UNDERGROUND STORAGE TANK
CLOSURE REPORT
TT-3114

TARAWA TERRACE
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

APRIL 15, 2009

CATLIN PROJECT NO. 209-022

PREPARED FOR:

OSAGE OF VIRGINIA, INC.
2618A COLLEY AVENUE
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PREPARED BY:

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UNDERGROUND STORAGE TANK CLOSURE REPORT
SITE TT-3114
TARAWA TERRACE
MCB CAMP LEJEUNE, NORTH CAROLINA

A. GENERAL INFORMATION

1. Facility Information

a. Facility Name:
Site TT-3114
Tarawa Terrace

b. Facility ID Number:
N/A

c. Facility address, telephone number, and county:
Commanding Officer
Director, Installations and Environment Department, Environmental Management Division (EMD)
PSC Box 20004
Marine Corps Base (MCB) Camp Lejeune, North Carolina, 28542-0004
(910) 451-5068
Onslow County

2. Contacts

a. Name, address, telephone number, and job title of primary contact person:
Mr. Bruce Markwick
Installations & Environment Department, EMD
MCB Camp Lejeune, North Carolina 28542
(910) 451-5068

b. Name, address, and telephone number of closure contractor:
Osage of Virginia, Inc. (Osage)
2618A Colley Avenue
Norfolk, Virginia 23517-1132
(757) 440-0400

c. Name, address, and telephone number of primary consultant:
CATLIN Engineers and Scientists (CATLIN)
220 Old Dairy Road
Wilmington, NC 28405
(910) 452-5861

d. Name, address, telephone number, and State certification number of laboratory:
SGS Environmental Services (SGS)
5500 Business Drive
Wilmington, North Carolina 28405
(910) 350-1903
NC Laboratory Certification # 481

3. UST Information

Tank Number	Installation Date	Capacity (Gallons)	Tank Dimensions	Last Contents of Tank
TT-3114	Unknown	550	4 ft x 6 ft	#2 Heating Oil

4. Site Characteristics

a. Describe any past releases at the site:
No previous releases have been reported in conjunction with this tank.

b. Indicate if the facility is active or inactive. If inactive, note the last date that the USTs were in operation:
The UST was an inactive home heating oil tank previously used to store #2 Heating Oil for on-site use.

c. Describe the use of surrounding properties:
The site is located within the Tarawa Terrace Housing Area aboard the MCB Camp Lejeune. The site area, where existing housing sites have been demolished, will be used to re-build military housing units. As a result, land use should be categorized as Residential.

d. Describe site geology and hydrogeology:
The site lies within the Tidewater Region of the Coastal Plain Physiographic Province of North Carolina, where large streams and many of their tributaries are affected by ocean tides. The predominant soil type at the site is silty sand to sand of Quarternary surficial deposits. The depth to the underlain Tertiary Castle Hayne limestone/sand is unknown, but is estimated to be more than 30 feet. The depth to water is estimated to be approximately 11 feet below land surface (BLS).

e. If a release has occurred, describe the results of the receptor survey performed within 1,500 feet of the facility:
As illustrated on Figure 1, the nearest surface water body is an unnamed tributary of the New River, which is approximately 400 feet northwest of the site. Groundwater flow direction in the surficial aquifer is estimated to flow toward the south. There are no water supply wells within a 1,500 ft radius of

the site, and all buildings in the area are supplied by the MCB water supply system, specifically water from the Holcomb Boulevard Water Treatment Plant.

The nearest place of public assembly is unknown at this time as the entire area is being redeveloped with new residential housing units. Community playgrounds may be planned in the area where the new housing units are to be constructed.

B. CLOSURE PROCEDURES

1. Describe preparations for closure including steps taken to notify authorities, permits obtained, and steps taken to clean and purge the tanks:
According to Osage, the UST was pre-located and surveyed prior to removal to prevent damage or UST releases by subcontractors of Actus Lend Lease (Actus). On February 23, 2009 an access hole was cut into the top of the tank in order to remove liquid contents from tank. A vacuum truck, provided by the EMD, Resource Conservation and Recovery Section (RCRS), was used to remove approximately 500 gallons of contaminated water from the tank.

As documented by Osage, on February 26, 2009 the tank was removed and transported to RCRS Building 977 for cleaning and disposal preparation. Osage personnel noted there were signs of deterioration and corrosion on the bottom of the UST. Photographs of the tank are included in Appendix F. The tank was transported to J&E Salvage for disposal on March 3, 2009. The Tank Disposal Manifest is included in Appendix C. Appendix A and B contain North Carolina Department of Environment and Natural Resources (NCDENR) Forms UST-2 and UST-61, respectively.

2. Note the amount of residual material pumped from the tank:
Osage reported that approximately 500 gallons of contaminated water was pumped from the tank.

3. Describe the storage, sampling and disposal of the residual material:
According to Osage, the 500 gallons of contaminated water pumped from the tank was containerized and properly disposed of by EMD, RCRS at Building 977.

4. Excavation

a. Describe excavation procedures noting the condition of the soil encountered and the dimensions of the excavation in relation to the tank, piping, and/or pumps:
Osage mobilized to the site to conduct a site survey and remove the UST on February 26 and 27, 2009. Once the UST was removed, visible staining was noted beneath the tank. Excavation activities began and a Photo Ionization Detector (PID) was used to identify contamination limits prior to obtaining soil samples. Photo Ionization Detector readings during the excavation ranged

from 0 to 300 parts per million (ppm).

The excavation limits were approximately 10 feet (length) x 15 feet (width) x 6 feet (depth). Four soil samples were collected at approximately three feet BLS along the sidewalls surrounding the tank (TT3114-S001 through TT3114-S004). One soil sample (TT3114-S005) was collected at 6 feet BLS, directly below the tank bottom. The soil samples were collected from the backhoe bucket. The excavated soil was loaded onto trucks and 32.55 tons of soil was disposed at the P&F Land Farming Facility, Permit# SR0500106, in Whitakers, NC. The excavation area was fenced off to ensure security.

On March 12 and 13, 2009 Osage personnel returned to the site to conduct over excavation of the eastern and western sidewalls and the bottom of the tank basin since laboratory analysis indicated noncompliant Total Petroleum Hydrocarbons (TPH) concentrations at these locations. The resultant over excavation increased the dimensions to 10 feet (length) x 20 feet (width) x 11 feet (depth). The excavated soil from the subsequent over excavation was loaded into trucks. Approximately 115.86 tons of soil was transported to the P&F Land Farming Facility, Permit# SR0500106, Whitakers NC for disposal. Confirmation soil samples were collected on March 12, 2009 and submitted for analysis via EPA Methods 8260, 8270, and MADEP VPH/EPH. Soil samples TT3114-S006 and TT3114-S007 were collected from the eastern and western sidewalls at three feet BLS, respectively. Soil samples TT3114-S008 through TT3114-S011 were collected at each of the sidewalls from a depth of 9 feet BLS. Again, the area was fenced off to ensure security pending results of the confirmation soil samples.

On March 19, 2009, Osage personnel returned to the site to conduct a second over excavation of the western sidewall since laboratory analysis indicated the presence of MADEP VPH/EPH compounds at concentrations above the Soil-to-Groundwater (STGW) and Residential Maximum Soil Contaminant Concentrations (MSCCs). The second over excavation increased the final excavation dimensions to 10 feet (length) x 23 feet (width) x 11 feet (depth). The soil from the second over excavation was loaded into trucks and 17.29 tons of soil was transported to the P&F Land Farming Facility, Permit# SR0500106, Whitakers NC for disposal. After over excavation, one confirmation soil sample was collected, TT3114-S012, from the western sidewall at 9 feet BLS on March 19, 2009. The sample was analyzed using MADEP VPH/EPH. Again, the area was fenced off to ensure security pending results of the confirmation soil sample.

b. Note the depth from the land surface to the top of the tank:
Approximately 2 feet.

c. Note the volume of soil excavated:
A total of 165.70 tons of soil was excavated from the tank basin – 32.55 tons

of contaminated soil was removed on February 26 and 27, 2009 and 133.15 tons between March 12 and 19, 2009.

d. Describe the soil type(s) encountered:
Based on field observation of the tank excavation:
0.0 – 2.5' BLS – Dry light brown silty sand with dark silty sand
2.5 – 7.0' BLS – Slightly moist light brown silty clay with sand
7.0 – 9.5' BLS – Moist light brown to tan clayey sand
9.5 – 11.0' BLS – Moist tan to white fine sand

e. Describe the type and source of backfill used:

The excavation was backfilled on March 24, 2009. The excavation was filled with common fill sand from Morton Trucking in Jacksonville, NC.

f. Note if water, free product, or bedrock was encountered during the excavation process:
Groundwater was encountered at approximately 11 feet BLS. Therefore, EMD concluded a temporary monitoring well would need to be installed in the former tank basin. No free product or bedrock was encountered during the excavation process.

5. Contaminated soil
During UST removal activities and over excavation, a total of 165.70 tons of contaminated soil were excavated. The 165.70 tons of soil removed during the excavations were transported to the P&F Land Facility, Permit# SR0500106, in Whitakers, NC for disposal. Soil Disposal Manifests are included in Appendix D.

C. SITE INVESTIGATION

1. Provide information of field screening and physical observations, including methods used to calibrate field screening instruments:
Soil discoloration and petroleum odor were observed within the UST excavation. Photo Ionization Detector field screening indicated organic vapor readings in the sidewalls, as well as at the bottom. Readings ranged from 0 to 300 ppm. The PID instrument was calibrated using the standard procedure as recommended by the manufacturer.

2. Document soil sampling information including the sample locations, sample type, procedure, and analyses used:
Soil sample locations are illustrated on Figure 2.

Confirmation soil samples (Sample IDs TT3114-S001 through S005) were collected from the tank basin on February 26, 2009 immediately following excavation of the basin. Soil samples TT3114-S001 through S004 were collected from the sidewalls at a depth of three feet BLS. Soil sample TT3114-S005 was obtained from the bottom of the tank basin at approximately 6 feet BLS. The samples were placed

into laboratory provided glassware, properly labeled, and transported directly to SGS under proper chain of custody. Samples were analyzed for TPH Gasoline and Diesel Range Organics (GRO/DRO) via EPA Methods 5030/3550.

On March 12 and 13, 2009, Osage personnel returned to the site to over excavate the eastern and western sidewalls and the bottom of the tank basin since laboratory analysis indicated the presence of TPH GRO and/or TPH DRO at concentrations above the 10 mg/kg North Carolina Department of Environment and Natural Resources (NCDENR) Action Level. Additional contaminated soil was excavated from the tank basin. After over excavation, six confirmation soil samples were collected (Soil Samples TT3114-S006 through TT3114-S011). Soil sample TT3114-S006 was collected from the eastern sidewall at three feet BLS. Soil sample TT3114-S007 was collected from the western sidewall at three feet BLS. Soil samples TT3114-S008 through TT3114-S011 were collected at each of the sidewalls from a depth of 9 feet BLS. Samples were again placed into laboratory provided glassware, properly labeled, and transported directly to SGS under proper chain of custody. Samples were analyzed using EPA Methods 8260, 8270, and MADEP VPH/EPH.

On March 19, 2009, Osage personnel returned to the site to conduct a second over excavation of the western sidewall since laboratory analysis indicated the presence of MADEP VPH/EPH compounds at concentrations above the STGW and Residential MSCCs. Additional contaminated soil was excavated from the tank basin. After over excavation, one confirmation soil sample was collected, TT3114-S012, from the western sidewall at 9 feet BLS. Samples were again placed into laboratory provided glassware, properly labeled, and transported directly to SGS under proper chain of custody. Samples were analyzed using MADEP VPH/EPH.

3. Document groundwater sampling information:
CATLIN installed temporary monitoring well TT3114-TW01 in the center of the former tank basin. The monitoring well was advanced to a depth of 14.6 feet BLS. The well was installed to monitor for the presence of free-phase product and to allow for the collection of a groundwater sample. As free-phase product was not encountered, a representative groundwater sample was collected on March 31, 2009 after proper purging of the well. The groundwater sample was analyzed per EPA Methods 602 and 625 and MADEP VPH/EPH. Groundwater analytical results are presented in Table 3 and illustrated on Figure 3. The temporary monitoring well was permanently abandoned on March 31, 2009. A well construction and abandonment record is included in Appendix G.

4. Document quality-control measures:
Laboratory provided glassware and containers and disposable gloves were used during sampling. Upon collection, soil samples were immediately packed into clean containers and refrigerated for shipment to the analytical laboratory. There was a laboratory trip blank included with each cooler of samples.

5. Describe investigation results:

Soil Investigation

Some soil discoloration and petroleum odors were observed during tank removal. Elevated PID readings indicated the presence of organic vapors in the sidewalls, as well as the excavation bottom.

Laboratory results of the soil samples collected during this tank removal action are summarized in Tables 1 and 2, illustrated on Figure 2 and the laboratory analytical reports are included in Appendix E.

Confirmation soil samples (Sample IDs TT3114-S001 through S005) were collected from the tank basin on February 26, 2009. Soil samples TT3114-S001, TT3114-S003 and TT3114-S005 exhibited noncompliant TPH DRO concentrations of 10.1 mg/kg, 36.8 mg/kg and 5,580 mg/kg, respectively. Soil sample TT3114-S005 also contained a noncompliant TPH GRO concentration of 170 mg/kg.

On March 12 and 13, 2009, Osage personnel returned to the site to conduct additional soil excavation. After over excavation, six confirmation soil samples were collected (Soil Samples TT3114-S006 through TT3114-S011). A second over excavation was conducted by Osage on March 19, 2009 and after this excavation, one additional confirmation sample was collected (TT3114-S012). All over excavation confirmation soil samples were sent to SGS for analysis via EPA Methods 8260, 8270, and MADEP VPH/EPH. Laboratory results are discussed as follows:

EPA Method 8260

All EPA Method 8260 compounds were reported as Below Method Detection Limits (BMDL).

EPA Method 8270

All EPA Method 8270 compounds were reported as BMDL.

MADEP VPH/EPH

Soil sample TT3114-S010 contained the C_9-C_{18} Aliphatics, C_{19}-C_{36} Aliphatics, and C_9-C_{22} Aromatics hydrocarbon fractions at concentrations of <2,760 mg/kg, 1,070 mg/kg, and 1,078 mg/kg, respectively. The TT3114-S011 soil sample revealed the C_9-C_{18} Aliphatics and C_{19}-C_{36} Aliphatics hydrocarbon fractions at concentrations of <138 mg/kg and 42.2 mg/kg, respectively. The above-stated concentrations proceeded by a "<" indicates the result is the sum of the reported practical quantitation limit of one fraction and the detected concentration of the other fraction. The concentration of the C_9-C_{22} Aromatics hydrocarbon fractions in the TT3114-S010 sample was above the STGW and Residential MSCCs.

All other MADEP VPH/EPH compounds were reported as BMDL.

Groundwater Investigation

Laboratory results of the groundwater samples collected during this tank removal action are summarized in Table 3, illustrated on Figure 3 and the laboratory analytical reports are included in Appendix E.

