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	0.002 B	<0.006	<0.007
Acetone	1000	0.016	0.039	<0.011	0.033	0.056	<0.011	<0.012	0.038	0.010 J
Carbon Disulfide	410	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,1-Dichloroethene	0.7	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,1-Dichloroethane	11	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,2-Dichloroethene (total)	**7/10	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Chloroform	10	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,2-Dichloroethane	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
2-Butanone	580	<0.011	<0.014	<0.011	0.004 J	<0.014	<0.011	<0.012	<0.013	<0.014
1,1,1-Trichloroethane	20	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Carbon Tetrachloride	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Bromodichloromethane	10	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,2-Dichloropropane	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
cis-1,3-Dichloropropene	2.6	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Trichloroethene	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Dibromochloromethane	NC	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,1,2-Trichloroethane	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Benzene	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Trans-1,3-Dichloropropene	2.6	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Bromoform	10	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
4-Methyl-2-pentanone	41	<0.011	<0.014	<0.011	<0.011	<0.014	<0.011	<0.012	<0.013	<0.014
2-Hexanone	NC	<0.011	<0.014	<0.011	0.011	<0.014	<0.011	<0.012	<0.013	<0.014
Tetrachloroethene	0.5	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,1,2,2-Tetrachloroethane	0.03	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Toluene	100	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Chlorobenzene	10	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Ethylbenzene	70	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Styrene	24 E	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Xylene (total)	1,000	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
1,2-Dibromoethane	0.005	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007
Isopropylbenzene	1,600 E	<0.006	<0.007	<0.006	<0.006	<0.007	<0.006	<0.006	<0.006	<0.007

Notes:

***MSC-**calculated Medium-Specific Concentrations; Direct Contact Numeric Values for Non-Residential Subsurface Soil or Soil to Groundwater Numeric Values for Non-Residential Used Aquifers with TDS less than or equal to 2500 for either 100 X Groundwater MSC or Generic Value

**7- cis and 10-trans

< - Indicates that the parameter was not detected at or above the reported limit.
The associated numerical value is the sample detection limit.

NC- No Criteria

J- Indicates an estimated value

E- Number calculated by the soil to groundwater equation in Section 250.308

B- Analyte is found in the associated blank as well as in the sample.

Concentrations above calculated *MSC are bolded and shaded

IR Site 10, NASJRB, Willow Grove, PA

Blank Analytical Summary Report

Sample ID Lab Batch Number Sample Date Units	10FB01050203 0305L337 5/2/03 ug/L	10RB01050203 0305L337 5/2/03 ug/L	10RB02050903 0305L388 5/9/03 ug/L
Metals			
Aluminum	<18.8	25.5	41.4 B
Antimony	<2.5	<2.5	<2.2 L
Arsenic	<3.5	<3.5	<3.3
Barium	0.16 B	0.21 B	0.68 B
Beryllium	<0.5	<0.5	<0.1
Cadmium	0.43 B	<0.4	<0.4
Calcium	40.9 B	24.9 B	72.9 B
Total Chromium	<0.6	<0.6	<1
Cobalt	<0.7	<0.7	<1
Copper	1.2 B	1.2 B	0.77 B
Iron	<19.7	<19.7	<25.8
Lead	<2.6	<2.6	<2.3
Magnesium	14.3 B	7.6 B	21.2 B
Manganese	<0.2	0.22 B	<0.2
Mercury	<0.1	<0.1	<0.1
Nickel	<1.8 L	<1.8 L	<1.3
Potassium	<20.8	533	88.6 B
Selenium	<3.6	<3.6	<4.2
Silver	<0.8	<0.8	<1.2
Sodium	28.6 B	40.5 B	104 B
Thallium	<3.6	<3.6	<4.5
Vanadium	<0.1	<0.1	0.74 B
Zinc	<1.4	<1.4	5.7 B

Notes:

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B- Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL).

L- Biased low

IR Site 10, NASJRB, Willow Grove, PA

Blank Analytical Summary Report

Sample ID Lab Batch Number Sample Date Units	10FB01050203 0305L337 5/2/03 ug/L	10RB01050203 0305L337 5/2/03 ug/L	10RB02050903 0305L388 5/9/03 ug/L
SVOC			
Phenol	<11	<10	<10
bis(2-Chloroethyl)ether	<11	<10	<10
2-Chlorophenol	<11	<10	<10
1,3-Dichlorobenzene	<11	<10	<10
1,4-Dichlorobenzene	<11	<10	<10
1,2-Dichlorobenzene	<11	<10	<10
2-Methylphenol	<11	<10	<10
2,2'-oxybis(1-Chloropropane)	<11	<10	<10
4-Methylphenol	<11	<10	<10
N-Nitroso-di-n-propylamine	<11	<10	<10
Hexachloroethane	<11	<10	<10
Nitrobenzene	<11	<10	<10
Isophorone	<11	<10	<10
2-Nitrophenol	<11	<10	<10
2,4-Dimethylphenol	<11	<10	<10
bis(2-Chloroethoxy)methane	<11	<10	<10
2,4-Dichlorophenol	<11	<10	<10
1,2,4-Trichlorobenzene	<11	<10	<10
Naphthalene	<11	<10	<10
4-Chloroaniline	<11	<10	<10
Hexachlorobutadiene	<11	<10	<10
4-Chloro-3-methyphenol	<11	<10	<10
2-Methylnaphthalene	<11	<10	<10
Hexachlorocyclopentadiene	<11	<10	<10
2,4,6-Trichlorophenol	<11	<10	<10
2,4,5-Trichlorophenol	<27	<26	<26
2-Chloronaphthalene	<11	<10	<10
2-Nitroaniline	<27	<26	<26
Dimethylphthalate	<11	<10	<10
Acenalphthylene	<11	<10	<10
2,6-Dinitrotoluene	<11	<10	<10
3-Nitroaniline	<27	<26	<26
Acenaphthene	<11	<10	<10
2,4-Dinitrophenol	<27	<26	<26
4-Nitrophenol	<27	<26	<26
Dibenzofuran	<11	<10	<10
2,4-Dinitrotoluene	<11	<10	<10
Diethylphthalate	<11	<10	<10
4-Chlorophenyl-phenylether	<11	<10	<10
Fluorene	<11	<10	<10
4-Nitroaniline	<27	<26	<26
4,6-Dinitro-2-methylphenol	<27	<26	<26
N-Nitrosodiphenylamine (1)	<11	<10	<10
4-Bromophenyl-phenylether	<11	<10	<10
Hexachlorobenzene	<11	<10	<10
Pentachlorophenol	<27	<26	<26
Phenanthrene	<11	<10	<10
Anthracene	<11	<10	<10
Carbazole	<11	<10	<10
Di-n-butylphthalate	0.8 B	1 B	<10
Fluoranthene	<11	<10	<10
Pyrene	<11	<10	<10
Butylbenzylphthalate	<11	<10	<10
3,3'-Dichlorobenzidine	<11	<10	<10
Banzo(a)anthracene	<11	<10	<10
Chrysene	<11	<10	<10
bis(2-Ethylhexyl)phthalate	1 B	1 B	3 B
Di-n-octyl phthalate	<11	<10	<10
Benzo(b)fluoranthene	<11	<10	<10
Benzo(k)fluoranthene	<11	<10	<10
Benzo(a)pyrene	<11	<10	<10
Indeno(1,2,3-cd) pyrene	<11	<10	<10
Dibenz(a,h)anthracene	<11	<10	<10
Benzo(g,h,i)perylene	<11	<10	<10

Notes:
J- Indicates an estimated value.
B- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

IR Site 10, NASJRB, Willow Grove, PA

Blank Analytical Summary Report

Sample ID Lab Batch Number Sample Date Units	10FB01050203 0305L337 5/2/03 ug/L	10RB01050203 0305L337 5/2/03 ug/L	10RB02050903 0305L388 5/9/03 ug/L	10TB02050103 0305L323 5/1/03 ug/L	10TB01050203 0305L337 5/2/03 ug/L	10TB03050902 0305L388 5/9/03 ug/L
VOC						
Chloromethane	<2	<2	<2	<2	<2	<2
Bromomethane	<2	<2	<2	<2	<2	<2
Vinyl Chloride	<2	<2	<2	<2	<2	<2
Chloroethane	<2	<2	<2	<2	<2	<2
Methylene Chloride	<2	<2	<2	11 J	12 J	11
Acetone	<5	<5	<5	<5	<5	<5
Carbon Disulfide	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (total)	<1	<1	<1	<1	<1	<1
Chloroform	2	2	2	<1	<1	<1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	0.1 J	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1	0.2 J	0.3 J	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1
Bromoform	<1	0.7 J	0.6 J	<1	<1	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5
2-Hexanone	5 R	5 R	5 R	5 R	5 R	5 R
Tetrachloroethene	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1
Toluene	0.2 J	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1
Xylene (total)	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	<1	<1	<1	<1	<1	<1
Isopropylbenzene	<1	<1	<1	<1	<1	<1
Dibenzofuran	<1	<1	<1	<1	<1	<1

Notes:

J- Indicates an estimated value.

B- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

R- Rejected (see Data Validation Report)

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

EA Engineering, Science, and Technology, Inc.

IR Site 10 NASJRB, Willow Grove, PA

Groundwater Analytical Summary

Sample ID Sample Date Units	ug/L	NFFW-3 10-21 June 1993 ug/L	NFFW-4 10-21 June 1993 ug/L	NFFW-5 10-21 June 1993 ug/L	NFFW-5D 10-21 June 1993 ug/L	NFFW-8 10-21 June 1993 ug/L	NFFW-9 10-21 June 1993 ug/L	NFFW-10 10-21 June 1993 ug/L	NFFW-11 10-21 June 1993 ug/L	NFFW-15 10-21 June 1993 ug/L	NFFW-17 10-21 June 1993 ug/L	NFFW-18 10-21 June 1993 ug/L	NFFW-19 10-21 June 1993 ug/L	NFFW-20 10-21 June 1993 ug/L	NFFW-21 10-21 June 1993 ug/L
VOC	*MSC														
**Acetone	10,000 G	ND	ND	ND	77	59 B	ND	14 B	ND	13 B	15 B	27 B	24 B	19 B	13 B
**Carbon Disulfide	4,100 N	ND	ND	14	12	ND	ND	ND	ND	ND	ND	ND	ND	17	ND
**Trichloroethene	5 M	ND	ND	ND	ND	ND	ND	ND	ND	3 J	ND	ND	ND	2 J	ND
**Chlorobenzene	100 M	ND	ND	ND	ND	ND	5 J	ND	ND	ND	ND	ND	ND	ND	ND
**Benzene	5 M	ND	ND	53	52	ND	29	ND	18	ND	6 J	2 J	67	6 J	1 J
**Toluene	1,000 M	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1 J	17 J	2 J	1 J
**Ethylbenzene	700 M	ND	ND	23	21	30	ND	ND	70	ND	ND	ND	320	ND	ND
**Xylene (total)	10,000 M	ND	ND	12	11	9 J	ND	ND	ND	ND	ND	ND	500	46	ND
TPH (Gasoline Range Organics-GRO)	NC	1,600	ND	1,600	1,700	8,800	1,300	360	8,300	ND	530	6,800	6,900	5,900	ND
TPH (JP-4)	NC	ND	ND	ND	ND	3,200	ND	ND	40,000	ND	8,400	ND	3,600,000	1,600,000	ND

Notes:
*MSC-calculated Medium-Specific Concentrations for Groundwater, Non-residential, Used Aquifer with TDS =< 2500 mg/L
**- These constituents were also part of the VOC analysis conducted in 2003
MSC M- Maximum Contaminant Level
MSC G- Ingestion
MSC N- Inhalation
ND- Not Detected
NC- No Criteria
J- Indicates an estimated value.
B- This flag is used when the analyte is found in the associated blank as well as in the sample.
It indicates possible/probable blank contamination.
Concentrations above calculated *MSC are bolded and shaded

IR Site 10 NASJRB, Willow Grove, PA

Groundwater Analytical Summary

Sample ID Sample Date Units	ug/L	NFFW-5 Sep-97	NFFW-6 9/4/97 ug/L	NFFW-6 9/4/97 ug/L	NFFW-7 9/4/97 ug/L	NFFW-7 9/4/97 ug/L	NFFW-8 9/4/97 ug/L	NFFW-10 9/4/97 ug/L	DUP-01 (NFFW-10) 9/4/97 ug/L	NFFW-12 9/4/97 ug/L	NFFW-12 9/4/97 ug/L	NFFW-14 9/4/97 ug/L	NFFW-14 9/4/97 ug/L	NFFW-16 9/4/97 ug/L	NFFW-16 9/4/97 ug/L	NFFW-19 9/4/97 ug/L	NFFW-20 9/4/97 ug/L	NFFW-20 9/4/97 ug/L
VOC	*MSC																	
Dichlorodifluoromethane	1,000 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Chloromethane	3 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Vinyl Chloride	2 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Bromomethane	10 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Chloroethane	900 G	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
Trichlorofluoromethane	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,1-Dichloroethene	7 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Methylene Chloride	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**trans-1,2-Dichloroethene	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,1-Dichloroethane	110 N	<1	<1	<10	<1	<20	<1	0.7 J	0.7 J	<1	<50	<1	<10	<1	<25	<1	<1	<10
2,2-Dichloropropane	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**cis-1,2-Dichloroethene	70 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Chloroform	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
Bromochloromethane	90 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,1,1-Trichloroethane	200 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,1-Dichloropropene	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Carbon Tetrachloride	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,2-Dichloroethane	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Benzene	5 M	<1	3	<10	36 E	47 D	<1	<1	<1	<1	<50	59 E	200 D	53 E	120 D	<1	1	<10
**Trichloroethene	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,2-Dichloropropane	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Bromodichloromethane	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
Dibromomethane	200 N	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Toluene	1,000 M	<1	0.6 J	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,1,2-Trichloroethane	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**1,2-Dibromoethane (EDB)	0.05 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,3-Dichloropropane	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Tetrachloroethene	5 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
Chlorodibromomethane	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Chlorobenzene	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,1,1,2-Tetrachloroethane	70 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Ethylbenzene	700 M	<1	44 E	51 D	79 E	120 D	<1	<1	<1	6	<50	110 E	230 D	95 E	140 D	<1	49 E	56 D
***Xylene (total)	10,000 M	<1	17/<1	19 D/<10	<1/0.7 J	<20/<20	<1/<1	<1/<1	<1	<1/<1	<50/<50	<1/1	<10/<10	<1/0.9 J	<25/<25	<1/<1	58E/9	120 D/9 JD
**Styrene	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Bromoform	100 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
**Isopropylbenzene	2,300N	<1	10	11 D	20	28 D	19	<1	<1	25	42 JD	25	42 D	22	26 D	7	14	14 D
**1,1,2,2-Tetrachloroethane	0.3 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,2,3-Trichloropropane	40 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
n-Propylbenzene	4,100 G	<1	14	10 JD	24	31 D	16	<1	<1	19	44 JD	20	55 D	18	33 D	17	17	16 D
Bromobenzene	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,3,5-Trimethylbenzene	35 N	<1	26 E	19 D	15	15 JD	<1	<1	<1	<1	<50	11	11 D	8	<25	<1	38 E	60 D
2-Chlorotoluene	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
4-Chlorotoluene	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
tert-Butylbenzene	4,100 G	<1	11	<10	<1	11 JD	0.6 J	<1	<1	<1	<50	6	<10	<1	<25	0.6 J	18	<10
Sec-Butylbenzene	4,100 G	<1	5	<10	8	<20	5	<1	<1	9	<50	7	7 JD	5	<25	8	7	<10
1,2,4-Trimethylbenzene	35 N	<1	30 E	97 D	31 E	76 D	<1	<1	<1	<1	<50	23	37 D	20	22 JD	0.6 J	34 E	170 D
p-Isopropyltoluene	NC	<1	9	10 D	11	11 JD	0.6 J	<1	<1	4	<50	10	10 JD	7	<25	1	16	9 JD
****1,3-Dichlorobenzene	600 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,2,3-Trimethylbenzene	NC	<1	31 E	<10	38 E	170 D	15	<1	<1	<1	<50	41 E	<10	38 E	<25	<1	28 E	<10
****1,4-Dichlorobenzene	75 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
n-Butylbenzene	4,100 G	<1	8	<10	9	<20	<1	<1	<1	6	<50	8	9 JD	5	<25	3	9	<10
****1,2-Dichlorobenzene	600 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
1,2-Dibromo-3-chloropropane	0.2 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
****1,2,4-Trichlorobenzene	70 M	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
****Hexachlorobutadiene	1 H	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10
****Naphthalene	100 H	<1	64 E	96 D	96 E	200 D	11	<1	<1	65 E	49 JD	110 E	220 D	94 E	130 D	<1	42 E	45 D
1,2,3-Trichlorobenzene	NC	<1	<1	<10	<1	<20	<1	<1	<1	<1	<50	<1	<10	<1	<25	<1	<1	<10

