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FOURTH QUARTER 2002 OPERATIONS AND MAINTENANCE STATUS REPORT FOR BIOVENTING AND BIOSPARGING SYSTEMS AT SOUTH FUEL FARM NAS CECIL FIELD FL

9/1/2003

CH2MHILL CONSTRUCTORS INC

Fourth Quarter 2002
Operations and Maintenance Status Report

Bioventing and Biosparging Systems
South Fuel Farm
Naval Air Station Cecil Field
Jacksonville, Florida

Contract No. N62467-98-D-0995
Contract Task Order No. 0086

Submitted to:

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Acronyms

ABB-ES	ABB Environmental Services, Inc.
acfm	actual cubic feet per minute
AST	aboveground storage tank
BCT	BRAC Cleanup Team
BEI	Bechtel Environmental, Inc.
bls	below land surface
BRAC	Base Realignment and Closure
BTEX	benzene, toluene, ethylbenzene, and xylene
^{o}C	degrees Celsius
CCI	CH2M HILL Constructors, Inc.
CLEAN	Comprehensive Long-term Environmental Action Navy
CTO	Contract Task Order
EMT	earth-mounted tank
EPA	U.S. Environmental Protection Agency
^{o}F	degrees Fahrenheit
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	flame ionization detector
FL PRO	Florida Petroleum Residual Organic
GCTLs	Groundwater Cleanup Target Levels
in Hg	inches of mercury
JP-5	jet propellant 5
LNAPL	light non-aqueous phase liquid
µg/L	micrograms per liter
mg/L	milligrams per liter
mS/cm	milliSeimens per centimeter
MSL	mean sea level
MTBE	methyl tert butyl ether
mV	millivolts
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NM	not measured
NTU	nephelometric turbidity units
O&M	operation and maintenance
ORP	oxygen reduction potential
OVA	organic vapor analyzer
PAHs	polycyclic aromatic hydrocarbons
ppm	parts per million
psig	pounds per square inch gauge
PVC	polyvinyl chloride
RAP	Remedial Action Plan
scfm	standard cubic feet per minute

SCTLs	Soil Cleanup Target Levels
SFF	South Fuel Farm
TRPH	total recoverable petroleum hydrocarbon
TtNUS	Tetra Tech NUS, Inc.
UST	underground storage tank

1.0 Introduction

CH2M HILL Constructors, Inc. (CCI) has been contracted by the Department of the Navy, Southern Division Naval Facilities Engineering Command (NAVFAC), to provide operation and maintenance (O&M) services at the South Fuel Farm (SFF), Former NAS Cecil Field, Jacksonville, Florida, under Response Action Contract No. N62467-98-D-0995, Contract Task Order (CTO) No. 0086.

Bioventing and biosparging systems were installed at the SFF to reduce petroleum hydrocarbon contaminant concentrations in site groundwater and unsaturated soils. The purpose of this 4th Quarter 2002 Operation and Maintenance Status Report is to provide a summary of activities performed at the site during the period of October 1, 2002, to December 31, 2002.

1.1 Objective

The objective of the remedial action at the SFF is to reduce the concentrations of petroleum contaminants in the groundwater and unsaturated soils to Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs) and Soil Cleanup Target Levels (SCTLs), respectively, as specified in Tables I and II of Chapter 62-777, Florida Administrative Code (FAC). Bioventing and biosparging systems have been installed and are currently operational at the site to achieve this objective.

1.2 Site History

The SFF is located at the northern edge of the east-west runway at Former NAS Cecil Field in Jacksonville, Florida. The SFF was used as a fuel storage facility for leaded and unleaded gasoline, aviation gasoline, diesel fuel, and jet propellant 5 (JP-5). When fully operational, the facility contained three aboveground storage tanks (ASTs), four underground storage tanks (USTs), and four earth-mounted tanks (EMTs) (Bechtel Environmental, Inc. [BEI], 1998a).

In 1983, the three ASTs were removed. In July 1994, the four USTs and three of the four EMTs were excavated. Excessively contaminated soil that was excavated during the tank removals was returned to the excavations. A contamination assessment was conducted by ABB Environmental Services, Inc. (ABB-ES) to determine the nature and extent of contamination as required by Chapter 62-770, FAC. A Remedial Action Plan (RAP) was submitted by ABB-ES in 1996 specifying the recommended remedial action as enhanced intrinsic remediation through bioventing and biosparging combined with an oxygen barrier wall. Subsequent to RAP submittal, the Base Realignment and Closure (BRAC) Cleanup Team (BCT) agreed to implement remedial action activities for only the northern portion of the SFF site (BEI, 1998a). The southern portion of the bioventing and biosparging systems and the oxygen barrier were subsequently deleted from the RAP by the BCT. Soil excavation was chosen as the remedial alternative for the southern portion of the SFF site. CCI

excavated 28,953 tons of petroleum-impacted soil from October 1998 to February 1999 (CCI, 2001).

BEI installed the approved bioventing and biosparging systems for the northern portion of the SFF site from December 1997 to March 1998. Startup of the bioventing and biosparging systems occurred on April 6, 1998 (BEI, 1998b). BEI performed O&M of the systems from April 1998 to April 1999; EnSafe, Inc. performed O&M of the systems from April 1999 to May 2001; and since June 2001, CCI has performed O&M of the system.

1.3 Remediation System/Technology Description

1.3.1 Bioventing System

The bioventing system improves intrinsic bioremediation of the contaminated soil by delivering oxygen to the aerobic bacteria in the vadose zone. This is achieved via subgrade wells at a low flow rate to minimize volatilization and stimulate subgrade indigenous microbial activity (ABB-ES, 1996).

The SFF bioventing system consists of 9 two-inch diameter polyvinyl chloride (PVC) vertical bioventing wells (BV-1 through BV-9), a blower, inlet air filter, flow meter, pressure and temperature gauges, valving, piping, and system controls. The aboveground portion of the bioventing system is located in a fenced, canopy covered equipment area. The bioventing wells are screened from approximately 3 to 8 feet below land surface (bls). The bioventing system is designed to deliver air to each well at a flow rate of 4 actual cubic feet per minute (acfm) at a well head pressure of 20 inches of water (ABB-ES, 1996). The locations of the bioventing wells and equipment area are shown on Figure 1-1.

1.3.2 Biosparging System

The biosparging system is used to treat the contaminated groundwater plume at the SFF site. This treatment system promotes the optimum environment for microbial activity and growth by injecting controlled volumes of air into the groundwater below the deepest point of contamination at controlled pressures via subgrade wells (ABB-ES, 1996).

The SFF biosparging system consists of 23 two-inch diameter PVC vertical biosparging wells (BS-1 through BS-23), a rotary screw air compressor, receiver tank, air dryer, in-line moisture separator, in-line coalescing oil filter, pressure regulator/gauge, header piping, valves, flow gauge, and system controls. The aboveground portion of the biosparging system is located in the same fenced canopy covered equipment area as the bioventing system. The biosparging wells are screened from approximately 27 to 30 feet bls. The biosparging system is designed for each well to operate at a flow rate of 1 acfm at an injection pressure of 15 pounds per square inch gauge (psig) (ABB-ES, 1996). The locations of the biosparging wells are shown on Figure 1-1.

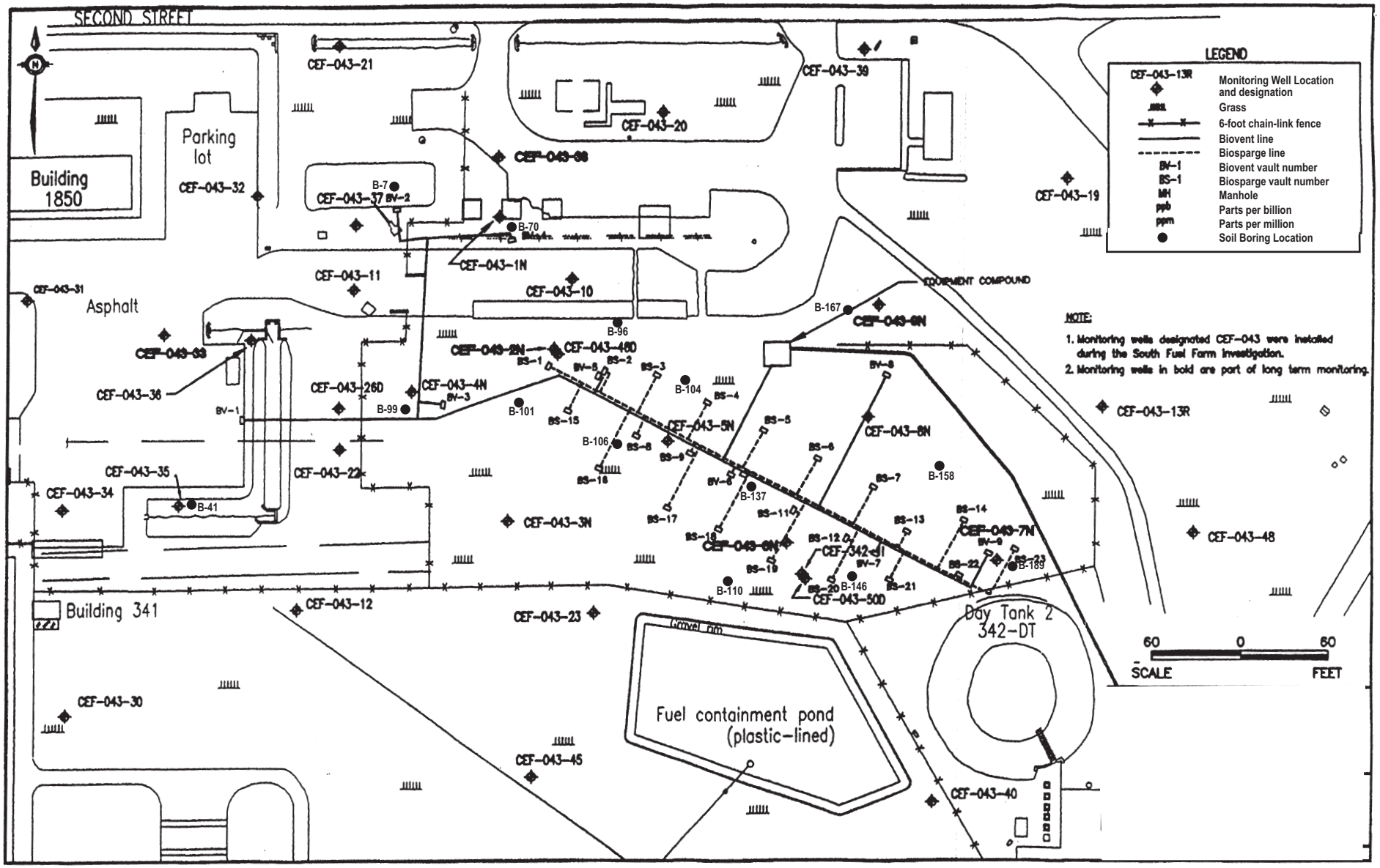

Figure 1-1
Site Plan
South Fuel Farm
NAS Cecil Field
Jacksonville, Florida

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A072003003ATL\Figure1-1.ai

2.0 System Performance Monitoring

Routine O&M checks of the system were performed weekly. During an O&M check, a preventative maintenance checklist (based upon manufacturer's recommendations) was completed, and any required maintenance activity was performed. The meters and gauges in the equipment area were read and recorded during the O&M check on a weekly basis. The meters and gauges in the bioventing and biosparging well vaults were read and recorded during the O&M check on a monthly basis.

During the O&M activities, the injection pressures and individual well air flow rates were adjusted and rebalanced in attempt to achieve the design specifications. These adjustments will be evaluated during the 1st quarter of 2003.

2.1 Operational Efficiencies

2.1.1 Bioventing System

	Operational Period	To Date
Hours of Possible Operation	2208	41544
Hours of Actual Operation	2181.3	25455.3
Percent hours of Operation	98.8%	61.2%

2.1.2 Biosparging System

	Operational Period	To Date
Hours of Possible Operation	2208	41544
Hours of Actual Operation	1767	40575
Percent hours of Operation	80 %	97.6%

2.2 Summary of Maintenance and System Downtime

2.2.1 Bioventing System

During the period of 4th quarter 2002, the bioventing system ran a total of 90.9 days out of a possible 92 days, resulting in 26.7 hours of downtime. The bioventing system downtime is detailed as follows:

- Manually shut down of the system for a total of 20 hours for a bioventing well test performed by Tetra Tech NUS, Inc. (TtNUS).
- Manually shut down system for a total of 6.7 hours for electrical safety to install a new 110V transformer.

2.2.2 Biosparging System

During the period of 4th quarter 2002, the biosparging system ran a total of 73.6 days out of a possible 92 days, resulting in 441 hours of downtime. The biosparging system downtime is detailed as follows:

- Manually shut down for a total of 20 hours a bioventing well test performed by TtNUS.
- Manually shut down for a total of 4 hour to perform routine equipment maintenance.
- 110V transformer failure and installation of new transformer resulting in a total of 413 hours of downtime.
- Electrical service discontinuation resulting in 4 hours of downtime.

2.3 Pressure/Flow Rate Monitoring

2.3.1 Bioventing System

During the 4th quarter 2002, monitoring period, the blower discharge pressure averaged 27.6 inches of water compared to the design blower discharge pressure of 40 inches of water. The total air injection flow rate at the blower averaged 120 standard cubic feet per minute (scfm) compared to the design blower flow rate of 80 scfm. Bioventing system data for 4th quarter 2002 are summarized in Table 2-1.

TABLE 2-1
Bioventing System Data

Date	Blower Discharge Pressure (inches of water)	Blower Discharge Temperature (°F)	Blower Air Flow Rate (scfm)
10/09/2002	29	112	119
10/10/2002	28	116	120
10/15/2002	27	106	118
10/24/2002	28	105	120
10/30/2002	26	114	120
11/12/2002	26	102	120
11/21/2002	28	97	120
11/26/2002	26	102	120
12/05/2002	28	95	120
12/12/2002	29	90	120
12/19/2002	26	110	120
12/23/2002	28	100	120
12/31/2002	30	98	120

NR = No Reading
°F = degrees Fahrenheit
scfm = standard cubic feet per minute

2.3.2 Biosparging System

During 4th quarter 2002, the average injection header discharge pressure of 15.4 psig equaled the design injection pressure of 15 psig. The 4th quarter 2002 biosparging system data are tabulated in Table 2-2.

TABLE 2-2
Biosparging System Data

Date	Air Compressor Supply Pressure (psig)	Air Compressor Discharge Temperature (°F)	Receiver Tank Supply Pressure (psig)	Header Discharge Pressure (psig)
10/09/2002	NM	NM	NM	NM
10/10/2002	110	190	110	17
10/15/2002	110	205	100	15
10/23/2002	NM	NM	NM	NM
10/24/2002	105	200	100	NM
10/25/2002	NM	NM	NM	NM
10/30/2002	45	190	40	17
11/01/2002	NM	NM	NM	NM
11/07/2002	84	186	80	16.5
11/12/2002	40	175	35	16.5
11/21/2002	45	170	35	14
11/26/2002	90	190	90	13
12/05/2002	115	185	105	14
12/12/2002	110	175	100	15
12/19/2002	110	220	100	16
12/23/2002	40	180	30	15
12/31/2002	85	195	80	16

psig - pounds per square inch gauge
°F - degrees Fahrenheit
NM - Not Measured

2.4 Water Level Measurements

Depth to groundwater measurements were recorded on a monthly basis from 20 monitoring wells during the 4th quarter 2002. The results from the 4th quarter 2002 groundwater level measurement surveys are provided in Table 2-3. Light non-aqueous phase liquid (LNAPL) was not detected in monitoring wells during the 4th quarter 2002.

The potentiometric surface of the groundwater at the site based on December 12, 2002, water levels is depicted on Figure 2-1. In general, the groundwater flow in the vicinity of the bioventing and biosparging systems is to the south-southwest.