A representative groundwater sample was collected on March 31, 2009 after proper purging of temporary monitoring well TT3114-TW01. The groundwater sample was analyzed per EPA Methods 602 and 625 and MADEP VPH/EPH. Laboratory results are discussed as follows:

EPA Method 602

All EPA Method 602 compounds were reported as BMDL.

EPA Method 625

All EPA Method 625 compounds were reported as BMDL.

MADEP VPH/EPH

All MADEP VPH/EPH compounds were reported as BMDL.

D. CONCLUSIONS AND RECOMMENDATION

A total of 165.70 tons of contaminated soil was removed from the TT-3114 site. The confirmation soil samples collected from the sidewalls of the final excavation limits (TT3114-S008 through TT3114-S010 and TT3114-S012) revealed that no soil contaminants were detected at concentrations above the lowest MSCCs.

The groundwater sample collected from temporary monitoring well TT3114-TW01 revealed no compounds above the MDLs.

As previously stated, the site's Land Use Classification is Residential. Since final confirmation soil samples revealed no contaminants above the lowest MSCCs and no groundwater contaminants were detected above the 2L GWQSs the site should require No Further Action (NFA).

E. SIGNATURE AND SEAL

Signature and seal of certifying Professional Engineer or Licensed Geologist:

Michael E. Mason

F. LIMITATIONS

The soil and groundwater samples analyzed as part of this investigation only provide isolated data points and may not represent conditions at every location in the project area. Analyses and conclusions of this report, being based on interpolation between data points at the project area, may not be completely representative of all site conditions. Conclusions and recommendations of this investigation and report are based on the best available data in an effort to comply with current regulatory requirements.

G. REFERENCES

CATLIN Engineers and Scientists. *Workplan/Health and Safety Plan, Sites TT-2018, TT-2084, TT-3103, TT-3114, TT-3127 and TT-3145 – Groundwater Assessment.* Marine Corps Base, Camp Lejeune, NC. March 23, 2009.

North Carolina Department of Environment and Natural Resources, Division of Waste Management, Underground Storage Tank Section, *Underground Storage Tank Section Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement*, Effective March 1, 2007.

TABLES

TABLE 1
SUMMARY OF SOIL LABORATORY RESULTS FROM FEBRUARY 26, 2009

Incident Name and No.: TT-3114 - Pending

Sample ID	Contaminant of Concern →		Gasoline Range Organics	Diesel Range Organics
	Date Collected	Sample Depth (ft. BLS)		
NCDENR Action Level (mg/kg)			10	10
TT3114-S001	2/26/2009	3	<5.57	**10.1**
TT3114-S002	2/26/2009	3	<5.66	<7.23
TT3114-S003	2/26/2009	3	<5.10	**36.8**
TT3114-S004	2/26/2009	3	<5.13	<7.50
TT3114-S005	2/26/2009	6	**170**	**5,580**

All results in milligrams per kilogram (mg/kg).
ft. BLS = Feet Below Land Surface
NCDENR = North Carolina Department of Environment and Natural Resources
< = Less than method detection limit
Bold results indicate concentration above the NCDENR Action Level.

TABLE 2
SUMMARY OF SOIL LABORATORY RESULTS FROM MARCH 12 AND 19, 2009

Incident Name and No.: TT-3114 - Pending

Sample ID	Contaminant of Concern →		EPA METHOD 8260	EPA METHOD 8270	MADEP VPH/EPH			
	Date Collected	Sample Depth (ft. BLS)	All EPA Method 8260B/5035 Compounds	All EPA Method 8270 Compounds	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
Residential MSCC (mg/kg)			Varies	Varies	939	9,386	93,860	469
Industrial/Commercial MSCC (mg/kg)			Varies	Varies	24,528	245,280	#	12,264
STGW MSCC (mg/kg)			Varies	Varies	72	3,300	##	34
TT3114-S006	3/12/2009	3	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S007	3/12/2009	3	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S008	3/12/2009	9	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S009	3/12/2009	9	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S010	3/12/2009	9	BMDL	BMDL	<10.0	<2,760*	1,070	**1,078**
TT3114-S011	3/12/2009	9	BMDL	BMDL	<10.0	<138*	42.2	<20.0
TT3114-S012	3/19/2009	9	NA	NA	<10.0	<20.0	<10.0	<20.0

All results in milligrams per kilogram (mg/kg).
BMDL = Below Method Detection Limit
ft. BLS = Feet Below Land Surface
< = Less than method detection limit
NA = Not Analyzed
STGW = Soil-to-Groundwater
MSCC = Maximum Soil Contaminant Concentration
# = Health-Based Level (>100%)
= Considered Immobile
Bold results indicate concentration above the lowest MSCC.
* = The value represents the sum of the reported practical quantitation limit of one fraction and the detected concentration of the other fraction.

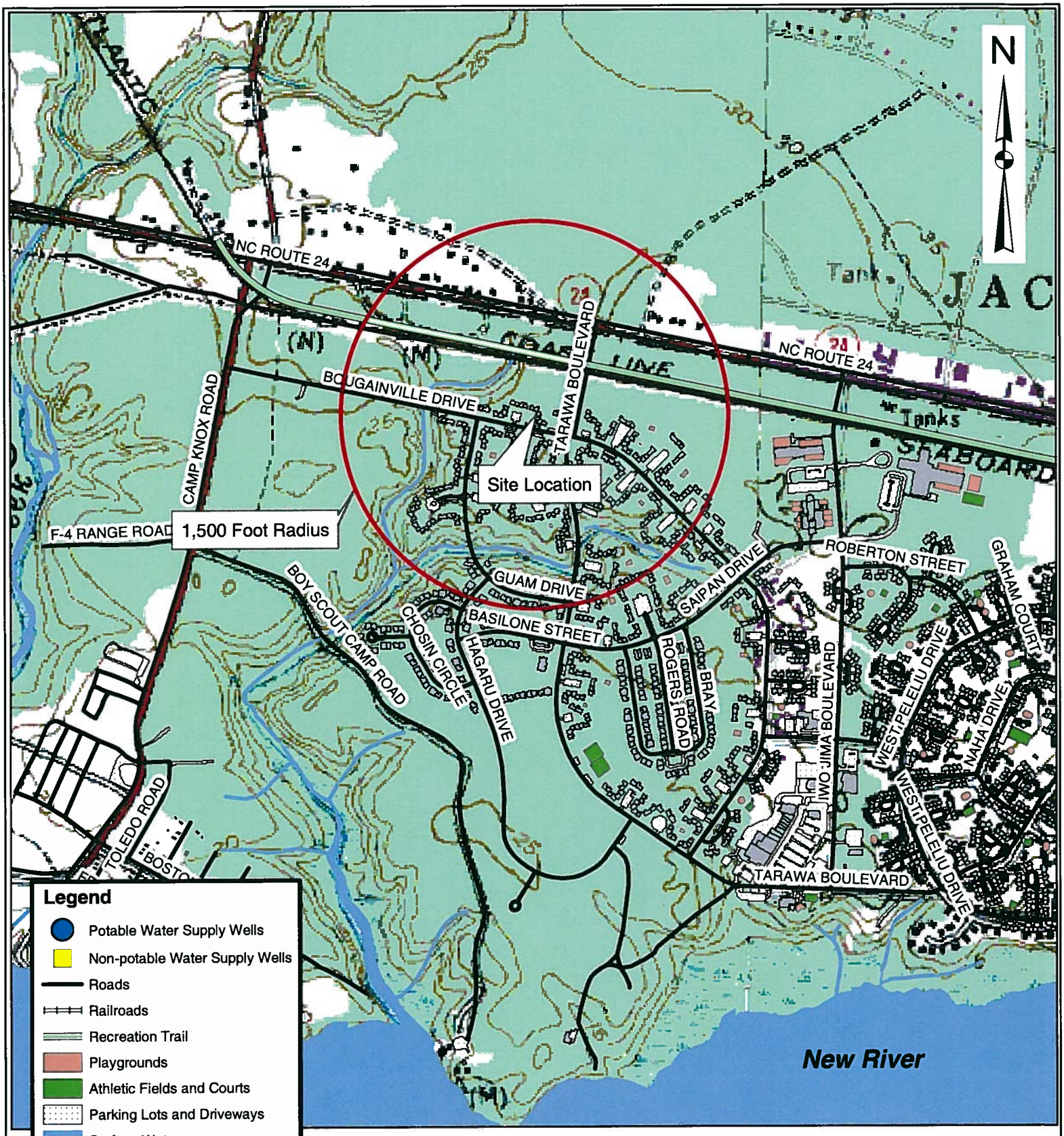
TABLE 3
SUMMARY OF GROUNDWATER LABORATORY RESULTS FROM MARCH 31, 2009

Incident Name and No.: TT-3114 - Pending

Well ID	Contaminant of Concern →		EPA METHOD 602	EPA METHOD 625	MADEP VPH/EPH			
	Sample ID	Date Collected	All EPA 602 Compounds	All EPA Method 625 Compounds	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
GCL (µg/L)			Varies	Varies	NE	NE	NE	NE
2L GWQS (µg/L)			Varies	Varies	420	4,200	42,000	210
TT3114-TW01	TT3114-TW01	3/31/2009	BMDL	BMDL	<100	<200	<100	<200

All results in micrograms per liter (µg/L).
BMDL = Below Method Detection Limit
< = Less than method detection limit
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards
NE = None Established

FIGURES



Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

CATLIN Engineers and Scientists

PROJECT	TITLE	FIGURE
TANK CLOSURE REPORT SITE TT-3114 MARINE CORPS BASE CAMP LEJEUNE, NC	USGS TOPOGRAPHIC SITE LOCATION MAP	1

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
209-022	APR 2009	AS SHOWN	SAC	MEM

TABLE 1
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TT3114-S004	2/26/2009	3	<5.13	<7.50
TT3114-S005	2/26/2009	6	**170**	**5,580**

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NCDENR = North Carolina Department of Environment and Natural Resources
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Bold results indicate concentration above the NCDENR Action Level.

TABLE 2
SUMMARY OF SOIL LABORATORY RESULTS FROM MARCH 12 AND 19, 2009

Incident Name and No.: TT-3114 - Pending

Sample ID	Date Collected	Sample Depth (ft. BLS)	EPA METHOD 8260	EPA METHOD 8270	MADEP VPH/EPH			
			All EPA Method 8260B/5035 Compounds	All EPA Method 8270 Compounds	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
Residential MSCC (mg/kg)			Varies	Varies	939	9,386	93,860	469
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TT3114-S008	3/12/2009	9	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S009	3/12/2009	9	BMDL	BMDL	<10.0	<20.0	<10.0	<20.0
TT3114-S010	3/12/2009	9	BMDL	BMDL	<10.0	<2,760*	1,070	**1,078**
TT3114-S011	3/12/2009	9	BMDL	BMDL	<10.0	<138*	42.2	<20.0
TT3114-S012	3/19/2009	9	NA	NA	<10.0	<20.0	<10.0	<20.0

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BMDL = Below Method Detection Limit
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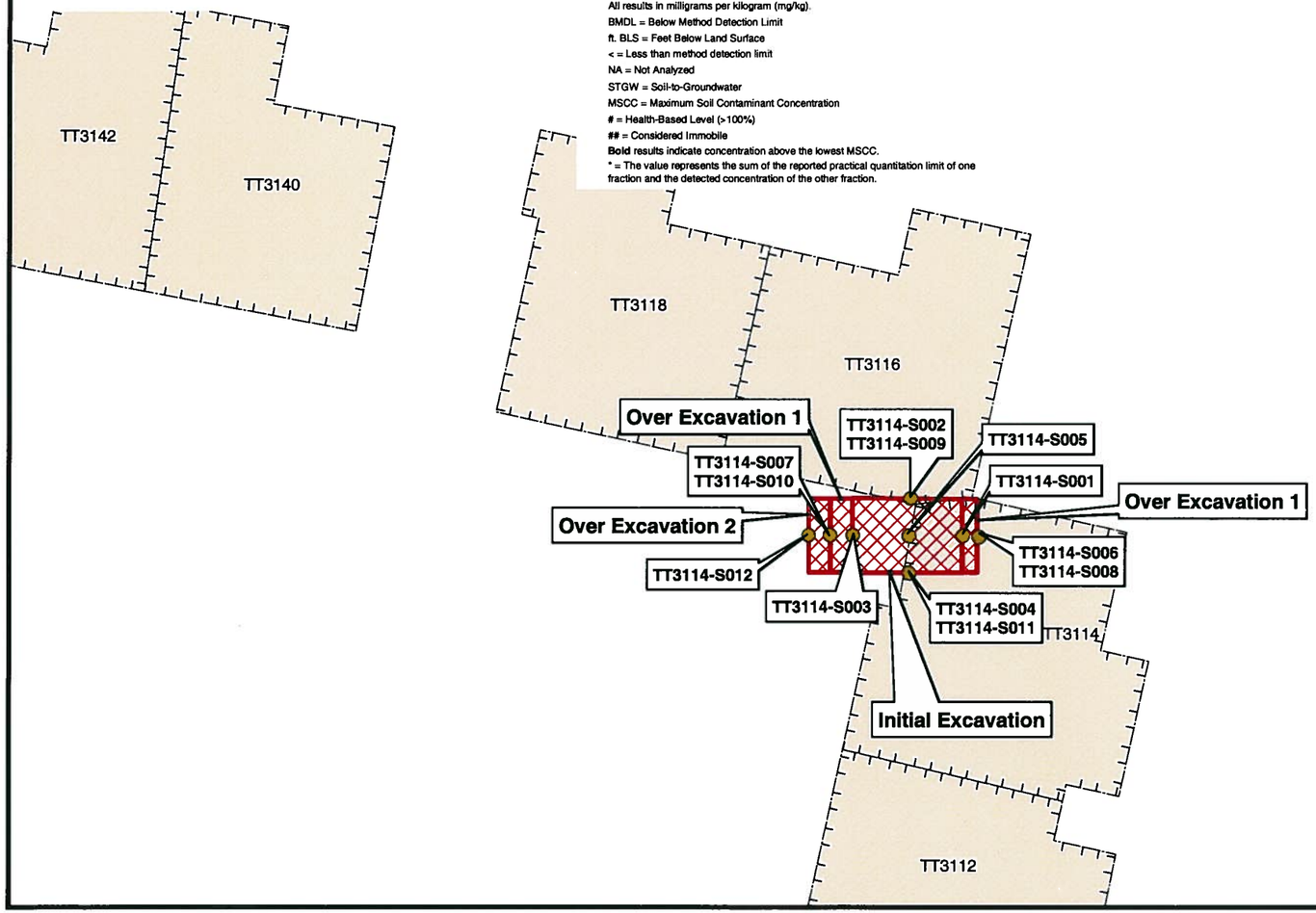
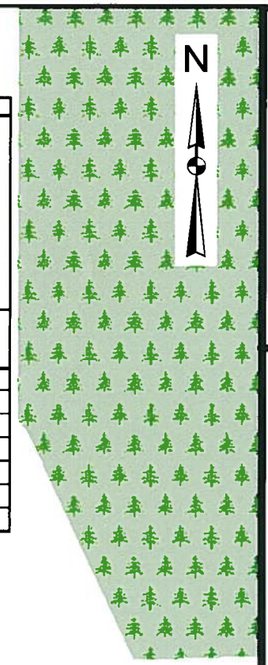
= Considered Immobile
Bold results indicate concentration above the lowest MSCC.
* = The value represents the sum of the reported practical quantitation limit of one fraction and the detected concentration of the other fraction.