Notes:

*MSC-calculated Medium-Specific Concentrations for Groundwater, Non-residential, Used Aquifer with TDS =< 2500 mg/L

MSC M- Maximum Contaminant Level

MSC G- Ingestion

MSC N- Inhalation

MSC H- Lifetime health advisory level

< - Indicates that the parameter was not detected at or above the reported limit.
The associated numerical value is the sample detection limit.

**- These constituents were also part of the VOC analysis conducted in 2003

***- MSC value is for Total Xylenes. Lab results are for m+p xylene/o-xylene. Xylene was also part of the VOC analysis conducted in 2003.

****- These constituents were also part of the SVOC analysis conducted in 2003

NC- No Criteria

J- Indicates an estimated value.

D- Diluted Sample

E- Exceeds instrument calibration range.

Concentrations above calculated MSC are bolded and shaded

EA Engineering, Science, and Technology, Inc.

IR Site 10 NASJRB, Willow Grove, PA

Groundwater Analytical Summary

Sample ID		10MW01(INFFW-1)	10MW02R (INFFW-2R)	10DUP01(10MW02R (INFFW-2R))	10MW03 (INFFW-3)	10MW04 (INFFW-4)	10MW05 (INFFW-5)	10MW06 (INFFW-6)	10MW07 (INFFW-7)	10MW08 (INFFW-8)	10MW09 (INFFW-9)	10MW10 (INFFW-10)	10MW12 (INFFW-12)	10MW14 (INFFW-14)	10MW15 (INFFW-15)	10MW16 (INFFW-16)	10MW17 (INFFW-17)	10MW18 (INFFW-18)	10MW19 (INFFW-19)	10MW20 (INFFW-20)	10MW21 (INFFW-21)	10MW24	10MW25	10MW26	10MW27	10MW28
Lab Batch Number		0303L436	0303L457	0303L457	0303L463	0303L586	0303L457	0303L457	0303L436	0303L457	0303L463	0303L463	0303L436	0303L436	0303L457	0303L436	0303L463	0303L457	0303L463	0303L463	0303L457	0303L570	0303L570	0303L586	0303L586	0303L586
Sample Date		5/19/03	5/20/03	5/20/03	5/21/03	6/5/03	5/21/03	5/20/03	5/19/03	5/20/03	5/21/03	5/21/03	5/19/03	5/19/03	5/20/03	5/19/03	5/21/03	5/20/03	5/21/03	5/21/03	5/20/03	6/4/03	6/4/03	6/5/03	6/5/03	6/5/03
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Metals	*MSC																									
Aluminum	***200	83.7 B	84.1 B	187 B	57.4 B	13.8 B	52.9 B	60.8 B	60.4 B	73.8 B	77.7 B	50.5 B	54.8 B	70.6 B	50.8 B	84.5 B	42.9 B	15.8 B	53.8 B	51.1 B	43.4 B	2,910	51.8 B	<13.1	34.2 B	57 B
Antimony	6 M	2.5 B	3.4 B	<2.7	<2.7	<2.7	<2.7	2.8 B	<2.7	<2.7	<2.7	3.5	<2.7	4.2 B	<2.7	<2.7	2.8	<2.7	<2.7	3.1	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7
Arsenic	50 M	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	3.4	<3.3	7.8	<3.3	<3.3	<3.3	<3.3	<3.3	4	4.8 K	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Barium	2,000 M	787	973	948	389	251	227	848	464	1,170	1,450	261	825	722	229	1,820	704	577	825	643	304	304	287	454	327	476
Beryllium	4 M	0.3 B	0.34 B	0.48 B	0.31 B	<0.1	0.29 B	0.34 B	0.25 B	0.44 B	0.31 B	0.26 B	0.25 B	0.25 B	0.3 B	0.38 B	0.15 B	0.43 B	0.31 B	0.15 B	0.42 B	0.34 B	0.27 B	<0.1	0.31 B	0.28 B
Cadmium	5 M	<0.1	<0.1	<0.4	<0.1	<0.4	<0.4	<0.1	<0.1	<0.1	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.44 B
Calcium	NC	54,400	45,100	41,500	41,500	40,500	64,100	54,100	73,700	35,400	45,800	46,000	43,200	48,700	20,800	48,000	26,500	38,800	42,400	45,900	38,800	61,500	63,100	87,500	30,900	51,900
Chromium	***1.32 M	<1	<1	<1	1.1	2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.2	<1	1	1.8	25.2	2.7	2.1
Cobalt	2,300 U	1.1	<1	<1	<1	<1	<1	<1	<1	0.9	4	<1	1.5	4.2	<1	<1	<1	19.7	2.7	<1	<1	<1	<1	<1	<1	<1
Copper	1,300 U	1.5	1.7	0.9	<0.4	0.98 B	1.2 B	0.76	1.3	<0.8	<0.8	<0.8	1.7	2.1	1.2	1.4	0.80 B	0.86	<0.4	0.83 B	<0.8	8.1	<0.8	1.8 B	<0.8	<0.8
Iron	***300	[illegible] 6,270	[illegible] 18,600	[illegible] 18,800	<25.8	37.7	46.1	[illegible] 18,900	[illegible] 4,000	[illegible] 8,120	[illegible] 15,800	<25.8	[illegible] 23,000	[illegible] 4,360	<25.8	[illegible] 28,700	[illegible] 17,700	[illegible] 4,900	[illegible] 7,110	[illegible] 16,300	<25.8	28.1	12.7	<25.8	<25.8	<25.8
Lead	5 M	<2.3	[illegible] 8.3	[illegible] 7.8	<2.3	<2.3	<2.3	<2.3	3.8	<2.3	<2.3	<2.3	<2.3	[illegible] 8.4	<2.3	3.2	<2.3	<2.3	<2.3	2.8	<2.3	3.1 B	3.1 B	<2.3	2.3	2.8 B
Magnesium	NC	34,300	35,400	31,000	71,000	17,300	14,300	34,000	20,800	12,900	20,800	20,700	26,400	18,300	8,870	29,800	13,500	15,800	14,800	20,400	18,300	276	13,200	20,800	7,730	18,800
Manganese	***50	[illegible] 2,200 J	[illegible] 13,900 J	[illegible] 13,900 J	3.1 B	2.7 B	7.1	[illegible] 11,600 J	[illegible] 1,450 J	[illegible] 12,150 J	[illegible] 16,800	2.3 B	[illegible] 21,700 J	[illegible] 13,900 J	1.7 B	[illegible] 13,800 J	[illegible] 13,000	[illegible] 8,870 J	[illegible] 9,200	[illegible] 18,800	1.8 B	0.66	[illegible] 366	[illegible] 86.9	0.8	[illegible] 194
Mercury	2 M	<0.1 L	<0.1 L	<0.1 L	<0.1	<0.1 L	<0.1	<0.1 L	<0.1 L	<0.1 L	<0.1	<0.1	<0.1 L	<0.1 L	<0.1 L	<0.1 L	<0.1	<0.1 L	<0.1	<0.1	<0.1 L	<0.1 L	<0.1 L	<0.1 L	<0.1 L	<0.1 L
Nickel	100 H	<1.3	<1.3	2.5	1.8 J	5.8	<1.3	<1.3	<1.3	2.7	1.7 J	8.1 J	<1.3	<1.3	<1.3	1.7	<1.3	1.8 B	3.1 J	1.8 J	<1.3	2.1	2.1	3	5.4	3.3
Potassium	NC	1,180	5,750	6,180	7,250	1,820	4,530	2,380	2,600	1,630	1,820	1,860	3,100	2,160	2,250	2,830	1,220	1,810	2,000	3,560	5,310	34,300	1,840	29,000	1,530	2,430
Selenium	50 M	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2	5.3
Silver	100 H	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Sodium	NC	14,300	18,300	18,800	36,900	17,200	5,560	10,800	5,640	18,700	27,100	45,900	21,800	17,700	13,800	13,800	13,900	23,600	22,400	21,900	38,800	35,100	18,800	28,300	17,300	23,800
Thallium	2 U	<4.5	<4.5	<4.5	<4.5 L	<4.5	<4.5 L	<4.5	<4.5	<4.5	<4.5 L	<4.5 L	<4.5	<4.6	<4.6	<4.6	<4.6 L	<4.5	<4.5 L	<4.5 L	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5
Vanadium	720 G	0.58 B	0.18 B	0.31 B	0.47 B	0.5 B	0.34 B	0.58 B	1 B	<0.1	0.47 B	0.21 B	0.12 B	<0.1	<0.1	<0.1	0.47 B	<0.1	<0.1	0.52 B	0.21 B	3.4	1 B	0.51 B	0.41 B	0.72 B
Zinc	2,000 H	20.3 J	84.7 J	44.7 J	108 J	15.6 J	57.6 J	81.9 J	75.3 J	44 J	99.3 J	203 J	118 J	28 J	87.6 J	176 J	60.4 J	138 J	108 J	70.3 J	129 J	31.8 B	87 J	152 J	184 J	86.5 J

Notes:

*MSC-Calculated Medium-Specific Concentrations for Groundwater Non-residential Used Aquifer with TDS =< 2500 mg/L

MSC H- Lifetime health reference level

MSC M- Maximum Contaminant Level

MSC G- Inorganic

**- Secondary Maximum Contaminant Level (SMCL)

***- Total Chromium MSC

< - indicates that the parameter was not detected at or above the reported limit
The associated numerical value is the sample detection limit

B- The reported value is estimated because of the presence of interference.

B- indicates that the parameter was between the Instrument Detection Limit (IDL) and the the Contract Required Detection Limit (CRDL)

J- Estimated value

K- Analytes present. Reported value may be biased high. Actual value is expected to be lower

L- Analytes present. Reported value may be biased low. Actual value is expected to be higher

NC- No Criteria

[illegible]

Ex Engineering, Science, and Technology, Inc.