TABLE 2-3
Water Level Measurements - Fourth Quarter 2002

Well Identification	Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet bls)	Groundwater Elevation (feet MSL)
CEF-043-1N	10/09/2002	78.15	6.64	71.51
	11/21/2002		7.16	70.99
	12/12/2002		7.51	70.64
CEF-043-2N	10/09/2002	78.00	6.78	71.22
	11/21/2002		7.33	70.67
	12/12/2002		7.65	70.35
CEF-043-3N	10/09/2002	78.26	7.76	70.50
	11/21/2002		8.16	70.10
	12/12/2002		8.41	69.85
CEF-043-4N	10/09/2002	78.07	7.02	71.05
	11/21/2002		7.49	70.58
	12/12/2002		7.94	70.13
CEF-043-5N	10/09/2002	78.46	7.55	70.91
	11/21/2002		8.36	70.10
	12/12/2002		8.55	69.91
CEF-043-6N	10/09/2002	77.79	6.88	70.91
	11/21/2002		7.61	70.18
	12/12/2002		8.10	69.69
CEF-043-7N	10/09/2002	77.61	5.54	72.07
	11/21/2002		6.93	70.68
	12/12/2002		7.45	70.16
CEF-043-8N	10/09/2002	78.41	6.49	71.92
	11/21/2002		7.42	70.99
	12/12/2002		8.05	70.36
CEF-043-9N	10/09/2002	77.50	4.98	72.52
	11/21/2002		5.85	71.65
	12/12/2002		6.31	71.19
CEF-043-10	10/09/2002	78.55	7.11	71.44
	11/21/2002		7.67	70.88
	12/12/2002		8.18	70.37
CEF-043-19	10/09/2002	78.47	5.51	72.96
	11/21/2002		6.44	72.03
	12/12/2002		7.38	71.09
CEF-043-20	10/09/2002	78.59	6.21	72.38
	11/21/2002		6.81	71.78
	12/12/2002		7.26	71.33
CEF-043-21	10/09/2002	76.71	5.06	71.65
	11/21/2002		5.29	71.42
	12/12/2002		5.87	70.84

TABLE 2-3
Water Level Measurements - Fourth Quarter 2002

Well Identification	Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet bls)	Groundwater Elevation (feet MSL)
CEF-043-22	10/09/2002	77.24	6.62	70.62
	11/21/2002		6.60	70.64
	12/12/2002		7.06	70.18
CEF-043-32	10/09/2002	76.53	5.03	71.50
	11/26/2002		5.36	71.17
	12/12/2002		5.55	70.98
CEF-043-33	10/09/2002	76.97	5.64	71.33
	11/26/2002		5.91	71.06
	12/12/2002		6.17	70.80
CEF-043-34	10/09/2002	76.84	5.63	71.21
	11/21/2002		5.68	71.16
	12/12/2002		6.13	70.71
CEF-043-38	10/09/2002	77.62	6.02	71.60
	11/21/2002		6.48	71.14
	12/12/2002		6.82	70.80
CEF-043-48	10/09/2002	77.10	5.14	71.96
	11/21/2002		6.37	70.73
	12/12/2002		7.10	70.00
CEF-043-50D	10/09/2002	77.23	8.10	69.13
	11/21/2002		7.91	69.32
	12/12/2002		7.79	69.44

Notes:
Top of Casing Elevations and data prior to 04/27/00 obtained from BEI.
All measurements reported in feet.
bls = below land surface
MSL = Elevations are respect to Mean Sea Level

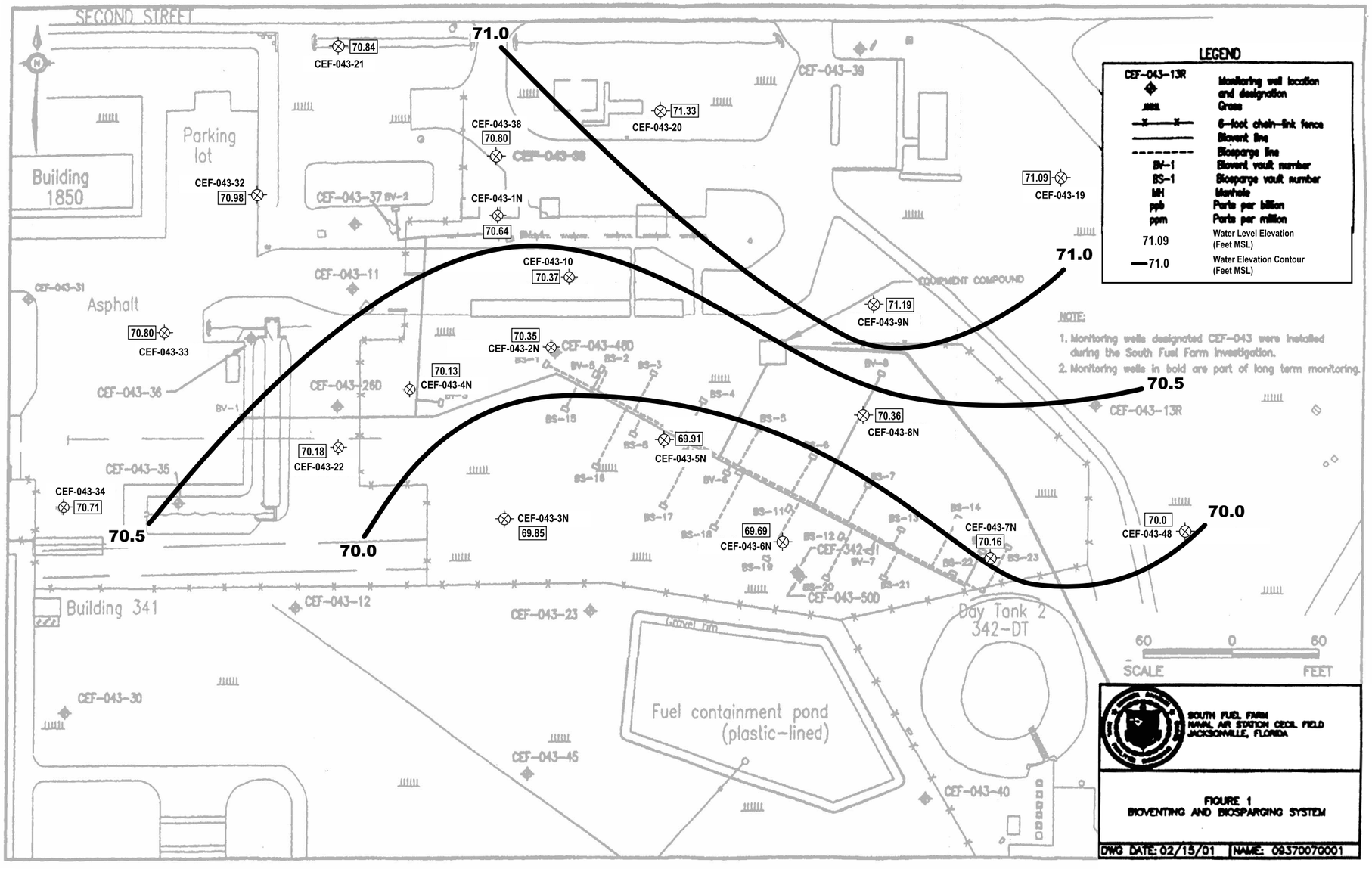

Figure 2-1
Potentiometric Surface Map - December 12, 2002
South Fuel Farm
NAS Cecil Field
Jacksonville, Florida

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3.0 Summary of Sampling and Laboratory Analytical Results

3.1 Soil Monitoring

Soil screening and sampling is conducted on an annual basis in the 4th quarter of each year. The 2002 annual soil screening and sampling event was performed on October 10, 2002. Fifteen soil borings were installed at the locations shown on Figure 1-1. The soil was screened using an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID) at depths ranging from 2 to 4 feet bls. The water table was encountered at 3 to 4 feet bls. The OVA/FID readings are tabulated in Table 3-1.

TABLE 3-1
Soil Screening OVA Readings

Soil Boring Number	Date	Depth (feet bls)	Unfiltered OVA Reading (ppm)	Filtered OVA Reading (ppm)	Net OVA Reading (ppm)
B-7	10/10/02	2	6	0	6
	10/10/02	4	5	0	5
B-31	10/10/02	2	2	0	2
	10/10/02	3	7	0	7
B-41	10/10/02	2	2	0	2
	10/10/02	4	150	23	127
B-70	10/10/02	2	2	0	2
	10/10/02	4	6	0	6
B-96	10/10/02	2	650	25	625
	10/10/02	4	10,000	85	9,915
B-99	10/10/02	2	2	0	2
	10/10/02	4	124	25	99
B-101	10/10/02	2	13	0	13
	10/10/02	4	130	6	124
B-104	10/10/02	2	2	0	2
	10/10/02	4	37	0	37
B-106	10/10/02	2	2	0	2
	10/10/02	4	3	0	3
B-110	10/10/02	2	3	0	3
	10/10/02	4	27	0	27
B-137	10/10/02	2	1	0	1
	10/10/02	4	37	0	37
B-146	10/10/02	2	6	0	6
	10/10/02	4	110	7	103
B-158	10/10/02	2	4	0	4
	10/10/02	4	2	0	2
B-167	10/10/02	2	1.1	0	1.1
	10/10/02	4	4720	520	4200
B-189	10/10/02	2	51	4	47
	10/10/02	4	2	0	2

OVA = organic vapor analyzer
ppm = parts per million
bls = below land surface
Filtered readings taken using an activated charcoal filter
Net Reading = unfiltered reading - filtered reading
OVA readings taken using an OVA meter equipped with a flame ionization detector (FID).
Shaded values indicate the Net OVA readings that exceed 50 ppm.

One confirmatory soil sample was collected from each of the 15 soil borings at the depth interval with the highest net OVA/FID reading. These soil samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl tert butyl ether (MTBE) by U.S. Environmental Protection Agency (EPA) Method 8021B, naphthalene and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8310, and total recoverable petroleum hydrocarbon (TRPH) by the Florida Petroleum Residual Organic (FL PRO) Method. The analytical results are summarized in Table 3-2. Historical soil analytical results are presented in Table 1 of Appendix A. The analytical laboratory reports from the soil sampling event are provided in Appendix B.

The results indicated that TRPH was detected at concentrations that exceeded the Leachability based on Groundwater Criteria value and the Direct Exposure Residential SCTLs in soil samples from six boring locations (B-41, B-96, B-101, B-106, B-146, and B-167). In addition, ethylbenzene and xylenes (total) in boring B-146 and naphthalene, 1-methylnaphthalene, and 2-methynapthalene in boring B-167 exceeded the Leachability based on Groundwater Criteria SCTLs. In general, the concentrations of these parameters have decreased from previous soil sampling events between one to three orders of magnitude.

3.2 Groundwater Monitoring

Groundwater sampling is conducted on an annual basis. The annual groundwater sampling event is scheduled to be performed in the 2nd quarter of 2003.

Field tests were performed on the head space and groundwater from selected monitoring wells on a monthly basis during the 4th quarter 2002 to evaluate indications of biological activity and influence of the bioventing and biosparging systems. The head space in each monitoring well was tested for percent methane, percent carbon dioxide, percent oxygen, pressure, and total hydrocarbons (using an organic vapor analyzer [OVA]). The groundwater in each monitoring well was tested for pH, conductivity, turbidity, dissolved oxygen, temperature, and eH. The results of the field tests are summarized in Table 3-3.

Methane, carbon dioxide, and oxygen levels are measured as an indication of biological activity. Pressure is measured as an indication of the influence of the bioventing and biosparging systems. OVA readings are measured as an indication of the levels of petroleum hydrocarbons. As compared to upgradient wells (CEF-043-19, -20, -21, and –48), in general, elevated carbon dioxide levels and less than ambient oxygen levels were observed in most wells in the vicinity of the bioventing/biosparging systems. This suggests that biological activity is occurring. Elevated hydrocarbon levels (OVA readings greater than 50 parts per million [ppm]) were noted in monitoring wells CEF-043-2N, and -4N. The dissolved oxygen levels were greater than 1 milligram per liter (mg/L), which indicates favorable conditions for aerobic biological activity.

TABLE 3-2
Soil Analytical Results

Sample Boring	Sample I.D.	Saple Depth (ft bgs)	Sample Date	Benzene	Ethylbenzene	Toluene	Xylene (total) mg/kg	tert-Butyl methyl ether (MTBE)	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Anthracene	Fluorene	Phenanthrene	Acenaphthene	Fluoranthene	Pyrene mg/kg	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	TRPH
Leachability from GW Criteria [1]				**0.007**	**0.6**	**0.5**	**0.2**	**0.2**	**1.7**	**2.2**	**6.1**	**27**	**2500**	**160**	**250**	**2.1**	**1200**	**880**	**3.2**	**77**	**10**	**25**	**8**	**28**	**30**	**32000**	**340**
Direct Exposure Residential [1]				**1.1**	**1100**	**380**	**5900**	**3200**	**40**	**68**	**80**	**1100**	**18000**	**2200**	**2000**	**1900**	**2900**	**2200**	**1.4**	**140**	**1.4**	**15**	**0.1**	**1.5**	**0.1**	**2300**	**340**
B-7	086-B7-S-1010-02	2	10/10/2002	0.00102 J	0.00141 J	0.00325 J	0.0119 =	0.00589 U	0.00884 U	0.0177 U	0.0177 U	0.0353 U	0.00353 U	0.0177 U	0.00353 U	0.0177 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	0.00353 U	9.42 U
B-31	086-B31-S-1010-02	3	10/10/2002	0.225 U	0.225 U	0.0506 J	0.45 U	0.225 U	0.00863 U	0.0173 U	0.0173 U	0.0345 U	0.00345 U	0.0173 U	0.00345 U	0.0173 U	0.0116 =	0.00345 U	0.00345 U	0.00345 U	0.00345 U	0.00345 U	0.00345 U	0.00345 U	0.00345 U	0.00345 U	8.38 J
B-41	086-B41-S-1010-02	4	10/10/2002	0.219 U	0.219 U	0.219 U	0.437 U	0.219 U	0.00859 U	0.0172 U	0.0172 U	0.0344 U	0.00344 U	0.0172 U	0.00344 U	0.0172 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	0.00344 U	**1640 =**
B-70	086-B70-S-1010-02	4	10/10/2002	0.00141 J	0.00104 J	0.00337 J	0.0102 =	0.00495 U	0.151 J	0.0161 U	0.0161 U	0.0322 U	0.00614 J	0.0161 U	0.0222 J	0.0161 U	0.168 J	0.0621 J	0.0554 J	0.0952 J	0.0795 J	0.0747 J	0.0847 J	0.0588 J	0.0616 J	0.0746 J	114 J
B-96	086-B96-S-1010-02	4	10/10/2002	0.269 U	0.269 U	0.269 U	0.538 U	0.269 U	0.0404 U	0.0807 U	0.0807 U	0.161 U	0.0161 U	0.0807 U	0.0161 U	0.0807 U	0.0274 J	0.142 J	0.0161 U	0.0161 U	0.0161 U	0.0161 U	0.0161 U	0.0161 U	0.0161 U	0.0161 U	**2710 J**
B-99	086-B99-S-1010-02	4	10/10/2002	0.00157 J	0.00156 J	0.00516 =	0.0154 =	0.00482 U	0.0235 J	0.0171 U	0.0171 U	0.0342 U	0.009 J	0.0171 U	0.0396 J	0.0171 U	0.223 J	0.147 J	0.165 J	0.117 J	0.0805 J	0.0357 J	0.0713 J	0.0351 J	0.00342 U	0.0418 J	33.7 J
B-101	086-B101-S-1010-02	4	10/10/2002	0.268 U	0.268 U	0.268 U	0.537 U	0.268 U	0.805 U	1.61 U	1.61 U	3.22 U	0.322 U	1.61 U	1.03 =	1.61 U	2.49 =	6.77 =	0.322 U	0.322 U	0.322 U	0.322 U	0.322 U	0.322 U	0.322 U	0.322 U	**13100 =**
B-104	086-B104-S-1010-02	4	10/10/2002	0.00169 J	0.00268 J	0.0107 =	0.029 =	0.00584 U	0.00864 U	0.0173 U	0.0173 U	0.0346 U	0.00346 U	0.0173 U	0.00346 U	0.0173 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	0.00346 U	10.3 =
B-106	086-B106-S-1010-02	4	10/10/2002	0.00479 U	0.00132 J	0.00494 =	0.0122 =	0.00479 U	0.125 =	0.0167 U	0.0167 U	0.0334 U	0.00334 U	0.0167 U	0.00334 U	0.0167 U	0.0781 =	0.0409 =	0.00334 U	0.0303 =	0.0309 =	0.00334 U	0.0197 =	0.00334 U	0.00334 U	0.0395 =	**483 =**
B-110	086-B110-S-1010-02	4	10/10/2002	0.248 U	0.248 U	0.248 U	0.495 U	0.248 U	0.00857 U	0.0171 U	0.0171 U	0.0343 U	0.00343 U	0.0171 U	0.00343 U	0.0171 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	0.00343 U	9.14 U
B-137	086-B137-S-1010-02	4	10/10/2002	0.00161 J	0.00108 J	0.00414 J	0.0111 =	0.00497 U	0.00811 U	0.0162 U	0.0162 U	0.0325 U	0.00325 U	0.0162 U	0.00325 U	0.0162 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	0.00325 U	127 =
B-146	086-B146-S-1010-02	4	10/10/2002	0.239 U	0.616 =	0.239 U	3.22 =	0.239 U	0.392 U	0.783 U	0.783 U	1.57 U	0.157 U	0.783 U	0.157 U	0.783 U	1.04 =	3.18 =	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	0.157 U	**4180 =**
B-158	086-B158-S-1010-02	2	10/10/2002	0.00341 J	0.00268 J	0.00622 =	0.0252 =	0.00189 J	0.00825 U	0.0165 U	0.0165 U	0.033 U	0.0033 U	0.0165 U	0.0033 U	0.0165 U	0.0129 =	0.0033 U	0.0033 U	0.0033 U	0.00766 =	0.00396 =	0.00678 =	0.0033 U	0.0033 U	0.0202 =	5.9 J
B-167	086-B167-S-1010-02	4	10/10/2002	0.219 U	0.219 U	0.219 U	0.439 U	0.219 U	9.05 =	21 =	34.9 =	3.34 U	0.334 U	1.67 U	0.334 U	1.67 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	0.334 U	**13800 =**
B-189	086-B189-S-1010-02	2	10/10/2002	0.285 U	0.285 U	0.285 U	0.57 U	0.285 U	0.00953 U	0.0191 U	0.0191 U	0.0381 U	0.00381 U	0.0191 U	0.00381 U	0.0191 U	0.014 =	0.00932 =	0.00381 U	0.00381 U	0.00593 =	0.00606 =	0.00686 =	0.00381 U	0.00381 U	0.00381 U	10.2 U