TANK REMOVAL
SITE TT-3114
MARINE CORPS BASE
CAMP LEJEUNE, NC

NAVFAC
Naval Facilities Engineering Command
ATLANTIC DIVISION

LEGEND

- Tank Excavation Area
- Soil Sample Location
- Demolished Buildings and Structures
- Slabs
- Driveways
- Parking Lots
- Woods

NOTES

1. Data layers provided by MCB Camp Lejeune GIS office.
2. Soil sample location TT3114-S005 provided by Lanier Surveying.
3. Initial excavation limits were approximately 10' by 15' by 6' deep. Over Excavation #1 increased the dimensions to 10' by 20' by 11' deep. Over Excavation #2 increased the final excavation limits to 10' by 23' by 11' deep.

CATLIN
Engineers and Scientists

SITE MAP WITH SOIL LABORATORY RESULTS

FIGURE **2**

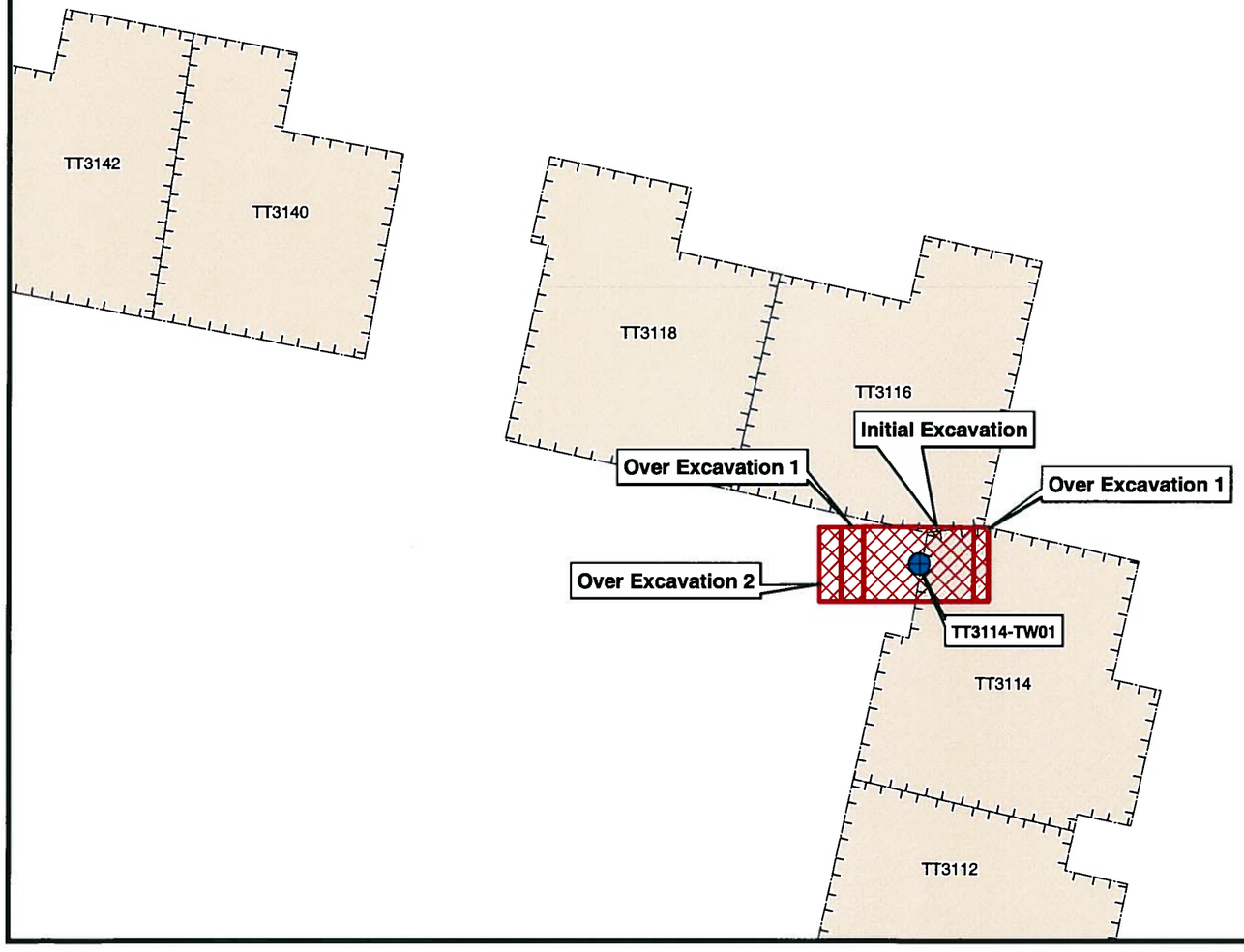
Job No.:	Date:	Scale:	Drawn By:	Checked By:
209-022	APR 2009	AS SHOWN	SAC	MEM

TABLE 3
SUMMARY OF GROUNDWATER LABORATORY RESULTS FROM MARCH 31, 2009

Incident Name and No.: TT-3114 - Pending

Well ID	Contaminant of Concern →		EPA METHOD 602	EPA METHOD 625	MADEP VPH/EPH			
	Sample ID	Date Collected	All EPA 602 Compounds	All EPA Method 625 Compounds	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
GCL (µg/L)			Varies	Varies	NE	NE	NE	NE
2L GWQS (µg/L)			Varies	Varies	420	4,200	42,000	210
TT3114-TW01	TT3114-TW01	3/31/2009	BMDL	BMDL	<100	<200	<100	<200

All results in micrograms per liter (µg/L).
BMDL = Below Method Detection Limit
< = Less than method detection limit
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards
NE = None Established



TANK REMOVAL
SITE TT-3114
MARINE CORPS BASE
CAMP LEJEUNE, NC

NAVFAC Naval Facilities Engineering Command
ATLANTIC DIVISION

LEGEND

- Tank Excavation Area
- Groundwater Sample Location
- Demolished Buildings and Structures
- Slabs
- Driveways
- Parking Lots
- Woods

NOTES

1. Data layers provided by MCB Camp Lejeune GIS office.
2. Groundwater sample collected from Temporary Monitoring Well TT3114-TW01.

CATLIN Engineers and Scientists

SITE MAP WITH GROUNDWATER LABORATORY RESULTS

FIGURE 3

Job No.:	Date:	Scale:	Drawn By:	Checked By:
209-022	APR 2009	AS SHOWN	SAC	MEM

APPENDICES

APPENDIX A

SITE INVESTIGATION REPORT FOR PERMANENT CLOSURE OR CHANGE-IN-SERVICE OF UST (UST-2)

UST-2 Site Investigation Report for Permanent Closure or Change-in-Service of UST

Return completed form to:
The DWM Regional Office located in the area where the facility is located. Send a copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED" and your tank fee account can be closed out.
SEE MAP ON THE BACK OF THIS FORM FOR THE CENTRAL AND REGIONAL OFFICE ADDRESSES.

STATE USE ONLY:
I.D. #_____
Date Received_____

INSTRUCTIONS (READ THIS FIRST)

For more than five UST systems you may attach additional forms as needed.

Permanent closure – For permanent closure, complete all sections of this form.

Change-in-service – For change-in-service where UST systems will be converted from containing a regulated substance to storing a non-regulated substance, complete sections I, II, III, IV, and VIII

Effective February 1, 1995, all UST closure/change-in-service reports must be submitted in the format provided in the UST-12 form. UST closure and change-in-services must be completed in accordance with the latest version of the *Guidelines for Tank Closure*. A copy of the UST-12 form and the *Guidelines for Tank Closure* can be obtained at www.wastenotnc.org.

You must make sure that USTs removed from your property are disposed of properly. When choosing a closure contractor, ask where the tank(s) will be taken for disposal. Usually, USTs are cleaned and cut up for scrap metal. This is dangerous work and must be performed by a qualified company. Tanks disposed of illegally in fields or other dumpsites can leak petroleum products and sludge into the environment. If your tanks are disposed of improperly, you could be held responsible for the cleanup of any environmental damage that occurs.

NOTE: If a release from the tank(s) has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G.

I. OWNERSHIP OF TANKS

Owner Name (Corporation, Individual, Public Agency, or Other Entity) Commanding Officer, Marine Corps Base	
Street Address Bldg 1 Holcumb Blvd	
City Camp Lejeune	County Onslow
State NC	Zip Code 28542-0004
Phone Number (910) 451-9660	

II. LOCATION OF TANKS

Facility Name or Company Tarawa Terrance Housing		
Facility ID # (If known) N/A		
Street Address TT3114 Bougainville Drive		
City Camp Lejeune	County Onslow	Zip Code 28542
Phone Number		

III. CONTACT PERSONNEL

Contact for Facility: Bruce Markwick		Job Title: Environmental Protection Specialist	Phone. No: (910) 451-9660
Closure Contractor Name: OSAGE of Virginia	Closure Contractor Company:	Address: 2818A Colley Avenue	Phone. No: 757 440-0400
Primary Consultant Name: OSAGE of Virginia	Primary Consultant Company:	Address: Norfolk, Virginia 23517-1132	Phone. No:

IV. UST INFORMATION FOR REGISTERED UST SYSTEMS

V. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Tank Dimensions	Last Contents	Last Use Date	Permanent Close Date	Change-in-Service Date	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

VI. UST INFORMATION FOR UNREGISTERED UST SYSTEMS

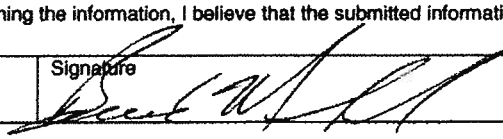
VII. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Tank Dimensions	Last Contents	Last Use Date	Permanent Close Date	Tank Owner Name *	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
TT3114	500	4' X 6'	Heating Oil	Unknown		See Above	☒	☐	☐	☒	☒	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

* If the tank owner address is different from the one listed in Section I., then enter the street address, city, state, zip code and telephone no. below:

VIII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete.

Print name and official title of owner or owner's authorized representative	Signature	Date Signed
Bruce Markwick		4/15/2009

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Waste Management
UST Section Central Office
1637 Mail Service Center
Raleigh, NC 27699-1637
(919) 733-8486 FAX (919) 733-9413
www.wastenoinc.org

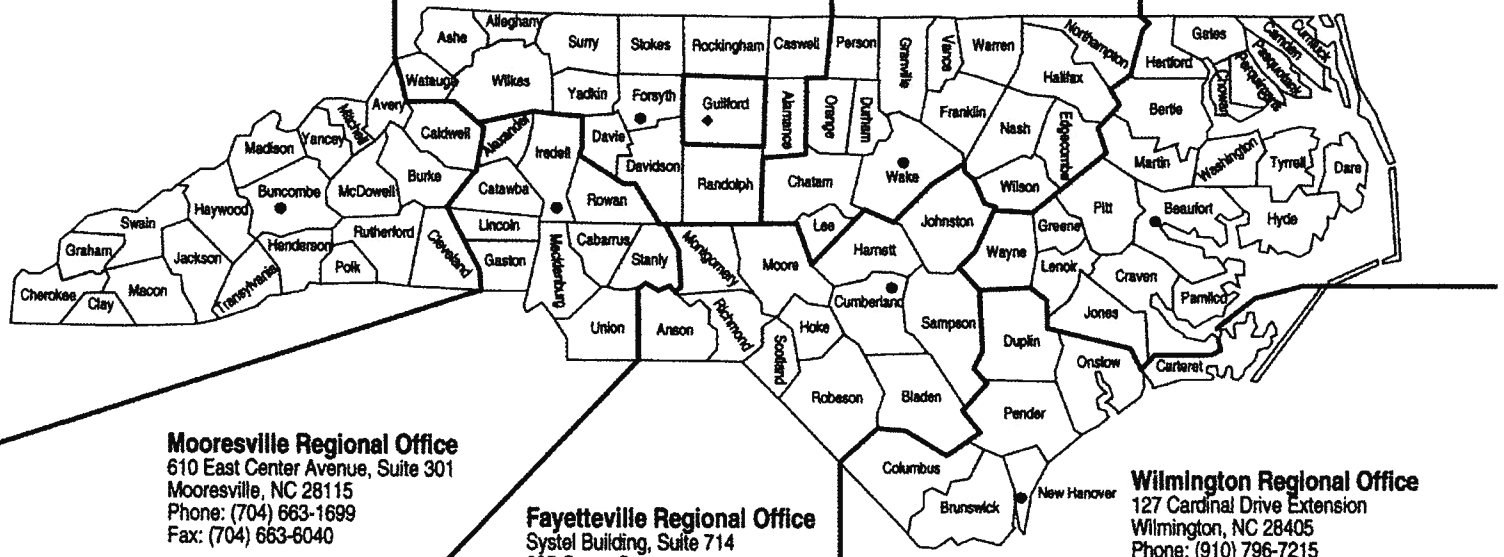
Asheville Regional Office
2090 U.S. Highway 70
Swannanoa, NC 28778
Phone: (828) 296-4500
Fax: (828) 299-7043

Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107
Phone: (336) 771-5000
Fax: (336) 771-4632

Guilford County Dept. of Public Health
1203 Maple Street
Greensboro, NC 27405
Phone: (336) 641-3771
Fax: (336) 641-4812

Raleigh Regional Office
3800 Barrett Drive
Raleigh, NC 27609
Phone: (919) 791-4200
Fax: (919) 571-4718

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
Phone: (252) 946-6481
Fax: (252) 975-3716



Mooresville Regional Office
610 East Center Avenue, Suite 301
Mooresville, NC 28115
Phone: (704) 663-1699
Fax: (704) 663-6040

Fayetteville Regional Office
Systel Building, Suite 714
225 Green Street
Fayetteville, NC 28301
Phone: (910) 433-3300
Fax: (910) 486-0707

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
Phone: (910) 796-7215
Fax: (910) 350-2004

● Regional Office

8/06

APPENDIX B

24 HOUR RELEASE AND UST LEAK REPORTING FORM (UST-61)

UST-61 | 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U) _____
Received On _____ Received By _____
Reported by (circle one): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) Y
Confirmed GW Contamination? (Y/N) N
Confirmed Soil Contamination ?(Y/N) Y
Samples Taken?(Y/N) Y
Free Product? (Y/N) N If Yes, State Greatest Thickness _____

Facility ID Number N/A
Date Leak Discovered 02/26/09
Comm/(Non-Commercial) _____
Reg/(Non-regulated)? _____

INCIDENT DESCRIPTION

Incident Name: TT3114 Heating Oil Tank

Address: TT3114 Bougainville Drive | County: Onslow

City/Town: Camp Lejeune | Zip Code: 28542 | Regional Office (circle one): Asheville, Mooresville, Fayetteville, Raleigh, Washington, (Wilmington), Winston-Salem