IR Site 10 NAS JRB, Willow Grove, PA

Groundwater Analytical Summary

Sample ID		100BW01 (NFPW-1)	100BW2R (NFPW-2R)	100UP01U (100BW2R (NFPW-2R))	100UP01RE (100BW2R (NFPW-2R))	100BW03 (NFPW-3)	100BW04 (NFPW-4)	100BW05 (NFPW-5)	100BW06 (NFPW-6)	100WW01RE (NFPW-6)	100BW07 (NFPW-7)	100BW08 (NFPW-8)	100BW09 (NFPW-9)	100BW10 (NFPW-10)	100BW12 (NFPW-12)	100WW14 (NFPW-14)	100BW15 (NFPW-15)	100WW16 (NFPW-16)	100BW17 (NFPW-17)	100BW18 (NFPW-18)	100BW19 (NFPW-19)	100BW20 (NFPW-20)	100WW21 (NFPW-21)	100BW24	100BW25	100BW26	100BW27	100BW28
Lab Batch Number		6306L438	6305L457	6305L457	6305L457	6305L463	6305L546	6305L463	6305L457	205L457	6305L438	6305L437	6305L463	6305L463	6305L438	6306L438	6305L457	6305L438	6305L463	6305L457	6305L463	6305L463	6305L457	6305L579	6305L579	6305L586	6305L586	6305L586
Sampling Date		5/19/03	5/20/03	5/20/03	5/20/03	5/21/03	6/5/03	5/21/03	5/20/03	5/20/03	5/19/03	5/20/03	5/21/03	5/20/03	5/19/03	5/19/03	5/20/03	5/19/03	5/21/03	5/20/03	5/21/03	5/21/03	5/20/03	6/4/03	6/4/03	6/5/03	6/3/03	6/3/03
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
SVOC	MSC																											
Phenol	4,200 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
bis,2-Chloroethyl ether	2.55 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2-Chlorophenol	42 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	9.6 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	75 M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	9.2E M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2-Methylphenol	5130 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,2'-oxybis(1-Chloropropane)	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
4-Methylphenol	910 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
N-Nitroso-di-n-propylamine	2.37 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Hexachloroethane	1 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Nitrobenzene	51 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Isophorone	130 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2-Nitrophenol	620 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4-Dimethylphenol	2000 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
bis,2-Chloroethoxy Methane	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4-Dichlorophenol	20 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
1,2,4-Trichlorobenzene	70 M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	3 J	1 J	<10	<33	1 J	<10	25	2 J	<10	<10	0.8 J	<12	21	<10	<10	<10	<10
Naphthalene	120 n	<11	<10	<100	NA	<12	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
4-Chloroaniline	410 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Hexachlorobutadiene	1 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	5 J	3 J	<10	<33	<11	<10	31	0.7 J	<10	<10	0.9 J	<12	28	<10	<10	<10	<10
2-Methylnaphthalene	2000 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	50 M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	10 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol	31 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	75 R	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4,5-Trichlorophenol	11,000 G	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
2-Chloronaphthalene	5200 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2-Nitroaniline	3.3 G	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	<25	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
Dimethylphthalate	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Acenaphthylene	3600 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	120 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
3-Nitroaniline	3.6 G	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	<25	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
Acenaphthene	3600 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4-Dinitrophenol	41 n	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
4-Nitrophenol	60 n	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
Dibenzofuran	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	8.4 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Diethylphthalate	5000 n	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
4-Chlorophenyl-phenylether	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Fluorene	1900 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
4,6-Dinitro-2-methylphenol	3.8 G	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
N-nitrosodiphenylamine (1)	NC	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
4-Bromophenyl-phenylether	NC	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Hexachlorobenzene	1 M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Pentachlorophenol	1 M	<27	<25	<250	NA	<25	<26	<25	<27	NA	<27	<25	<25	<25	<83	<27	75 R	<27	<25	<25	<25	<25	<27	<26	<26	<26	<25	<25
Phenanthrene	1100 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Anthracene	98 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	3 J	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Carbazole	130G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	0.9 B	1 J	0.8 J	<33	<11	0.9 B	<11	<10	0.9 J	0.8 J	<10	<12	<10	<10	<10	<10	<10
Di-n-butylphthalate	13,000 G	<11	0.8 B	<100	NA	<10	0.7 B	<10	<12	NA	<11	<10	<10	<10	31 J	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Fluoranthene	280 G	<11	<10	<100	NA	<10	<10	<10	3 J	NA	<11	<10	<10	<10	28 J	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Pyrene	130 G	<11	<10	<100	NA	<10	<10	<10	2 J	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Butylbenzylphthalate	2700 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	9.8 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Benzo,a,anthracene	3.8 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Chrysene	1.9 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	1.8	2 J	0.7 J	[illegible]	[illegible]	0.8 B	1 J	5 J	0.7 B	1 J	1 J	<12	2 J	<10	1.8	<10	<10
bis,2-Ethylhexyl phthalate	6 M	0.8 B	[illegible]	[illegible]	NA	<10	3 B	<10	0.8 B	NA	<11	1 B	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Di-n-octyl phthalate	2000 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Benzo,b,fluoranthene	1.2 B	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Benzo,k,fluoranthene	0.98 B	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Benzo,a,pyrene	0.2 M	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	0.17	<0.24	<0.23	<0.25	<0.23	<0.23	<0.23	<0.23	<0.23	<0.24	<0.26	<0.24	<0.23	<0.23
Indeno,1,2,3-cd,pyrene	0.2 M	<0.24	<0.23	[illegible]	***<0.24 J	<0.23	<0.24	<0.23	***<0.23 L	0.26 J	<0.26	<0.23	<0.23	<0.23	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Dibenz,a,h,anthracene	3.8 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10
Benzo,g,h,i,perylene	0.24 G	<11	<10	<100	NA	<10	<10	<10	<12	NA	<11	<10	<10	<10	<33	<11	<10	<11	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10

Notes:

MSC=Generic Medium-Specific Concentrations for Groundwater Non-residential. Used Aquifer with TDS <= 2500 mg/L

SSC G: Lifetime health advisory level

SSC B: Maximum Contaminant Level

SSC B: Inhalation

SSC B: Ingestion

SSC B: Arsenic, a carcinogen

**: Analyzed by Method 8310

***: Result is not valid based on data validation report.

n: indicates that the compound was not detected at or above the reported limit.
The associated numerical value is the sample detection limit.

NA: Not analyzed

NC: No Criteria

J: Indicates an estimated value.

L: Analyte present. Reported value may be biased low. Actual value is suspected to be higher.

B: This flag is used when the analyte is found in the associated blank as well as in the sample.

R: indicates potential problems exists. [illegible]

Ed Greenstone, Reports, ATS, Indianapolis, IN.

on site in Brownsville, Middle of Bldg. F.A.

Unsaturated Analytical Summary

Sample ID / Lab Batch Number / Sample Date / Units		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
VOC	***MRC																																
**Acetone	NC	19000 x	NA	1700 x	21000 x	<5	<5	20	4.800 x	6.400 x	NA	1.800 x	15.000 x	<5	5.900 x	NA	1.200 x	NA	<5	11.000 x	NA	22.000 x	1.400 x	620	13.000 x	<5	4.900	28	<5	<5	<5	<5
Chloromethane	3 n	<2	<2 J	<2	<2	<2	<2	<2	<10	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane	NC n	<2	<2 J	<2	<2	<2	<2	<2	<10	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethyl Chloride	2 n	<2	<2 J	<2	<2	<2	<2	<2	<10	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	278 Q	<2	<2 J	<2	<2	<2	<2	<2	<10	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2 J	<2	<2	<2	<2	<2	<2	<2	0.7 B	<2	<2	<2	<2
Methylene Chloride	5 n	<2	1 B	<2	<2	<2	<2	<2	1 B	<2	2 B	<2	<2	<2	<2	1 B	<2	3 B	<2	<2	2 B	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Acetone	10,000 S	<5	<5 J	<5	<5	<5	<5	<5	<25	<5	<5 J	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	0.7 J	<5	<5	<5	<5	<5	<5
Carbon Disulfide	1,100 n	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	0.3 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	1	0.4 J	<1	<1
1,1-Dichloroethane	* n	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	1	<1	0.3 J	0.3 J	<1
1,1-Dichloroethene	110 N	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	0.2 J	<1	<1	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	0.1 J	<1	1.4	<1	<1	0.2 J	<1
1,2-Dichloroethane (total)	***5 or 100 N	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	0.1 B	<1	<1	0.3 B	<1	0.3 J	<1
Chloroform	NC M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	1,200 n	5 B	5 B	5 B	5 B	5 B	5 B	5 B	25 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B
1,1,1-Trichloroethane	200 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Tetrachloride	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	NC M	<1	<1 J	<1	<1	<1	<1	0.3 J	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	30 S	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	0.3 J	<1	0.4 J	0.1 J	0.1 J	3	<1
Trichloroethene	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	0.1 B	<1	0.3 B	<1	0.2 J	0.3 J	<1
Dibromochloromethane	NC	<1	<1 J	<1	<1	0.3 J	0.3 J	0.2 J	<5	<1	<1 J	<1	<1	0.4 J	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	0.2 J	0.3 J	<1	(~50 J)	<1	<1	<1	<1	<1
Benzene	5 M	0.5 J	0.3 J	0.7 J	0.3 J	<1	<1	<1	<5	0.4 J	0.4 J	0.4 J	0.3 J	<1	0.6 J	0.5 J	3 J	3 J	<1	<1 J	0.4 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	21 S	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	0.3 B	0.3 B	<1	0.7 J	0.3 J	<1
Bromoform	100 M	<1	<1 J	<1	<1	0.7 J	0.4 J	0.3 J	<5	<1	<1 J	<1	<1	0.6 J	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-Methyl-2-pentanone	4,140 N	<5	<5 J	<5	<5	<5	<5	<5	<25	<5	<5 J	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	NC	5 B	5 B	5 B	5 B	5 B	5 B	5 B	25 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B	5 B
Tetrachloroethene	5 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	0.2 N	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	0.1 B	<1	<1	<1	<1	0.1 B	<1	<1	<1	<1	<1	0.3 B	<1	1.7	<1	<1	<1	<1
Toluene	1,000 M	<1	<1 J	0.1 J	0.2 J	<1	<1	<1	<5	<1	<1 J	<1	0.3 J	<1	<1	<1 J	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	100 M	<1	<1 J	<1	<1	<1	<1	<1	<5	2 J	2 J	2 J	0.7 J	<1	0.7 J	0.3 J	2 J	1 J	<1	10 J	0.2 J	<1	<1	<1	0.7 J	<1	<1	20 J	<1	<1	<1	<1	<1
Ethylbenzene	700 M	0.3 J	0.1 J	3	0.7	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	100 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	21 J	<1	<1	<1	<1	<1
Xylene (total)	10,000 M	<1	<1 J	0.3 B	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	1,140 M	<1	<1 J	<1	<1	<1	<1	<1	<5	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	2,55 M	<5 B	NA	<5 B	<5 B	<5 B	<5 B	<5 B	<25 B	<5 B	2 J	2 J	0.7 J	<1	0.6 J	0.3 J	2 J	2 J	<1	21 J	21 J	10 J	<1	1	2 J	<1	12 J	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	2,2000	0.7 J	0.5 J	3	2 J	<1	<1	<1	2 J	2 J	2 J	0.7 J	10 J	<1	0.6 J	0.4 J	2 J	2 J	<1	21 J	21 J	10 J	<1	1	2 J	<1	12 J	<1	<1	<1	<1	<1	<1

Notes:

* not with result based on Data Validation Report
**RBSL-adjusted Medium-Specific Concentrations for Groundwater (Non-residential) Lead results with TCE >= 2500 ug/L
MRC = Maximum Regulatory Concentration
MRC Q = Maximum Contaminant Level
MRC G = Inorganic
MRC N = Industrial
***= Analyzed by Method 8260, 625
****70, 90 and 100 ug/L
*****= Analyzed by Method 504
< = indicates that the compound was not detected at or above the reported limit
The associated numerical value is the sample quantitation limit
NA = Not Analyzed
NC = No Criteria
J = indicates an estimated value
N = Analysis suspect. Reported value may be biased high. Actual value is expected to be lower
B = This flag is used when the analyte is found in the associated blank as well as in the sample
It indicates possible/suspected blank contamination
S = Laboratory results. Analysis may or may not be present in samples
[redacted]

IR Site 10 NASJRB, Willow Grove, PA

Blanks Analytical Summary

Sample ID Lab Batch Number Sample Date Units	10FB01052003 0305L457 5/20/03 ug/L	10RB01052003 0305L457 5/20/03 ug/L
Metals		
Aluminum	35.5 B	45.2 B
Antimony	<2.2	<2.2
Arsenic	<3.3	<3.3
Barium	0.42	0.55
Beryllium	0.28 B	0.32 B
Cadmium	<0.4	<0.4
Calcium	45.6 B	75.3 B
Chromium	<1	<1
Cobalt	<1	<1
Copper	<0.6	<0.6
Iron	<25.8	53.6
Lead	<2.3	<2.3
Magnesium	9.8	17.9
Manganese	1.2 B	0.47 B
Mercury	<0.1 L	<0.1 L
Nickel	<1.3	<1.3
Potassium	<40	<40
Selenium	<4.2	<4.2
Silver	<1.2	<1.2
Sodium	45.4 B	136
Thallium	<4.5	<4.5
Vanadium	0.25 B	<0.1
Zinc	2.9 J	2.4 J

Notes:

< - Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

B- Indicates that the parameter was between the Instrument Detection Limit (IDL) and the the Contract Required Detection Limit (CRDL).

L- Analyte present. Reported value may be biased low. Actual value is expected to be higher.

J- Estimated value.

IR Site 10 NASJRB, Willow Grove, PA

Blanks Analytical Summary

Sample ID Lab Batch Number Sample Date Units	10FB01052003 0305L457 5/20/03 ug/L	10RB01052003 0305L457 5/20/03 ug/L
SVOC		
Phenol	<10	<10
bis(2-Chloroethyl)ether	<10	<10
2-Chlorophenol	<10	<10
1,3-Dichlorobenzene	<10	<10
1,4-Dichlorobenzene	<10	<10
1,2-Dichlorobenzene	<10	<10
2-Methylphenol	<10	<10
2,2'-oxybis(1-Chloropropane)	<10	<10
4-Methylphenol	<10	<10
N-Nitroso-di-n-propylamine	<10	<10
Hexachloroethane	<10	<10
Nitrobenzene	<10	<10
Isophorone	<10	<10
2-Nitrophenol	<10	<10
2,4-Dimethylphenol	<10	<10
bis(2-Chloroethoxy)methane	<10	<10
2,4-Dichlorophenol	<10	<10
1,2,4-Trichlorobenzene	<10	<10
Naphthalene	<10	<10
4-Chloroaniline	<10	<10
Hexachlorobutadiene	<10	<10
4-Chloro-3-methyphenol	<10	<10
2-Methylnaphthalene	<10	<10
Hexachlorocyclopentadiene	<10	<10
2,4,6-Trichlorophenol	<10	<10
2,4,5-Trichlorophenol	<25	<25
2-Chloronaphthalene	<10	<10
2-Nitroaniline	<25	<25
Dimethylphthalate	<10	<10
Acenalphthylene	<10	<10
2,6-Dinitrotoluene	<10	<10
3-Nitroaniline	<25	<25
Acenaphthene	<10	<10
2,4-Dinitrophenol	<25	<25
4-Nitrophenol	<25	<25
Dibenzofuran	<10	<10
2,4-Dinitrotoluene	<10	<10
Diethylphthalate	<10	<10
4-Chlorophenyl-phenylether	<10	<10
Fluorene	<10	<10
4-Nitroaniline	<25	<25
4,6-Dinitro-2-methylphenol	<25	<25
N-Nitrosodiphenylamine (1)	<10	<10
4-Bromophenyl-phenylether	<10	<10
Hexachlorobenzene	<10	<10
Pentachlorophenol	<25	<25
Phenanthrene	<10	<10
Anthracene	<10	<10
Carbazole	<10	<10
Di-n-butylphthalate	2 J	0.8 J
Fluoranthene	<10	<10
Pyrene	<10	<10
Butylbenzylphthalate	<10	<10
3,3'-Dichlorobenzidine	<10	<10
Banzo(a)anthracene	<10	<10
Chrysene	<10	<10
bis(2-Ethylhexyl)phthalate	0.7 J	0.6 J
Di-n-octyl phthalate	<10	<10
Benzo(b)fluoranthene	<10	<10
Benzo(k)fluoranthene	<10	<10
Benzo(a)pyrene	<10	<10
*Benzo(a)pyrene	<0.23	<0.23
Indeno(1,2,3-cd) pyrene	<10	<10
Dibenz(a,h)anthracene	<10	<10
Benzo(g,h,i)perylene	<10	<10

Notes:
*- Analyzed by Method 8310
< - Indicates that the parameter was not detected at or above the reported limit.
The associated numerical value is the sample detection limit.
J- Indicates an estimated value

IR Site 10 NASJRB, Willow Grove, PA

Blanks Analytical Summary

Sample ID Lab Batch Number Sample Date Units	10TB01051903 0305L438 5/19/03 ug/L	10TB02052003 0305L457 5/20/03 ug/L	10FB01052003 0305L457 5/20/03 ug/L	10RB01052003 0305L457 5/20/03 ug/L	10TB03052103 0305L463 5/21/03 ug/L	10TB07060303 0306L566 6/3/03 ug/L	10TB07060403 0306L570 6/4/03 ug/L	10TB08060503 0306L586 6/5/03 ug/L
VOC								
*Methane	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloromethane	<2	<2	<2	<2	<2	<2	<2	<2
Bromomethane	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	<2	<2	<2	<2	<2	<2	<2	<2
Chloroethane	<2	<2	<2	<2	<2	<2	<2	<2
Methylene Chloride	10	10	<2	<2	9	11	<2	0.4 B
Acetone	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Disulfide	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethene (total)	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	2	2	<1	<1	2	1
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
2-Butanone	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloromethane	<1	<1	0.1 J	<1	<1	<1	0.2 J	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1
Benzene	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<1	<1	0.4 J	0.2 J	<1	<1	0.4 J	<1
4-Methyl-2-pentanone	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	5 R	5 R	5 R	5 R	5 R	5 R	5 R	5 R
Tetrachloroethene	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.1 J	<1	<1	<1	0.1 J	0.1 J	<1	0.1 J
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (total)	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromoethane	<1	<1	<1	<1	<1	<1	<1	<1
**1,2-Dibromoethane	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	<0.019
Isopropylbenzene	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

*- Analyzed by Method RSK 175

**- Analyzed by Method 504

< - Indicates that the parameter was not detected at or above the reported limit.
The associated numerical value is the sample detection limit.