1 = Ch 62-777 F.A.C Soil Cleanup Target Level (SCTLs) reported in mg/kg
U - result is not detected
= - value equal to
J - result is estimated
Bold indicates concentration exceeds Residential Direct Exposure Limit
Shaded values indicates the compounds that exceeds Leachability based on Groundwater Criteria value

TABLE 3-3
Field Test Results

		Air					Groundwater					
Well Identification	Sample Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Pressure (in Hg)	OVA (ppm)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (^{oC})	ORP (mV)
CEF-043-1N	10/09/2002	0	4.8	14	29.7	8	6.57	0.408	4.4	1.75	26.1	124
	11/21/2002	0.1	4.8	16.5	29.7	2.71	6.38	0.268	0	1.42	25.3	167
	12/12/2002	0	2.5	20.4	30.1	1.5	5.95	0.212	0	6.39	24	-59
CEF-043-2N	10/09/2002	0	3.9	16	29.8	5	6.4	0.184	0	2.45	27.1	70
	11/21/2002	0	6.9	14.9	29.8	0	6.07	0.398	123	0	26	-134
	12/12/2002	0	5.2	17.2	30.1	150	5.45	0.16	58	5.97	24.3	212
CEF-043-3N	10/09/2002	0	0.3	0.2	29.8	3	5.51	0.055	357	4.38	26	258
	11/21/2002	0	2.5	18.5	29.8	0	5.31	0.045	999	1.79	25	102
	12/12/2002	0	2.3	19	30.1	0	5.21	0.061	228	1.91	24.1	126
CEF-043-4N	10/09/2002	0	0.5	19.8	29.8	29	6.16	0.523	15.8	2.49	26.4	14
	11/21/2002	2.4	18.3	0.2	29.8	1047	5.86	0.529	33.9	0.21	25	20
	12/12/2002	0.6	18.3	0.3	30.1	1800	5.72	0.423	21	5.31	23.5	69
CEF-043-5N	10/09/2002	0	2.6	16.1	29.9	4	5.98	0.076	157	2.44	25.9	192
	11/21/2002	0	0	21.4	29.8	0	5.81	0.075	50	8.65	25.1	173
	12/12/2002	0	0	22.8	30.1	0	5.64	0.064	128	9.99	23.8	354
CEF-043-6N	10/09/2002	0	6.9	2.8	29.9	40	5.46	0.234	29	0.85	26.6	200
	11/21/2002	0	0.9	20.2	29.8	7.63	4.92	0.251	999	6.1	25.78	21
	12/12/2002	0	1	20	30.2	3	5.02	0.261	316	6.51	23.5	33
CEF-043-7N	10/09/2002	0	1.8	18.5	29.9	4	5.91	0.376	26	2.17	25.8	275
	11/21/2002	0	0.5	20.9	29.8	3.46	6.02	0.126	15.4	5.22	24.7	193
	12/12/2002	0	0.3	22.1	30.3	NM	5.13	0.124	61	7.86	23.3	345
CEF-043-8N	10/09/2002	0	3.1	16.4	29.9	1	5.62	0.111	10	3.09	25.8	178
	11/21/2002	0	4.2	18.2	29.8	0	5.45	1.03	999	6.26	24.9	379
	12/12/2002	0	2.1	21.5	30.3	0	5.17	0.101	10.4	9.79	24.1	369
CEF-043-9N	10/09/2002	0	0.2	20.4	29.9	3	5.93	0.163	7.9	2.13	26.2	-49
	11/21/2002	0	2.1	19.4	29.9	0	5.83	0.153	0	0	24.9	-31
	12/12/2002	0	2.3	20	30	0	5.76	0.171	0	0	23.1	102
CEF-043-10	10/9//2002	0	9.8	5.5	29.8	0	5.68	0.322	27.8	1.89	29.5	165
	11/21/2002	0.1	9.1	6.5	29.8	4.24	6.25	0.271	0	0.81	25.5	165
	12/12/2002	0	8.6	20.8	30.1	6	6.38	0.256	0	0.95	23.6	152
CEF-043-19	10/09/2002	0	3.1	18.2	29.9	4	4.67	0.035	0	1.51	25.4	337
	11/21/2002	0	0.9	20.4	29.9	0	4.94	0.04	0	0.35	24.8	182
	12/12/2002	0	0.7	21.8	30.3	0	4.4	0.029	52	4.46	23.7	374
CEF-043-20	10/09/2002	0	0	20.5	29.7	4	5.51	0.025	9.7	3.1	27	230
	11/21/2002	0	0.5	20.8	29.8	4.34	5.71	0.033	82	2.9	25.3	217
	12/12/2002	0	0.4	20.7	30.1	5	5.76	0.136	59	2.8	23.9	208

TABLE 3-3
Field Test Results

		Air					Groundwater					
Well Identification	Sample Date	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Pressure (in Hg)	OVA (ppm)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
CEF-043-21	10/09/2002	0	0	20.5	29.7	5	5.84	0.093	0	2.63	26.4	209
	11/21/2002	0.1	1.4	20.6	29.8	3.61	5.82	0.123	0	2.17	24.7	201
	12/12/2002	0	0	18.6	30.1	7	5.92	0.075	0	2.12	23.6	195
CEF-043-22	10/09/2002	0	8.2	11.6	29.8	1	5.03	0.06	249	3.11	26.4	293
	11/21/2002	0.1	3.8	18.1	29.8	0	5.15	0.061	35	3.1	24.7	223
	12/12/2002	0	3.2	18.3	30.1	0	5.19	0.073	42	3.61	24.2	219
CEF-043-32	10/09/2002	0	1.2	18.7	29.7	2	6.47	0.438	102	2.92	29	150
	11/21/2002	0.2	0.1	21.2	29.7	2.57	6.45	0.422	0	4.1	27	157
	12/12/2002	0	0.4	22.3	30.1	3	6.06	0.362	999	7.55	25.4	128
CEF-043-33	10/09/2002	0	0.2	20	29.7	3	6	0.211	62	2.12	29.5	181
	11/21/2002	0.2	0.5	20.9	29.7	3.81	5.92	0.197	10	0.3	27.8	189
	12/12/2002	0	5.7	18.3	30.1	0	5.55	0.138	249	7.14	26.1	180
CEF-043-34	10/09/2002	0	0.2	19.8	29.7	2	6.16	0.088	0	1.21	26.9	190
	11/21/2002	0.1	2.9	17.7	29.7	1.7	6.04	0.076	0	0.08	24.7	175
	12/12/2002	0	3.1	19	30.1	0	5.74	0.058	0	6.99	21.9	189
CEF-043-38	10/09/2002	0	0	20.4	29.7	3	6.38	0.196	0	2.48	26.8	189
	11/21/2002	0.2	2.3	18.6	29.7	0	6.13	0.243	999	3.13	25.7	167
	12/12/2002	0	1.9	21	30.1	4	5.88	0.177	999	6.72	23.9	256
CEF-043-48	10/09/2002	0	0	20.3	29.7	1	6.44	0.074	129	4.5	26.1	175
	11/21/2002	0	0.9	20.7	29.9	0	5.2	0.076	1000	1.04	24.2	83
	12/12/2002	0	0.5	20	29.8	0	5.61	0.059	127	0.98	24.1	96
CEF-043-50D	10/09/2002	0	0.1	20.5	29.9	5	5.5	0.12	0	2.96	25.6	227
	11/21/2002	0	0.2	21.3	29.8	1.1	5.57	0.139	10	2.28	24.1	223
	12/12/2002	0	0.8	22.3	30.2	0	5.37	0.122	0	7.56	24	328

Note: All measurements taken using direct reading instruments in the field.
% = percent
in Hg = inches of mercury
OVA = organic vapor analyzer
ppm = parts per million
mS/cm = milliSiemens per centimeter
NTU = nephelometric turbidity units
mg/L = milligrams per liter
°C = degrees Celsius
ORP = oxygen reducing potential
mV = millivolts

4.0 Conclusions and Recommendations

The bioventing and biosparging systems operated consistently during the 4th quarter 2002. The resulting operational efficiency of the bioventing and biosparging systems was 98.8 percent and 80 percent, respectively. The bioventing system actual blower discharge pressure and total air injection flow rate averaged 69 percent and 150 percent of design specifications, respectively. The biosparging system actual injection discharge pressure averaged 103 percent of the design specification.

The annual soil screening and sampling event indicated that six of the fifteen soil boring locations continue to exhibit soil contaminant concentrations in excess of Leachability based on Groundwater Criteria and/or the Direct Exposure Residential SCTLs. In general, the concentrations of these parameters have decreased from previous soil sampling events between one to three orders of magnitude.

Based on the field parameter testing it appears that biological activity is occurring at the site. The biosparging injection continues to provide sufficient oxygen as indicated by the dissolved oxygen readings being greater than 1 mg/L.

Based on the results of the soil sampling and the field tests, CCI recommends continuing the operation of the bioventing and biosparging remediation systems. The Navy Comprehensive Long-term Environmental Action Navy (CLEAN) contractor is currently evaluating remedial alternatives to supplement and/or modify the existing bioventing and biosparging systems. Operation of the current bioventing and biosparging systems will continue until implementation of the remedial alternative.

5.0 References

ABB Environmental Services, Inc. 1996. Remedial Action Plan; South Fuel Farm; Naval Air Station Cecil Field, Jacksonville, Florida. October.

Bechtel Environmental, Inc. 1998a. Operation and Maintenance Plan Bioventing and Biosparging System; South Fuel Farm; Naval Air Station Cecil Field, Jacksonville, Florida. July.

Bechtel Environmental, Inc. 1998b. Completion Report for the South Fuel Farm Bioventing and Biosparging Systems; Naval Air Station Cecil Field, Jacksonville, Florida. September.

CH2M HILL Constructors, Inc. 2001. Work Plan Addendum No. 12 Operation and Maintenance of the Remediation Systems at Day Tank 1, South Fuel Farm, and 103rd Street and A Avenue; Naval Air Station Cecil Field, Jacksonville, Florida. April.

Appendix A

Historical Data

TABLE 1
Historical Soil Analytical Results
South Fuel Farm

Soil Boring Number	Sample Date	Sample Depth (ft bgs)	Benzene	Ethyl Benzene	Toluene	Xylene	Methyl tert-butyl ether	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1, 2, 3-cd) pyrene	Dibenzo (a,h) anthracene	Benzo (g,h,i) perylene	TRPH (mg/kg)
Direct Exposure Residential [1]			1.1	1100	380	5900	3200	40	68	80	1100	1900	2200	2000	18000	2900	2200	1.4	140	1.4	15	0.1	1.5	0.1	2300	340
Leachability from GW Criteria [1]			0.007	0.6	0.5	0.2	0.2	1.7	2.2	6.1	27	2.1	160	250	2500	1200	880	3.2	77	10	25	8	28	30	32000	340
B-7	03/22/99	N/A	<0.11	<0.11	<0.11	<0.33	<0.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	84
	09/13/00	N/A	<0.001	<0.001	<0.001	<0.003	<0.002	<0.018	<0.037	<0.037	<0.037	<0.019	<0.003	<0.037	<0.0018	<0.0037	<0.0018	<0.0018	<0.0018	<0.0037	<0.0018	<0.002	<0.0018	<0.0036	<0.003	8
	10/18/01	2	<0.001	<0.001	<0.001	<0.0031	<0.001	<0.597	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<18
B-31	03/22/99	N/A	<0.012	<0.012	<0.012	<0.036	<0.071	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	170
	09/13/00	N/A	<0.0011	<0.0011	<0.0011	<0.0031	<0.002	<0.02	<0.04	<0.04	<0.04	<0.02	<0.004	<0.04	<0.002	<0.004	<0.002	<0.002	<0.002	<0.004	<0.002	0.002	0.0028	0.01	0.01	180
	10/18/01	4	<0.0011	<0.0011	<0.0011	<0.0033	<0.0011	<0.604	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	0.010 J	<0.060	<0.060	<0.060	<18
B-41	03/22/99	N/A	<0.013	<0.013	<0.013	<0.038	<0.076	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	30
	09/13/00	N/A	<0.55	<0.55	<0.55	24.9	<1.1	3.3	22	14	<2	<1	0.21	<0.2	<0.098	0.88	<0.098	<0.098	<0.098	<0.2	<0.098	<0.099	<0.098	<0.19	<0.2	460
	10/18/01	4	<0.0011	<0.0011	<0.0011	<0.0033	<0.0011	<0.579	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<17
B-70	03/22/99	N/A	<0.13	<0.13	<0.13	<0.4	<0.8	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	830
	09/13/00	N/A	0.0014	<0.001	0.002	0.019	<0.002	<0.021	<0.041	<0.041	0.109	0.094	<0.004	<0.041	<0.0021	0.091	0.148	0.016	0.043	0.014	0.012	0.005	0.0025	<0.004	<0.004	100
	10/18/01	4	<0.0012	<0.0012	<0.0012	<0.0036	<0.0012	<0.565	<0.056	0.035 J	>0.056	<0.056	<0.056	0.0049 J	<0.056	<0.056	0.0057J	0.0053J	0.008J	0.015J	<0.056	0.007J	0.010J	<0.056	0.016J	64
B-96	03/22/99	N/A	<0.1	0.25	<0.1	5.8	<.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	7600
	09/13/00	N/A	<0.22	<0.22	<0.22	<0.65	<0.43	0.074	0.48	0.58	0.058	0.032	0.11	0.26	0.039	<0.004	<0.002	0.015	0.021	0.02	0.011	0.012	0.0063	0.0087	0.005	1800
	10/18/01	4	0.024	0.017	0.0017	0.0141	<0.0014	0.562	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	0.128	0.016	0.018	0.033	0.015	<0.056	0.014	<0.056	0.016	969
B-99	03/22/99	N/A	<0.11	<0.11	<0.11	<0.33	<0.67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	570
	09/13/00	N/A	0.001	<0.001	0.0018	0.0017	<0.002	<0.02	<0.04	0.073	<0.04	0.14	<0.004	<0.04	0.004	0.052	0.028	0.0076	0.02	0.025	0.0057	0.016	0.013	0.019	0.024	<8.1
	10/18/01	4	<0.0012	<0.0012	<0.0012	<0.0035	<0.0012	<0.593	<0.059	<0.059	<0.059	<0.059	<0.059	0.024J	<0.059	0.046J	0.015J	0.027J	0.040J	0.040J	0.017J	0.032J	0.024J	<0.059	0.029J	36
B-101	03/22/99	N/A	<0.12	<0.12	<0.12	<0.36	<0.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	320
	09/13/00	N/A	<0.0011	<0.0011	<0.0011	<0.0031	<0.002	<0.021	<0.042	<0.042	<0.042	<0.021	<0.004	<0.042	<0.0021	<0.0042	<0.0021	<0.0021	0.0046	0.0066	0.0029	0.006	0.009	0.0084	0.018	<8.4
	10/18/01	4	0.00088	<0.001	0.0012	<0.003	<0.001	<0.572	0.206	1.09	1.25	0.17	0.321	0.912	<0.057	1.84	0.201	<0.057	1.14	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	7510
B-104	03/22/99	N/A	<0.11	<0.11	<0.11	<0.33	<0.67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	28
	09/13/00	N/A	<0.001	<0.001	0.0018	0.0084	<0.002	<0.021	<0.041	<0.041	<0.041	<0.021	<0.004	<0.041	<0.0021	<0.0041	<0.0021	<0.0021	<0.0021	<0.0041	<0.0021	<0.002	<0.0021	<0.0041	<0.004	<8.3
	10/18/01	4	<0.0012	<0.0012	<0.0012	<0.0035	<0.0012	<0.569	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	0.0049J	0.014J	<0.057	<0.057	0.011J	<0.057	<0.057	<0.057	<0.057	0.0041J	80
B-106	03/22/99	N/A	<0.12	<0.12	<0.12	<0.37	<0.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3200
	09/13/00	N/A	<0.001	0.001	0.002	0.0145	<0.002	<0.19	2.4	<0.38	<0.38	0.47	<0.038	<0.38	<0.019	0.93	2.8	0.62	0.89	0.97	0.62	0.68	0.31	0.34	0.5	1000
	10/18/01	4	<0.0011	<0.0011	<0.0011	<0.0033	<0.0011	<0.550	<0.055	<0.055	<0.055	<0.055	<0.055	0.023J	<0.055	<0.055	0.019J	0.023J	0.034J	0.037J	<0.055	0.040J	0.038J	<0.055	0.040J	37
B-110	03/22/99	N/A	<0.13	<0.13	<0.13	<0.39	<0.78	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1000
	09/13/00	N/A	<0.097	<0.097	<0.097	<0.286	<0.2	<0.97	<1.9	<1.9	4.3	3.7	0.23	<1.9	<0.097	<0.19	<0.097	<0.097	1.6	<0.19	<0.097	<0.098	<0.097	<0.19	<0.19	530
	10/18/01	4	<0.001	<0.001	<0.001	<0.003	<0.001	<0.575	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<17
B-137	03/22/99	N/A	<0.1	<0.1	<0.1	0.52	<0.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1200
	09/13/00	N/A	<0.0013	<0.0013	<0.0013	0.008	<0.002	<0.02	<0.04	<0.04	<0.04	<0.02	<0.004	<0.04	<0.002	<0.004	<0.002	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.0039	<0.004	8
	10/18/01	2	<0.0012	<0.0012	<0.0012	<0.0037	<0.0012	<0.563	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<17
B-146	03/22/99	N/A	<0.1	<0.1	<0.1	<0.31	<0.63	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1000
	09/13/00	N/A	<0.0013	<0.0013	0.002	0.006	<0.002	0.028	<0.041	<0.041	<0.041	<0.021	0.005	<0.041	<0.002	<0.0041	<0.002	<0.002	<0.002	<0.0041	<0.002	0.008	<0.002	<0.004	<0.004	13
	10/18/01	4	<0.0012	<0.0012	<0.0012	<0.0037	<0.0012	<0.541	<0.054	<0.054	<0.054	<0.054	0.012	<0.054	<0.054	0.185	0.029	<0.054	0.184	0.0099	0.017	0.0059	0.0092	<0.054	<0.054	1640