Latitude (decimal degrees): 34 44 27.250 N Longitude (decimal degrees): 77 22 48.934 W

Obtained by:
- ☐ GPS
- ☐ Topographic map
- ☒ GIS Address matching
- ☐ Other
- ☐ Unknown

Describe location:

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

On December 2008 at Tarawa Terrace housing area of Camp Lejeune, OSAGE of Virginia using magnetometer equipment discovered an abandoned heating oil tank. February 25, 2009 Environmental personnel removed all liquids from the tank (approximately 400 gallons of fuel and water mixture). OSAGE of Virginia removed the tank on 02/26/09 and there was evidence (visual) of a release from the tank. OSAGE took samples per the state requirements. All contaminated soil was removed and stored at the MCB Camp Lejeune soil storage pad at bldg TP464 awaiting removal on a separate contract. A UST-12 report will follow.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

- ☐ Release Detection Equipment or Methods
- ☒ During UST Closure/Removal
- ☐ Property Transfer
- ☒ Visual/Odor
- ☐ Water in Tank
- ☐ Water Supply Well Contamination
- ☐ Groundwater Contamination
- ☐ Surface Water Contamination
- ☐ Other (specify) _____

SOURCE OF CONTAMINATION

Source of Release *(Check one to indicate primary source)*
- ☒ Tank
- ☐ Piping
- ☐ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Cause of Release *(Check one to indicate primary cause)*
- ☐ Spill
- ☐ Overfill
- ☐ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Install Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Type of Release *(Check one)*
- ☒ Petroleum
- ☐ Non-Petroleum
- ☐ Both

Location *(Check one)*
- ☐ Facility
- ☒ Residence
- ☐ Other

Product Type Released *(Check one to indicate primary product type released)*
- ☐ Gasoline/ Diesel/ Kerosene
- ☒ Heating Oil
- ☐ Other Petroleum Products
- ☐ Metals
- ☐ Other Inorganics
- ☐ Other Organics
- ☐ Diesel/Veg. Oil Blend
- ☐ Vegetable Oil 100%
- ☐ E10 – E20
- ☐ E21 – E84
- ☐ E85 – E99
- ☐ Ethanol 100%
- ☐ E01 – E09

Ownership
1. Municipal 2. (Military) 3. Unknown 4. Private 5. Federal 6. County 7. State

Operation Type
1. Public Service 2. Agricultural 3. (Residential) 4. Education/Relig. 5. Industrial 6. Commercial 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes (2. No) 3. Unknown

Number of Water Supply Wells Affected _____

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1.
2.
3.

UST SYSTEM OWNER

UST Owner/Company			
Commanding Officer, Marine Corps Base,			
Point of Contact: Bruce Markwick		Address:	
City: Camp Lejeune	State: NC	Zip Code: 28542	Telephone Number: 910 451-9660

UST SYSTEM OPERATOR

UST Operator/Company			
Same as above		Address:	
City:	State:	Zip Code:	Telephone Number:

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner			
Same as above		Address:	
City:	State:	Zip Code:	Telephone Number:

Draw Sketch of Area (showing two major road intersections) or Attach Map

Person Reporting Incident: Bruce Markwick	Company: Miltary/USMC	Telephone Number: 910 451-9660
Title: Environmental Protection Specialist	Address: Bldg 12 Post Lane, Camp Lejeune, NC 28542	Date: 02/26/09

Definitions of Sources

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

Dispenser: includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)

Submersible Turbine Pump (STP) Area includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank

Delivery Problem: identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)

Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

Definitions of Causes

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined

APPENDIX C

CERTIFICATE OF UST DISPOSAL

Tank Disposal Manifest

Tank Owner: Commanding Officer, Marine Corps Base,
Camp Lejeune NC 28542

Tank/Owner Authorized Representative
Contact: Bruce Markwick
Phone: (910) 451-9660

Description of Tank:

Tank ID	Capacity	Previous Contents	Comments/Dimensions
TT-3114	550 gal	Heating Oil	4 Ft X 6 Ft Dim

Transporter: Osage of Virginia
2618 Colley Ave Ste A
Norfolk, VA 23517
Phone: (757) 440-0400

Print Name	Signature	Month/Day/Year
Theresa Ellerman	Theresa Ellerman	3/3/09

The undersigned certifies that the above named storage tank(s) has been cut into scrap and accepted by the disposal facility.

Name of Receiving Facility: J&E Salvage
2012 Blue Creek Rd
Jacksonville NC 28540
Phone: (910) 347-5865

Print Name	Signature	Month/Day/Year
Crystal Dacington	Crystal Dacington	3/3/09

APPENDIX D

DISPOSAL MANIFESTS

P & F Environmental

4352.N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07293

GENERATOR

CG, AC/S, I-E (EMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: 910 451 4482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: IT site 3114 Bogganville Rd @ IT
USAGE of VA 757 274 4949

Transporter: P&F Environmental
Truck #: P 103
Truck Tag #/State: NC ZB 16949
Driver Name (Print): Walter Parker
CDL # NC 4538892

Gross Weight (lbs.): 81340
Tare Weight (lbs.): 33060
Net Weight (lbs.): 48280
Net Weight (tons): 24.14

I hereby certify that the material stated herein was received at the waste origination site listed.

Walter Parker 3-13-09
Driver Signature Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Walter Parker 3-13-09
Driver Signature Date

Inspected and Accepted By: 3.13.09

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07294

GENERATOR

CG, ACS, I+E (EMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: 910 451 1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: TTsite 3114 Bogamilk Rd @ TT
OSAGE of VA 757 274 4949

Transporter: P&F Environmental
Truck #: P 101
Truck Tag #/State: NC ZB 12254
Driver Name (Print): Tim Thorne
CDL # NC 21673?

Gross Weight (lbs.): 55680
Tare Weight (lbs.): 23560
Net Weight (lbs.): 32120
Net Weight (tons): 16.06

I hereby certify that the material stated herein was received at the waste origination site listed.

Tim Thorne 3-13-09
Driver Signature Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Tim Thorne 3-13-09
Driver Signature Date

Inspected and Accepted By: 5/13/09

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL # _____ LOAD # 07295

GENERATOR

CG, AC/S, I&E (EMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: 910 451 1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: IT site 3114 Boganville Rd ETT
OSAGE OF VA 757 274 4949

Transporter: P&F Environmental
Truck #: P-104
Truck Tag #/State: NC ZB 12252
Driver Name (Print): Bryant Pridgen
CDL # NC 1406087

Gross Weight (lbs.): 81600
Tare Weight (lbs.): 31700
Net Weight (lbs.): 49900
Net Weight (tons): 24.95

I hereby certify that the material stated herein was received at the waste origination site listed.

Bryant Pridgen 3-13-09
Driver Signature Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Bryant Pridgen 3-13-09
Driver Signature Date

Inspected and Accepted By: [signature] 3/13/09 James Pridgen

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07296

GENERATOR

CG, ACS, I&E (EMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: 910 451 1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: TT site 3114 Boguville Rd @ TT
OSAGE of VA 757 274 4949

Transporter: P&F Environmental
Truck #: P 105
Truck Tag #/State: NC ZB 35517
Driver Name (Print): Franklin Rhodes
CDL # NC 2806555

Gross Weight (lbs.): 54660
Tare Weight (lbs.): 21600
Net Weight (lbs.): 33060
Net Weight (tons): 16.53

I hereby certify that the material stated herein was received at the waste origination site listed.

Driver Signature 3-13-09 Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Driver Signature 3-13-09 Date

Inspected and Accepted By: 3/13/09

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07297

GENERATOR

CG, AC/S, I&E (EmD) MCB
PO BOX 20004
CLNC 28542-0004

PHONE: 910 451 1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: Site 3114 off Bogamble CT
OSAGE of VA 757 274 4949

Transporter: P & F Environmental
Truck #: P 101
Truck Tag #/State: NC ZB12254
Driver Name (Print): Tim Thorne
CDL # NC 2167392

Gross Weight (lbs.): 55260
Tare Weight (lbs.): 23560
Net Weight (lbs.): 31700
Net Weight (tons): 15.85

I hereby certify that the material stated herein was received at the waste origination site listed.

Tim Thorne 3-13-09
Driver Signature Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Tim Thorne 3-13-09
Driver Signature Date

Inspected and Accepted By: 3-13-09

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07299

GENERATOR

CG, AC/S, I-E (CEMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: 910 451 1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: site 3114 off Bogamville Rd @ TT
OSAGE of VA 757 274 4949

Transporter: P-F Environmental
Truck #: P105
Truck Tag #/State: NC 2B 35517
Driver Name (Print): Franklin Rhodes
CDL # NC 2806555

Gross Weight (lbs.): 58260
Tare Weight (lbs.): 21600
Net Weight (lbs.): 36660
Net Weight (tons): 18.33

I hereby certify that the material stated herein was received at the waste origination site listed.

Franklin Rhodes 3-13-09
Driver Signature Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Franklin Rhodes 3-13-09
Driver Signature Date

Inspected and Accepted By: [signature] 3.13.09 Jason Pruden

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

P & F Environmental

4352 N. Old Carriage Road • Rocky Mount, NC 27804
Phone: (252) 443-4083 • Fax: (252) 443-4104

NON-HAZARDOUS WASTE MANIFEST

APPROVAL #_____ LOAD # 07331

GENERATOR

CG, AC/S, I&E (EMD) MCB
PO Box 20004
CLNC 28542-0004

PHONE: (910) 451-1482

DESTINATION

Land Application Facility Permit No. SR0500106
Speights Chapel Road
Whitakers, NC 27891

PHONE: (252) 443-4083

WASTE DESCRIPTION: Non-Hazardous Petroleum Contaminated Soil

WASTE ORIGINATION: TT 3114, Bougainville Dr TT AREA CLNC

OSAGE OF VIRGINIA (757) 274-4949

Transporter: P&F Environmental
Truck #: P-105
Truck Tag #/State: ZB 35517
Driver Name (Print): Franklin Rhodes
CDL# NC 2804555

Gross Weight (lbs.): 56180
Tare Weight (lbs.): 21600
Net Weight (lbs.): 34580
Net Weight (tons): 17.29

I hereby certify that the material stated herein was received at the waste origination site listed.

Driver Signature 2/20/09 Date

I hereby certify that the material stated herein was delivered without incident to the destination listed.

Driver Signature 5/20/09 Date

Inspected and Accepted By: George L. Taylor 20090320

NOTICE TO TRANSPORTER

TRUCKS WILL NOT BE PERMITTED TO ENTER THE FACILITY WITHOUT THIS ENTRANCE TICKET

WHITE - *Invoice* YELLOW - *Generator* PINK - *Trucker* GOLD - *P & F Environmental*

APPENDIX E

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

SGS

Shaun Whitworth
Osage of Virginia
2618 A Colley Ave
Norfolk, VA 23517

Report Number: G649-121

Client Project: CTO 005

Dear Shaun Whitworth,

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS Environmental Services at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

Ashley Nifong 3/2/09

Project Manager Date
Ashley Nifong

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: TT3114-S001
Client Project ID: CTO 005
Lab Sample ID: G649-121-1D
Lab Project ID: G649-121

Date Collected: 2/26/2009 10:41
Date Received: 2/27/2009
Matrix: Soil
Solids 83.63
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**10.1**	7.28	mg/Kg	1	02/28/09 20:49

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	31.8	79.5

Comments:

Batch Information

Analytical Batch: EP022809
Analytical Method: 8015
Instrument: GC6
Analyst: EAW

Prep batch: 13763
Prep Method: 3541
Prep Date: 02/27/09
Initial Prep Wt/Vol: 32.85 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: TT3114-S002
Client Project ID: CTO 005
Lab Sample ID: G649-121-2D
Lab Project ID: G649-121

Date Collected: 2/26/2009 10:46
Date Received: 2/27/2009
Matrix: Soil
Solids 83.14
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.23	mg/Kg	1	02/28/09 21:18

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	32.1	80.2

Comments:

Batch Information

Analytical Batch: EP022809
Analytical Method: 8015
Instrument: GC6
Analyst: EAW

Prep batch: 13763
Prep Method: 3541
Prep Date: 02/27/09
Initial Prep Wt/Vol: 33.27 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: TT3114-S003
Client Project ID: CTO 005
Lab Sample ID: G649-121-3D
Lab Project ID: G649-121

Date Collected: 2/26/2009 10:51
Date Received: 2/27/2009
Matrix: Soil
Solids 84.71
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**36.8**	6.94	mg/Kg	1	02/28/09 21:46

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	30.8	77.1

Comments:

Batch Information

Analytical Batch: EP022809
Analytical Method: 8015
Instrument: GC6
Analyst: EAW

Prep batch: 13763
Prep Method: 3541
Prep Date: 02/27/09
Initial Prep Wt/Vol: 34.01 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: TT3114-S004
Client Project ID: CTO 005
Lab Sample ID: G649-121-4D
Lab Project ID: G649-121

Date Collected: 2/26/2009 11:02
Date Received: 2/27/2009
Matrix: Soil
Solids 84.07
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.50	mg/Kg	1	02/28/09 15:05

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.3	73.3

Comments:

Batch Information

Analytical Batch: EP022809
Analytical Method: 8015
Instrument: GC6
Analyst: EAW

Prep batch: 13763
Prep Method: 3541
Prep Date: 02/27/09
Initial Prep Wt/Vol: 31.71 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: DRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: TT3114-S005
Client Project ID: CTO 005
Lab Sample ID: G649-121-5D
Lab Project ID: G649-121

Date Collected: 2/26/2009 10:30
Date Received: 2/27/2009
Matrix: Soil
Solids 87.73
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	**5580**	342	mg/Kg	50	03/01/09 13:27

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	NA	NA

Comments:

Batch Information

Analytical Batch: EP030109
Analytical Method: 8015
Instrument: GC6
Analyst: EAW

Prep batch: 13763
Prep Method: 3541
Prep Date: 02/27/09
Initial Prep Wt/Vol: 33.3 G
Prep Final Vol: 10 mL

Analyst: _____

NC Certification #481

Reviewed By: _____
DRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	TT3114-S001	Analyzed By:	DVG
Client Project ID:	CTO 005	Date Collected:	2/26/2009 10:41
Lab Sample ID:	G649-121-1A	Date Received:	2/27/2009
Lab Project ID:	G649-121	Matrix:	Soil
Report Basis:	Dry Weight	Solids	83.63

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.57	mg/Kg	1	02/27/09 18:40

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97	97.3		70-130

Comments:

Batch Information

Analytical Batch:	VP022709	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.44 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	DVG		

Analyst: DVG

NC Certification #481

Reviewed By: GRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	TT3114-S002	Analyzed By:	DVG
Client Project ID:	CTO 005	Date Collected:	2/26/2009 10:46
Lab Sample ID:	G649-121-2A	Date Received:	2/27/2009
Lab Project ID:	G649-121	Matrix:	Soil
Report Basis:	Dry Weight	Solids	83.14