R- Unusable result. Analyte may or may not be present in the sample.

J- Indicates an estimated value.

B- This flag is used when the analyte is found in the associated blank as well as in the sample.
It indicates possible/probable blank contamination.

ATTACHMENT A

FIELD METHODOLOGY
(BORE LOGS INCLUDED)

ATTACHMENT A
FIELD METHODOLOGY

Field activities were in accordance with the PADEP approved "Final Work Plan for Various Fieldwork Efforts, IR Program Site 10 and 11, NASJRB, Willow Grove, PA", dated March 2003, prepared by EA for the Department of the Navy, Northern Division, Naval Facilities Engineering Command. The Work Plan also included a Safety, Health and Emergency Response Plan as an appendix.

EA field personnel performed sampling activities in Level D and used a photoionization detector (PID) and a combustible gas/oxygen analyzer (CGI/02) for health and safety protection as per the Site Safety, Health, and Emergency Response Plan referenced above. The PID indicated 0.0 parts per million (ppm) in the breathing zone. A CGI/02 was used to determine potential explosive conditions or low oxygen levels. A background reading of 0 % was indicated in the breathing zone.

Sampling Methodology

During the drilling of five borings for the installation of five monitoring wells, a surface and subsurface soil sample was collected from each of these borings. The bore logs are provided within this attachment. The bore logs include the boring lithology, sample identification number, sample intervals, sample times, PID readings, and other detailed information. EA collected the samples from these five borings on 1, 2, and 9 May 2003. Samples were collected via split spoon. One surface and one subsurface sample was collected from each location. The subsurface sample was collected at the interface of the soil and bedrock, unless the soil yielded a PID reading above background and/or visual environmental concern was observed. No visual environmental concerns were observed during soil sampling. Sample number 10SB250608 is the only sample were a PID reading was slightly above background (0.2 ppm). Therefore, the collection of the soil sample at 10SB250608 was collected based on the PID reading and the other samples were collected at the soil and bedrock interface. The sample interval for each soil sample collected is as follows:

Sample Location	*Sample Identification Number	Sample Interval (ft below ground surface (bgs))
10MW24	10SB240204	2 to 4
10MW24	10SB241214	12 to 14
10MW25	10SB250204	2 to 4
10MW25	10SB250608 (**10DUP01)	6 to 8
10MW26	10SB260204	2 to 4
10MW26	10SB261416	14 to 16
10MW27	10SB270105	***1 to 5
10MW27	10SB270810	8 to 10
10MW28	10SB280105 (****MS/MSD)	***1 to 5
10MW28	10SB280608	6 to 8

*Samples were identified as i.e. 10SB240204. The first two digits (10) is the site number, SB is soil boring, the next two digits (i.e. 24) is the location number (Figure 4), the next two digits (i.e.02) is the beginning depth of the sample, and the last two digits (i.e. 04) is the ending depth of the sample.

**Field Duplicate

***The surface sample was from 1 to 5 ft bgs because a soft vacuum dig was required for utility location prior to drilling. Therefore, the top 5 ft of soil was mixed during the vacuuming for utility location purposes thus there was an impossibility for a discrete interval of soil for collection.

****Matrix Spike/Matrix Spike Duplicate

After collection, samples were placed in sample jars in preparation for shipment to Lionville Laboratory.

Decontamination

Decontamination was followed according to the "Final Work Plan for Various Fieldwork Efforts, IR Program Site 10 and 11, NASJRB, Willow Grove, PA", dated March 2003. Non-dedicated equipment was decontaminated as follows:

- Cleaned thoroughly with potable water and detergent (alconox or liquinox), using a brush to remove particulate matter and surface films.
- Rinsed thoroughly with potable water.
- Rinsed with isopropyl alcohol followed by a nitric acid rinse.
- Rinsed equipment thoroughly with de-ionized water.

Investigation Derived Waste (IDW)

Wastes generated by field activities were treated as IDW. The excess soil from sampling was drummed, labeled, analyzed, and disposed offsite as non-hazardous waste. All non-disposable sampling equipment was decontaminated between sample collection activities and liquid wastes were drummed, labeled, analyzed, and disposed offsite as non-hazardous. Solid wastes such as paper towels, latex gloves and plastic were drummed and disposed offsite.

Analytical Methodology

Soil samples from IR Site 10 were analyzed for:

- TCL VOC by EPA SW-846 8260B (Preparation Method 5035)
- EDB and Cumene by EPA SW-846 8260B
- TCL SVOC by EPA SW-846 8270C
- TCL VOC by EPA Method Series 6010B/7000

In addition to the collection of standard environmental samples, Quality Control (QC) samples were also collected, as per PADEP Act II guidelines. The following QC samples were collected and analyzed for the constituents listed above unless otherwise stated:

- One duplicate
- One matrix spike/matrix spike duplicate
- One trip blank per cooler (VOC analyses)
- One field blank per sampling event
- Two rinsate blanks

EA Engineering, Science, and Technology, Inc.	BORING NUMBER MW-24	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF SHEETS 1

PROJECT NASJRB IR Site 10, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 328549.766 ' N 2695182.404' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; parking lot in the vicinity of the EA sheds	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/1/03	DATE COMPLETED 5/5/03
OVERBURDEN THICKNESS 14'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 14' to 70'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 70 '	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Asphalt to dark reddish brown (5YR3/3) fine sand and clay mixture, surface water at soil surface to dry	0	10SB240204 AT 1220 2 ft to 4 ft	2 - 4	9	
	Dark reddish brown (5YR3/3) fine sand with traces of hard clay, traces of silt, dry	0		4 - 6	12	
	Dark reddish brown (5YR3/3) fine sand with traces of clay, traces of fine silt, dry	0		6 - 8	8	
	Dark reddish brown (5YR3/3) fine sand with traces of hard and fine silt, dry	0		8 - 10	7	
	Dark reddish brown (5YR3/3) fine sand with traces of fine silver sand, traces of fine silt, dry	0		10 - 12	8	
	Dark reddish brown (5YR3/3) fine sand with traces of fine silver sand, traces of fine silt, dry	0	10 SB241214 AT 1340 12 ft to 14 ft	12 - 14	8	
	Reddish Brown (5YR4/4) Sandstone, wet (competent bedrock)	0		14 - 19	NA	
	Dark reddish brown (5YR3/3) shale, sandstone, water	0		19 - 50	NA	
	Dark gray (5YR 4/1) shale with traces of sandstone, wet	0		50- 60	NA	
	Dark reddish brown (5YR3/3) shale with traces of sandstone, wet	0		60 - 70	NA	

EA Engineering, Science, and Technology, Inc.	BORING NUMBER MW-25		
	DRILL SUBCONTRACTOR Eichelbergers, Inc.		SHEET 1 OF SHEETS 2
PROJECT NASJRB IR Site 10, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 328831.958' N 2695352.549' E	
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand		
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA:grass area		
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/2/03	DATE COMPLETED 5/6/03	
OVERBURDEN THICKNESS 22'	DEPTH GROUNDWATER ENCOUNTERED see below		
DEPTH DRILLED INTO ROCK 22' to 121'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below		
TOTAL DEPTH OF HOLE 121'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below		
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite		
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done		SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton		

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Dark reddish brown (5YR3/3) fine sand and gravel mixture, dry	0	not enough to sample	0 - 2	5	
	Dark reddish brown (5YR3/3) fine sand and clay mixture, dry, hard	0	10SB250204 AT 0745 2 ft to 4 ft	2 - 4	12	
	Dark reddish brown (5YR3/3) with some yellowish red (5YR4/6) throughout, fine sand and stiff clay mixture, dry	0		4 - 6	0 (1st attempt) 3 (2nd attempt)	
	Dark reddish brown (5YR3/3) with some yellowish red (5YR4/6) throughout, fine sand and medium stiff clay mixture, dry	0.2	10SB250608 10DUP01 AT 0755 6 ft to 8 ft	6 - 8	24	
	Yellowish red (5YR4/6) to dark reddish brown (5YR3/4) fine sand and stiff clay mixture, dry	0		8 - 10	24	
	Dark reddish brown (5YR 3/4) fine sand and clay mixture, dry, brittle	0		10 - 12	24	
	Dark reddish brown (5YR3/4) fine sand and very stiff clay mixture, traces of fine silver sand, dry	0		12 - 14	24	
	Dark reddish brown (5YR 3/4) fine sand and very stiff clay mixture, dry, traces of fine silver sand	0		14 - 16	24	
	Dark reddish brown (5YR3/4) fine sand and hard clay mixture, dry, traces of fine silver sand	0		16 - 18	9	
	Dark reddish brown (5YR3/4) fine sand and hard clay mixture, dry	0		18 - 20	5	

(CONTINUATION SHEET) MW-25	COMPONENT-AREA	GRID/BIASED POINT LOCATION

PROJECT	GEOLOGIST	SHEET 2 OF 2 SHEETS
NASJRB IR Site 10, Willow Grove, PA	Maria Magilton	

	DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)		ANALYTICAL SAMPLE DESIGNATION	DEPTH (FT)	RECOVERY (IN.)	REMARKS
		Dark reddish brown (5YR3/4) fine sand with taces of clay and fine silt, dry		0		20-22	6	
		Dark reddish brown (5YR3/4) and reddish brown (5YR4/4) sandstone with some shale, dry (competent bedrock)		0		22-27	NA	
		Dark reddish brown (5YR3/4) and reddish brown sandstone/shale/siltstone		0		27-85	NA	
		Dark reddish brown (5YR3/4), reddish brown (5YR4/4), and dark gray (5YR 4/1) siltstone and shale with traces of sanstone		0		85-95	NA	
		Dark reddish brown (5YR3/4), reddish brown (5YR4/4), and dark gray (5YR4/1) sandstone/siltstone/shale		0		95-121	NA	

PROJECT: NASJRB IR Site 10, Willow Grove, PA	HOLE NO.: MW-25

EA Engineering, Science, and Technology, Inc.	BORING NUMBER MW-26	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF SHEETS 2

PROJECT NASJRB IR Site 10, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 328812.158' N 2695936.231' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; close to a storage shed, weeds, grass	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/2/03	DATE COMPLETED 5/6/03
OVERBURDEN THICKNESS 16'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 16' to 120 '	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 120'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes / IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE / IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Pale brown (10YR 6/3) fine sand, traces of silt, dry	0	not enough to sample	0 - 2	2	
	Dark yellowish brown (10YR4/4) fine sand and clay mixture, dry	0	10SB260204 AT 1050 2 ft to 4 ft	2 - 4	7	
	Dark yellowish brown (10YR4/4) fine sand and stiff clay mixture, slightly moist	0		4 - 6	19	
	Dark yellowish brown (10YR4/4) fine sand, dry	0		6 - 8	24	
	Dark yellowish brown (10YR4/4) fine sand, dry	0		8 - 10	18	
	Dark yellowish brown (5YR4/4) and Dark grayish brown (10YR4/2) fine sand, dry	0		10 - 12	19	
	No Recovery			12 - 14	0	
	Dark yellowish brown (10YR4/4), dark grayish brown (10YR4/2), and dark gray (10YR4/1) fine sand with traces of clay to sandstone (at about 16'), dry	0	10SB261416 at 1145 14 ft to 16 ft	14-16	20	
	Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone	0		16 - 44	NA	
	Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone	0		44 - 75	NA	

(CONTINUATION SHEET) MW-26	COMPONENT-AREA	GRID/BIASED POINT LOCATION

PROJECT	GEOLOGIST	SHEET 2 OF 2 SHEETS
NASJRB IR Site 10, Willow Grove, PA	Maria Magilton	

	DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)		ANALYTICAL SAMPLE DESIGNATION	DEPTH (FT)	RECOVERY (IN.)	REMARKS
		Saturated, Dark yellowish brown (10YR4/4) , dark grayish brown (10YR 4/2), and dark gray (10YR4/1) siltstone, shale, sandstone		0		75-120	NA	

PROJECT: NASJRB IR Site 10, Willow Grove, PA	HOLE NO.: MW-26

EA Engineering, Science, and Technology, Inc.