TABLE 1
Historical Soil Analytical Results
South Fuel Farm

Soil Boring Number	Sample Date	Sample Depth (ft bgs)	Benzene	Ethyl Benzene	Toluene	Xylene	Methyl tert-butyl ether	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo (a) anthracene	Chrysene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Indeno (1, 2, 3-cd) pyrene	Dibenzo (a,h) anthracene	Benzo (g,h,i) perylene	TRPH (mg/kg)
Direct Exposure Residential [1]			1.1	1100	380	5900	3200	40	68	80	1100	1900	2200	2000	18000	2900	2200	1.4	140	1.4	15	0.1	1.5	0.1	2300	340
Leachability from GW Criteria [1]			0.007	0.6	0.5	0.2	0.2	1.7	2.2	6.1	27	2.1	160	250	2500	1200	880	3.2	77	10	25	8	28	30	32000	340
B-158	03/22/99	N/A	<0.12	<0.12	<0.12	<0.36	<0.7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	9.5
	09/13/00	N/A	0.0016	0.003	0.002	0.0342	<0.002	0.13	<0.041	<0.041	<0.041	<0.021	0.01	<0.041	<0.002	<0.0041	<0.002	<0.002	<0.002	<0.0041	0.0028	0.004	<0.002	0.005	0.01	<8.2
	10/18/01	4	<0.0012	<0.0012	<0.0012	<0.0037	<0.0012	<0.596	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<18
B-167	03/22/99	N/A	<0.12	0.45	0.29	2.8	<0.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	4200
	09/13/00	N/A	<0.0011	<0.0011	<0.0011	<0.0031	<0.002	<0.02	<0.04	<0.04	<0.040	<0.02	<0.004	<0.04	<0.002	<0.004	<0.002	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.004	<0.004	<8.1
	10/18/01	4	0.029	3.84	0.019	5.334	0.0034	10.3	22.3	26.3	<0.573	0.188	1.71	2.37	<0.573	2.07	<0.573	<0.573	0.351	<0.573	<0.573	<0.573	<0.573	<0.573	<0.573	11400
B-189	03/22/99	N/A	<0.11	<0.11	<0.11	<0.33	<0.67	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<7.4
	09/13/00	N/A	0.0018	<0.0011	0.0038	0.0061	<0.002	<0.02	<0.041	<0.041	<0.041	<0.021	0.006	<0.041	<0.002	<0.0041	0.004	<0.002	<0.002	<0.0041	0.0021	0.004	0.002	<0.004	0.005	<8.2
	10/18/01	4	<0.0012	0.00062J	<0.0012	0.0042	<0.0012	<0.570	<0.057	0.013J	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	<0.057	18

All values reported in milligram per kilogram (mg/kg)
1 = Ch 62-777 F.A.C Soil cleanup Target Level (SCTLs) reported in mg/kg
bgs = below ground surface
BTEX = sum of benzene, toluene, ethylbenzene, and xylene
N/A = not available
N/S = not sampled for compound
J = concentration is less than the reporting limit but greater than the method detection limit
Shaded values indicate the compounds that exceed the SCTLs
Sampling events dated prior to 10/18/01 were performed by previous contractors.

Appendix B

Laboratory Analytical Reports for Soil Samples

e*data, inc.
Environmental Data Management
& Chemistry Consulting Services

981001

June 25, 2003

Christelle Newsome
CH2M HILL Constructors, Inc.
115 Perimeter Center Place, N.E.
Suite 700
Atlanta, GA 30346-1278

Subject: Data Validation Services for the NAS Cecil Field, South Fuel Farm. Remedial Action Contract, SoDiv; Contract No. N62467-98-D-0995. CTO #0086.

Dear Ms. Newsome,

Enclosed please find the data validation package for CTO #0086 – NAS Cecil Field, South Fuel Farm. A copy of the validated database file in comma-delimited variable (csv) file format has been emailed to your attention. Three additional fields were added for the validated results, validated qualifiers, and qualifier codes.

This report addresses a single sample deliver group (SDG) for the NAS Cecil Field sampling effort. The SDG is 202101102 and includes GCAL work order 202101102. Mr. Chris Ohland, a senior data validator, conducted the data validation effort.

Please call me at (414) 475-5503 if you have any questions or need additional information.

Sincerely,

Christopher M. Ohland

Christopher Ohland
Senior Environmental Chemist

Enclosures
CMO/jo

edata:030625LTR

Approved for Quality Assurance Release by:
Rev. 0 Date 6/27/03
C. Christelle Newsome

2262 N 71 ST, STE 100
Wauwatosa, WI 53208

Tel: (414) 475-5503
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cjohland@myexcel.com

Data Validation Reference Package

Acronyms and Abbreviations

CLP	Contract Laboratory Program
COC	Chain-of-Custody
%D	Percent Difference
DUP	Duplicate
GC	Gas Chromatography
GS/MS	Gas Chromatography/Mass Spectroscopy
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NFG	Nation Functional Guidelines
%REC	Percent Recovery
QA	Quality Assurance
QC	Quality Control
RL	Reporting Limits
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SVOCs	Semi Volatile Organic Compounds
VOC	Volatile Organic Compound

Data Qualifier Reference Table

Final validated data were assigned qualifiers per USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (NFG). Table 1 presents all data qualifiers used in data validation for the NAS Cecil Field, South Fuel Farm effort, CTO#0086.

TABLE 1
EXAMPLE DATA QUALIFIER REFERENCE
(NAS Cecil Field, South Fuel Farm. CTO#0086)

Qualifier	Inorganic	Organic
=	The parameter was detected at the reported concentration.	The parameter was detected at the reported concentration.
U	The analyte was analyzed for, but was not detected above the reported sample quantification limit	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantification limit of the sample detection limit.
J	The associated value is an estimated quantity.	The parameter was positively identified: the associated numerical value is the approximate concentration of the parameter in the sample.

Qualification Code Reference Table

Qualification codes explain why data qualifiers have been applied and identify possible limitations of data use. Table 2 presents all data qualifier codes used in data validation for the NAS Cecil Field, South Fuel Farm effort, CTO#0086.

TABLE 2
EXAMPLE DATA QUALIFIER CODE REFERENCE
(NAS Cecil Field, South Fuel Farm. CTO#0086)

Code	Inorganic	Organic
<	Concentration measurement is less than the laboratory limit of reporting, but greater than the method detection limit.	Concentration measurement is less than the laboratory limit of reporting, but greater than the method detection limit.
Q	Accuracy or precision objectives were not achieved as indicated by the matrix spike and duplicate results	Accuracy or precision objectives were not achieved as indicated by the matrix spike and duplicate results
Z	Precision objectives were not achieved as indicated by the field duplicate results	Precision objectives were not achieved as indicated by the field duplicate results

Data Validation Report

Introduction

The Navy issued a task order to CH2M HILL Constructors, Inc. (CCI) to conduct annual sampling and analysis activities at the NAS Cecil Field, South Fuel Tank area under Navy Remedial Action Contract, SoDiv; Contract No. N62467-98-D-0995; CTO #0086. This report describes the data validation services provided by E-Data Inc., in support of CCI project number 171591.

CCI collected soil samples and aqueous field quality control samples on September 10, 2002. Samples were taken at 15 soil sampling locations. Field quality control samples include 2 field duplicate, 1 equipment rinse, and 2 trip blank samples. The laboratory prepared project-specific samples for MS/MSD pair analyses where applicable for all organic and inorganic chemistry analyses.

A summary of the samples and required analyses is shown in Table 3. Samples were submitted to Gulf Coast Analytical Laboratory, located in Baton Rouge, Louisiana. All analyses were performed at the Baton Rouge facility.

Laboratory data were validated using CCI-approved checklists based on the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. A copy of the laboratory reports with data qualifiers applied during the data validation and chain-of-custody forms are provided in Appendix A. Appendix B contains copies of the completed data validation checklists.

Sample results from the final validated-laboratory reports were compared to the electronic data. Table C-1 (Appendix C) summarizes the 576 sample results that were verified. The database contains 576 results from regular, field duplicate, equipment rinse blank, and trip blank samples.

This report addresses a single sample deliver group (SDG) for the NAS Cecil Field sampling effort. The SDG is 202101102 and includes GCAL work order 202101102. Mr. Chris Ohland, a senior data validator, conducted the data validation effort.

Data Validation Findings Summary

This section presents a summary of the data validation findings of the data reviewer.

General Comments

None are noted.

Volatile Organic Analyses

Matrix spike/matrix spike duplicate analyses were conducted on sample 20210110204. The matrix accuracy and precision objectives were achieved.

Two field duplicates pairs were collected including samples 20210110207/202101102018 and 20210110208/20210110219. The field duplicate precision objectives were achieved but most of the concentrations were less than the reporting limit. Field duplicate precision objectives were not met for the Florida PRO and PAH analyses.

Initial calibrations were performed using a 5 part per billion (ppb) standard, except benzene and toluene low standards were analyzed at 2 ppb. Laboratory reporting limits are 1 µg/Kg. A sufficient peak response value was reported with these standards to justify the reporting limit.

Samples 20210110215 and 20210110219 had internal standard areas for 1,2-dichloro-benzene-$_{d4}$ below 50 percent of the 12-hour standard. The laboratory did not conduct re-analyses. None of the target analytes for this sampling and analysis effort are quantified using this internal standard, thus no action was needed to qualify the sample results.

Numerous samples were analyzed at a 1:50 dilution. In many of these samples a late-eluting hydrocarbon is present, which interferes with the analyses. Nominal reporting limits were not achieved for samples 20210110202, -03, -07, -09, 12, 14, 16, 17, and 18.

Florida PRO Analyses

Matrix spike/matrix spike duplicate analyses were conducted on sample 20210110204. Native concentration levels exceed the amount fortified into the sample, thus the data is inconclusive. A review of the chromatograms for the fortified samples reveals the absence of petroleum hydrocarbons, which were present in the native sample; indicating the hydrocarbon contamination in the sample is non-homogenous. The Florida PRO results for this sample are qualified as estimated and flagged "J."

Two field duplicates pairs were collected including samples 20210110207/202101102018 and 20210110208/20210110219. The field duplicate precision objectives were not achieved. The results are qualified as estimated and flagged "J."

Sample surrogate recoveries were within established limits except sample 20210110209 and 20210110216, which the surrogates were diluted out of the analyses. Sample 20210110204 was reported with low o-terphenyl recovery; however, the alternate surrogate was within the established limits. No action was needed to qualify the sample results based on surrogate performance.

Florida PRO was measured in the laboratory method blank analysis for aqueous samples. Action levels were determined using the 5X Rule. No action was taken to qualify the sample results because the equipment blank sample was reported as non-detected for Florida PRO.

Polyaromatic Hydrocarbon Analyses

Matrix spike/matrix spike duplicate analyses were conducted on sample 20210110204. Native concentration levels exceed the amount fortified into the sample, thus the data is inconclusive. All detected results for this sample are qualified as estimated and flagged "J."

Two field duplicates pairs were collected including samples 20210110207/202101102018 and 20210110208/20210110219. The field duplicate precision objectives were not achieved. The results are qualified as estimated and flagged "J."

Numerous samples were analyzed using a diluted aliquot to properly quantify target parameters. Nominal reporting limits were not achieved for samples 202101102007, -09, 14, 16, and 19.

Technical Validity and Usability

The analytical performance of this data set is very strong. The analytical results meet the data quality objectives defined by the applicable method and NFG, except as noted in the data validation findings.

Summary of Qualified Data

A summary of the data qualified during the data validation exercise is summarized in Table 4.

Table 3
SUMMARY OF REQUESTED ANALYSES
(CTO#0086 - NAS Cecil Field, South Tank Farm)

Lab Sample ID	Field ID	Sample Date	Receive Date	Matrix	QAQC TYPE	FL-PRO	SW8260B	SW8310
20210110201	086-B7-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110202	086-B31-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110203	086-B41-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110204	086-B70-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110207	086-B96-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110208	086-B99-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110209	086-B101-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110210	086-B104-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110211	086-B106-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110212	086-B110-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110213	086-B137-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110214	086-B146-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110215	086-B158-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110216	086-B167-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110217	086-B189-S-1010-02	10/10/2002	10/11/2002	SOIL	N	1	5	18
20210110218	086-DUP1-S-1010-02	10/10/2002	10/11/2002	SOIL	FD	1	5	18
20210110219	086-DUP2-S-1010-02	10/10/2002	10/11/2002	SOIL	FD	1	5	18
20210110220	086-EQB-W-1010-02	10/10/2002	10/11/2002	WATER	EB	1	5	18
20210110221	086-TB1-W-1010-02	10/11/2002	10/11/2002	WATER	TB	--	5	--
20210110222	086-TB2-W-1010-02	10/11/2002	10/11/2002	WATER	TB	--	5	--

Table 4
SUMMARY OF QUALIFIED RESULTS
(CTO#0086 - NAS Cecil Field, South Tank Farm)