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.66	mg/Kg	1	02/27/09 19:07

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97	97.3		70-130

Comments:

Batch Information

Analytical Batch:	VP022709	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.37 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	DVG		

Analyst: DVG

NC Certification #481

Reviewed By: GRO

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID:	TT3114-S003	Analyzed By:	DVG
Client Project ID:	CTO 005	Date Collected:	2/26/2009 10:51
Lab Sample ID:	G649-121-3A	Date Received:	2/27/2009
Lab Project ID:	G649-121	Matrix:	Soil
Report Basis:	Dry Weight	Solids	84.71

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.10	mg/Kg	1	02/27/09 19:34

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97	96.7		70-130

Comments:

Batch Information

Analytical Batch:	VP022709	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.94 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	DVG		

Analyst: DVG

NC Certification #481

Reviewed By: GRO

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID:	TT3114-S004	Analyzed By:	DVG
Client Project ID:	CTO 005	Date Collected:	2/26/2009 11:02
Lab Sample ID:	G649-121-4A	Date Received:	2/27/2009
Lab Project ID:	G649-121	Matrix:	Soil
Report Basis:	Dry Weight	Solids	84.07

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.13	mg/Kg	1	02/27/09 20:00

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	97	96.6		70-130

Comments:

Batch Information

Analytical Batch:	VP022709	Prep Method:	5035
Analytical Method:	8015	Initial Wt/Vol:	6.95 g
Instrument ID:	GC4	Final Volume:	5 mL
Analyst:	DVG		

Analyst: DVG

NC Certification #481

Reviewed By: GRO

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: TT3114-S005
Client Project ID: CTO 005
Lab Sample ID: G649-121-5A
Lab Project ID: G649-121
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 2/26/2009 10:30
Date Received: 2/27/2009
Matrix: Soil
Solids 87.73

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	**170**	4.68	mg/Kg	10	02/28/09 11:07

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	106	106		70-130

Comments:

Batch Information

Analytical Batch: VP022809
Analytical Method: 8015
Instrument ID: GC4
Analyst: DVG

Prep Method: 5035
Initial Wt/Vol: 7.3 g
Final Volume: 5 mL

Analyst: DVG

NC Certification #481

Reviewed By: GRO

Results for Total Petroleum Hydrocarbons
by **GC/FID 8015**

Client Sample ID: Trip Blank
Client Project ID: CTO 005
Lab Sample ID: G649-121-6A
Lab Project ID: G649-121
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 2/26/2009 9:00
Date Received: 2/27/2009
Matrix: Soil
Solids 100.00

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.00	mg/Kg	1	02/27/09 12:26

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	103	103		70-130

Comments:

Batch Information

Analytical Batch: VP022709
Analytical Method: 8015
Instrument ID: GC4
Analyst: DVG

Prep Method: 5035
Initial Wt/Vol: 5 g
Final Volume: 5 mL

Analyst: DVG

NC Certification #481

Reviewed By: GRO

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio
- West Virginia

www.us.sgs.com

(1)

CLIENT: OSAGE of VIRGINIA

CONTACT: THURESA ELLERMAN PHONE NO: (757) 274-4949

PROJECT: CTO 005 SITE/PWSID#: TT 3114

REPORTS TO: EMAIL:
Shaun Whitworth@osageva.com

INVOICE TO: QUOTE #:
Mike Creel

P.O. #: CTO 005

SGS Reference #: 649-124

page 1 of 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	None	Methanol								REMARKS/ LOC ID
							Analysis Required (3)	TPH DRO	TPH GRO								
	TT3114-S001	2/26/09	1041	S	3			X	X								
	TT3114-S002	2/26/09	1046	S	3			X	X								
	TT3114-S003	2/26/09	1051	S	3			X	X								
	TT3114-S004	2/26/09	1102	S	3			X	X								
	TT3114-S005	2/26/09	1030	S	3			X	X								
	Trip Blank	2/26/09	0900	—	1				X								

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	2/27/09 2/26/09	845	
Relinquished By: (2)	Date	Time	Received By:
	2/27/09	925	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

DOD Project? (YES) NO

Cooler ID _____

Special Deliverable Requirements: EDD

Requested Turnaround Time and-or Special Instructions: 24 hr turn

Email results: swhitworth@osageva.com
tellerman@osageva.com

Samples Received Cold? (YES) NO

Cooler TB

Temperature °C: 2.9°C

Chain of Custody Seal: (Circle)

INTACT BROKEN (ABSENT)

SGS

Mr. Shaun Whitworth
Osage of Virginia
2618 A Colley Ave
Norfolk VA 23517

Report Number: G649-130

Client Project: CTO 005

Dear Mr. Whitworth:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

Barbara Hager March 16.09
Project Manager Date
Ashley Nifong

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S006
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 13:50
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 20:32 - 03/15/09 20:32
Dry Weight	87.0
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	93.5		70	130
Surrogate % Recovery - FID	94.8		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-1e	Lab Info: g649-130-1e
FID Info: VP031509/026F0101.D	PID Info: VP031509/026R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S007
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 13:57
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 20:59 - 03/15/09 20:59
Dry Weight	84.8
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	97.5		70	130
Surrogate % Recovery - FID	98.1		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-2e	Lab Info: g649-130-2e
FID Info: VP031509/027F0101.D	PID Info: VP031509/027R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S008
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 17:25
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 21:26 - 03/15/09 21:26
Dry Weight	97.3
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	100		70	130
Surrogate % Recovery - FID	100		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-3e	Lab Info: g649-130-3e
FID Info: VP031509/028F0101.D	PID Info: VP031509/028R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S009
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 17:35
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 21:53 - 03/15/09 21:53
Dry Weight	95.7
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	101		70	130
Surrogate % Recovery - FID	101		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-4e	Lab Info: g649-130-4e
FID Info: VP031509/029F0101.D	PID Info: VP031509/029R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S010
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 17:40
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 22:20 - 03/15/09 22:20
Dry Weight	96.0
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	28.0	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	97.4		70	130
Surrogate % Recovery - FID	98.1		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-5e	Lab Info: g649-130-5e
FID Info: VP031509/030F0101.D	PID Info: VP031509/030R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S011
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/12/09 17:44
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/15/09 22:47 - 03/15/09 22:47
Dry Weight	92.3
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	97.4		70	130
Surrogate % Recovery - FID	98.1		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-6e	Lab Info: g649-130-6e
FID Info: VP031509/031F0101.D	PID Info: VP031509/031R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	Trip Blanks
Sample Matrix	Soil
Collection Option (for Soil)*	NA
Date Collected	03/12/09 00:00
Date Received	03/13/09
Date Extracted	03/14/09
Date Analyzed	03/14/09 16:35 - 03/14/09 16:35
Dry Weight	100
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	94.0		70	130
Surrogate % Recovery - FID	94.2		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-130-7b	Lab Info: g649-130-7b
FID Info: VP031409/019F0101.D	PID Info: VP031409/019R0101.D

Reviewed By:

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/09/09 PID Initial Calibration Date: 03/09/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	6.98	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	6.63	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/14/09 Filename: VP031409/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF ✓ %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-10.7	±25%
C_9-C_{12} Aliphatics	200	16	-7.2	±25%
C_9-C_{10} Aromatics	200	16	-1.1	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/09/09 PID Initial Calibration Date: 03/09/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF / r If LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	6.98	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	1.00	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	6.63	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/14/09 Filename: VP031409/029F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF / %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-14.1	±25%
C_9-C_{12} Aliphatics	200	16	-0.6	±25%
C_9-C_{10} Aromatics	200	16	7.4	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/15/09 PID Initial Calibration Date: 03/15/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	8.21	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	24.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	7.07	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/15/09 Filename: VP031509/015F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF ✓ %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-2.4	±25%
C_9-C_{12} Aliphatics	200	16	11.7	±25%
C_9-C_{10} Aromatics	200	16	3.1	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/15/09 PID Initial Calibration Date: 03/15/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	8.21	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	24.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	7.07	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/15/09 Filename: VP031509/033F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF ✓ %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-5.5	±25%
C_9-C_{12} Aliphatics	200	16	11.2	±25%
C_9-C_{10} Aromatics	200	16	1.2	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S006
Sample Matrix	Soil
Date Collected	03/12/09 13:50
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/15/09 21:29 - 03/15/09 21:57
Dry Weight	87.0
Dilution Factor	1 - 1
Initial weight (g)	12.29
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	BQL	10.0	
C19-C36 Aliphatics	BQL	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	107		40	140
Aromatic (ortho-terphenyl)	105		40	140
Fractionation 1 (2-bromonaphthalene)	100		40	140
Fractionation 2 (2-fluorobiphenyl)	103		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-1G	Lab Info: G649-130-1G
Aliphatic: EP031509/011F1101.D	Aromatic: EP031509/012F1201.D

Reviewed By:

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S007
Sample Matrix	Soil
Date Collected	03/12/09 13:57
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/15/09 22:26 - 03/15/09 22:54
Dry Weight	84.8
Dilution Factor	1 - 1
Initial weight (g)	13.11
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	BQL	10.0	
C19-C36 Aliphatics	BQL	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	95.7		40	140
Aromatic (ortho-terphenyl)	93.2		40	140
Fractionation 1 (2-bromonaphthalene)	103		40	140
Fractionation 2 (2-fluorobiphenyl)	105		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-2G	Lab Info: G649-130-2G
Aliphatic: EP031509/013F1301.D	Aromatic: EP031509/014F1401.D

Reviewed By:

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S008
Sample Matrix	Soil
Date Collected	03/12/09 17:25
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/15/09 23:23 - 03/15/09 23:51
Dry Weight	97.3
Dilution Factor	1 - 1
Initial weight (g)	14.98
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	BQL	10.0	
C19-C36 Aliphatics	BQL	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	96.0		40	140
Aromatic (ortho-terphenyl)	87.6		40	140
Fractionation 1 (2-bromonaphthalene)	102		40	140
Fractionation 2 (2-fluorobiphenyl)	93.2		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-3G	Lab Info: G649-130-3G
Aliphatic: EP031509/015F1501.D	Aromatic: EP031509/016F1601.D

Reviewed By:

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S009
Sample Matrix	Soil
Date Collected	03/12/09 17:35
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/16/09 00:19 - 03/16/09 00:48
Dry Weight	95.7
Dilution Factor	1 - 1
Initial weight (g)	12.94
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	BQL	10.0	
C19-C36 Aliphatics	BQL	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	95.0		40	140
Aromatic (ortho-terphenyl)	92.4		40	140
Fractionation 1 (2-bromonaphthalene)	101		40	140
Fractionation 2 (2-fluorobiphenyl)	104		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-4G	Lab Info: G649-130-4G
Aliphatic: EP031509/017F1701.D	Aromatic: EP031509/018F1801.D

Reviewed By:

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

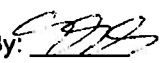
Sample Information	
Sample Identification	TT3114-S010
Sample Matrix	Soil
Date Collected	03/12/09 17:40
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/16/09 10:11 - 03/16/09 10:39
Dry Weight	96.0
Dilution Factor	10 - 2
Initial weight (g)	13.09
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	2750	10.0	
C19-C36 Aliphatics	1070	10.0	
C11-C22 Aromatics	1050	10.0	

Surrogates	Percent Recovery	Flags	Limits Lower	Limits Upper
Aliphatic (tricosane)	123		40	140
Aromatic (ortho-terphenyl)	91.4		40	140
Fractionation 1 (2-bromonaphthalene)	97.4		40	140
Fractionation 2 (2-fluorobiphenyl)	98.5		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-5G	Lab Info: G649-130-5G
Aliphatic: EP031609/004F0401.D	Aromatic: EP031609/005F0501.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S011
Sample Matrix	Soil
Date Collected	03/12/09 17:44
Date Received	03/13/09
Date Extracted	03/13/09
Date Analyzed	03/16/09 11:08 - 03/16/09 02:40
Dry Weight	92.3
Dilution Factor	1 - 1
Initial weight (g)	13.01
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	128	10.0	
C19-C36 Aliphatics	42.2	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	99.8		40	140
Aromatic (ortho-terphenyl)	94.9		40	140
Fractionation 1 (2-bromonaphthalene)	99.5		40	140
Fractionation 2 (2-fluorobiphenyl)	103		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-130-6G	Lab Info: G649-130-6G
Aliphatic: EP031609/006F0601.D	Aromatic: EP031509/022F2201.D

Reviewed By:

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/15/09 / 03/15/09

Filenames: ep031509/001f0101.d / ep031509/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF ✓ %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	21.8	≤±25%
C19-C36 Aliphatics	100	16.7	23.7	≤±25%
C11-C22 Aromatics	100	16.7	13.6	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/15/09, 03/16/09

Filenames: ep031509/029f2901.d, ep031509/030f3001.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF or %Drift if LR ✓	Limits
C9-C18 Aliphatics	100	16.7	28.8	≤±25%
C19-C36 Aliphatics	100	16.7	31.4	≤±25%
C11-C22 Aromatics	100	16.7	19.9	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/16/09
03/16/09

Filenames: ep031609/003f0301.d
ep031609/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	-4.9	≤±25%
C19-C36 Aliphatics	100	16.7	-3.9	≤±25%
C11-C22 Aromatics	100	16.7	18.2	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/16/09 / 03/16/09