BORING NUMBER	MW-27
DRILL SUBCONTRACTOR	Eichelbergers, Inc.
SHEET	1 OF 1 SHEETS
PROJECT	NASJRB IR Site 10, Willow Grove, PA
SURFACE ELEVATION	NA
COORDINATES	329623.974' N 2696773.106' E
NAME OF DRILLER	Jesse Trish
MANUFACTURER'S DESIGNATION OF DRILL	Air Rotary with Split Spoon/Inger Soil Rand
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT	2 ft length split spoon
TYPE OF LINER USED, IF APPLICABLE	
SURFACE ELEVATION AND CONDITIONS	NA; grass area adjacent to gas station and Bldg. 78
DIRECT READING PARAMETERS: VOC- PID, ppm	0
DATE STARTED	5/9/03
DATE COMPLETED	5/9/03
10 '	
DEPTH GROUNDWATER ENCOUNTERED	see below
DEPTH DRILLED INTO ROCK	10' to 40'
DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED	see below
TOTAL DEPTH OF HOLE	40 '
OTHER WATER LEVEL MEASUREMENTS (SPECIFY)	see below
WELL INSTALLED?	yes
IF SO COMPLETE CONSTRUCTION DIAGRAM	
SAMPLE TYPE:	grab/composite
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS	see below
SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS	no screening done
SCREENING ANALYSIS	no screening done
DISPOSITION OF HOLE	IF NOT A WELL, BACKFILLED WITH:
GEOLOGIST	Maria Magilton

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Strong brown (7.5YR5/6) fine sand with traces of clay, dry	0	10SB270105 AT 0845 1 ft to 5 ft	0 - 5	NA	soft dig area
	Reddish brown (5YR4/4) fine sand and hard clay mixture, dry	0		4 - 6	24	
	Reddish brown (5YR4/4) fine sand and soft clay mixture, dry	0		6 - 8	24	
	Reddish brown (5YR4/4) fine sand, trace of soft clay, dry bedrock encountered at about 10' - 11'	0	10SB270810 AT 0915 8 ft to 10 ft	8 - 10	24	24
	Weathered to competent bedrock at about 10' to 11' Reddish brown (5YR4/4) Sandstone	0		10 - 15	NA	
	Reddish brown (5YR4/4) sandstone/siltstone, dry water at about 30 ' bgs	0		15 - 32	NA	
	Reddish brown (5YR4/4) sandstone/siltstone, wet	0		32 - 40	NA	

PROJECT: NASJRB IR Site 10, Willow Grove, PA

HOLE NO.: MW-27

EA Engineering, Science, and Technology, Inc.	BORING NUMBER MW-28	
	DRILL SUBCONTRACTOR Eichelbergers, Inc.	SHEET 1 OF 1 SHEETS

PROJECT NASJRB IR Site 10, Willow Grove, PA	SURFACE ELEVATION NA	COORDINATES 329562.107' N 2696732.654' E
NAME OF DRILLER Jesse Trish	MANUFACTURER'S DESIGNATION OF DRILL Air Rotary with Split Spoon/Inger Soil Rand	
SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 2 ft length split spoon TYPE OF LINER USED, IF APPLICABLE	SURFACE ELEVATION AND CONDITIONS NA; grass area adjacent to gas station and Bldg. 78	
DIRECT READING PARAMETERS: VOC- PID, ppm 0	DATE STARTED 5/9/03	DATE COMPLETED 5/12/03
OVERBURDEN THICKNESS 10'	DEPTH GROUNDWATER ENCOUNTERED see below	
DEPTH DRILLED INTO ROCK 10' to 120'	DEPTH TO WATER AND ELAPSED TIME ATFER DRILLING COMPLETED see below	
TOTAL DEPTH OF HOLE 120'	OTHER WATER LEVEL MEASUREMENTS (SPECIFY) see below	
WELL INSTALLED? yes — IF SO COMPLETE CONSTRUCTION DIAGRAM	SAMPLE TYPE: grab/composite	
SAMPLE INTERVAL AND DESIGNATION FOR LAB ANALYSIS see below	SAMPLE INTERVAL AND DESIGNATION FOR FIELD SCREENING ANALYSIS no screening done	SCREENING ANALYSIS no screening done
DISPOSITION OF HOLE — IF NOT A WELL, BACKFILLED WITH:	GEOLOGIST Maria Magilton	

DEPTH (FT)	DESCRIPTION OF MATERIALS	DIRECT READING VOC (ppm)	ANALYTICAL SAMPLE DESIGN.	DEPTH (FT)	RECOVERY (IN.)	REMARKS
	Strong brown (7.5YR 5/6) fine sand with traces of clay to reddish brown (5YR4/4) fine sand and clay mixture, dry	0	10SB280105 AT 0745 MS/MSD 1 ft to 5 ft	0 - 5	NA	soft dig area
	Reddish brown (5YR4/4) fine sand and stiff clay mixture, dry	0		4 - 6	24	
	Reddish brown (5YR4/4) fine sand to weathered sandstone at about 9' - 10' , to competent bedrock, dry	0	10SB280608 AT 0815 6 ft to 8 ft	6 - 10	20	
	Reddish brown (5YR4/4) sandstone with traces of siltstone, dry	0		10 - 16		
	Reddish brown (5YR4/4) sandstone with traces of siltstone, dry	0		16 - 28		
	Reddish brown (5YR4/4) sandstone with traces of siltstone , water encountered at about 30 ft bgs	0		28 - 57		
	Reddish brown (5YR4/4) siltstone/sandstone	0		57 - 76		
	Reddish brown (5YR4/4) siltstone/sandstone	0		76 - 96		
	Reddish brown (5YR4/4) siltstone/sandstone	0		96 - 120		

ATTACHMENT B

DATA VALIDATION PACKETS

ENVIRONMENTAL
Data Services, Inc.

TCL VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L323

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB240204	0305L323-001	Soil
10SB241214	0305L323-002	Soil
10TP02050103	0305L323-003	Water

Holding Times - All samples were analyzed within 14 days for preserved water samples and soil samples. No qualifications were required.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/06/03 (water) exhibited a low mean RRF value for 2-butanone of 0.016. 2-Butanone has been rejected (R) in sample 10TP02050103.

The initial calibration analyzed on 05/08/03 (soil) exhibited acceptable %RSD, mean RRF values, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/11/03 (water) exhibited low RRF values for 2-butanone and 2-hexanone of 0.013 and 0.0495, respectively, and high %D values for bromomethane and methylene chloride of 34.1% and 28.6%, respectively. Methylene chloride has been qualified (J) and 2-hexanone rejected (R) in sample 10TP02050103.

The continuing calibration analyzed on 05/09/03 (soil) exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed from this data package.

Laboratory Control Sample - LCS samples VBLKRF and VBLKRG exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK094-MB1 exhibited methylene chloride contamination at 0.8 ug/L. However, the associated sample result was >5X the blank concentration and no qualifications were required.

Method blank 03LVJ051-MB1 was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank sample 10TP02050103 exhibited methylene chloride contamination at 11 ug/L. However, the associated sample results were non-detect and no qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the continuing calibration and TIC sections of this report with the exception of one analyte rejected in the water sample due to the initial calibration and one analyte rejected in the water sample due to the continuing calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-001

Sample wt/vol: 5.60 (g/mL) G Lab File ID: j050905

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.893

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

08/12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-001

Sample wt/vol: 5.60 (g/mL) G Lab File ID: j050905

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.893

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

FORM 1 V-2 1/87 Rev.

001.2103

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-001

Sample wt/vol: 5.60 (g/mL) G Lab File ID: j050905

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.893

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	17.033	30	~~J~~ J
2.	UNKNOWN	17.441	20	~~J~~
3.	CYCLOALKANE	17.690	10	~~J~~
4.	UNKNOWN	17.751	10	~~J~~
5.	CYCLOALKANE	17.842	30	~~J~~
6.	UNKNOWN	18.165	8	~~J~~
7.	UNKNOWN	18.420	9	~~J~~
8.	ALKANE	18.737	20	~~J~~
9.	ALKANE	19.114	6	~~J~~
10.	CYCLOALKANE	19.534	10	~~J~~
11.	UNKNOWN	20.124	8	~~J~~

FORM 1 VOA-TIC 1/87 Rev.

08/13/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-002

Sample wt/vol: 4.20 (g/mL) G Lab File ID: i050906

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 15 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	39	
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U
106-93-4	1,2-Dibromoethane	7	U

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08/21/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-002

Sample wt/vol: 4.20 (g/mL) G Lab File ID: j050906

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 15 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	7	U

FORM 1 V-2 1/87 Rev.

08/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L323-002

Sample wt/vol: 4.20 (g/mL) G Lab File ID: j050906

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. 15 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.19

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	13.608	200	J
2.	ALKANE	13.803	200	J
3.	ALKANE	14.484	70	J
4.	CYCLOALKANE	16.017	20	J
5.	ALKANE	17.666	10	J
6.	UNKNOWN	17.848	20	J
7.	UNKNOWN	18.183	20	J
8.	CYCLOALKANE	18.426	30	J
9.	UNKNOWN	20.130	20	J
10.	UNKNOWN	20.793	10	J
11.	UNKNOWN	21.000	20	J

08/12/03

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TP02050103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L323-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051108

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	11	~~B~~ J
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

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1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TP02050103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L323-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051108

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TP02050103

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L323-003

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051108

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

G8/12/03

FORM 1 VOA-TIC 1/87 Rev.

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L337

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB250204	0305L337-001	Soil
10SB250608	0305L337-002	Soil
10DUP01	0305L337-003	Soil
10TB01050203	0305L337-004	Water
10FB01050203	0305L337-005	Water
10RB01050203	0305L337-006	Water
10SB260204	0305L337-007	Soil
10SB261416	0305L337-008	Soil

Holding Times - All samples were analyzed within 14 days for preserved water samples and soil samples. No qualifications were required.

Note: The samples were received at 8.7°C. No action was taken on this basis.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/06/03 (water) exhibited a low mean RRF value for 2-butanone of 0.016. 2-Butanone has been rejected (R) in all water samples.

The initial calibration analyzed on 05/08/03 (soil) exhibited acceptable %RSD, mean RRF values, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/11/03 (water) exhibited low RRF values for 2-butanone and 2-hexanone of 0.013 and 0.0495, respectively, and high %D values for bromomethane and methylene chloride of 34.1% and 28.6%, respectively. Methylene chloride has been qualified (J) in sample 10TB01050203. 2-Hexanone has been rejected (R) in all water samples. The other mentioned compounds were non-detect or have already been qualified in the associated samples and no further qualifications were required.

The continuing calibration analyzed on 05/09/03 (soil) exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed from this data package.

Laboratory Control Sample - LCS samples VBLKRF and VBLKRG exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LVK094-MB1 exhibited methylene chloride contamination at 0.8 ug/L. However, the associated sample results were >5X the blank concentration and no qualifications were required.

Method blank 03LVJ051-MB1 was free of contamination. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank sample 10TB01050203 exhibited methylene chloride contamination at 12 ug/L. Methylene chloride has been qualified (B) in sample 10SB261416.

Field blank 10FB01050203 exhibited chloroform and toluene contamination at 2 ug/L and 0.2 ug/L, respectively. However, the associated sample results were non-detect and no qualifications were required.

Rinsate blank 10RB01050203 exhibited chloroform, dibromochloromethane, and bromoform contamination at 2 ug/L, 0.2 ug/L, and 0.7 ug/L, respectively. However, the associated sample results were non-detect and no qualifications were required.

Field Duplicates - Field duplicate results are summarized in the tables below. No qualifications were required.

Compound	10SB250608 ug/kg	10DUP1 ug/kg	RPD
Acetone	33	56	52%
2-Butanone	4	ND	NC
2-Hexanone	11	ND	NC

Tentatively Identified Compounds (TICs) - All "unknown" TICs were qualified as estimated (J) and common laboratory contaminants were crossed out and rejected (R).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the continuing calibration, field blank, and TIC sections of this report with the exception of one analyte rejected in all water samples due to the initial calibration and one analyte rejected in all water samples due to the continuing calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-001

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050907

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

08112603

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-001

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050907

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

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08112403

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-001

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050907

L vel: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	15.883	40	~~J~~ J
2.	~~SILOXANE~~	~~20.495~~	~~9~~	~~J~~ R

FORM 1 VOA-TIC 1/87 R v.

08/12/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-002

Sample wt/vol: 5.50 (g/mL) G Lab File ID: j050908

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.909

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	33	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	4	J
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

GS 12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-002

Sample wt/vol: 5.50 (g/mL) G Lab File ID: j050908

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.909

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

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05/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-002

Sample wt/vol: 5.50 (g/mL) G Lab File ID: j050908

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.909

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

0 8/12/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-003

Sample wt/vol: 4.40 (g/mL) G Lab File ID: j050909

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	56	
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U
106-93-4	1,2-Dibromoethane	7	U

08/12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-003

Sample wt/vol: 4.40 (g/mL) G Lab File ID: j050909

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	7	U

FORM 1 V-2 1/87 Rev.

G8h2h03a

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-003

Sample wt/vol: 4.40 (g/mL) G Lab File ID: j050909

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 16 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.14

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 08/12/03 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051109

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	12	~~B~~ J
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051109

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-004

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051109

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 08/12/03 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051110

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	0.2	J
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051110

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-005

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051110

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/12/03

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051111

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.2	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.7	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

FORM 1 V-1 1/87 Rev.

08/12/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051111

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

FORM 1 V-2 1/87 Rev.

08112B2

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L337-006

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051111

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. _____ Date Analyzed: 05/11/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-007

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050910

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-007

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050910

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

FORM 1 V-2 1/87 Rev.

08/12/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-007

Sample wt/vol: 5.10 (g/mL) G Lab File ID: j050910

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 11 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 0.980

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08112603

FORM 1 VOA-TIC 1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-008

Sample wt/vol: 5.00 (g/mL) G Lab File ID: j050911

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	2	J B
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-008

Sample wt/vol: 5.00 (g/mL) G Lab File ID: j050911

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

05/12/03

FORM 1 VOA-TIC 1/87 Rev.

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: ____ SAS No.: ____ SDG No.: ____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L337-008

Sample wt/vol: 5.00 (g/mL) G Lab File ID: j050911

Level: (low/med) LOW Date Received: 05/03/03

% Moisture: not dec. 17 Date Analyzed: 05/09/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

FORM 1 V-2 1/87 Rev.

08/12/03

ENVIRONMENTAL
Data Services, Inc.

VOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L388

Client: EA Engineering, Science & Technology, Inc. Date: August 14, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10TB03050903	0305L388-001	Water
10RB02050903	0305L388-002	Water
10SB280105	0305L388-003	Soil
10SB280105 MS	0305L388-003 MS	Soil
10SB280105 MSD	0305L388-003 MSD	Soil
10SB280608	0305L388-004	Soil
10SB270105	0305L388-005	Soil
10SB270810	0305L388-006	Soil

Holding Times - All samples were analyzed within 14 days, with the exception of soil encore samples, which were prepared 1 day outside of the 48 hour holding time. No action was taken on this basis.

Note: The samples were received at 17.6°C. No action was taken on this basis.

GC/MS Tuning - All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/06/03 exhibited a low mean RRF value for 2-butanone of 0.016. 2-Butanone has been rejected (R) in all water samples.

The initial calibration analyzed on 05/19/03 exhibited acceptable %RSD, mean RRF values, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/19/03 exhibited low RRF values for 2-butanone and 2-hexanone of 0.015 and 0.047, respectively. 2-Hexanone has been rejected (R) in all water samples. 2-Butanone has already been rejected in all water samples and no further qualifications were required.