Lab Sample ID	FieldID	QA/QC Type	Analysis Method	Analyte	Result	Lab Qual	Valid Result	Valid Qual	Qual Code
20210110201	086-B7-S-1010-02	N	SW8260B	Benzene	1.02	=	1.02	J	<
20210110201	086-B7-S-1010-02	N	SW8260B	Ethylbenzene	1.41	=	1.41	J	<
20210110201	086-B7-S-1010-02	N	SW8260B	Toluene	3.25	=	3.25	J	<
20210110202	086-B31-S-1010-02	N	FL-PRO	Petroleum Hydrocarbons	8380	=	8380	J	<
20210110202	086-B31-S-1010-02	N	SW8260B	Toluene	50.6	=	50.6	J	<
20210110204	086-B70-S-1010-02	N	FL-PRO	Petroleum Hydrocarbons	114000	=	114000	J	Q
20210110204	086-B70-S-1010-02	N	SW8260B	Benzene	1.41	=	1.41	J	<
20210110204	086-B70-S-1010-02	N	SW8260B	Ethylbenzene	1.04	=	1.04	J	<
20210110204	086-B70-S-1010-02	N	SW8260B	Toluene	3.37	=	3.37	J	<
20210110204	086-B70-S-1010-02	N	SW8310	Anthracene	6.14	=	6.14	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Benzo(a)anthracene	55.4	=	55.4	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Benzo(a)pyrene	84.7	=	84.7	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Benzo(b)fluoranthene	79.5	=	79.5	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Benzo(g,h,i)perylene	74.6	=	74.6	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Benzo(k)fluoranthene	74.7	=	74.7	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Chrysene	95.2	=	95.2	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Dibenz(a,h)anthracene	61.6	=	61.6	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Fluoranthene	168	=	168	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Indeno(1,2,3-cd)pyrene	58.8	=	58.8	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Naphthalene	151	=	151	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Phenanthrene	22.2	=	22.2	J	Q
20210110204	086-B70-S-1010-02	N	SW8310	Pyrene	62.1	=	62.1	J	Q
20210110207	086-B96-S-1010-02	N	FL-PRO	Petroleum Hydrocarbons	2710000	=	2710000	J	Z
20210110207	086-B96-S-1010-02	N	SW8310	Fluoranthene	27.4	=	27.4	J	Z
20210110207	086-B96-S-1010-02	N	SW8310	Pyrene	142	=	142	J	Z
20210110208	086-B99-S-1010-02	N	FL-PRO	Petroleum Hydrocarbons	33700	=	33700	J	Z
20210110208	086-B99-S-1010-02	N	SW8260B	Benzene	1.57	=	1.57	J	<
20210110208	086-B99-S-1010-02	N	SW8260B	Ethylbenzene	1.56	=	1.56	J	<
20210110208	086-B99-S-1010-02	N	SW8310	Anthracene	9	=	9	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Benzo(a)anthracene	165	=	165	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Benzo(a)pyrene	71.3	=	71.3	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Benzo(b)fluoranthene	80.5	=	80.5	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Benzo(g,h,i)perylene	41.8	=	41.8	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Benzo(k)fluoranthene	35.7	=	35.7	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Chrysene	117	=	117	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Fluoranthene	223	=	223	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Indeno(1,2,3-cd)pyrene	35.1	=	35.1	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Naphthalene	23.5	=	23.5	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Phenanthrene	39.6	=	39.6	J	Z
20210110208	086-B99-S-1010-02	N	SW8310	Pyrene	147	=	147	J	Z
20210110210	086-B104-S-1010-02	N	SW8260B	Benzene	1.69	=	1.69	J	<
20210110210	086-B104-S-1010-02	N	SW8260B	Ethylbenzene	2.68	=	2.68	J	<
20210110211	086-B106-S-1010-02	N	SW8260B	Ethylbenzene	1.32	=	1.32	J	<
20210110213	086-B137-S-1010-02	N	SW8260B	Benzene	1.61	=	1.61	J	<
20210110213	086-B137-S-1010-02	N	SW8260B	Ethylbenzene	1.08	=	1.08	J	<
20210110213	086-B137-S-1010-02	N	SW8260B	Toluene	4.14	=	4.14	J	<
20210110215	086-B158-S-1010-02	N	FL-PRO	Petroleum Hydrocarbons	5900	=	5900	J	<
20210110215	086-B158-S-1010-02	N	SW8260B	Benzene	3.41	=	3.41	J	<
20210110215	086-B158-S-1010-02	N	SW8260B	Ethylbenzene	2.68	=	2.68	J	<
20210110215	086-B158-S-1010-02	N	SW8260B	tert-Butyl methyl ether (MTBE)	1.89	=	1.89	J	<
20210110218	086-DUP1-S-1010-02	FD	FL-PRO	Petroleum Hydrocarbons	1020000	=	1020000	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8260B	Xylene (total)	46.3	=	46.3	J	<

Table 4
SUMMARY OF QUALIFIED RESULTS
(CTO#0086 - NAS Cecil Field, South Tank Farm)

Lab Sample ID	FieldID	QA/QC Type	Analysis Method	Analyte	Result	Lab Qual	Valid Result	Valid Qual	Qual Code
20210110218	086-DUP1-S-1010-02	FD	SW8310	Anthracene	14.7	=	14.7	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Benzo(a)anthracene	71.5	=	71.5	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Benzo(a)pyrene	118	=	118	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Benzo(b)fluoranthene	132	=	132	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Benzo(k)fluoranthene	70.2	=	70.2	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Chrysene	116	=	116	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Dibenz(a,h)anthracene	247	=	247	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Fluoranthene	267	=	267	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Indeno(1,2,3-cd)pyrene	83.6	=	83.6	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Naphthalene	340	=	340	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Phenanthrene	56.8	=	56.8	J	Z
20210110218	086-DUP1-S-1010-02	FD	SW8310	Pyrene	309	=	309	J	Z
20210110219	086-DUP2-S-1010-02	FD	FL-PRO	Petroleum Hydrocarbons	389000	=	389000	J	Z
20210110219	086-DUP2-S-1010-02	FD	SW8260B	Benzene	1.35	=	1.35	J	<
20210110219	086-DUP2-S-1010-02	FD	SW8260B	Ethylbenzene	1.3	=	1.3	J	<
20210110219	086-DUP2-S-1010-02	FD	SW8260B	Toluene	4.58	=	4.58	J	<
20210110219	086-DUP2-S-1010-02	FD	SW8310	Anthracene	28.9	=	28.9	J	Z
20210110219	086-DUP2-S-1010-02	FD	SW8310	Fluoranthene	163	=	163	J	Z
20210110219	086-DUP2-S-1010-02	FD	SW8310	Phenanthrene	126	=	126	J	Z
20210110219	086-DUP2-S-1010-02	FD	SW8310	Pyrene	271	=	271	J	Z

Volatile Organic Analyses

Appendix A

Validated Reports of Analysis

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110201	086-B7-S-1010-02	Solid	10/10/2002 16:20	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 16:19	HJL	192406

CAS #	PARAMETER	RESULT	Code	PQL	MDL	UNITS
71-43-2	Benzene	1.02J	<	5.89	0.311	ug/Kg
100-41-4	Ethylbenzene	1.41J	<	5.89	1.16	ug/Kg
108-88-3	Toluene	3.25J	<	5.89	0.209	ug/Kg
1330-20-7	**Xylene (total)**	**11.9**		**11.8**	**0.782**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	5.89 U		5.89	0.257	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	50	52.3 ug/Kg	105	73 - 138
1868-53-7	Dibromofluoromethane	50	60.1 ug/Kg	120	70 - 130
2037-26-5	Toluene d8	50	47.1 ug/Kg	94	65 - 128
17060-07-0	1,2-Dichloroethane-d4	50	54.1 ug/Kg	108	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110202	086-B31-S-1010-02	Solid	10/10/2002 17:05	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/19/2002 13:02	KRV	189120

CAS #	PARAMETER	RESULT	Code	PQL	MDL	UNITS
71-43-2	Benzene	225 U		225	11.9	ug/Kg
100-41-4	Ethylbenzene	225 U		225	44.4	ug/Kg
108-88-3	Toluene	50.6J	<	225	7.98	ug/Kg
1330-20-7	Xylene (total)	450 U		450	29.9	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	225 U		225	9.81	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	1960	1760 ug/Kg	90	73 - 138
1868-53-7	Dibromofluoromethane	1960	2000 ug/Kg	102	70 - 130
2037-26-5	Toluene d8	1960	1980 ug/Kg	101	65 - 128
17060-07-0	1,2-Dichloroethane-d4	1960	2000 ug/Kg	102	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

Cmw 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110203	086-B41-S-1010-02	Solid	10/10/2002 16:00	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 16:16	RJO	189126

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	219 U	219	11.5	ug/Kg
100-41-4	Ethylbenzene	219 U	219	43.1	ug/Kg
108-88-3	Toluene	219 U	219	7.75	ug/Kg
1330-20-7	Xylene (total)	437 U	437	29.0	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	219 U	219	9.53	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	1910	1820 ug/Kg	95	73 - 138
1868-53-7	Dibromofluoromethane	1910	1770 ug/Kg	93	70 - 130
2037-26-5	Toluene d8	1910	1940 ug/Kg	102	65 - 128
17060-07-0	1,2-Dichloroethane-d4	1910	1850 ug/Kg	97	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110204	086-B70-S-1010-02	Solid	10/10/2002 16:40	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 11:09	HJL	192406

CAS #	PARAMETER	RESULT	code	PQL	MDL	UNITS
71-43-2	Benzene	1.41J	<	4.95	0.261	ug/Kg
100-41-4	Ethylbenzene	1.04J	<	4.95	0.976	ug/Kg
108-88-3	Toluene	3.37J	<	4.95	0.175	ug/Kg
1330-20-7	**Xylene (total)**	**10.2**		**9.90**	**0.657**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	4.95 U		4.95	0.216	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	46.1	50.7 ug/Kg	110	73 - 138
1868-53-7	Dibromofluoromethane	46.1	55.7 ug/Kg	121	70 - 130
2037-26-5	Toluene d8	46.1	47.7 ug/Kg	103	65 - 128
17060-07-0	1,2-Dichloroethane-d4	46.1	45.2 ug/Kg	98	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110207	086-B96-S-1010-02	Solid	10/10/2002 14:25	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 16:38	RJO	189126

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	269 U	269	14.2	ug/Kg
100-41-4	Ethylbenzene	269 U	269	53.0	ug/Kg
108-88-3	Toluene	269 U	269	9.54	ug/Kg
1330-20-7	Xylene (total)	538 U	538	35.7	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	269 U	269	11.7	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2500	2370 ug/Kg	95	73 - 138
1868-53-7	Dibromofluoromethane	2500	2260 ug/Kg	90	70 - 130
2037-26-5	Toluene d8	2500	2500 ug/Kg	100	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2500	1910 ug/Kg	76	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110208	086-B99-S-1010-02	Solid	10/10/2002 15:25	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 13:15	HJL	192406

CAS #	PARAMETER	RESULT	code	PQL	MDL	UNITS
71-43-2	Benzene	1.57J	<	4.82	0.254	ug/Kg
100-41-4	Ethylbenzene	1.56J	<	4.82	0.950	ug/Kg
108-88-3	**Toluene**	**5.16**		**4.82**	**0.171**	**ug/Kg**
1330-20-7	**Xylene (total)**	**15.4**		**9.64**	**0.640**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	4.82 U		4.82	0.210	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	42.3	40.8 ug/Kg	96	73 - 138
1868-53-7	Dibromofluoromethane	42.3	53.5 ug/Kg	126	70 - 130
2037-26-5	Toluene d8	42.3	45.5 ug/Kg	108	65 - 128
17060-07-0	1,2-Dichloroethane-d4	42.3	44.1 ug/Kg	104	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110209	086-B101-S-1010-02	Solid	10/10/2002 15:05	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 17:01	RJO	189126

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	268 U	268	14.2	ug/Kg
100-41-4	Ethylbenzene	268 U	268	52.9	ug/Kg
108-88-3	Toluene	268 U	268	9.51	ug/Kg
1330-20-7	Xylene (total)	537 U	537	35.6	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	268 U	268	11.7	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2500	2460 ug/Kg	98	73 - 138
1868-53-7	Dibromofluoromethane	2500	2290 ug/Kg	92	70 - 130
2037-26-5	Toluene d8	2500	2570 ug/Kg	103	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2500	2350 ug/Kg	94	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110210	086-B104-S-1010-02	Solid	10/10/2002 14:10	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 13:41	HJL	192406

CAS #	PARAMETER	RESULT	cal	PQL	MDL	UNITS
71-43-2	Benzene	1.69J	<	5.84	0.308	ug/Kg
100-41-4	Ethylbenzene	2.68J	<	5.84	1.15	ug/Kg
108-88-3	**Toluene**	**10.7**		**5.84**	**0.207**	**ug/Kg**
1330-20-7	**Xylene (total)**	**29.0**		**11.7**	**0.775**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	5.84 U		5.84	0.255	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	50.7	50.5 ug/Kg	100	73 - 138
1868-53-7	Dibromofluoromethane	50.7	58.8 ug/Kg	116	70 - 130
2037-26-5	Toluene d8	50.7	54 ug/Kg	106	65 - 128
17060-07-0	1,2-Dichloroethane-d4	50.7	52.5 ug/Kg	104	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110211	086-B106-S-1010-02	Solid	10/10/2002 14:45	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 14:06	HJL	192406

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	4.79 U	4.79	0.253	ug/Kg
100-41-4	Ethylbenzene	1.32J	4.79	0.944	ug/Kg
108-88-3	**Toluene**	**4.94**	**4.79**	**0.170**	**ug/Kg**
1330-20-7	**Xylene (total)**	**12.2**	**9.57**	**0.635**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	4.79 U	4.79	0.209	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	43	41 ug/Kg	95	73 - 138
1868-53-7	Dibromofluoromethane	43	49 ug/Kg	114	70 - 130
2037-26-5	Toluene d8	43	47.3 ug/Kg	110	65 - 128
17060-07-0	1,2-Dichloroethane-d4	43	42.5 ug/Kg	99	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

Cmo 6/29/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110212	086-B110-S-1010-02	Solid	10/10/2002 13:40	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/19/2002 15:30	KRV	189120

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	248 U	248	13.1	ug/Kg
100-41-4	Ethylbenzene	248 U	248	48.8	ug/Kg
108-88-3	Toluene	248 U	248	8.77	ug/Kg
1330-20-7	Xylene (total)	495 U	495	32.9	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	248 U	248	10.8	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2170	2110 ug/Kg	97	73 - 138
1868-53-7	Dibromofluoromethane	2170	2140 ug/Kg	99	70 - 130
2037-26-5	Toluene d8	2170	2270 ug/Kg	105	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2170	2190 ug/Kg	101	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110213	086-B137-S-1010-02	Solid	10/10/2002 13:10	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 12:50	HJL	192406

CAS #	PARAMETER	RESULT	Code	PQL	MDL	UNITS
71-43-2	Benzene	1.61J	<	4.97	0.262	ug/Kg
100-41-4	Ethylbenzene	1.08J	<	4.97	0.980	ug/Kg
108-88-3	Toluene	4.14J	<	4.97	0.176	ug/Kg
1330-20-7	**Xylene (total)**	**11.1**		**9.94**	**0.660**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	4.97 U		4.97	0.217	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	46	48.6 ug/Kg	106	73 - 138
1868-53-7	Dibromofluoromethane	46	54.6 ug/Kg	119	70 - 130
2037-26-5	Toluene d8	46	47.1 ug/Kg	102	65 - 128
17060-07-0	1,2-Dichloroethane-d4	46	47 ug/Kg	102	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

Omo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110214	086-B146-S-1010-02	Solid	10/10/2002 11:55	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 17:47	RSP	189126

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	239 U	239	12.6	ug/Kg
100-41-4	**Ethylbenzene**	**616**	**239**	**47.0**	**ug/Kg**
108-88-3	Toluene	239 U	239	8.46	ug/Kg
1330-20-7	**Xylene (total)**	**3220**	**477**	**31.7**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	239 U	239	10.4	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2290	2330 ug/Kg	102	73 - 138
1868-53-7	Dibromofluoromethane	2290	2000 ug/Kg	88	70 - 130
2037-26-5	Toluene d8	2290	2840 ug/Kg	124	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2290	1820 ug/Kg	80	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110215	086-B158-S-1010-02	Solid	10/10/2002 10:55	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 14:57	HJL	192406

CAS #	PARAMETER	RESULT	Code	PQL	MDL	UNITS
71-43-2	Benzene	3.41J	<	4.96	0.262	ug/Kg
100-41-4	Ethylbenzene	2.68J	<	4.96	0.977	ug/Kg
108-88-3	**Toluene**	**6.22**		**4.96**	**0.176**	**ug/Kg**
1330-20-7	**Xylene (total)**	**25.2**		**9.91**	**0.658**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	1.89J	<	4.96	0.216	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	45	44.3 ug/Kg	98	73 - 138
1868-53-7	Dibromofluoromethane	45	55.4 ug/Kg	123	70 - 130
2037-26-5	Toluene d8	45	49.8 ug/Kg	111	65 - 128
17060-07-0	1,2-Dichloroethane-d4	45	45.6 ug/Kg	101	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110216	086-B167-S-1010-02	Solid	10/10/2002 10:30	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 17:24	RSP	189126

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	219 U	219	11.6	ug/Kg
100-41-4	Ethylbenzene	219 U	219	43.3	ug/Kg
108-88-3	Toluene	219 U	219	7.78	ug/Kg
1330-20-7	Xylene (total)	439 U	439	29.1	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	219 U	219	9.56	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	1970	1880 ug/Kg	95	73 - 138
1868-53-7	Dibromofluoromethane	1970	1700 ug/Kg	86	70 - 130
2037-26-5	Toluene d8	1970	1980 ug/Kg	100	65 - 128
17060-07-0	1,2-Dichloroethane-d4	1970	1730 ug/Kg	88	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

Cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110217	086-B189-S-1010-02	Solid	10/10/2002 11:20	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/19/2002 16:33	KRV	189120