Filenames: ep031609/013f1601.d / ep031609/014f1401.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	4.2	≤±25%
C19-C36 Aliphatics	100	16.7	5.5	≤±25%
C11-C22 Aromatics	100	16.7	-5.7	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S006
Client Project ID: CTO 005
Lab Sample ID G649-130-1A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 13:50
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 6.32 g
%Solids: 87.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	45.4	1	3/14/2009
Benzene	BQL	4.54	1	3/14/2009
Bromobenzene	BQL	4.54	1	3/14/2009
Bromochloromethane	BQL	4.54	1	3/14/2009
Bromodichloromethane	BQL	4.54	1	3/14/2009
Bromoform	BQL	4.54	1	3/14/2009
Bromomethane	BQL	4.54	1	3/14/2009
2-Butanone	BQL	22.7	1	3/14/2009
n-Butylbenzene	BQL	4.54	1	3/14/2009
sec-Butylbenzene	BQL	4.54	1	3/14/2009
tert-Butylbenzene	BQL	4.54	1	3/14/2009
Carbon disulfide	BQL	4.54	1	3/14/2009
Carbon tetrachloride	BQL	4.54	1	3/14/2009
Chlorobenzene	BQL	4.54	1	3/14/2009
Chloroethane	BQL	4.54	1	3/14/2009
Chloroform	BQL	4.54	1	3/14/2009
Chloromethane	BQL	4.54	1	3/14/2009
2-Chlorotoluene	BQL	4.54	1	3/14/2009
4-Chlorotoluene	BQL	4.54	1	3/14/2009
Dibromochloromethane	BQL	4.54	1	3/14/2009
1,2-Dibromo-3-chloropropane	BQL	22.7	1	3/14/2009
Dibromomethane	BQL	4.54	1	3/14/2009
1,2-Dibromoethane (EDB)	BQL	4.54	1	3/14/2009
1,2-Dichlorobenzene	BQL	4.54	1	3/14/2009
1,3-Dichlorobenzene	BQL	4.54	1	3/14/2009
1,4-Dichlorobenzene	BQL	4.54	1	3/14/2009
trans-1,4-Dichloro-2-butene	BQL	22.7	1	3/14/2009
1,1-Dichloroethane	BQL	4.54	1	3/14/2009
1,1-Dichloroethene	BQL	4.54	1	3/14/2009
1,2-Dichloroethane	BQL	4.54	1	3/14/2009
cis-1,2-Dichloroethene	BQL	4.54	1	3/14/2009
trans-1,2-dichloroethene	BQL	4.54	1	3/14/2009
1,2-Dichloropropane	BQL	4.54	1	3/14/2009
1,3-Dichloropropane	BQL	4.54	1	3/14/2009
2,2-Dichloropropane	BQL	4.54	1	3/14/2009
1,1-Dichloropropene	BQL	4.54	1	3/14/2009
cis-1,3-Dichloropropene	BQL	4.54	1	3/14/2009
trans-1,3-Dichloropropene	BQL	4.54	1	3/14/2009
Dichlorodifluoromethane	BQL	4.54	1	3/14/2009
Diisopropyl ether (DIPE)	BQL	4.54	1	3/14/2009
Ethylbenzene	BQL	4.54	1	3/14/2009
Hexachlorobutadiene	BQL	4.54	1	3/14/2009
2-Hexanone	BQL	11.3	1	3/14/2009
Iodomethane	BQL	4.54	1	3/14/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S006
Client Project ID: CTO 005
Lab Sample ID G649-130-1A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 13:50
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 6.32 g
%Solids: 87.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.54	1	3/14/2009
4-Isopropyltoluene	BQL	4.54	1	3/14/2009
Methylene chloride	BQL	18.2	1	3/14/2009
4-Methyl-2-pentanone	BQL	11.3	1	3/14/2009
Methyl-tert-butyl ether (MTBE)	BQL	4.54	1	3/14/2009
Naphthalene	BQL	4.54	1	3/14/2009
n-Propyl benzene	BQL	4.54	1	3/14/2009
Styrene	BQL	4.54	1	3/14/2009
1,1,1,2-Tetrachloroethane	BQL	4.54	1	3/14/2009
1,1,2,2-Tetrachloroethane	BQL	4.54	1	3/14/2009
Tetrachloroethene	BQL	4.54	1	3/14/2009
Toluene	BQL	4.54	1	3/14/2009
1,2,3-Trichlorobenzene	BQL	4.54	1	3/14/2009
1,2,4-Trichlorobenzene	BQL	4.54	1	3/14/2009
Trichloroethene	BQL	4.54	1	3/14/2009
1,1,1-Trichloroethane	BQL	4.54	1	3/14/2009
1,1,2-Trichloroethane	BQL	4.54	1	3/14/2009
Trichlorofluoromethane	BQL	4.54	1	3/14/2009
1,2,3-Trichloropropane	BQL	4.54	1	3/14/2009
1,2,4-Trimethylbenzene	BQL	4.54	1	3/14/2009
1,3,5-Trimethylbenzene	BQL	4.54	1	3/14/2009
Vinyl chloride	BQL	4.54	1	3/14/2009
m-,p-Xylene	BQL	9.08	1	3/14/2009
o-Xylene	BQL	4.54	1	3/14/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	63.3	127
Toluene-d8	50	51	102
4-Bromofluorobenzene	50	48.3	97

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S007
Client Project ID: CTO 005
Lab Sample ID G649-130-2A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 13:57
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 6.11 g
%Solids: 84.8

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	48.2	1	3/14/2009
Benzene	BQL	4.82	1	3/14/2009
Bromobenzene	BQL	4.82	1	3/14/2009
Bromochloromethane	BQL	4.82	1	3/14/2009
Bromodichloromethane	BQL	4.82	1	3/14/2009
Bromoform	BQL	4.82	1	3/14/2009
Bromomethane	BQL	4.82	1	3/14/2009
2-Butanone	BQL	24.1	1	3/14/2009
n-Butylbenzene	BQL	4.82	1	3/14/2009
sec-Butylbenzene	BQL	4.82	1	3/14/2009
tert-Butylbenzene	BQL	4.82	1	3/14/2009
Carbon disulfide	BQL	4.82	1	3/14/2009
Carbon tetrachloride	BQL	4.82	1	3/14/2009
Chlorobenzene	BQL	4.82	1	3/14/2009
Chloroethane	BQL	4.82	1	3/14/2009
Chloroform	BQL	4.82	1	3/14/2009
Chloromethane	BQL	4.82	1	3/14/2009
2-Chlorotoluene	BQL	4.82	1	3/14/2009
4-Chlorotoluene	BQL	4.82	1	3/14/2009
Dibromochloromethane	BQL	4.82	1	3/14/2009
1,2-Dibromo-3-chloropropane	BQL	24.1	1	3/14/2009
Dibromomethane	BQL	4.82	1	3/14/2009
1,2-Dibromoethane (EDB)	BQL	4.82	1	3/14/2009
1,2-Dichlorobenzene	BQL	4.82	1	3/14/2009
1,3-Dichlorobenzene	BQL	4.82	1	3/14/2009
1,4-Dichlorobenzene	BQL	4.82	1	3/14/2009
trans-1,4-Dichloro-2-butene	BQL	24.1	1	3/14/2009
1,1-Dichloroethane	BQL	4.82	1	3/14/2009
1,1-Dichloroethene	BQL	4.82	1	3/14/2009
1,2-Dichloroethane	BQL	4.82	1	3/14/2009
cis-1,2-Dichloroethene	BQL	4.82	1	3/14/2009
trans-1,2-dichloroethene	BQL	4.82	1	3/14/2009
1,2-Dichloropropane	BQL	4.82	1	3/14/2009
1,3-Dichloropropane	BQL	4.82	1	3/14/2009
2,2-Dichloropropane	BQL	4.82	1	3/14/2009
1,1-Dichloropropene	BQL	4.82	1	3/14/2009
cis-1,3-Dichloropropene	BQL	4.82	1	3/14/2009
trans-1,3-Dichloropropene	BQL	4.82	1	3/14/2009
Dichlorodifluoromethane	BQL	4.82	1	3/14/2009
Diisopropyl ether (DIPE)	BQL	4.82	1	3/14/2009
Ethylbenzene	BQL	4.82	1	3/14/2009
Hexachlorobutadiene	BQL	4.82	1	3/14/2009
2-Hexanone	BQL	12.1	1	3/14/2009
Iodomethane	BQL	4.82	1	3/14/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S007
Client Project ID: CTO 005
Lab Sample ID G649-130-2A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 13:57
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 6.11 g
%Solids: 84.8

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	4.82	1	3/14/2009
4-Isopropyltoluene	BQL	4.82	1	3/14/2009
Methylene chloride	BQL	19.3	1	3/14/2009
4-Methyl-2-pentanone	BQL	12.1	1	3/14/2009
Methyl-tert-butyl ether (MTBE)	BQL	4.82	1	3/14/2009
Naphthalene	BQL	4.82	1	3/14/2009
n-Propyl benzene	BQL	4.82	1	3/14/2009
Styrene	BQL	4.82	1	3/14/2009
1,1,1,2-Tetrachloroethane	BQL	4.82	1	3/14/2009
1,1,2,2-Tetrachloroethane	BQL	4.82	1	3/14/2009
Tetrachloroethene	BQL	4.82	1	3/14/2009
Toluene	BQL	4.82	1	3/14/2009
1,2,3-Trichlorobenzene	BQL	4.82	1	3/14/2009
1,2,4-Trichlorobenzene	BQL	4.82	1	3/14/2009
Trichloroethene	BQL	4.82	1	3/14/2009
1,1,1-Trichloroethane	BQL	4.82	1	3/14/2009
1,1,2-Trichloroethane	BQL	4.82	1	3/14/2009
Trichlorofluoromethane	BQL	4.82	1	3/14/2009
1,2,3-Trichloropropane	BQL	4.82	1	3/14/2009
1,2,4-Trimethylbenzene	BQL	4.82	1	3/14/2009
1,3,5-Trimethylbenzene	BQL	4.82	1	3/14/2009
Vinyl chloride	BQL	4.82	1	3/14/2009
m-,p-Xylene	BQL	9.65	1	3/14/2009
o-Xylene	BQL	4.82	1	3/14/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	62.7	125
Toluene-d8	50	50.6	101
4-Bromofluorobenzene	50	47.8	96

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S008
Client Project ID: CTO 005
Lab Sample ID G649-130-3A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:25
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 4.84 g
%Solids: 97.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	53.1	1	3/14/2009
Benzene	BQL	5.31	1	3/14/2009
Bromobenzene	BQL	5.31	1	3/14/2009
Bromochloromethane	BQL	5.31	1	3/14/2009
Bromodichloromethane	BQL	5.31	1	3/14/2009
Bromoform	BQL	5.31	1	3/14/2009
Bromomethane	BQL	5.31	1	3/14/2009
2-Butanone	BQL	26.5	1	3/14/2009
n-Butylbenzene	BQL	5.31	1	3/14/2009
sec-Butylbenzene	BQL	5.31	1	3/14/2009
tert-Butylbenzene	BQL	5.31	1	3/14/2009
Carbon disulfide	BQL	5.31	1	3/14/2009
Carbon tetrachloride	BQL	5.31	1	3/14/2009
Chlorobenzene	BQL	5.31	1	3/14/2009
Chloroethane	BQL	5.31	1	3/14/2009
Chloroform	BQL	5.31	1	3/14/2009
Chloromethane	BQL	5.31	1	3/14/2009
2-Chlorotoluene	BQL	5.31	1	3/14/2009
4-Chlorotoluene	BQL	5.31	1	3/14/2009
Dibromochloromethane	BQL	5.31	1	3/14/2009
1,2-Dibromo-3-chloropropane	BQL	26.5	1	3/14/2009
Dibromomethane	BQL	5.31	1	3/14/2009
1,2-Dibromoethane (EDB)	BQL	5.31	1	3/14/2009
1,2-Dichlorobenzene	BQL	5.31	1	3/14/2009
1,3-Dichlorobenzene	BQL	5.31	1	3/14/2009
1,4-Dichlorobenzene	BQL	5.31	1	3/14/2009
trans-1,4-Dichloro-2-butene	BQL	26.5	1	3/14/2009
1,1-Dichloroethane	BQL	5.31	1	3/14/2009
1,1-Dichloroethene	BQL	5.31	1	3/14/2009
1,2-Dichloroethane	BQL	5.31	1	3/14/2009
cis-1,2-Dichloroethene	BQL	5.31	1	3/14/2009
trans-1,2-dichloroethene	BQL	5.31	1	3/14/2009
1,2-Dichloropropane	BQL	5.31	1	3/14/2009
1,3-Dichloropropane	BQL	5.31	1	3/14/2009
2,2-Dichloropropane	BQL	5.31	1	3/14/2009
1,1-Dichloropropene	BQL	5.31	1	3/14/2009
cis-1,3-Dichloropropene	BQL	5.31	1	3/14/2009
trans-1,3-Dichloropropene	BQL	5.31	1	3/14/2009
Dichlorodifluoromethane	BQL	5.31	1	3/14/2009
Diisopropyl ether (DIPE)	BQL	5.31	1	3/14/2009
Ethylbenzene	BQL	5.31	1	3/14/2009
Hexachlorobutadiene	BQL	5.31	1	3/14/2009
2-Hexanone	BQL	13.3	1	3/14/2009
Iodomethane	BQL	5.31	1	3/14/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S008
Client Project ID: CTO 005
Lab Sample ID G649-130-3A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:25
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 4.84 g
%Solids: 97.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.31	1	3/14/2009
4-Isopropyltoluene	BQL	5.31	1	3/14/2009
Methylene chloride	BQL	21.2	1	3/14/2009
4-Methyl-2-pentanone	BQL	13.3	1	3/14/2009
Methyl-tert-butyl ether (MTBE)	BQL	5.31	1	3/14/2009
Naphthalene	BQL	5.31	1	3/14/2009
n-Propyl benzene	BQL	5.31	1	3/14/2009
Styrene	BQL	5.31	1	3/14/2009
1,1,1,2-Tetrachloroethane	BQL	5.31	1	3/14/2009
1,1,2,2-Tetrachloroethane	BQL	5.31	1	3/14/2009
Tetrachloroethene	BQL	5.31	1	3/14/2009
Toluene	BQL	5.31	1	3/14/2009
1,2,3-Trichlorobenzene	BQL	5.31	1	3/14/2009
1,2,4-Trichlorobenzene	BQL	5.31	1	3/14/2009
Trichloroethene	BQL	5.31	1	3/14/2009
1,1,1-Trichloroethane	BQL	5.31	1	3/14/2009
1,1,2-Trichloroethane	BQL	5.31	1	3/14/2009
Trichlorofluoromethane	BQL	5.31	1	3/14/2009
1,2,3-Trichloropropane	BQL	5.31	1	3/14/2009
1,2,4-Trimethylbenzene	BQL	5.31	1	3/14/2009
1,3,5-Trimethylbenzene	BQL	5.31	1	3/14/2009
Vinyl chloride	BQL	5.31	1	3/14/2009
m-,p-Xylene	BQL	10.6	1	3/14/2009
o-Xylene	BQL	5.31	1	3/14/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	66.3	133
Toluene-d8	50	50.9	102
4-Bromofluorobenzene	50	47.7	95

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S009
Client Project ID: CTO 005
Lab Sample ID G649-130-4A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:35
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5.19 g
%Solids: 95.7