The continuing calibration analyzed on 05/20/03 exhibited high %D values for 4-methyl-2-pentanone and 2-hexanone of 25.4% and 28%, respectively. However, both of these compounds were non-detect in the associated samples and no qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10SB280105 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS samples VBLKSA and VBLKSE exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blanks 03LVK101-MB1 (05/19/03) and 03LVJ057-MB1 (05/20/03) were non-detect. No qualifications were required.

Trip, Field, Equipment Blank - Trip blank 10TB03050903 exhibited methylene chloride contamination at 11 ug/L. However, the associated sample results were non-detect and no qualifications were required.

Rinsate blank 11RB02050903 exhibited chloroform, bromodichloromethane, dibromochloromethane, and bromoform contamination at 2 ug/L, 0.1 ug/L, 0.3 ug/L, and 0.6 ug/L, respectively. However, the associated sample results were non-detect and no qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - TICs were not present in any of the samples.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid with the exception of one analyte rejected in the water samples due to the initial calibration and one analyte rejected in the water samples due to the continuing calibration. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB03050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051905

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	11	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	1	U
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	1	U
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	1	U
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/14/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10TB03050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051905

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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08/11/03

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10TB03050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-001

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051905

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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05/19/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051906

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
74-87-3	Chloromethane	2	U
74-83-9	Bromomethane	2	U
75-01-4	Vinyl Chloride	2	U
75-00-3	Chloroethane	2	U
75-09-2	Methylene Chloride	2	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-35-4	1,1-Dichloroethene	1	U
75-34-3	1,1-Dichloroethane	1	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	2	
107-06-2	1,2-Dichloroethane	1	U
78-93-3	2-Butanone	5	~~U~~ R
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
75-27-4	Bromodichloromethane	0.1	J
78-87-5	1,2-Dichloropropane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
79-01-6	Trichloroethene	1	U
124-48-1	Dibromochloromethane	0.3	J
79-00-5	1,1,2-Trichloroethane	1	U
71-43-2	Benzene	1	U
10061-02-6	Trans-1,3-Dichloropropene	1	U
75-25-2	Bromoform	0.6	J
108-10-1	4-Methyl-2-pentanone	5	U
591-78-6	2-Hexanone	5	~~U~~ R
127-18-4	Tetrachloroethene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-88-3	Toluene	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
100-42-5	Styrene	1	U
1330-20-7	Xylene (total)	1	U
106-93-4	1,2-Dibromoethane	1	U

08/14/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051906

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	1	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0305L388-002

Sample wt/vol: 25.0 (g/mL) ML Lab File ID: k051906

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. _____ Date Analyzed: 05/19/03

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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08462

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-003

Sample wt/vol: 4.50 (g/mL) G Lab File ID: j052006

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.11

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U
106-93-4	1,2-Dibromoethane	7	U

Odlulcmc

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-003

Sample wt/vol: 4.50 (g/mL) G Lab File ID: j052006

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	7	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-003

Sample wt/vol: 4.50 (g/mL) G Lab File ID: j052006

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-004

Sample wt/vol: 4.00 (g/mL) G Lab File ID: j052007

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 10 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.25

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U
106-93-4	1,2-Dibromoethane	7	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-004

Sample wt/vol: 4.00 (g/mL) G Lab File ID: j052007

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 10 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.25

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	7	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-004

Sample wt/vol: 4.00 (g/mL) G Lab File ID: j052007

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 10 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.25

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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08/14/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-005

Sample wt/vol: 4.60 (g/mL) G Lab File ID: j052008

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.09

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	44	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-005

Sample wt/vol: 4.60 (g/mL) G Lab File ID: j052008

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.09

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-005

Sample wt/vol: 4.60 (g/mL) G Lab File ID: j052008

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 18 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.09

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

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08/14/03

1A
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-006

Sample wt/vol: 4.80 (g/mL) G Lab File ID: j052009

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 19 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.04

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	38	
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U
106-93-4	1,2-Dibromoethane	6	U

FORM 1 V-1 1/87 Rev.

08/14/03

1B
VOLATILE ORGANICS ANALYSIS SHEET

EPA SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-006

Sample wt/vol: 4.80 (g/mL) G Lab File ID: j052009

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 19 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.04

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NO.	COMPOUND		
98-82-8	Isopropylbenzene	6	U

FORM 1 V-2 1/87 Rev.

05/14/03

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Contract: 60104003001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0305L388-006

Sample wt/vol: 4.80 (g/mL) G Lab File ID: j052009

Level: (low/med) LOW Date Received: 05/12/03

% Moisture: not dec. 19 Date Analyzed: 05/20/03

Column: (pack/cap) CAP Dilution Factor: 1.04

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

08/14/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L323

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB240204	0305L323-001	Soil
10SB240204 MS	0305L323-001 MS	Soil
10SB240204 MSD	0305L323-001 MSD	Soil
10SB241214	0305L323-002	Soil

Holding Times - All samples were extracted within 14 days for soil samples and analyzed within 40 days. No qualifications were required.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/01/03 (water) exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/13/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10SB240204 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS sample SBLK0541-MB1 exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0541-MB1 (05/06/03) exhibited diethylphthalate contamination at 24 ug/kg. Qualifications were not required since the associated sample results were non-detect.

Field, Equipment Blank - Field QC samples were not analyzed from this data package.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all "known" TIC results were qualified (NJ), all aldol condensation products were rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the TICs section of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L323-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051303

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

FORM 1 SV-1 RFW (v3.3)

08/12/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L323-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051303

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	21	J
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB240204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L323-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051303

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.667	100	~~JB~~ B
2.	~~ALDOL CONDENSATE~~	~~7.178~~	~~20000~~	~~JAB~~
3.	ALKANE	10.167	200	~~J~~ J
4.	ALKANE	10.583	100	~~J~~
5.	ALKANE	11.917	100	~~J~~
6.	UNKNOWN	22.945	200	~~J~~
7.	UNKNOWN	23.456	100	~~J~~
8.	UNKNOWN	24.634	300	~~J~~

08/12/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL — Lab Sample ID: 0305L323-002

Sample wt/vol: 30.0 (g/mL) G — Lab File ID: C051306

Level: (low/med) LOW — Date Received: 05/02/03

% Moisture: 15 decanted: (Y/N)__ — Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL) — Date Analyzed: 05/13/03

Injection Volume: 2.0(uL) — Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U

08/12/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L323-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051306

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 15 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB241214

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENGINEERING-WILLOW GR

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L323-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051306

Level: (low/med) LOW

Date Received: 05/02/03

% Moisture: 15 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.667	80	~~J~~ J
2.	ALDOL CONDENSATE	~~7.152~~	~~20000~~	~~JAB~~
3.	ALKANE	9.482	100	J
4.	ALKANE	10.565	200	J
5.	ALKANE	12.367	80	J
6.	ALKANE	13.718	300	J
7.	ALKANE	14.611	400	J
8.	ALKANE	16.109	300	J
9.	UNKNOWN	17.418	90	J
10.	UNKNOWN	24.625	800	J

FORM 1 SV-TIC RFW (v3.3)

08/12/03

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L337

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB250204	0305L337-001	Soil
10SB250608	0305L337-002	Soil
10DUP01	0305L337-003	Soil
10FB01050203	0305L337-005	Water
10RB01050203	0305L337-006	Water
10SB260204	0305L337-007	Soil
10SB261416	0305L337-008	Soil

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within 40 days. No qualifications were required.

Note: The samples were received at 8.7°C. No action was taken on this basis.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibration analyzed on 05/01/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibration analyzed on 05/13/03 exhibited acceptable %D and RRF values. No qualifications were required.

The continuing calibration analyzed on 05/14/03 exhibited a high %D value for hexachlorocyclopentadiene of 26.3%. However, the associated sample results were non-detect and no qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - A MS/MSD sample was not analyzed from this data package.

Laboratory Control Sample - LCS sample SBLKSTLE0538-MB1 exhibited a high %R value for 4-nitrophenol of 83%. However, the associated sample results were non-detect and no qualifications were required.

LCS sample SBLKSRLE0541-MB1 exhibited acceptable %R values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0538-MB1 (05/06/03) exhibited di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination at 0.9 ug/L and 1 ug/L, respectively. Both of these compounds have been qualified (B) in samples 10FB01050203 and 10RB01050203.

Method blank 03LE0541-MB1 (06/06/03) exhibited diethylphthalate contamination at 24 ug/kg. Diethylphthalate has been qualified (B) in sample 10SB261416.

Field, Equipment Blank - Field blank 10FB01050203 and rinsate blank 10RB01050203 were free of contamination. No qualifications were required.

Field Duplicates - Field duplicate results are summarized in the table below. No qualifications were required.

Compound	10SB250608 ug/kg	10DUP01 ug/kg	RPD
Fluoranthene	37	31	21%
Pyrene	27	29	7%
Bis(2-ethylhexyl)phthalate	ND	38	NC

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all aldol condensation products were crossed out and rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TICs sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051311

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	380	U

08/12/03 9

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051311

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	19	J
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

08/12/03

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB250204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051311

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.644	100	~~JB~~ B
2.	~~ALDOL CONDENSATE~~	~~7.147~~	~~20000~~	~~JAB~~ B
3.	UNKNOWN	10.915	400	~~J~~ J
4.	UNKNOWN	11.756	100	~~J~~
5.	UNKNOWN	11.834	200	~~J~~
6.	UNKNOWN	24.612	600	~~J~~

08/12/02

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051312

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	990	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	990	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	990	U
83-32-9	Acenaphthene	400	U

08/12/03

FORM 1 SV-1 RFW (v3.3)

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051312

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	990	U
100-02-7	4-Nitrophenol	990	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	990	U
534-52-1	4,6-Dinitro-2-methylphenol	990	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	990	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	37	J
129-00-0	Pyrene	27	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB250608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051312

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.641	100	~~JB~~ J
2.	~~ALDOL CONDENSATE~~	~~7.152~~	~~20000~~	~~JAB~~
3.	UNKNOWN	22.927	200	J
4.	UNKNOWN	24.616	200	J

08/12/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051313

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

FORM 1 SV-1 RFW (v3.3)

05/12/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051313

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	31	J
129-00-0	Pyrene	29	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	38	J
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

08/12/02

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10DUP01

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051313

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.617	200	~~JB~~ B
2.	~~ALDOL CONDENSATE~~	~~7.146~~	~~20000~~	~~JAB~~ R
3.	UNKNOWN	22.609	200	J
4.	UNKNOWN	22.921	400	J
5.	UNKNOWN	24.610	800	J

08/12/03

FORM 1 SV-TIC

RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: C051309

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	27	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	27	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U
99-09-2	3-Nitroaniline	27	U
83-32-9	Acenaphthene	11	U

08/12/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: C051309

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	27	U
100-02-7	4-Nitrophenol	27	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	27	U
534-52-1	4,6-Dinitro-2-methylphenol	27	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	27	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
84-74-2	Di-n-butylphthalate	0.8	~~JB~~ B
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	~~JB~~ B
117-84-0	Di-n-octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenz(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

05/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10FB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-005

Sample wt/vol: 940 (g/mL) ML

Lab File ID: C051309

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.727	5	~~J~~ J
2.	UNKNOWN	9.360	4	~~J~~ J

08/12/03

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-006

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C051310

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08/12/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-006

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C051310

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	1	~~JB~~ B
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	~~JB~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10RB01050203

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L337-006

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C051310

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.727	2	J
2.	UNKNOWN	9.256	2	J
3.	UNKNOWN	9.420	6	J

FORM 1 SV-TIC

RFW (v3.3)

08/12/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-007

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051314

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	380	U

08/12/02

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-007

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051314

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	31	J
129-00-0	Pyrene	31	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	40	J
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB260204

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-007

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051314

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 11 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/13/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.622	100	JB~~G~~
2.	~~ALDOL CONDENSATE~~	~~7.142~~	~~20000~~	~~JAB~~ R
3.	UNKNOWN	24.606	700	~~J~~ J

08/12/03

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-008

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051403

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/14/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U

08/12/03

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-008

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051403

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/14/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	22	~~JB~~ B
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

08/12/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB261416

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L337-008

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C051403

Level: (low/med) LOW

Date Received: 05/03/03

% Moisture: 17 decanted: (Y/N)

Date Extracted: 05/06/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/14/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.303	900	J J
2.	~~ALDOL CONDENSATE~~	~~7.230~~	~~4000~~	~~JAB~~
3.	UNKNOWN	22.728	200	~~J~~ J

08/12/03

FORM 1 SV-TIC RFW (v3.3)

ENVIRONMENTAL
Data Services, Inc.

SEMIVOLATILE ORGANIC COMPOUNDS
USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L388

Client: EA Engineering, Science & Technology, Inc. Date: August 14, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10RB02050903	0305L388-002	Water
10SB280105	0305L388-003	Soil
10SB280105 MS	0305L388-003 MS	Soil
10SB280105 MSD	0305L388-003 MSD	Soil
10SB280608	0305L388-004	Soil
10SB270105	0305L388-005	Soil
10SB270810	0305L388-006	Soil

Holding Times - All samples were extracted within 7 days for water samples and 14 days for soil samples and analyzed within 40 days for all samples. No qualifications were required.

Note: The samples were received at 17.6°C. No action was taken on this basis.

GC/MS Tuning - All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

Initial Calibration - The initial calibrations analyzed on 05/28/03 and 05/30/03 exhibited acceptable %RSD, mean RRF, and/or correlation coefficients. No qualifications were required.

Continuing Calibration - The continuing calibrations analyzed on 05/28/03 and 06/03/03 exhibited acceptable %D and RRF values. No qualifications were required.

Surrogates - All samples exhibited acceptable surrogate recoveries. No qualifications were required.

MS/MSD - MS/MSD sample 10SB280105 exhibited acceptable %R and RPD values. No qualifications were required.

Laboratory Control Sample - LCS sample SBLKTDLE0569-MB1 exhibited acceptable %R values. No qualifications were required.

LCS/LCSD sample SBLKTMLE0568-MB1 exhibited acceptable %R and RPD values. No qualifications were required.

Internal Standard (IS) Area Performance - All internal standards met response and retention time (RT) criteria. No qualifications were required.

Method Blank - Method blank 03LE0568-MB1 (05/13/03) exhibited bis(2-ethylhexyl)phthalate contamination at 3 ug/L. Bis(2-ethylhexyl)phthalate has been qualified (B) in sample 10RB02050903.

Method blank 03LE0569-MB1 (05/13/03) was non-detect. No qualifications were required.