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	285 U	285	15.1	ug/Kg
100-41-4	Ethylbenzene	285 U	285	56.2	ug/Kg
108-88-3	Toluene	285 U	285	10.1	ug/Kg
1330-20-7	Xylene (total)	570 U	570	37.9	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	285 U	285	12.4	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2240	2130 ug/Kg	95	73 - 138
1868-53-7	Dibromofluoromethane	2240	2250 ug/Kg	100	70 - 130
2037-26-5	Toluene d8	2240	2290 ug/Kg	102	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2240	2300 ug/Kg	102	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110218	086-DUP1-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			50	10/18/2002 18:17	RSP	189126

CAS #	PARAMETER	RESULT	Code	PQL	MDL	UNITS
71-43-2	Benzene	252 U		252	13.3	ug/Kg
100-41-4	Ethylbenzene	252 U		252	49.8	ug/Kg
108-88-3	Toluene	252 U		252	8.95	ug/Kg
1330-20-7	Xylene (total)	46.3J	<	505	33.5	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	252 U		252	11.0	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	2360	2190 ug/Kg	93	73 - 138
1868-53-7	Dibromofluoromethane	2360	2010 ug/Kg	85	70 - 130
2037-26-5	Toluene d8	2360	2380 ug/Kg	101	65 - 128
17060-07-0	1,2-Dichloroethane-d4	2360	2060 ug/Kg	87	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110219	086-DUP2-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/23/2002 15:48	HJL	192406

CAS #	PARAMETER	RESULT	code	PQL	MDL	UNITS
71-43-2	Benzene	1.35J	<	5.03	0.266	ug/Kg
100-41-4	Ethylbenzene	1.30J	<	5.03	0.993	ug/Kg
108-88-3	Toluene	4.58J	<	5.03	0.178	ug/Kg
1330-20-7	**Xylene (total)**	**14.2**		**10.1**	**0.668**	**ug/Kg**
1634-04-4	tert-Butyl methyl ether (MTBE)	5.03 U		5.03	0.219	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	44.4	41.5 ug/Kg	93	73 - 138
1868-53-7	Dibromofluoromethane	44.4	53.8 ug/Kg	121	70 - 130
2037-26-5	Toluene d8	44.4	45.3 ug/Kg	102	65 - 128
17060-07-0	1,2-Dichloroethane-d4	44.4	47.9 ug/Kg	108	60 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

OMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110220	086-EQB-W-1010-02	Water	10/10/2002 17:20	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/19/2002 19:00	KRV	189714

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	5.00 U	5.00	0.836	ug/L
100-41-4	Ethylbenzene	5.00 U	5.00	0.690	ug/L
108-88-3	Toluene	5.00 U	5.00	0.678	ug/L
1330-20-7	Xylene (total)	10.0 U	10.0	2.24	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	5.00 U	5.00	0.531	ug/L

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	50	49.9 ug/L	100	78 - 115
1868-53-7	Dibromofluoromethane	50	51 ug/L	102	70 - 130
2037-26-5	Toluene d8	50	50.2 ug/L	100	83 - 112
17060-07-0	1,2-Dichloroethane-d4	50	48.3 ug/L	97	76 - 128

RESULTS REPORTED ON A WET WEIGHT BASIS

DMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110221	086-TB1-W-1010-02	Water	10/10/2002 00:00	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/19/2002 17:50	KRV	189714

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	5.00 U	5.00	0.836	ug/L
100-41-4	Ethylbenzene	5.00 U	5.00	0.690	ug/L
108-88-3	Toluene	5.00 U	5.00	0.678	ug/L
1330-20-7	Xylene (total)	10.0 U	10.0	2.24	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	5.00 U	5.00	0.531	ug/L

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	50	48.4 ug/L	97	78 - 115
1868-53-7	Dibromofluoromethane	50	50 ug/L	100	70 - 130
2037-26-5	Toluene d8	50	52.6 ug/L	105	83 - 112
17060-07-0	1,2-Dichloroethane-d4	50	40.8 ug/L	82	76 - 128

RESULTS REPORTED ON A WET WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110222	086-TB2-W-1010-02	Water	10/10/2002 00:00	10/11/2002 09:15	

8260B, Volatiles

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
			1	10/19/2002 19:23	KRV	189714

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
71-43-2	Benzene	5.00 U	5.00	0.836	ug/L
100-41-4	Ethylbenzene	5.00 U	5.00	0.690	ug/L
108-88-3	Toluene	5.00 U	5.00	0.678	ug/L
1330-20-7	Xylene (total)	10.0 U	10.0	2.24	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	5.00 U	5.00	0.531	ug/L

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
460-00-4	4-Bromofluorobenzene	50	56.4 ug/L	113	78 - 115
1868-53-7	Dibromofluoromethane	50	51.3 ug/L	103	70 - 130
2037-26-5	Toluene d8	50	50.3 ug/L	101	83 - 112
17060-07-0	1,2-Dichloroethane-d4	50	47.5 ug/L	95	76 - 128

RESULTS REPORTED ON A WET WEIGHT BASIS

OMO 6/24/03

Florida PRO Analyses

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110201	086-B7-S-1010-02	Solid	10/10/2002 16:20	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/21/2002 21:00	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	9420 U	9420	5890	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	3940 ug/Kg	99	50 - 150
7194-86-7	Nonatriacontane	24000	13300 ug/Kg	55	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

Omo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110202	086-B31-S-1010-02	Solid	10/10/2002 17:05	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/21/2002 21:55	DLB	188207

CAS #	PARAMETER	RESULT	code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	8380J	<	9200	5750	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	3130 ug/Kg	78	50 - 150
7194-86-7	Nonatriacontane	24000	14000 ug/Kg	58	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110203	086-B41-S-1010-02	Solid	10/10/2002 16:00	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	2	10/22/2002 21:22	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	1640000	18300	11500	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	3630 ug/Kg	91	50 - 150
7194-86-7	Nonatriacontane	24000	17500 ug/Kg	73	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

emo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110204	086-B70-S-1010-02	Solid	10/10/2002 16:40	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/21/2002 23:44	DLB	188207

CAS #	PARAMETER	RESULT	Q Code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	114000	J Q	8580	5360	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	4460 ug/Kg	112	50 - 150
7194-86-7	Nonatriacontane	24000	19800 ug/Kg	83	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

mm 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110207	086-B96-S-1010-02	Solid	10/10/2002 14:25	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	5	10/22/2002 22:16	DLB	188207

CAS #	PARAMETER	RESULT	Q Code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	2710000	J Z	43000	26900	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	3270 ug/Kg	82	50 - 150
7194-86-7	Nonatriacontane	24000	15500 ug/Kg	65	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110208	086-B99-S-1010-02	Solid	10/10/2002 15:25	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 03:23	DLB	188207

CAS #	PARAMETER	RESULT	Q	Code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	33700	J	Z	9110	5700	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2480 ug/Kg	62	50 - 150
7194-86-7	Nonatriacontane	24000	10800 ug/Kg	45	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110209	086-B101-S-1010-02	Solid	10/10/2002 15:05	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	20	10/23/2002 10:08	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	13100000	172000	107000	ug/Kg

CAS #	SURROGATE NAME		CONC ADDED	CONC REC	% RECOVERY		REC-LIMITS
84-15-1	o-Terphenyl	DO	4000	1920 ug/Kg	48	*	50 - 150
7194-86-7	Nonatriacontane	DO	24000	0 ug/Kg	0	*	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110210	086-B104-S-1010-02	Solid	10/10/2002 14:10	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 07:02	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	**Petroleum Hydrocarbons**	**10300**	**9210**	**5760**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2810 ug/Kg	70	50 - 150
7194-86-7	Nonatriacontane	24000	12100 ug/Kg	50	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110211	086-B106-S-1010-02	Solid	10/10/2002 14:45	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 07:56	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	**Petroleum Hydrocarbons**	**483000**	**8900**	**5560**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	3540 ug/Kg	89	50 - 150
7194-86-7	Nonatriacontane	24000	13900 ug/Kg	58	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110212	086-B110-S-1010-02	Solid	10/10/2002 13:40	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 09:07	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	9140 U	9140	5710	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2220 ug/Kg	56	50 - 150
7194-86-7	Nonatriacontane	24000	12300 ug/Kg	51	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110213	086-B137-S-1010-02	Solid	10/10/2002 13:10	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 10:02	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	**Petroleum Hydrocarbons**	**127000**	**8650**	**5410**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2890 ug/Kg	72	50 - 150
7194-86-7	Nonatriacontane	24000	14000 ug/Kg	58	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

amo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110214	086-B146-S-1010-02	Solid	10/10/2002 11:55	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	5	10/23/2002 00:05	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	4180000	41800	26100	ug/Kg

CAS #	SURROGATE NAME		CONC ADDED	CONC REC	% RECOVERY		REC-LIMITS
84-15-1	o-Terphenyl	MI	4000	614 ug/Kg	15	*	50 - 150
7194-86-7	Nonatriacontane		24000	21000 ug/Kg	88		40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110215	086-B158-S-1010-02	Solid	10/10/2002 10:55	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 11:51	DLB	188207

CAS #	PARAMETER	RESULT	code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	5900J	<	8800	5500	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2670 ug/Kg	67	50 - 150
7194-86-7	Nonatriacontane	24000	15300 ug/Kg	64	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

omo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110216	086-B167-S-1010-02	Solid	10/10/2002 10:30	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	20	10/23/2002 01:00	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	13800000	178000	111000	ug/Kg

CAS #	SURROGATE NAME		CONC ADDED	CONC REC	% RECOVERY		REC-LIMITS
84-15-1	o-Terphenyl	DO	4000	3120 ug/Kg	78		50 - 150
7194-86-7	Nonatriacontane	DO	24000	0 ug/Kg	0	*	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110217	086-B189-S-1010-02	Solid	10/10/2002 11:20	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 13:40	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	10200 U	10200	6350	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2210 ug/Kg	55	50 - 150
7194-86-7	Nonatriacontane	24000	16400 ug/Kg	68	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

omo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110218	086-DUP1-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	2	10/23/2002 03:44	DLB	188207

CAS #	PARAMETER	RESULT	Q	Code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	1020000	J	Z	17100	10700	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2640 ug/Kg	66	50 - 150
7194-86-7	Nonatriacontane	24000	15300 ug/Kg	64	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110219	086-DUP2-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 09:00	187652	Florida PRO	1	10/22/2002 16:49	DLB	188207

CAS #	PARAMETER	RESULT	Q	Code	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	389000	J	Z	9070	5670	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	4000	2470 ug/Kg	62	50 - 150
7194-86-7	Nonatriacontane	24000	15100 ug/Kg	63	40 - 150

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110220	086-EQB-W-1010-02	Water	10/10/2002 17:20	10/11/2002 09:15	

Florida PRO

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/15/2002 08:00	187736	Florida PRO	1	10/22/2002 20:27	DLB	188207

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
FLPRO-01	Petroleum Hydrocarbons	100 U	100	40.7	ug/L

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
84-15-1	o-Terphenyl	100	58 ug/L	58	50 - 150
7194-86-7	Nonatriacontane	600	280 ug/L	47	40 - 150

RESULTS REPORTED ON A WET WEIGHT BASIS

OMO 6/6/03

Polynuclear Hydrocarbon Analyses

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110201	086-B7-S-1010-02	Solid	10/10/2002 16:20	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 04:35	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.7 U	17.7	9.72	ug/Kg
91-57-6	2-Methylnaphthalene	17.7 U	17.7	13.1	ug/Kg
83-32-9	Acenaphthene	17.7 U	17.7	5.69	ug/Kg
208-96-8	Acenaphthylene	35.3 U	35.3	2.44	ug/Kg
120-12-7	Anthracene	3.53 U	3.53	0.531	ug/Kg
56-55-3	Benzo(a)anthracene	3.53 U	3.53	1.19	ug/Kg
50-32-8	Benzo(a)pyrene	3.53 U	3.53	1.41	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.53 U	3.53	0.393	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.53 U	3.53	1.64	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.53 U	3.53	0.448	ug/Kg
218-01-9	Chrysene	3.53 U	3.53	1.28	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.53 U	3.53	0.994	ug/Kg
206-44-0	Fluoranthene	3.53 U	3.53	0.903	ug/Kg
86-73-7	Fluorene	17.7 U	17.7	2.18	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.53 U	3.53	1.07	ug/Kg
91-20-3	Naphthalene	8.84 U	8.84	3.21	ug/Kg
85-01-8	Phenanthrene	3.53 U	3.53	0.852	ug/Kg
129-00-0	Pyrene	3.53 U	3.53	0.389	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	38.5 ug/Kg	58	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

OMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110202	086-B31-S-1010-02	Solid	10/10/2002 17:05	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 05:14	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.3 U	17.3	9.49	ug/Kg
91-57-6	2-Methylnaphthalene	17.3 U	17.3	12.8	ug/Kg
83-32-9	Acenaphthene	17.3 U	17.3	5.56	ug/Kg
208-96-8	Acenaphthylene	34.5 U	34.5	2.39	ug/Kg
120-12-7	Anthracene	3.45 U	3.45	0.519	ug/Kg
56-55-3	Benzo(a)anthracene	3.45 U	3.45	1.17	ug/Kg
50-32-8	Benzo(a)pyrene	3.45 U	3.45	1.38	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.45 U	3.45	0.383	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.45 U	3.45	1.60	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.45 U	3.45	0.437	ug/Kg
218-01-9	Chrysene	3.45 U	3.45	1.25	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.45 U	3.45	0.970	ug/Kg
206-44-0	**Fluoranthene**	**11.6**	**3.45**	**0.882**	**ug/Kg**
86-73-7	Fluorene	17.3 U	17.3	2.13	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.45 U	3.45	1.04	ug/Kg
91-20-3	Naphthalene	8.63 U	8.63	3.14	ug/Kg
85-01-8	Phenanthrene	3.45 U	3.45	0.832	ug/Kg
129-00-0	Pyrene	3.45 U	3.45	0.380	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	52 ug/Kg	78	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110203	086-B41-S-1010-02	Solid	10/10/2002 16:00	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 05:54	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.2 U	17.2	9.45	ug/Kg
91-57-6	2-Methylnaphthalene	17.2 U	17.2	12.7	ug/Kg
83-32-9	Acenaphthene	17.2 U	17.2	5.54	ug/Kg
208-96-8	Acenaphthylene	34.4 U	34.4	2.38	ug/Kg
120-12-7	Anthracene	3.44 U	3.44	0.517	ug/Kg
56-55-3	Benzo(a)anthracene	3.44 U	3.44	1.16	ug/Kg
50-32-8	Benzo(a)pyrene	3.44 U	3.44	1.37	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.44 U	3.44	0.382	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.44 U	3.44	1.59	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.44 U	3.44	0.435	ug/Kg
218-01-9	Chrysene	3.44 U	3.44	1.25	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.44 U	3.44	0.966	ug/Kg
206-44-0	Fluoranthene	3.44 U	3.44	0.879	ug/Kg
86-73-7	Fluorene	17.2 U	17.2	2.12	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.44 U	3.44	1.04	ug/Kg
91-20-3	Naphthalene	8.59 U	8.59	3.13	ug/Kg
85-01-8	Phenanthrene	3.44 U	3.44	0.829	ug/Kg
129-00-0	Pyrene	3.44 U	3.44	0.379	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	54.8 ug/Kg	82	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

cmw 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110204	086-B70-S-1010-02	Solid	10/10/2002 16:40	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 06:33	JDT	188423