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	50.3	1	3/14/2009
Benzene	BQL	5.03	1	3/14/2009
Bromobenzene	BQL	5.03	1	3/14/2009
Bromochloromethane	BQL	5.03	1	3/14/2009
Bromodichloromethane	BQL	5.03	1	3/14/2009
Bromoform	BQL	5.03	1	3/14/2009
Bromomethane	BQL	5.03	1	3/14/2009
2-Butanone	BQL	25.2	1	3/14/2009
n-Butylbenzene	BQL	5.03	1	3/14/2009
sec-Butylbenzene	BQL	5.03	1	3/14/2009
tert-Butylbenzene	BQL	5.03	1	3/14/2009
Carbon disulfide	BQL	5.03	1	3/14/2009
Carbon tetrachloride	BQL	5.03	1	3/14/2009
Chlorobenzene	BQL	5.03	1	3/14/2009
Chloroethane	BQL	5.03	1	3/14/2009
Chloroform	BQL	5.03	1	3/14/2009
Chloromethane	BQL	5.03	1	3/14/2009
2-Chlorotoluene	BQL	5.03	1	3/14/2009
4-Chlorotoluene	BQL	5.03	1	3/14/2009
Dibromochloromethane	BQL	5.03	1	3/14/2009
1,2-Dibromo-3-chloropropane	BQL	25.2	1	3/14/2009
Dibromomethane	BQL	5.03	1	3/14/2009
1,2-Dibromoethane (EDB)	BQL	5.03	1	3/14/2009
1,2-Dichlorobenzene	BQL	5.03	1	3/14/2009
1,3-Dichlorobenzene	BQL	5.03	1	3/14/2009
1,4-Dichlorobenzene	BQL	5.03	1	3/14/2009
trans-1,4-Dichloro-2-butene	BQL	25.2	1	3/14/2009
1,1-Dichloroethane	BQL	5.03	1	3/14/2009
1,1-Dichloroethene	BQL	5.03	1	3/14/2009
1,2-Dichloroethane	BQL	5.03	1	3/14/2009
cis-1,2-Dichloroethene	BQL	5.03	1	3/14/2009
trans-1,2-dichloroethene	BQL	5.03	1	3/14/2009
1,2-Dichloropropane	BQL	5.03	1	3/14/2009
1,3-Dichloropropane	BQL	5.03	1	3/14/2009
2,2-Dichloropropane	BQL	5.03	1	3/14/2009
1,1-Dichloropropene	BQL	5.03	1	3/14/2009
cis-1,3-Dichloropropene	BQL	5.03	1	3/14/2009
trans-1,3-Dichloropropene	BQL	5.03	1	3/14/2009
Dichlorodifluoromethane	BQL	5.03	1	3/14/2009
Diisopropyl ether (DIPE)	BQL	5.03	1	3/14/2009
Ethylbenzene	BQL	5.03	1	3/14/2009
Hexachlorobutadiene	BQL	5.03	1	3/14/2009
2-Hexanone	BQL	12.6	1	3/14/2009
Iodomethane	BQL	5.03	1	3/14/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S009
Client Project ID: CTO 005
Lab Sample ID G649-130-4A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:35
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5.19 g
%Solids: 95.7

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.03	1	3/14/2009
4-Isopropyltoluene	BQL	5.03	1	3/14/2009
Methylene chloride	BQL	20.1	1	3/14/2009
4-Methyl-2-pentanone	BQL	12.6	1	3/14/2009
Methyl-tert-butyl ether (MTBE)	BQL	5.03	1	3/14/2009
Naphthalene	BQL	5.03	1	3/14/2009
n-Propyl benzene	BQL	5.03	1	3/14/2009
Styrene	BQL	5.03	1	3/14/2009
1,1,1,2-Tetrachloroethane	BQL	5.03	1	3/14/2009
1,1,2,2-Tetrachloroethane	BQL	5.03	1	3/14/2009
Tetrachloroethene	BQL	5.03	1	3/14/2009
Toluene	BQL	5.03	1	3/14/2009
1,2,3-Trichlorobenzene	BQL	5.03	1	3/14/2009
1,2,4-Trichlorobenzene	BQL	5.03	1	3/14/2009
Trichloroethene	BQL	5.03	1	3/14/2009
1,1,1-Trichloroethane	BQL	5.03	1	3/14/2009
1,1,2-Trichloroethane	BQL	5.03	1	3/14/2009
Trichlorofluoromethane	BQL	5.03	1	3/14/2009
1,2,3-Trichloropropane	BQL	5.03	1	3/14/2009
1,2,4-Trimethylbenzene	BQL	5.03	1	3/14/2009
1,3,5-Trimethylbenzene	BQL	5.03	1	3/14/2009
Vinyl chloride	BQL	5.03	1	3/14/2009
m-,p-Xylene	BQL	10.1	1	3/14/2009
o-Xylene	BQL	5.03	1	3/14/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	61.9	124
Toluene-d8	50	50.5	101
4-Bromofluorobenzene	50	47.9	96

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S010
Client Project ID: CTO 005
Lab Sample ID G649-130-5A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:40
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 4.94 g
%Solids: 96.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	52.6	1	3/14/2009
Benzene	BQL	5.26	1	3/14/2009
Bromobenzene	BQL	5.26	1	3/14/2009
Bromochloromethane	BQL	5.26	1	3/14/2009
Bromodichloromethane	BQL	5.26	1	3/14/2009
Bromoform	BQL	5.26	1	3/14/2009
Bromomethane	BQL	5.26	1	3/14/2009
2-Butanone	BQL	26.3	1	3/14/2009
n-Butylbenzene	BQL	5.26	1	3/14/2009
sec-Butylbenzene	BQL	5.26	1	3/14/2009
tert-Butylbenzene	BQL	5.26	1	3/14/2009
Carbon disulfide	BQL	5.26	1	3/14/2009
Carbon tetrachloride	BQL	5.26	1	3/14/2009
Chlorobenzene	BQL	5.26	1	3/14/2009
Chloroethane	BQL	5.26	1	3/14/2009
Chloroform	BQL	5.26	1	3/14/2009
Chloromethane	BQL	5.26	1	3/14/2009
2-Chlorotoluene	BQL	5.26	1	3/14/2009
4-Chlorotoluene	BQL	5.26	1	3/14/2009
Dibromochloromethane	BQL	5.26	1	3/14/2009
1,2-Dibromo-3-chloropropane	BQL	26.3	1	3/14/2009
Dibromomethane	BQL	5.26	1	3/14/2009
1,2-Dibromoethane (EDB)	BQL	5.26	1	3/14/2009
1,2-Dichlorobenzene	BQL	5.26	1	3/14/2009
1,3-Dichlorobenzene	BQL	5.26	1	3/14/2009
1,4-Dichlorobenzene	BQL	5.26	1	3/14/2009
trans-1,4-Dichloro-2-butene	BQL	26.3	1	3/14/2009
1,1-Dichloroethane	BQL	5.26	1	3/14/2009
1,1-Dichloroethene	BQL	5.26	1	3/14/2009
1,2-Dichloroethane	BQL	5.26	1	3/14/2009
cis-1,2-Dichloroethene	BQL	5.26	1	3/14/2009
trans-1,2-dichloroethene	BQL	5.26	1	3/14/2009
1,2-Dichloropropane	BQL	5.26	1	3/14/2009
1,3-Dichloropropane	BQL	5.26	1	3/14/2009
2,2-Dichloropropane	BQL	5.26	1	3/14/2009
1,1-Dichloropropene	BQL	5.26	1	3/14/2009
cis-1,3-Dichloropropene	BQL	5.26	1	3/14/2009
trans-1,3-Dichloropropene	BQL	5.26	1	3/14/2009
Dichlorodifluoromethane	BQL	5.26	1	3/14/2009
Diisopropyl ether (DIPE)	BQL	5.26	1	3/14/2009
Ethylbenzene	BQL	5.26	1	3/14/2009
Hexachlorobutadiene	BQL	5.26	1	3/14/2009
2-Hexanone	BQL	13.1	1	3/14/2009
Iodomethane	BQL	5.26	1	3/14/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S010
Client Project ID: CTO 005
Lab Sample ID G649-130-5A
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: CLP
Date Collected: 03-12-2009 17:40
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 4.94 g
%Solids: 96.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.26	1	3/14/2009
4-Isopropyltoluene	BQL	5.26	1	3/14/2009
Methylene chloride	BQL	21.0	1	3/14/2009
4-Methyl-2-pentanone	BQL	13.1	1	3/14/2009
Methyl-tert-butyl ether (MTBE)	BQL	5.26	1	3/14/2009
Naphthalene	BQL	5.26	1	3/14/2009
n-Propyl benzene	BQL	5.26	1	3/14/2009
Styrene	BQL	5.26	1	3/14/2009
1,1,1,2-Tetrachloroethane	BQL	5.26	1	3/14/2009
1,1,2,2-Tetrachloroethane	BQL	5.26	1	3/14/2009
Tetrachloroethene	BQL	5.26	1	3/14/2009
Toluene	BQL	5.26	1	3/14/2009
1,2,3-Trichlorobenzene	BQL	5.26	1	3/14/2009
1,2,4-Trichlorobenzene	BQL	5.26	1	3/14/2009
Trichloroethene	BQL	5.26	1	3/14/2009
1,1,1-Trichloroethane	BQL	5.26	1	3/14/2009
1,1,2-Trichloroethane	BQL	5.26	1	3/14/2009
Trichlorofluoromethane	BQL	5.26	1	3/14/2009
1,2,3-Trichloropropane	BQL	5.26	1	3/14/2009
1,2,4-Trimethylbenzene	BQL	5.26	1	3/14/2009
1,3,5-Trimethylbenzene	BQL	5.26	1	3/14/2009
Vinyl chloride	BQL	5.26	1	3/14/2009
m-,p-Xylene	BQL	10.5	1	3/14/2009
o-Xylene	BQL	5.26	1	3/14/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	66.8	134
Toluene-d8	50	50.2	100
4-Bromofluorobenzene	50	46.2	92

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S011
Client Project ID: CTO 005
Lab Sample ID G649-130-6B
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 03-12-2009 17:44
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5.05 g
%Solids: 92.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	53.6	1	3/16/2009
Benzene	BQL	5.36	1	3/16/2009
Bromobenzene	BQL	5.36	1	3/16/2009
Bromochloromethane	BQL	5.36	1	3/16/2009
Bromodichloromethane	BQL	5.36	1	3/16/2009
Bromoform	BQL	5.36	1	3/16/2009
Bromomethane	BQL	5.36	1	3/16/2009
2-Butanone	BQL	26.8	1	3/16/2009
n-Butylbenzene	BQL	5.36	1	3/16/2009
sec-Butylbenzene	BQL	5.36	1	3/16/2009
tert-Butylbenzene	BQL	5.36	1	3/16/2009
Carbon disulfide	BQL	5.36	1	3/16/2009
Carbon tetrachloride	BQL	5.36	1	3/16/2009
Chlorobenzene	BQL	5.36	1	3/16/2009
Chloroethane	BQL	5.36	1	3/16/2009
Chloroform	BQL	5.36	1	3/16/2009
Chloromethane	BQL	5.36	1	3/16/2009
2-Chlorotoluene	BQL	5.36	1	3/16/2009
4-Chlorotoluene	BQL	5.36	1	3/16/2009
Dibromochloromethane	BQL	5.36	1	3/16/2009
1,2-Dibromo-3-chloropropane	BQL	26.8	1	3/16/2009
Dibromomethane	BQL	5.36	1	3/16/2009
1,2-Dibromoethane (EDB)	BQL	5.36	1	3/16/2009
1,2-Dichlorobenzene	BQL	5.36	1	3/16/2009
1,3-Dichlorobenzene	BQL	5.36	1	3/16/2009
1,4-Dichlorobenzene	BQL	5.36	1	3/16/2009
trans-1,4-Dichloro-2-butene	BQL	26.8	1	3/16/2009
1,1-Dichloroethane	BQL	5.36	1	3/16/2009
1,1-Dichloroethene	BQL	5.36	1	3/16/2009
1,2-Dichloroethane	BQL	5.36	1	3/16/2009
cis-1,2-Dichloroethene	BQL	5.36	1	3/16/2009
trans-1,2-dichloroethene	BQL	5.36	1	3/16/2009
1,2-Dichloropropane	BQL	5.36	1	3/16/2009
1,3-Dichloropropane	BQL	5.36	1	3/16/2009
2,2-Dichloropropane	BQL	5.36	1	3/16/2009
1,1-Dichloropropene	BQL	5.36	1	3/16/2009
cis-1,3-Dichloropropene	BQL	5.36	1	3/16/2009
trans-1,3-Dichloropropene	BQL	5.36	1	3/16/2009
Dichlorodifluoromethane	BQL	5.36	1	3/16/2009
Diisopropyl ether (DIPE)	BQL	5.36	1	3/16/2009
Ethylbenzene	BQL	5.36	1	3/16/2009
Hexachlorobutadiene	BQL	5.36	1	3/16/2009
2-Hexanone	BQL	13.4	1	3/16/2009
Iodomethane	BQL	5.36	1	3/16/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: TT3114-S011
Client Project ID: CTO 005
Lab Sample ID G649-130-6B
Lab Project ID: G649-130
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 03-12-2009 17:44
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5.05 g
%Solids: 92.3

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.36	1	3/16/2009
4-Isopropyltoluene	BQL	5.36	1	3/16/2009
Methylene chloride	BQL	21.4	1	3/16/2009
4-Methyl-2-pentanone	BQL	13.4	1	3/16/2009
Methyl-tert-butyl ether (MTBE)	BQL	5.36	1	3/16/2009
Naphthalene	BQL	5.36	1	3/16/2009
n-Propyl benzene	BQL	5.36	1	3/16/2009
Styrene	BQL	5.36	1	3/16/2009
1,1,1,2-Tetrachloroethane	BQL	5.36	1	3/16/2009
1,1,2,2-Tetrachloroethane	BQL	5.36	1	3/16/2009
Tetrachloroethene	BQL	5.36	1	3/16/2009
Toluene	BQL	5.36	1	3/16/2009
1,2,3-Trichlorobenzene	BQL	5.36	1	3/16/2009
1,2,4-Trichlorobenzene	BQL	5.36	1	3/16/2009
Trichloroethene	BQL	5.36	1	3/16/2009
1,1,1-Trichloroethane	BQL	5.36	1	3/16/2009
1,1,2-Trichloroethane	BQL	5.36	1	3/16/2009
Trichlorofluoromethane	BQL	5.36	1	3/16/2009
1,2,3-Trichloropropane	BQL	5.36	1	3/16/2009
1,2,4-Trimethylbenzene	BQL	5.36	1	3/16/2009
1,3,5-Trimethylbenzene	BQL	5.36	1	3/16/2009
Vinyl chloride	BQL	5.36	1	3/16/2009
m-,p-Xylene	BQL	10.7	1	3/16/2009
o-Xylene	BQL	5.36	1	3/16/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	62.7	125
Toluene-d8	50	50.9	102
4-Bromofluorobenzene	50	48.7	97

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

SGS Environmental Services, Inc.