Field, Equipment Blank - Rinsate blank 10RB02050903 was non-detect. No qualifications were required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Tentatively Identified Compounds (TICs) - All "unknown" TIC results were qualified (J) with estimated concentrations, all laboratory artifacts were crossed out and rejected (R), and TICs present in the blanks as well as in the samples were qualified (B).

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the method blank and TICs sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the National Functional Guidelines for Organic Data Review", September 1994, was used in evaluating the data in this summary report.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L388-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C052813

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	26	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	26	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	26	U
83-32-9	Acenaphthene	10	U

08/14/03a

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L388-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C052813

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	26	U
100-02-7	4-Nitrophenol	26	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	26	U
534-52-1	4,6-Dinitro-2-methylphenol	26	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	26	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	~~JB~~ B
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10RB02050903

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) WATER

Lab Sample ID: 0305L388-002

Sample wt/vol: 970 (g/mL) ML

Lab File ID: C052813

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: _____ decanted: (Y/N) __

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

08/14/02

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052816

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U

08/14/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052816

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 RFW (v3.3)

08/14/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB280105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-003

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052816

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.973	100	~~JB~~ B
2.	SILOXANE	7.198	90	~~JB~~ B
3.	~~ALDOL CONDENSATE~~	~~7.389~~	~~300~~	~~JAB~~ R
4.	~~ALDOL CONDENSATE~~	~~7.917~~	~~20000~~	~~JAB~~ R
5.	~~ALDOL CONDENSATE~~	~~9.390~~	~~100~~	~~JAB~~ R
6.	UNKNOWN	25.482	200	~~J~~ J

08/11/03

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052819

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 10 decanted: (Y/N)

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	370	U

081463

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052819

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 10 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

08/14/03

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB280608

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052819

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 10 decanted: (Y/N)

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	6.981	200	~~JB~~ B	
2.	~~ALDOL CONDENSATE~~	~~7.388~~	~~300~~	~~JAB~~	R
3.	~~ALDOL CONDENSATE~~	~~7.934~~	~~20000~~	~~JAB~~	R
4.	~~ALDOL CONDENSATE~~	~~9.398~~	~~100~~	~~JAB~~	R
5.	UNKNOWN	25.499	500	J	J

08/14/03

FORM 1 SV-TIC RFW (v3.3)

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL — Lab Sample ID: 0305L388-005

Sample wt/vol: 30.0 (g/mL) G — Lab File ID: C052820

Level: (low/med) LOW — Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N) __ — Date Extracted: 05/13/03

Concentrated Extract Volume: 1000 (uL) — Date Analyzed: 05/28/03

Injection Volume: 2.0 (uL) — Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U

08/11/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052820

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	24	J
129-00-0	Pyrene	23	J
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	37	J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

(1) - Cannot be separated from Diphenylamine

odlulna

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB270105

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-005

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C052820

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 18 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/28/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 6

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.978	300	~~JB~~ B
2.	~~ALDOL CONDENSATE~~	~~7.394~~	~~300~~	~~JAB~~ R
3.	~~ALDOL CONDENSATE~~	~~7.931~~	~~20000~~	~~JAB~~ R
4.	~~ALDOL CONDENSATE~~	~~9.394~~	~~100~~	~~JAB~~ R
5.	UNKNOWN	25.479	300	J J
6.	ALKANE	36.193	200	J J

05/14/03

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060307

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 19 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/03/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U

G8/14/03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060307

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 19 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 06/03/03

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	68	J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

(1) - Cannot be separated from Diphenylamine

08/11/03

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10SB270810

Lab Name: Lionville Labs, Inc. Work Order: 60104003001

Client: EA ENG-WILLOW GROVE

Matrix: (soil/water) SOIL

Lab Sample ID: 0305L388-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: D060307

Level: (low/med) LOW

Date Received: 05/12/03

% Moisture: 19 decanted: (Y/N)__

Date Extracted: 05/13/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/03/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 7

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.643	100	~~JB~~ B
2.	~~ALDOL CONDENSATE~~	~~4.025~~	~~300~~	~~JAB~~ R
3.	~~ALDOL CONDENSATE~~	~~4.582~~	~~30000~~	~~JAB~~ R
4.	~~ALDOL CONDENSATE~~	~~5.816~~	~~200~~	~~JAB~~ R
5.	UNKNOWN	21.866	500	J J
6.	ALKANE	24.048	900	J J
7.	ALKANE	33.916	600	J J

05/14/03

FORM 1 SV-TIC RFW (v3.3)

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L323

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB240204	0305L323-001	Soil
10SB240204 MS	0305L323-001 MS	Soil
10SB240204 DUP	0305L323-001 DUP	Soil
10SB241214	0305L323-002	Soil

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards exhibited low %R values for magnesium and selenium and a high %R value for mercury. The associated sample results for these compounds were non-detect or >2X the IDL, with the exception of selenium which has been qualified (UL) in all samples.

Method and Calibration Blanks - The method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration. No qualifications were required.

Field and Equipment Blank - Field QC samples were not analyzed from this data package.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample 10SB240204 exhibited a high %R value for aluminum of 1489.7% and low %R values for antimony, iron, and manganese of 49.2%, -255.1%, and -28%, respectively. Antimony has been qualified (UL) in all samples. The other mentioned compounds were >4X the spike concentration in the associated samples and no further qualifications were required.

Matrix Duplicate - Matrix duplicate sample 10SB240204 exhibited acceptable RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample 10SB240204 exhibited a high %D value for beryllium of 11.1%. Beryllium has been qualified (J) in all samples.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Compound Quantitation - No discrepancies were identified.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, matrix spike, and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

240204

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: 240204

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L323-001

Level (low/med): LOW__ Date Received: 05/02/03

% Solids: _83.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16400		~~N~~	P
7440-36-0	Antimony	0.29	~~U~~	~~N~~ UL	P
7440-38-2	Arsenic	4.8		*	P
7440-39-3	Barium	66.0		*	P
7440-41-7	Beryllium	0.87		~~E~~ J	P
7440-43-9	Cadmium	0.05	U		P
7440-70-2	Calcium	665			P
7440-47-3	Chromium	24.0			P
7440-48-4	Cobalt	13.0			P
7440-50-8	Copper	14.3			P
7439-89-6	Iron	26100		~~N~~	P
7439-92-1	Lead	8.7			P
7439-95-4	Magnesium	2540			P
7439-96-5	Manganese	412		~~N~~	P
7439-97-6	Mercury	0.02	U		AV
7440-02-0	Nickel	17.5			P
7440-09-7	Potassium	1060			P
7782-49-2	Selenium	0.41	~~U~~	UL	P
7440-22-4	Silver	0.09	U		P
7440-23-5	Sodium	185			P
7440-28-0	Thallium	0.41	U		P
7440-62-2	Vanadium	40.3			P
7440-66-6	Zinc	37.4			P

08/12/03

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB240204

FORM I - IN

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

241214

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: WILLO SAS No.: SDG No.: 240204

Matrix (soil/water): SOIL Lab Sample ID: 0305L323-002

Level (low/med): LOW Date Received: 05/02/03

% Solids: 85.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10500		N	P
7440-36-0	Antimony	0.29	U	N uc	P
7440-38-2	Arsenic	1.9		*	P
7440-39-3	Barium	127		*	P
7440-41-7	Beryllium	1.1		E J	P
7440-43-9	Cadmium	0.05	U		P
7440-70-2	Calcium	528			P
7440-47-3	Chromium	27.9			P
7440-48-4	Cobalt	9.2			P
7440-50-8	Copper	8.5			P
7439-89-6	Iron	24600		N	P
7439-92-1	Lead	9.4			P
7439-95-4	Magnesium	672			P
7439-96-5	Manganese	778		N	P
7439-97-6	Mercury	0.02	U		AV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	531			P
7782-49-2	Selenium	0.41	U	uc	P
7440-22-4	Silver	0.09	U		P
7440-23-5	Sodium	120			P
7440-28-0	Thallium	0.41	U		P
7440-62-2	Vanadium	33.7			P
7440-66-6	Zinc	17.5			P

08/12/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10SB241214

FORM I - IN

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L337

Client: EA Engineering Date: August 12, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10SB250204	0305L337-001	Soil
10SB250608	0305L337-002	Soil
10DUP01	0305L337-003	Soil
10FB01050203	0305L337-005	Water
10RB01050203	0305L337-006	Water
10SB260204	0305L337-007	Soil
10SB261416	0305L337-008	Soil

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The CRDL standards (water) exhibited low %R values for magnesium and nickel and a high %R value for mercury. The associated sample results for these compounds were non-detect or have already been qualified, with the exception of nickel which has been qualified (UL) in both water samples.

The CRDL standards (soil) exhibited high %R values for manganese and antimony. The associated sample results for these compounds were >2X IDL or have already been qualified and no further qualifications were required.

Method and Calibration Blanks - The (water) method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Barium, calcium, magnesium, and sodium have been qualified (B) in samples 10FB01050203 and 10RB01050203.
- Cadmium and copper have been qualified (B) in sample 10FB01050203.

- Manganese has been qualified (B) in sample 10RB01050203.

The (soil) method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Cadmium has been qualified (B) in samples 10SB250204 and 10SB261416.

Field and Equipment Blank - Field blank 10FB01050203 was free of contamination. No qualifications were required.

Rinsate blank 10RB01050203 exhibited aluminum and potassium contamination at 25.2 ug/L and 533 ug/L, respectively. However, both of these compounds were >5X the blank concentration in the associated samples and no qualifications were required.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample REFERENCE (0305L363) exhibited a low %R value for antimony of 41.3% and a high %R value for copper of 128.9%. Antimony has been qualified (L/UL) and copper (K) in all soil samples.

Matrix Duplicate - Matrix duplicate sample REFERENCE (0305L363) exhibited acceptable RPD values. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample REFERENCE (0305L363) exhibited a high %D value for lead of 11.9%. Lead has been qualified (J) in all soil samples.

Field Duplicates - Field duplicate results are summarized in the tables below. No qualifications were required.

Compound	10SB250608 mg/kg	10DUP01 mg/kg	RPD
Aluminum	18800	23100	21%
Antimony	ND	0.28	NC
Arsenic	6.3	5.0	23%
Barium	93.2	90.4	3%
Beryllium	0.95	0.98	3%

Compound	10SB250608 mg/kg	10DUP01 mg/kg	RPD
Calcium	906	892	2%
Chromium	25.7	23.8	8%
Cobalt	11.0	9.5	15%
Copper	14.6	21.7	39%
Iron	27700	26500	4%
Lead	14.6	10.9	29%
Magnesium	2370	2070	14%
Manganese	421	654	43%
Mercury	0.04	0.14	111%
Nickel	14.8	14.0	6%
Potassium	1210	1220	1%
Selenium	0.41	0.57	33%
Sodium	83.5	87.2	4%
Vanadium	39.9	37.0	8%
Zinc	37.9	32.3	16%

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, method and calibration blanks, matrix spike, and ICP serial dilution sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

250204

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: NEWCA SAS No.: _____ SDG No.: 10DUP_

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L337-001

Level (low/med): LOW__ Date Received: 05/03/03

% Solids: _88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	15300			P
7440-36-0	Antimony_	0.27	U	UL	P
7440-38-2	Arsenic__	3.9			P
7440-39-3	Barium___	166			P
7440-41-7	Beryllium	1.3			P
7440-43-9	Cadmium__	0.09		B	P
7440-70-2	Calcium__	957			P
7440-47-3	Chromium_	26.0			P
7440-48-4	Cobalt___	11.2			P
7440-50-8	Copper___	7.6		L	P
7439-89-6	Iron____	34600			P
7439-92-1	Lead____	18.3		J	P
7439-95-4	Magnesium	3440			P
7439-96-5	Manganese	419			P
7439-97-6	Mercury__	0.02	U		AV
7440-02-0	Nickel___	17.5			P
7440-09-7	Potassium	2980			P
7782-49-2	Selenium_	0.38	U		P
7440-22-4	Silver___	0.09	U		P
7440-23-5	Sodium___	112			P
7440-28-0	Thallium_	0.38	U		P
7440-62-2	Vanadium_	34.9			P
7440-66-6	Zinc____	42.2			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB250204

FORM I - IN

08/12/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

250608

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: NEWCA SAS No.: SDG No.: 10DUP

Matrix (soil/water): SOIL Lab Sample ID: 0305L337-002

Level (low/med): LOW Date Received: 05/03/03

% Solids: 84.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18800			P
7440-36-0	Antimony	0.28	U	UL	P
7440-38-2	Arsenic	6.3			P
7440-39-3	Barium	93.2			P
7440-41-7	Beryllium	0.95			P
7440-43-9	Cadmium	0.04	U		P
7440-70-2	Calcium	906			P
7440-47-3	Chromium	25.7			P
7440-48-4	Cobalt	11.0			P
7440-50-8	Copper	14.6		K	P
7439-89-6	Iron	27700			P
7439-92-1	Lead	14.6		J	P
7439-95-4	Magnesium	2370			P
7439-96-5	Manganese	421			P
7439-97-6	Mercury	0.04			AV
7440-02-0	Nickel	14.8			P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium	0.41			P
7440-22-4	Silver	0.09	U		P
7440-23-5	Sodium	83.5			P
7440-28-0	Thallium	0.40	U		P
7440-62-2	Vanadium	39.9			P
7440-66-6	Zinc	37.9			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10SB250608

FORM I - IN

08/12/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10DUP

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: NEWCA SAS No.: _____ SDG No.: 10DUP_

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L337-003

Level (low/med): LOW_ Date Received: 05/03/03

% Solids: _83.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23100			P
7440-36-0	Antimony	0.28		L	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	90.4			P
7440-41-7	Beryllium	0.98			P
7440-43-9	Cadmium	0.04	U		P
7440-70-2	Calcium	892			P
7440-47-3	Chromium	23.8			P
7440-48-4	Cobalt	9.5			P
7440-50-8	Copper	21.7		K	P
7439-89-6	Iron	26500			P
7439-92-1	Lead	10.9		J	P
7439-95-4	Magnesium	2070			P
7439-96-5	Manganese	654			P
7439-97-6	Mercury	0.14			AV
7440-02-0	Nickel	14.0			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	0.57			P
7440-22-4	Silver	0.09	U		P
7440-23-5	Sodium	87.2			P
7440-28-0	Thallium	0.39	U		P
7440-62-2	Vanadium	37.0			P
7440-66-6	Zinc	32.3			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10DUP01

FORM I - IN

08/12/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10FB

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: NEWCA SAS No.: _____ SDG No.: 10DUP_