CAS #	PARAMETER	RESULT	Q Code	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	16.1 U		16.1	8.85	ug/Kg
91-57-6	2-Methylnaphthalene	16.1 U		16.1	11.9	ug/Kg
83-32-9	Acenaphthene	16.1 U		16.1	5.18	ug/Kg
208-96-8	Acenaphthylene	32.2 U		32.2	2.22	ug/Kg
120-12-7	**Anthracene**	**6.14**	J Z	**3.22**	**0.484**	**ug/Kg**
56-55-3	**Benzo(a)anthracene**	**55.4**		**3.22**	**1.09**	**ug/Kg**
50-32-8	**Benzo(a)pyrene**	**84.7**		**3.22**	**1.29**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**79.5**		**3.22**	**0.358**	**ug/Kg**
191-24-2	**Benzo(g,h,i)perylene**	**74.6**		**3.22**	**1.49**	**ug/Kg**
207-08-9	**Benzo(k)fluoranthene**	**74.7**		**3.22**	**0.408**	**ug/Kg**
218-01-9	**Chrysene**	**95.2**		**3.22**	**1.17**	**ug/Kg**
53-70-3	**Dibenz(a,h)anthracene**	**61.6**		**3.22**	**0.905**	**ug/Kg**
206-44-0	**Fluoranthene**	**168**		**3.22**	**0.823**	**ug/Kg**
86-73-7	Fluorene	16.1 U		16.1	1.98	ug/Kg
193-39-5	**Indeno(1,2,3-cd)pyrene**	**58.8**	J Q	**3.22**	**0.971**	**ug/Kg**
91-20-3	**Naphthalene**	**151**		**8.05**	**2.93**	**ug/Kg**
85-01-8	**Phenanthrene**	**22.2**		**3.22**	**0.776**	**ug/Kg**
129-00-0	**Pyrene**	**62.1**		**3.22**	**0.355**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	62.9 ug/Kg	94	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110207	086-B96-S-1010-02	Solid	10/10/2002 14:25	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	5	10/18/2002 18:09	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	80.7 U	80.7	44.4	ug/Kg
91-57-6	2-Methylnaphthalene	80.7 U	80.7	59.7	ug/Kg
83-32-9	Acenaphthene	80.7 U	80.7	26.0	ug/Kg
208-96-8	Acenaphthylene	161 U	161	11.2	ug/Kg
120-12-7	Anthracene	16.1 U	16.1	2.43	ug/Kg
56-55-3	Benzo(a)anthracene	16.1 U	16.1	5.45	ug/Kg
50-32-8	Benzo(a)pyrene	16.1 U	16.1	6.45	ug/Kg
205-99-2	Benzo(b)fluoranthene	16.1 U	16.1	1.79	ug/Kg
191-24-2	Benzo(g,h,i)perylene	16.1 U	16.1	7.48	ug/Kg
207-08-9	Benzo(k)fluoranthene	16.1 U	16.1	2.04	ug/Kg
218-01-9	Chrysene	16.1 U	16.1	5.85	ug/Kg
53-70-3	Dibenz(a,h)anthracene	16.1 U	16.1	4.54	ug/Kg
206-44-0	**Fluoranthene**	**27.4** J Z	**16.1**	**4.13**	**ug/Kg**
86-73-7	Fluorene	80.7 U	80.7	9.95	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	16.1 U	16.1	4.87	ug/Kg
91-20-3	Naphthalene	40.4 U	40.4	14.7	ug/Kg
85-01-8	Phenanthrene	16.1 U	16.1	3.89	ug/Kg
129-00-0	**Pyrene**	**142** J Z	**16.1**	**1.78**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	48.2 ug/Kg	72	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110208	086-B99-S-1010-02	Solid	10/10/2002 15:25	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 09:09	JDT	188423

CAS #	PARAMETER	RESULT	Q Code	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.1 U		17.1	9.40	ug/Kg
91-57-6	2-Methylnaphthalene	17.1 U		17.1	12.6	ug/Kg
83-32-9	Acenaphthene	17.1 U		17.1	5.50	ug/Kg
208-96-8	Acenaphthylene	34.2 U		34.2	2.36	ug/Kg
120-12-7	**Anthracene**	**9.00**	J Z	**3.42**	**0.514**	**ug/Kg**
56-55-3	**Benzo(a)anthracene**	**165**		**3.42**	**1.15**	**ug/Kg**
50-32-8	**Benzo(a)pyrene**	**71.3**		**3.42**	**1.36**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**80.5**		**3.42**	**0.380**	**ug/Kg**
191-24-2	**Benzo(g,h,i)perylene**	**41.8**		**3.42**	**1.58**	**ug/Kg**
207-08-9	**Benzo(k)fluoranthene**	**35.7**		**3.42**	**0.433**	**ug/Kg**
218-01-9	**Chrysene**	**117**		**3.42**	**1.24**	**ug/Kg**
53-70-3	Dibenz(a,h)anthracene	3.42 U		3.42	0.961	ug/Kg
206-44-0	**Fluoranthene**	**223**	J Z	**3.42**	**0.873**	**ug/Kg**
86-73-7	Fluorene	17.1 U		17.1	2.11	ug/Kg
193-39-5	**Indeno(1,2,3-cd)pyrene**	**35.1**	J Z	**3.42**	**1.03**	**ug/Kg**
91-20-3	**Naphthalene**	**23.5**		**8.54**	**3.11**	**ug/Kg**
85-01-8	**Phenanthrene**	**39.6**		**3.42**	**0.824**	**ug/Kg**
129-00-0	**Pyrene**	**147**		**3.42**	**0.377**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	52.5 ug/Kg	79	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

GMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110209	086-B101-S-1010-02	Solid	10/10/2002 15:05	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	100	10/18/2002 20:06	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	1610 U	1610	885	ug/Kg
91-57-6	2-Methylnaphthalene	1610 U	1610	1190	ug/Kg
83-32-9	Acenaphthene	1610 U	1610	518	ug/Kg
208-96-8	Acenaphthylene	3220 U	3220	222	ug/Kg
120-12-7	Anthracene	322 U	322	48.4	ug/Kg
56-55-3	Benzo(a)anthracene	322 U	322	109	ug/Kg
50-32-8	Benzo(a)pyrene	322 U	322	129	ug/Kg
205-99-2	Benzo(b)fluoranthene	322 U	322	35.8	ug/Kg
191-24-2	Benzo(g,h,i)perylene	322 U	322	149	ug/Kg
207-08-9	Benzo(k)fluoranthene	322 U	322	40.8	ug/Kg
218-01-9	Chrysene	322 U	322	117	ug/Kg
53-70-3	Dibenz(a,h)anthracene	322 U	322	90.5	ug/Kg
206-44-0	**Fluoranthene**	**2490**	**322**	**82.3**	**ug/Kg**
86-73-7	Fluorene	1610 U	1610	198	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	322 U	322	97.2	ug/Kg
91-20-3	Naphthalene	805 U	805	293	ug/Kg
85-01-8	**Phenanthrene**	**1030**	**322**	**77.6**	**ug/Kg**
129-00-0	**Pyrene**	**6770**	**322**	**35.5**	**ug/Kg**

CAS #	SURROGATE NAME		CONC ADDED	CONC REC	% RECOVERY		REC-LIMITS
92-94-4	p-Terphenyl	DO	66.7	0 ug/Kg	0	*	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110210	086-B104-S-1010-02	Solid	10/10/2002 14:10	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 10:27	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.3 U	17.3	9.50	ug/Kg
91-57-6	2-Methylnaphthalene	17.3 U	17.3	12.8	ug/Kg
83-32-9	Acenaphthene	17.3 U	17.3	5.56	ug/Kg
208-96-8	Acenaphthylene	34.6 U	34.6	2.39	ug/Kg
120-12-7	Anthracene	3.46 U	3.46	0.520	ug/Kg
56-55-3	Benzo(a)anthracene	3.46 U	3.46	1.17	ug/Kg
50-32-8	Benzo(a)pyrene	3.46 U	3.46	1.38	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.46 U	3.46	0.384	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.46 U	3.46	1.60	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.46 U	3.46	0.438	ug/Kg
218-01-9	Chrysene	3.46 U	3.46	1.25	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.46 U	3.46	0.971	ug/Kg
206-44-0	Fluoranthene	3.46 U	3.46	0.883	ug/Kg
86-73-7	Fluorene	17.3 U	17.3	2.13	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.46 U	3.46	1.04	ug/Kg
91-20-3	Naphthalene	8.64 U	8.64	3.14	ug/Kg
85-01-8	Phenanthrene	3.46 U	3.46	0.833	ug/Kg
129-00-0	Pyrene	3.46 U	3.46	0.381	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	65.6 ug/Kg	98	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110211	086-B106-S-1010-02	Solid	10/10/2002 14:45	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 12:18	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	16.7 U	16.7	9.18	ug/Kg
91-57-6	2-Methylnaphthalene	16.7 U	16.7	12.3	ug/Kg
83-32-9	Acenaphthene	16.7 U	16.7	5.37	ug/Kg
208-96-8	Acenaphthylene	33.4 U	33.4	2.31	ug/Kg
120-12-7	Anthracene	3.34 U	3.34	0.502	ug/Kg
56-55-3	Benzo(a)anthracene	3.34 U	3.34	1.13	ug/Kg
50-32-8	**Benzo(a)pyrene**	**19.7**	**3.34**	**1.33**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**30.9**	**3.34**	**0.371**	**ug/Kg**
191-24-2	**Benzo(g,h,i)perylene**	**39.5**	**3.34**	**1.55**	**ug/Kg**
207-08-9	Benzo(k)fluoranthene	3.34 U	3.34	0.423	ug/Kg
218-01-9	**Chrysene**	**30.3**	**3.34**	**1.21**	**ug/Kg**
53-70-3	Dibenz(a,h)anthracene	3.34 U	3.34	0.938	ug/Kg
206-44-0	**Fluoranthene**	**78.1**	**3.34**	**0.853**	**ug/Kg**
86-73-7	Fluorene	16.7 U	16.7	2.06	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.34 U	3.34	1.01	ug/Kg
91-20-3	**Naphthalene**	**125**	**8.34**	**3.03**	**ug/Kg**
85-01-8	Phenanthrene	3.34 U	3.34	0.805	ug/Kg
129-00-0	**Pyrene**	**40.9**	**3.34**	**0.368**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	65.1 ug/Kg	98	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110212	086-B110-S-1010-02	Solid	10/10/2002 13:40	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 12:57	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	17.1 U	17.1	9.43	ug/Kg
91-57-6	2-Methylnaphthalene	17.1 U	17.1	12.7	ug/Kg
83-32-9	Acenaphthene	17.1 U	17.1	5.52	ug/Kg
208-96-8	Acenaphthylene	34.3 U	34.3	2.37	ug/Kg
120-12-7	Anthracene	3.43 U	3.43	0.515	ug/Kg
56-55-3	Benzo(a)anthracene	3.43 U	3.43	1.16	ug/Kg
50-32-8	Benzo(a)pyrene	3.43 U	3.43	1.37	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.43 U	3.43	0.381	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.43 U	3.43	1.59	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.43 U	3.43	0.434	ug/Kg
218-01-9	Chrysene	3.43 U	3.43	1.24	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.43 U	3.43	0.964	ug/Kg
206-44-0	Fluoranthene	3.43 U	3.43	0.876	ug/Kg
86-73-7	Fluorene	17.1 U	17.1	2.11	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.43 U	3.43	1.03	ug/Kg
91-20-3	Naphthalene	8.57 U	8.57	3.12	ug/Kg
85-01-8	Phenanthrene	3.43 U	3.43	0.827	ug/Kg
129-00-0	Pyrene	3.43 U	3.43	0.378	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	50.3 ug/Kg	75	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110213	086-B137-S-1010-02	Solid	10/10/2002 13:10	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 13:36	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	16.2 U	16.2	8.92	ug/Kg
91-57-6	2-Methylnaphthalene	16.2 U	16.2	12.0	ug/Kg
83-32-9	Acenaphthene	16.2 U	16.2	5.23	ug/Kg
208-96-8	Acenaphthylene	32.5 U	32.5	2.24	ug/Kg
120-12-7	Anthracene	3.25 U	3.25	0.488	ug/Kg
56-55-3	Benzo(a)anthracene	3.25 U	3.25	1.10	ug/Kg
50-32-8	Benzo(a)pyrene	3.25 U	3.25	1.30	ug/Kg
205-99-2	Benzo(b)fluoranthene	3.25 U	3.25	0.361	ug/Kg
191-24-2	Benzo(g,h,i)perylene	3.25 U	3.25	1.50	ug/Kg
207-08-9	Benzo(k)fluoranthene	3.25 U	3.25	0.411	ug/Kg
218-01-9	Chrysene	3.25 U	3.25	1.18	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.25 U	3.25	0.912	ug/Kg
206-44-0	Fluoranthene	3.25 U	3.25	0.829	ug/Kg
86-73-7	Fluorene	16.2 U	16.2	2.00	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.25 U	3.25	0.979	ug/Kg
91-20-3	Naphthalene	8.11 U	8.11	2.95	ug/Kg
85-01-8	Phenanthrene	3.25 U	3.25	0.783	ug/Kg
129-00-0	Pyrene	3.25 U	3.25	0.358	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	52.7 ug/Kg	79	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110214	086-B146-S-1010-02	Solid	10/10/2002 11:55	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	50	10/19/2002 00:36	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	783 U	783	431	ug/Kg
91-57-6	2-Methylnaphthalene	783 U	783	579	ug/Kg
83-32-9	Acenaphthene	783 U	783	252	ug/Kg
208-96-8	Acenaphthylene	1570 U	1570	108	ug/Kg
120-12-7	Anthracene	157 U	157	23.6	ug/Kg
56-55-3	Benzo(a)anthracene	157 U	157	52.9	ug/Kg
50-32-8	Benzo(a)pyrene	157 U	157	62.5	ug/Kg
205-99-2	Benzo(b)fluoranthene	157 U	157	17.4	ug/Kg
191-24-2	Benzo(g,h,i)perylene	157 U	157	72.5	ug/Kg
207-08-9	Benzo(k)fluoranthene	157 U	157	19.8	ug/Kg
218-01-9	Chrysene	157 U	157	56.7	ug/Kg
53-70-3	Dibenz(a,h)anthracene	157 U	157	44.0	ug/Kg
206-44-0	**Fluoranthene**	**1040**	**157**	**40.0**	**ug/Kg**
86-73-7	Fluorene	783 U	783	96.5	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	157 U	157	47.3	ug/Kg
91-20-3	Naphthalene	392 U	392	142	ug/Kg
85-01-8	Phenanthrene	157 U	157	37.8	ug/Kg
129-00-0	**Pyrene**	**3180**	**157**	**17.3**	**ug/Kg**

CAS #	SURROGATE NAME		CONC ADDED	CONC REC	% RECOVERY		REC-LIMITS
92-94-4	p-Terphenyl	DO	66.7	0 ug/Kg	0	*	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110215	086-B158-S-1010-02	Solid	10/10/2002 10:55	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/200214:54	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	16.5 U	16.5	9.08	ug/Kg
91-57-6	2-Methylnaphthalene	16.5 U	16.5	12.2	ug/Kg
83-32-9	Acenaphthene	16.5 U	16.5	5.31	ug/Kg
208-96-8	Acenaphthylene	33.0 U	33.0	2.28	ug/Kg
120-12-7	Anthracene	3.30 U	3.30	0.496	ug/Kg
56-55-3	Benzo(a)anthracene	3.30 U	3.30	1.11	ug/Kg
50-32-8	**Benzo(a)pyrene**	**6.78**	**3.30**	**1.32**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**7.66**	**3.30**	**0.367**	**ug/Kg**
191-24-2	**Benzo(g,h,i)perylene**	**20.2**	**3.30**	**1.53**	**ug/Kg**
207-08-9	**Benzo(k)fluoranthene**	**3.96**	**3.30**	**0.418**	**ug/Kg**
218-01-9	Chrysene	3.30 U	3.30	1.20	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.30 U	3.30	0.928	ug/Kg
206-44-0	**Fluoranthene**	**12.9**	**3.30**	**0.844**	**ug/Kg**
86-73-7	Fluorene	16.5 U	16.5	2.03	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.30 U	3.30	0.996	ug/Kg
91-20-3	Naphthalene	8.25 U	8.25	3.00	ug/Kg
85-01-8	Phenanthrene	3.30 U	3.30	0.796	ug/Kg
129-00-0	Pyrene	3.30 U	3.30	0.364	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	80.1 ug/Kg	120	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMO 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110216	086-B167-S-1010-02	Solid	10/10/2002 10:30	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	100	10/18/2002 23:18	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	**1-Methylnaphthalene**	**21000**	**1670**	**918**	**ug/Kg**
91-57-6	**2-Methylnaphthalene**	**34900**	**1670**	**1240**	**ug/Kg**
83-32-9	Acenaphthene	1670 U	1670	538	ug/Kg
208-96-8	Acenaphthylene	3340 U	3340	231	ug/Kg
120-12-7	Anthracene	334 U	334	50.2	ug/Kg
56-55-3	Benzo(a)anthracene	334 U	334	113	ug/Kg
50-32-8	Benzo(a)pyrene	334 U	334	133	ug/Kg
205-99-2	Benzo(b)fluoranthene	334 U	334	37.1	ug/Kg
191-24-2	Benzo(g,h,i)perylene	334 U	334	155	ug/Kg
207-08-9	Benzo(k)fluoranthene	334 U	334	42.3	ug/Kg
218-01-9	Chrysene	334 U	334	121	ug/Kg
53-70-3	Dibenz(a,h)anthracene	334 U	334	93.9	ug/Kg
206-44-0	Fluoranthene	334 U	334	85.3	ug/Kg
86-73-7	Fluorene	1670 U	1670	206	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	334 U	334	101	ug/Kg
91-20-3	**Naphthalene**	**9050**	**835**	**304**	**ug/Kg**
85-01-8	Phenanthrene	334 U	334	80.5	ug/Kg
129-00-0	Pyrene	334 U	334	36.8	ug/Kg

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	DO 66.7	0 ug/Kg	0 *	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMS 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110217	086-B189-S-1010-02	Solid	10/10/2002 11:20	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 16:12	JDT	188423

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	19.1 U	19.1	10.5	ug/Kg
91-57-6	2-Methylnaphthalene	19.1 U	19.1	14.1	ug/Kg
83-32-9	Acenaphthene	19.1 U	19.1	6.14	ug/Kg
208-96-8	Acenaphthylene	38.1 U	38.1	2.63	ug/Kg
120-12-7	Anthracene	3.81 U	3.81	0.573	ug/Kg
56-55-3	Benzo(a)anthracene	3.81 U	3.81	1.29	ug/Kg
50-32-8	**Benzo(a)pyrene**	**6.86**	**3.81**	**1.52**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**5.93**	**3.81**	**0.424**	**ug/Kg**
191-24-2	Benzo(g,h,i)perylene	3.81 U	3.81	1.77	ug/Kg
207-08-9	**Benzo(k)fluoranthene**	**6.06**	**3.81**	**0.483**	**ug/Kg**
218-01-9	Chrysene	3.81 U	3.81	1.38	ug/Kg
53-70-3	Dibenz(a,h)anthracene	3.81 U	3.81	1.07	ug/Kg
206-44-0	**Fluoranthene**	**14.0**	**3.81**	**0.974**	**ug/Kg**
86-73-7	Fluorene	19.1 U	19.1	2.35	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	3.81 U	3.81	1.15	ug/Kg
91-20-3	Naphthalene	9.53 U	9.53	3.47	ug/Kg
85-01-8	Phenanthrene	3.81 U	3.81	0.919	ug/Kg
129-00-0	**Pyrene**	**9.32**	**3.81**	**0.420**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	69.9 ug/Kg	105	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

Dmo 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110218	086-DUP1-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	1	10/18/2002 16:51	JDT	188423

CAS #	PARAMETER	RESULT	Q Code	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	16.0 U		16.0	8.82	ug/Kg
91-57-6	2-Methylnaphthalene	16.0 U		16.0	11.9	ug/Kg
83-32-9	Acenaphthene	16.0 U		16.0	5.16	ug/Kg
208-96-8	Acenaphthylene	32.1 U		32.1	2.22	ug/Kg
120-12-7	**Anthracene**	**14.7**	J Z	**3.21**	**0.482**	**ug/Kg**
56-55-3	**Benzo(a)anthracene**	**71.5**		**3.21**	**1.08**	**ug/Kg**
50-32-8	**Benzo(a)pyrene**	**118**		**3.21**	**1.28**	**ug/Kg**
205-99-2	**Benzo(b)fluoranthene**	**132**		**3.21**	**0.356**	**ug/Kg**
191-24-2	Benzo(g,h,i)perylene	3.21 U		3.21	1.48	ug/Kg
207-08-9	**Benzo(k)fluoranthene**	**70.2**	J Z	**3.21**	**0.406**	**ug/Kg**
218-01-9	**Chrysene**	**116**		**3.21**	**1.16**	**ug/Kg**
53-70-3	**Dibenz(a,h)anthracene**	**247**		**3.21**	**0.901**	**ug/Kg**
206-44-0	**Fluoranthene**	**267**		**3.21**	**0.819**	**ug/Kg**
86-73-7	Fluorene	16.0 U		16.0	1.98	ug/Kg
193-39-5	**Indeno(1,2,3-cd)pyrene**	**83.6**	J Z	**3.21**	**0.967**	**ug/Kg**
91-20-3	**Naphthalene**	**340**		**8.01**	**2.92**	**ug/Kg**
85-01-8	**Phenanthrene**	**56.8**		**3.21**	**0.773**	**ug/Kg**
129-00-0	**Pyrene**	**309**		**3.21**	**0.353**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	48.3 ug/Kg	72	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMW 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110219	086-DUP2-S-1010-02	Solid	10/10/2002 00:00	10/11/2002 09:15	

8310, PNAs by HPLC, Solid

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 13:00	187653	SW-846 8310	5	10/18/2002 23:57	JDT	188423

CAS #	PARAMETER	RESULT	Q	Code	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	85.0	U		85.0	46.8	ug/Kg
91-57-6	2-Methylnaphthalene	85.0	U		85.0	62.9	ug/Kg
83-32-9	Acenaphthene	85.0	U		85.0	27.4	ug/Kg
208-96-8	Acenaphthylene	170	U		170	11.8	ug/Kg
120-12-7	**Anthracene**	**28.9**	J	Z	**17.0**	**2.56**	**ug/Kg**
56-55-3	Benzo(a)anthracene	17.0	U		17.0	5.75	ug/Kg
50-32-8	Benzo(a)pyrene	17.0	U		17.0	6.79	ug/Kg
205-99-2	Benzo(b)fluoranthene	17.0	U		17.0	1.89	ug/Kg
191-24-2	Benzo(g,h,i)perylene	17.0	U		17.0	7.88	ug/Kg
207-08-9	Benzo(k)fluoranthene	17.0	U		17.0	2.15	ug/Kg
218-01-9	Chrysene	17.0	U		17.0	6.16	ug/Kg
53-70-3	Dibenz(a,h)anthracene	17.0	U		17.0	4.78	ug/Kg
206-44-0	**Fluoranthene**	**163**	J	Z	**17.0**	**4.35**	**ug/Kg**
86-73-7	Fluorene	85.0	U		85.0	10.5	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	17.0	U		17.0	5.13	ug/Kg
91-20-3	Naphthalene	42.5	U		42.5	15.5	ug/Kg
85-01-8	**Phenanthrene**	**126**	J	Z	**17.0**	**4.10**	**ug/Kg**
129-00-0	**Pyrene**	**271**	J	Z	**17.0**	**1.87**	**ug/Kg**

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	66.7	54.5 ug/Kg	82	40 - 140

RESULTS REPORTED ON A DRY WEIGHT BASIS

CMS 6/24/03

GCAL ID	CLIENT ID	MATRIX	COLLECTED	RECEIVED	REPORTED
20210110220	086-EQB-W-1010-02	Water	10/10/2002 17:20	10/11/2002 09:15	

8310, PNAs by HPLC, Water

PREP DATE	PREP BATCH	PREP METHOD	DILUTION	ANALYZED	BY	ANALYTICAL BATCH
10/14/2002 14:00	187663	SW-846 8310	1	10/18/2002 01:59	JDT	188009

CAS #	PARAMETER	RESULT	PQL	MDL	UNITS
90-12-0	1-Methylnaphthalene	0.500 U	0.500	0.250	ug/L
91-57-6	2-Methylnaphthalene	0.500 U	0.500	0.228	ug/L
83-32-9	Acenaphthene	0.500 U	0.500	0.148	ug/L
208-96-8	Acenaphthylene	1.00 U	1.00	0.129	ug/L
120-12-7	Anthracene	0.100 U	0.100	0.051	ug/L
56-55-3	Benzo(a)anthracene	0.100 U	0.100	0.077	ug/L
50-32-8	Benzo(a)pyrene	0.100 U	0.100	0.063	ug/L
205-99-2	Benzo(b)fluoranthene	0.100 U	0.100	0.035	ug/L
191-24-2	Benzo(g,h,i)perylene	0.100 U	0.100	0.021	ug/L
207-08-9	Benzo(k)fluoranthene	0.100 U	0.100	0.031	ug/L
218-01-9	Chrysene	0.100 U	0.100	0.074	ug/L
53-70-3	Dibenz(a,h)anthracene	0.100 U	0.100	0.047	ug/L
206-44-0	Fluoranthene	0.100 U	0.100	0.077	ug/L
86-73-7	Fluorene	0.500 U	0.500	0.155	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.100 U	0.100	0.074	ug/L
91-20-3	Naphthalene	0.250 U	0.250	0.115	ug/L
85-01-8	Phenanthrene	0.100 U	0.100	0.097	ug/L
129-00-0	Pyrene	0.100 U	0.100	0.034	ug/L

CAS #	SURROGATE NAME	CONC ADDED	CONC REC	% RECOVERY	REC-LIMITS
92-94-4	p-Terphenyl	2	2.22 ug/L	111	40 - 140

RESULTS REPORTED ON A WET WEIGHT BASIS

Amo 6/24/03

Chain of Custody Forms

CH2M Hill Constructors, Inc. 14380 / 20210110 / Due 10/18/02
115 Perimeter Center Place, Suite 700
Atlanta, GA 30346-1278
Tel No (770) 604-9182 ; Fax No (770) 604-9282

CHAIN-OF-CUSTODY RECORD

COC NUMBER
171591-001 page 2 of 2

PROJECT NAME:	PROJECT NUMBER:	LAB NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 1 (Name and Company)	RECIPIENT 1 (Address, Tel No. , and Fax No.):
NAS Cecil Field	171591	Gulf Coast Labs. Dano Merril	Bill Canelos / J.A Jones Env. Services	6219 Authority Avenue, Jacksonville, FL 32215 PH: 904-777-4812 Fax: 904-777-4262
PROJECT PHASE/SITE/TASK:	CTO OR DO NUMBER:	LAB PO NUMBER:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 2 (Name and Company)	RECIPIENT 2 (Address, Tel No. , and Fax No.):
South Fuel Farm - Annual Soil Sampling	CTO 086		Christelle Newsome / CH2M Hill Constuctors, Inc.	115 Perimeter Center Place, N.E. Suite 700 Atlanta, GA 30346 (770)604-9182 Ext.561 FAX:604-9282
PROJECT CONTACT:	PROJECT TEL NO AND FAX NO:	LAB TEL NO AND FAX NO:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 3 (Name and Company)	RECIPIENT 3 (Address, Tel No. , and Fax No.):
Bill Canelos	904-777-4182	Ph:(225) 769-4900		

ANALYSES REQUIRED (Include Method Numbers)

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on back)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on back)	TAT (calendar days)	Aromatics by 8021B	8310	FL-PRO								SAMPLE TYPE (see codes on back)	COMMENTS/ SCREENING READINGS 20210110	LAB ID
1	086-B137-S-1010-02	boring B-137 @ 4 ft	soil	10/10/02	13:10	III/C	14	4	½	½								Grab	OVA = 37 ppm	13
2	086-B146-S-1010-02	boring B-146 @ 4 ft	soil	10/10/02	11:55	III/C	14	4	½	½								Grab	OVA = 103 ppm	14
3	086-B158-S-1010-02	boring B-158 @ 2 ft	soil	10/10/02	10:55	III/C	14	4	½	½								Grab	OVA = 4 ppm	15
4	086-B167-S-1010-02	boring B-167 @ 4 ft	soil	10/10/02	10:30	III/C	14	4	½	½								Grab	OVA = 4,200 ppm	16
5	086-B189-S-1010-02	boring B-189 @ 2 ft	soil	10/10/02	11:20	III/C	14	4	½	½								Grab	OVA = 47 ppm	17
6	086-DUP1-S-1010-02	Duplicate #1	soil	10/10/02	--	III/C	14	4	½	½								Grab	--	18
7	086-DUP2-S-1010-02	Duplicate #2	soil	10/10/02	--	III/C	14	4	½	½								Grab	--	19
8	086-EQB-W-1010-02	Equipment Blank	Wtr	10/10/02	17:20	III/C	14	3	2	1								Grab	--	20
9	086-TB1-W-1010-02	Trip Blank #1	Wtr	10/10/02	--	III/C	14	3										prepared by lab	--	21
10	086-TB2-W-1010-02	Trip Blank #2	Wtr	10/10/02	--	III/C	14	3										prepared by lab	--	22
11																				

SAMPLER(S) AND COMPANY: (please print)	COURIER AND SHIPPING NUMBER:	SAMPLES TEMPERATURE AND CONDITION UPON RECEIPT:
Randy Dumaop / Sean Smith J.A. Jones Environmental Services	FedEx/ Tracking # 790107464831, 790107464886, 790107464934. (3 Coolers)	4°C Good

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
R. Dumaop	10/10/02	18:00	FedEx/ Tracking # 790107464831, 790107464886, 790107464934. (3 Coolers)	10/10/02	18:00
Printed Name and Signature:					
FedEx	10/11/02	0915	Dana Kincher	10/11/02	0915

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/ 1380 / 0001011102 1 Case 10/11/02

CH2M Hill Constructors, Inc.
115 Perimeter Center Place, Suite 700
Atlanta, GA 30346-1278
Tel No (770) 604-9182 ; Fax No (770) 604-9282

CHAIN-OF-CUSTODY RECORD

COC NUMBER
171591-001 page 1 of 2

PROJECT NAME:	PROJECT NUMBER:	LAB NAME AND CONTACT:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 1 (Name and Company)	RECIPIENT 1 (Address, Tel No. , and Fax No.):
NAS Cecil Field	171591	Gulf Coast Labs. Dano Merril	Bill Canelos / J.A Jones Env. Services	6219 Authority Avenue, Jacksonville, FL 32215 PH: 904-777-4812 Fax: 904-777-4262
PROJECT PHASE/SITE/TASK:	CTO OR DO NUMBER:	LAB PO NUMBER:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 2 (Name and Company)	RECIPIENT 2 (Address, Tel No. , and Fax No.):
South Fuel Farm - Annual Soil Sampling	CTO 086		Christelle Newsome / CH2M Hill Constuctors, Inc.	115 Perimeter Center Place, N.E. Suite 700 Atlanta, GA 30346 (770)604-9182 Ext.561 FAX:604-9282
PROJECT CONTACT:	PROJECT TEL NO AND FAX NO:	LAB TEL NO AND FAX NO:	FAX AND MAIL REPORTS/EDD TO:: RECIPIENT 3 (Name and Company)	RECIPIENT 3 (Address, Tel No. , and Fax No.):
Bill Canelos	904-777-4182	Ph:(225) 769-4900		

ANALYSES REQUIRED (Include Method Numbers)

ITEM	SAMPLE IDENTIFIER	SAMPLE DESCRIPTION/LOCATION	MATRIX (see codes on back)	DATE COLLECTED	TIME COLLECTED	DATA PKG LEVEL (see codes on back)	TAT (calendar days)	Aromatics by ~~8021B~~ 8260B	8310	FL-PRO								SAMPLE TYPE (see codes on back)	COMMENTS/ SCREENING READINGS 20210110102	LAB ID
1	086-B7-S-1010-02	boring B-7 @ 2 ft	soil	10/10/02	16:20	III/C	14	4	½	½								Grab	OVA = 6 ppm	-1
2	086-B31-S-1010-02	boring B-31 @ 3 ft	soil	10/10/02	17:05	III/C	14	4	½	½								Grab	OVA = 7 ppm	2
3	086-B41-S-1010-02	boring B-41 @ 4 ft	soil	10/10/02	16:00	III/C	14	4	½	½								Grab	OVA = 127 ppm	3
4	086-B70-S-1010-02	boring B-70 @ 4 ft	soil	10/10/02	16:40	III/C	14	12	1.5	1.5		MS	-	5	MSD	-	6	Grab	OVA = 6 ppm MS/MSD	-4
5	086-B96-S-1010-02	boring B-96 @ 4 ft	soil	10/10/02	14:25	III/C	14	4	½	½								Grab	OVA = 9,915 ppm	7
6	086-B99-S-1010-02	boring B-99 @ 4 ft	soil	10/10/02	15:25	III/C	14	4	½	½								Grab	OVA = 99 ppm	8
7	086-B101-S-1010-02	boring B-101 @ 4 ft	soil	10/10/02	15:05	III/C	14	4	½	½								Grab	OVA = 124 ppm	9
8	086-B104-S-1010-02	boring B-104 @ 4 ft	soil	10/10/02	14:10	III/C	14	4	½	½								Grab	OVA = 37 ppm	10
9	086-B106-S-1010-02	boring B-106 @ 4 ft	soil	10/10/02	14:45	III/C	14	4	½	½								Grab	OVA = 3 ppm	11
10	086-B110-S-1010-02	boring B-110 @ 4 ft	soil	10/10/02	13:40	III/C	14	4	½	½								Grab	OVA = 27 ppm	12

SAMPLER(S) AND COMPANY: (please print)	COURIER AND SHIPPING NUMBER:	SAMPLES TEMPERATURE AND CONDITION UPON RECEIPT:
Randy Dumaop / Sean Smith J.A. Jones Environmental Services	FedEx/ Tracking # 790107464831, 790107464886, 790107464934. (3 Coolers)	4°C good

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Printed Name and Signature:			Printed Name and Signature:		
R. Dumaop R. Dumaop	10/10/02	18:00	FedEx/ Tracking # 790107464831, 790107464886, 790107464934. (3 Coolers)	10/10/02	18:00
Printed Name and Signature:			Printed Name and Signature:		
FedEx	10/11/02	0915	Dawn Kincher Dawn Kincher	10/11/02	0915

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