Matrix (soil/water): WATER Lab Sample ID: 0305L337-005

Level (low/med): LOW__ Date Received: 05/03/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	18.8	U		P
7440-36-0	Antimony_	2.5	U		P
7440-38-2	Arsenic__	3.5	U		P
7440-39-3	Barium___	0.16		B	P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium__	0.43		B	P
7440-70-2	Calcium__	40.9		B	P
7440-47-3	Chromium_	0.60	U		P
7440-48-4	Cobalt___	0.70	U		P
7440-50-8	Copper___	1.2		B	P
7439-89-6	Iron____	19.7	U		P
7439-92-1	Lead____	2.6	U		P
7439-95-4	Magnesium	14.3		B	P
7439-96-5	Manganese	0.20	U		P
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.8	~~U~~	UL	P
7440-09-7	Potassium	20.8	U		P
7782-49-2	Selenium_	3.6	U		P
7440-22-4	Silver___	0.80	U		P
7440-23-5	Sodium___	28.6		B	P
7440-28-0	Thallium_	3.6	U		P
7440-62-2	Vanadium_	0.10	U		P
7440-66-6	Zinc____	1.4	U		P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10FB01050203

FORM I - IN

08/12/04

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

10RB

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: NEWCA SAS No.: _____ SDG No.: 10DUP_

Matrix (soil/water): WATER Lab Sample ID: 0305L337-006

Level (low/med): LOW__ Date Received: 05/03/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	25.5			P_
7440-36-0	Antimony_	2.5	U		P_
7440-38-2	Arsenic__	3.5	U		P_
7440-39-3	Barium___	0.21		B	P_
7440-41-7	Beryllium	0.50	U		P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	24.9		B	P_
7440-47-3	Chromium_	0.60	U		P_
7440-48-4	Cobalt___	0.70	U		P_
7440-50-8	Copper___	1.2		B	P_
7439-89-6	Iron____	19.7	U		P_
7439-92-1	Lead____	2.6	U		P_
7439-95-4	Magnesium	7.6		B	P_
7439-96-5	Manganese	0.22		B	P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.8	U	UL	P_
7440-09-7	Potassium	533			P_
7782-49-2	Selenium_	3.6	U		P_
7440-22-4	Silver___	0.80	U		P_
7440-23-5	Sodium___	40.5		B	P_
7440-28-0	Thallium_	3.6	U		P_
7440-62-2	Vanadium_	0.10	U		P_
7440-66-6	Zinc____	1.4	U		P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10RB01050203

FORM I - IN

08/26/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

260204

Lab Name: LIONVILLE_LABORATORY Contract: 60104

Lab Code: LVLI Case No.: NEWCA SAS No.: SDG No.: 10DUP

Matrix (soil/water): SOIL Lab Sample ID: 0305L337-007

Level (low/med): LOW Date Received: 05/03/03

% Solids: 88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17700			P
7440-36-0	Antimony	0.28	U	uc	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	69.0			P
7440-41-7	Beryllium	0.88			P
7440-43-9	Cadmium	0.04	U		P
7440-70-2	Calcium	1650			P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	7.0			P
7440-50-8	Copper	15.3		K	P
7439-89-6	Iron	22000			P
7439-92-1	Lead	43.1		J	P
7439-95-4	Magnesium	2170			P
7439-96-5	Manganese	411			P
7439-97-6	Mercury	0.11			AV
7440-02-0	Nickel	11.3			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.09	U		P
7440-23-5	Sodium	87.6			P
7440-28-0	Thallium	0.40	U		P
7440-62-2	Vanadium	30.4			P
7440-66-6	Zinc	43.5			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

10SB260204

FORM I - IN

08/12/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

261416

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: NEWCA SAS No.: _____ SDG No.: 10DUP_

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L337-008

Level (low/med): LOW__ Date Received: 05/03/03

% Solids: _83.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	15000			P
7440-36-0	Antimony_	0.29	U	UL	P
7440-38-2	Arsenic__	5.9			P
7440-39-3	Barium__	294			P
7440-41-7	Beryllium	2.6			P
7440-43-9	Cadmium__	0.06		B	P
7440-70-2	Calcium__	1110			P
7440-47-3	Chromium_	14.6			P
7440-48-4	Cobalt___	15.0			P
7440-50-8	Copper___	33.4		K	P
7439-89-6	Iron____	27500			P
7439-92-1	Lead____	15.2		J	P
7439-95-4	Magnesium	2400			P
7439-96-5	Manganese	1770			P
7439-97-6	Mercury__	0.02	U		AV
7440-02-0	Nickel___	19.4			P
7440-09-7	Potassium	2030			P
7782-49-2	Selenium_	0.42	U		P
7440-22-4	Silver___	0.09	U		P
7440-23-5	Sodium___	88.6			P
7440-28-0	Thallium_	0.42	U		P
7440-62-2	Vanadium_	26.6			P
7440-66-6	Zinc____	56.2			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB261416

FORM I - IN

08/12/03

ENVIRONMENTAL
Data Services, Inc.

TOTAL METALS

USEPA Region III - Level IV Review

Site: Willow Grove SDG #: 0305L388

Client: EA Engineering, Science & Technology, Inc. Date: August 14, 2003

Laboratory: Lionville Laboratories, Inc., Exton, PA Reviewer: Christine Garvey

Client Sample ID	Laboratory Sample ID	Matrix
10RB02050903	0305L388-002	Water
10SB280105	0305L388-003	Soil
10SB280105 MS	0305L388-003 MS	Soil
10SB280105 MSD	0305L388-003 MSD	Soil
10SB280608	0305L388-004	Soil
10SB270105	0305L388-005	Soil
10SB270810	0305L388-006	Soil

Holding Times - All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals. No qualifications were required.

Note: The samples were received at 17.6°C. No action was taken on this basis.

Calibration - The ICV and CCV %R values were acceptable. No qualifications were required.

CRDL Standard - The (water) CRDL standards exhibited high and low %R values for antimony and high %R values for lead and nickel. Antimony has been qualified (UL) in sample 10RB02050903. The other mentioned compounds were non-detect and no further qualifications were required.

The (soil) CRDL standards exhibited high %R values for antimony, manganese, nickel, and thallium and a low %R value for mercury. Mercury has been qualified (UL) in all soil samples. Thallium has been qualified (K) in sample 10SB280608. The other mentioned compounds were non-detect or >2X the IDL and no further qualifications were required.

Method and Calibration Blanks - The (water) method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration with the exception of the following:

- Aluminum, barium, calcium, copper, magnesium, potassium, sodium, vanadium, and zinc have been qualified (B) in sample 10RB02050903.

The (soil) method blanks and continuing calibration blanks exhibited contamination for several compounds, however, all sample results are non-detect or greater than 5X the blank concentration.

Field and Equipment Blank - Rinsate blank 10RB02050903 was free of contamination. No qualifications were required.

ICP Interference Check Sample - All %R values were acceptable. No qualifications were required.

Matrix Spike - Matrix spike sample 10SB280105 exhibited a low %R value for antimony of 49.8% and high %R values for aluminum, iron, and manganese. Antimony has been qualified (L/UL) in all soil samples. The other mentioned compounds were >4X the spike concentration in the associated samples and no further qualifications were required.

Matrix Duplicate - Matrix duplicate sample 10SB280105 exhibited acceptable RPD values. No qualifications were required.

Matrix duplicate REFERENCE (0305L363) and the duplicate sample were non-detect for mercury. No qualifications were required.

LCS - The LCS sample exhibited acceptable %R values. No qualifications were required.

ICP Serial Dilutions - ICP serial dilution sample 10SB280105 exhibited acceptable %D values. No qualifications we required.

Field Duplicates - Field duplicate samples were not analyzed from this data package.

Compound Quantitation - Several samples were analyzed at dilutions due to high concentrations of target analytes in the samples. No action was taken on this basis.

Comments - The analyses of environmental samples and quality control samples are valid within the constraints identified with the data quality flags as presented in the CRDL, method and calibration blanks, and matrix spike sections of this report. Ten percent of the calculations for the samples in this data package were verified for the Level IV validation. The USEPA "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses", April 1993, was used in evaluating the data in this summary report.

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

RB0205

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0205

Matrix (soil/water): WATER Lab Sample ID: 0305L388-002

Level (low/med): LOW__ Date Received: 05/12/03

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	41.4		B	P_
7440-36-0	Antimony_	2.2	U	UL	P_
7440-38-2	Arsenic__	3.3	U		P_
7440-39-3	Barium___	0.68		B	P_
7440-41-7	Beryllium	0.10	U		P_
7440-43-9	Cadmium__	0.40	U		P_
7440-70-2	Calcium__	72.9		B	P_
7440-47-3	Chromium_	1.0	U		P_
7440-48-4	Cobalt___	1.0	U		P_
7440-50-8	Copper___	0.77		B	P_
7439-89-6	Iron_____	25.8	U		P_
7439-92-1	Lead_____	2.3	U		P_
7439-95-4	Magnesium	21.2		B	P_
7439-96-5	Manganese	0.20	U		P_
7439-97-6	Mercury__	0.10	U		AV
7440-02-0	Nickel___	1.3	U		P_
7440-09-7	Potassium	88.6		B	P_
7782-49-2	Selenium_	4.2	U		P_
7440-22-4	Silver___	1.2	U		P_
7440-23-5	Sodium___	104		B	P_
7440-28-0	Thallium_	4.5	U		P_
7440-62-2	Vanadium_	0.74		B	P_
7440-66-6	Zinc_____	5.7		B	P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10RB02050903

FORM I - IN

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U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

280105

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0205

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L388-003

Level (low/med): LOW__ Date Received: 05/12/03

% Solids: _82.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	20000		N	P
7440-36-0	Antimony_	0.26	U	UN	P
7440-38-2	Arsenic__	4.3			P
7440-39-3	Barium___	88.2			P
7440-41-7	Beryllium	0.90			P
7440-43-9	Cadmium__	0.05	U		P
7440-70-2	Calcium__	596			P
7440-47-3	Chromium_	28.8			P
7440-48-4	Cobalt___	8.8			P
7440-50-8	Copper___	8.7			P
7439-89-6	Iron_____	30700		N	P
7439-92-1	Lead_____	11.1			P
7439-95-4	Magnesium	2020			P
7439-96-5	Manganese	530		N	P
7439-97-6	Mercury__	0.02	U	UL	AV
7440-02-0	Nickel___	14.8			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium_	0.50	U		P
7440-22-4	Silver___	0.14	U		P
7440-23-5	Sodium___	94.8			P
7440-28-0	Thallium_	0.54	U		P
7440-62-2	Vanadium_	43.4			P
7440-66-6	Zinc_____	29.7			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB280105

FORM I - IN

08/11/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

280608

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0205

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L388-004

Level (low/med): LOW__ Date Received: 05/12/03

% Solids: _89.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	7930		N	P
7440-36-0	Antimony_	0.23	U	N	P
7440-38-2	Arsenic__	0.90			P
7440-39-3	Barium___	46.6			P
7440-41-7	Beryllium	0.33			P
7440-43-9	Cadmium__	0.04	U		P
7440-70-2	Calcium__	186			P
7440-47-3	Chromium_	24.5			P
7440-48-4	Cobalt___	5.5			P
7440-50-8	Copper___	1.00			P
7439-89-6	Iron____	19300		N	P
7439-92-1	Lead____	4.9			P
7439-95-4	Magnesium	404			P
7439-96-5	Manganese	249		N	P
7439-97-6	Mercury__	0.02	U		AV
7440-02-0	Nickel___	7.7			P
7440-09-7	Potassium	307			P
7782-49-2	Selenium_	0.44	U		P
7440-22-4	Silver___	0.12	U		P
7440-23-5	Sodium___	127			P
7440-28-0	Thallium_	0.48		K	P
7440-62-2	Vanadium_	34.7			P
7440-66-6	Zinc____	8.7			P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB280608

FORM I - IN

08/14/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

270105

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ SDG No.: RB0205

Matrix (soil/water): SOIL_ Lab Sample ID: 0305L388-005

Level (low/med): LOW__ Date Received: 05/12/03

% Solids: _82.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	18200		~~N~~	P_
7440-36-0	Antimony_	0.22	~~U~~	UL ~~N~~	P_
7440-38-2	Arsenic__	4.9			P_
7440-39-3	Barium___	58.2			P_
7440-41-7	Beryllium	0.69			P_
7440-43-9	Cadmium__	0.04	U		P_
7440-70-2	Calcium__	6620			P_
7440-47-3	Chromium_	25.9			P_
7440-48-4	Cobalt___	8.5			P_
7440-50-8	Copper___	10.9			P_
7439-89-6	Iron_____	27300		~~N~~	P_
7439-92-1	Lead_____	11.2			P_
7439-95-4	Magnesium	2370			P_
7439-96-5	Manganese	542		~~N~~	P_
7439-97-6	Mercury__	0.02	~~U~~	UL	AV
7440-02-0	Nickel___	14.1			P_
7440-09-7	Potassium	1320			P_
7782-49-2	Selenium_	0.43	U		P_
7440-22-4	Silver___	0.12	U		P_
7440-23-5	Sodium___	105			P_
7440-28-0	Thallium_	0.46	U		P_
7440-62-2	Vanadium_	41.4			P_
7440-66-6	Zinc_____	32.5			P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB270105

FORM I - IN

05/14/03

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

270810

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60104_____ SDG No.: RB0205

Lab Code: LVLI__ Case No.: WILLO SAS No.: _____ Lab Sample ID: 0305L388-006

Matrix (soil/water): SOIL_ Date Received: 05/12/03

Level (low/med): LOW__

% Solids: _81.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	20700		~~N~~	P_
7440-36-0	Antimony_	0.25	~~U~~ UL	~~N~~	P_
7440-38-2	Arsenic__	2.2			P_
7440-39-3	Barium__	210			P_
7440-41-7	Beryllium	0.88			P_
7440-43-9	Cadmium__	0.05	U		P_
7440-70-2	Calcium__	726			P_
7440-47-3	Chromium_	22.4			P_
7440-48-4	Cobalt___	10.7			P_
7440-50-8	Copper___	3.0			P_
7439-89-6	Iron____	24400		~~N~~	P_
7439-92-1	Lead____	7.9			P_
7439-95-4	Magnesium	846			P_
7439-96-5	Manganese	1730		~~N~~	P_
7439-97-6	Mercury__	0.02	U	UL	AV
7440-02-0	Nickel___	13.6			P_
7440-09-7	Potassium	778			P_
7782-49-2	Selenium_	0.48	U		P_
7440-22-4	Silver___	0.14	U		P_
7440-23-5	Sodium___	96.3			P_
7440-28-0	Thallium_	0.52	U		P_
7440-62-2	Vanadium_	33.0			P_
7440-66-6	Zinc____	25.5			P_

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

10SB270810

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