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: Trip Blanks
Client Project ID: CTO 005
Lab Sample ID G649-130-7A
Lab Project ID: G649-130
Report Basis: 0.0

Analyzed By: CLP
Date Collected: 03-12-2009 00:00
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5 g
%Solids: 100.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	50.0	1	3/15/2009
Benzene	BQL	5.00	1	3/15/2009
Bromobenzene	BQL	5.00	1	3/15/2009
Bromochloromethane	BQL	5.00	1	3/15/2009
Bromodichloromethane	BQL	5.00	1	3/15/2009
Bromoform	BQL	5.00	1	3/15/2009
Bromomethane	BQL	5.00	1	3/15/2009
2-Butanone	BQL	25.0	1	3/15/2009
n-Butylbenzene	BQL	5.00	1	3/15/2009
sec-Butylbenzene	BQL	5.00	1	3/15/2009
tert-Butylbenzene	BQL	5.00	1	3/15/2009
Carbon disulfide	BQL	5.00	1	3/15/2009
Carbon tetrachloride	BQL	5.00	1	3/15/2009
Chlorobenzene	BQL	5.00	1	3/15/2009
Chloroethane	BQL	5.00	1	3/15/2009
Chloroform	BQL	5.00	1	3/15/2009
Chloromethane	BQL	5.00	1	3/15/2009
2-Chlorotoluene	BQL	5.00	1	3/15/2009
4-Chlorotoluene	BQL	5.00	1	3/15/2009
Dibromochloromethane	BQL	5.00	1	3/15/2009
1,2-Dibromo-3-chloropropane	BQL	25.0	1	3/15/2009
Dibromomethane	BQL	5.00	1	3/15/2009
1,2-Dibromoethane (EDB)	BQL	5.00	1	3/15/2009
1,2-Dichlorobenzene	BQL	5.00	1	3/15/2009
1,3-Dichlorobenzene	BQL	5.00	1	3/15/2009
1,4-Dichlorobenzene	BQL	5.00	1	3/15/2009
trans-1,4-Dichloro-2-butene	BQL	25.0	1	3/15/2009
1,1-Dichloroethane	BQL	5.00	1	3/15/2009
1,1-Dichloroethene	BQL	5.00	1	3/15/2009
1,2-Dichloroethane	BQL	5.00	1	3/15/2009
cis-1,2-Dichloroethene	BQL	5.00	1	3/15/2009
trans-1,2-dichloroethene	BQL	5.00	1	3/15/2009
1,2-Dichloropropane	BQL	5.00	1	3/15/2009
1,3-Dichloropropane	BQL	5.00	1	3/15/2009
2,2-Dichloropropane	BQL	5.00	1	3/15/2009
1,1-Dichloropropene	BQL	5.00	1	3/15/2009
cis-1,3-Dichloropropene	BQL	5.00	1	3/15/2009
trans-1,3-Dichloropropene	BQL	5.00	1	3/15/2009
Dichlorodifluoromethane	BQL	5.00	1	3/15/2009
Diisopropyl ether (DIPE)	BQL	5.00	1	3/15/2009
Ethylbenzene	BQL	5.00	1	3/15/2009
Hexachlorobutadiene	BQL	5.00	1	3/15/2009
2-Hexanone	BQL	12.5	1	3/15/2009
Iodomethane	BQL	5.00	1	3/15/2009

Results for Volatiles
by GCMS 8260-5035

Client Sample ID: Trip Blanks
Client Project ID: CTO 005
Lab Sample ID G649-130-7A
Lab Project ID: G649-130
Report Basis: 0.0

Analyzed By: CLP
Date Collected: 03-12-2009 00:00
Date Received: 3/13/2009
Matrix: Soil
Sample Amount: 5 g
%Solids: 100.0

Report Name Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Isopropylbenzene	BQL	5.00	1	3/15/2009
4-Isopropyltoluene	BQL	5.00	1	3/15/2009
Methylene chloride	BQL	20.0	1	3/15/2009
4-Methyl-2-pentanone	BQL	12.5	1	3/15/2009
Methyl-tert-butyl ether (MTBE)	BQL	5.00	1	3/15/2009
Naphthalene	BQL	5.00	1	3/15/2009
n-Propyl benzene	BQL	5.00	1	3/15/2009
Styrene	BQL	5.00	1	3/15/2009
1,1,1,2-Tetrachloroethane	BQL	5.00	1	3/15/2009
1,1,2,2-Tetrachloroethane	BQL	5.00	1	3/15/2009
Tetrachloroethene	BQL	5.00	1	3/15/2009
Toluene	BQL	5.00	1	3/15/2009
1,2,3-Trichlorobenzene	BQL	5.00	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	5.00	1	3/15/2009
Trichloroethene	BQL	5.00	1	3/15/2009
1,1,1-Trichloroethane	BQL	5.00	1	3/15/2009
1,1,2-Trichloroethane	BQL	5.00	1	3/15/2009
Trichlorofluoromethane	BQL	5.00	1	3/15/2009
1,2,3-Trichloropropane	BQL	5.00	1	3/15/2009
1,2,4-Trimethylbenzene	BQL	5.00	1	3/15/2009
1,3,5-Trimethylbenzene	BQL	5.00	1	3/15/2009
Vinyl chloride	BQL	5.00	1	3/15/2009
m-,p-Xylene	BQL	10.0	1	3/15/2009
o-Xylene	BQL	5.00	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	50	59.8	120
Toluene-d8	50	50.4	101
4-Bromofluorobenzene	50	49.6	99

Comments:

Flags:
BQL = Below Quantitation Limits.

Analyst: _____

Reviewed By: _____

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S006
Client Project ID: CTO 005
Lab Sample ID: G649-130-1H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 33.41 g

Analyzed By: DCS
Date Collected: 3/12/2009 13:50
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 87.04

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	344	1	3/15/2009
Acenaphthylene	BQL	344	1	3/15/2009
Anthracene	BQL	344	1	3/15/2009
Benzo[a]anthracene	BQL	344	1	3/15/2009
Benzo[a]pyrene	BQL	344	1	3/15/2009
Benzo[b]fluoranthene	BQL	344	1	3/15/2009
Benzo[g,h,i]perylene	BQL	344	1	3/15/2009
Benzo[k]fluoranthene	BQL	344	1	3/15/2009
Benzoic Acid	BQL	688	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	344	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	344	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	344	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	344	1	3/15/2009
4-bromophenyl phenyl ether	BQL	344	1	3/15/2009
Butylbenzylphthalate	BQL	344	1	3/15/2009
2-Chloronaphthalene	BQL	344	1	3/15/2009
2-Chlorophenol	BQL	344	1	3/15/2009
4-Chloro-3-methylphenol	BQL	344	1	3/15/2009
4-Chloroaniline	BQL	1720	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	344	1	3/15/2009
Chrysene	BQL	344	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	344	1	3/15/2009
Dibenzofuran	BQL	344	1	3/15/2009
Di-n-Butylphthalate	BQL	344	1	3/15/2009
1,2-Dichlorobenzene	BQL	344	1	3/15/2009
1,3-Dichlorobenzene	BQL	344	1	3/15/2009
1,4-Dichlorobenzene	BQL	344	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	688	1	3/15/2009
2,4-Dichlorophenol	BQL	344	1	3/15/2009
Diethylphthalate	BQL	344	1	3/15/2009
Dimethylphthalate	BQL	344	1	3/15/2009
2,4-Dimethylphenol	BQL	344	1	3/15/2009
Di-n-octylphthalate	BQL	344	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1720	1	3/15/2009
2,4-Dinitrophenol	BQL	1720	1	3/15/2009
2,4-Dinitrotoluene	BQL	344	1	3/15/2009
2,6-Dinitrotoluene	BQL	344	1	3/15/2009
Fluoranthene	BQL	344	1	3/15/2009
Fluorene	BQL	344	1	3/15/2009
Hexachlorobenzene	BQL	344	1	3/15/2009
Hexachlorobutadiene	BQL	344	1	3/15/2009
Hexachlorocyclopentadiene	BQL	688	1	3/15/2009
Hexachloroethane	BQL	344	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	344	1	3/15/2009
Isophorone	BQL	344	1	3/15/2009
2-Methylnaphthalene	BQL	344	1	3/15/2009
2-Methylphenol	BQL	344	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S006
Client Project ID: CTO 005
Lab Sample ID: G649-130-1H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 33.41 g

Analyzed By: DCS
Date Collected: 3/12/2009 13:50
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 87.04

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	344	1	3/15/2009
Naphthalene	BQL	344	1	3/15/2009
2-Nitroaniline	BQL	344	1	3/15/2009
3-Nitroaniline	BQL	1720	1	3/15/2009
4-Nitroaniline	BQL	1720	1	3/15/2009
Nitrobenzene	BQL	344	1	3/15/2009
2-Nitrophenol	BQL	344	1	3/15/2009
4-Nitrophenol	BQL	1720	1	3/15/2009
Diphenylamine *	BQL	344	1	3/15/2009
Pentachlorophenol	BQL	1720	1	3/15/2009
Phenanthrene	BQL	344	1	3/15/2009
Phenol	BQL	344	1	3/15/2009
Pyrene	BQL	344	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	344	1	3/15/2009
2,4,5-Trichlorophenol	BQL	344	1	3/15/2009
2,4,6-Trichlorophenol	BQL	344	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7.7	77
2-Fluorophenol	10	8.4	84
Nitrobenzene-d5	10	8.4	84
Phenol-d6	10	8.7	87
2,4,6-Tribromophenol	10	7.5	75
4-Terphenyl-d14	10	7	70

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By:

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S007
Client Project ID: CTO 005
Lab Sample ID: G649-130-2H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.84 g

Analyzed By: DCS
Date Collected: 3/12/2009 13:57
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 84.82

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	359	1	3/15/2009
Acenaphthylene	BQL	359	1	3/15/2009
Anthracene	BQL	359	1	3/15/2009
Benzo[a]anthracene	BQL	359	1	3/15/2009
Benzo[a]pyrene	BQL	359	1	3/15/2009
Benzo[b]fluoranthene	BQL	359	1	3/15/2009
Benzo[g,h,i]perylene	BQL	359	1	3/15/2009
Benzo[k]fluoranthene	BQL	359	1	3/15/2009
Benzoic Acid	BQL	718	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	359	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	359	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	359	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	359	1	3/15/2009
4-bromophenyl phenyl ether	BQL	359	1	3/15/2009
Butylbenzylphthalate	BQL	359	1	3/15/2009
2-Chloronaphthalene	BQL	359	1	3/15/2009
2-Chlorophenol	BQL	359	1	3/15/2009
4-Chloro-3-methylphenol	BQL	359	1	3/15/2009
4-Chloroaniline	BQL	1800	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	359	1	3/15/2009
Chrysene	BQL	359	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	359	1	3/15/2009
Dibenzofuran	BQL	359	1	3/15/2009
Di-n-Butylphthalate	BQL	359	1	3/15/2009
1,2-Dichlorobenzene	BQL	359	1	3/15/2009
1,3-Dichlorobenzene	BQL	359	1	3/15/2009
1,4-Dichlorobenzene	BQL	359	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	718	1	3/15/2009
2,4-Dichlorophenol	BQL	359	1	3/15/2009
Diethylphthalate	BQL	359	1	3/15/2009
Dimethylphthalate	BQL	359	1	3/15/2009
2,4-Dimethylphenol	BQL	359	1	3/15/2009
Di-n-octylphthalate	BQL	359	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1800	1	3/15/2009
2,4-Dinitrophenol	BQL	1800	1	3/15/2009
2,4-Dinitrotoluene	BQL	359	1	3/15/2009
2,6-Dinitrotoluene	BQL	359	1	3/15/2009
Fluoranthene	BQL	359	1	3/15/2009
Fluorene	BQL	359	1	3/15/2009
Hexachlorobenzene	BQL	359	1	3/15/2009
Hexachlorobutadiene	BQL	359	1	3/15/2009
Hexachlorocyclopentadiene	BQL	718	1	3/15/2009
Hexachloroethane	BQL	359	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	359	1	3/15/2009
Isophorone	BQL	359	1	3/15/2009
2-Methylnaphthalene	BQL	359	1	3/15/2009
2-Methylphenol	BQL	359	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S007
Client Project ID: CTO 005
Lab Sample ID: G649-130-2H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.84 g

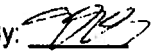
Analyzed By: DCS
Date Collected: 3/12/2009 13:57
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 84.82

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	359	1	3/15/2009
Naphthalene	BQL	359	1	3/15/2009
2-Nitroaniline	BQL	359	1	3/15/2009
3-Nitroaniline	BQL	1800	1	3/15/2009
4-Nitroaniline	BQL	1800	1	3/15/2009
Nitrobenzene	BQL	359	1	3/15/2009
2-Nitrophenol	BQL	359	1	3/15/2009
4-Nitrophenol	BQL	1800	1	3/15/2009
Diphenylamine *	BQL	359	1	3/15/2009
Pentachlorophenol	BQL	1800	1	3/15/2009
Phenanthrene	BQL	359	1	3/15/2009
Phenol	BQL	359	1	3/15/2009
Pyrene	BQL	359	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	359	1	3/15/2009
2,4,5-Trichlorophenol	BQL	359	1	3/15/2009
2,4,6-Trichlorophenol	BQL	359	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
2-Fluorophenol	10	8.6	86
Nitrobenzene-d5	10	8.8	88
Phenol-d6	10	8.8	88
2,4,6-Tribromophenol	10	8.4	84
4-Terphenyl-d14	10	7.5	75

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: 

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S008
Client Project ID: CTO 005
Lab Sample ID: G649-130-3H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.04 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:25
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 97.34

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	321	1	3/15/2009
Acenaphthylene	BQL	321	1	3/15/2009
Anthracene	BQL	321	1	3/15/2009
Benzo[a]anthracene	BQL	321	1	3/15/2009
Benzo[a]pyrene	BQL	321	1	3/15/2009
Benzo[b]fluoranthene	BQL	321	1	3/15/2009
Benzo[g,h,i]perylene	BQL	321	1	3/15/2009
Benzo[k]fluoranthene	BQL	321	1	3/15/2009
Benzoic Acid	BQL	641	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	321	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	321	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	321	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	321	1	3/15/2009
4-bromophenyl phenyl ether	BQL	321	1	3/15/2009
Butylbenzylphthalate	BQL	321	1	3/15/2009
2-Chloronaphthalene	BQL	321	1	3/15/2009
2-Chlorophenol	BQL	321	1	3/15/2009
4-Chloro-3-methylphenol	BQL	321	1	3/15/2009
4-Chloroaniline	BQL	1600	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	321	1	3/15/2009
Chrysene	BQL	321	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	321	1	3/15/2009
Dibenzofuran	BQL	321	1	3/15/2009
Di-n-Butylphthalate	BQL	321	1	3/15/2009
1,2-Dichlorobenzene	BQL	321	1	3/15/2009
1,3-Dichlorobenzene	BQL	321	1	3/15/2009
1,4-Dichlorobenzene	BQL	321	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	641	1	3/15/2009
2,4-Dichlorophenol	BQL	321	1	3/15/2009
Diethylphthalate	BQL	321	1	3/15/2009
Dimethylphthalate	BQL	321	1	3/15/2009
2,4-Dimethylphenol	BQL	321	1	3/15/2009
Di-n-octylphthalate	BQL	321	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1600	1	3/15/2009
2,4-Dinitrophenol	BQL	1600	1	3/15/2009
2,4-Dinitrotoluene	BQL	321	1	3/15/2009
2,6-Dinitrotoluene	BQL	321	1	3/15/2009
Fluoranthene	BQL	321	1	3/15/2009
Fluorene	BQL	321	1	3/15/2009
Hexachlorobenzene	BQL	321	1	3/15/2009
Hexachlorobutadiene	BQL	321	1	3/15/2009
Hexachlorocyclopentadiene	BQL	641	1	3/15/2009
Hexachloroethane	BQL	321	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	321	1	3/15/2009
Isophorone	BQL	321	1	3/15/2009
2-Methylnaphthalene	BQL	321	1	3/15/2009
2-Methylphenol	BQL	321	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S008
Client Project ID: CTO 005
Lab Sample ID: G649-130-3H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.04 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:25
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 97.34

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	321	1	3/15/2009
Naphthalene	BQL	321	1	3/15/2009
2-Nitroaniline	BQL	321	1	3/15/2009
3-Nitroaniline	BQL	1600	1	3/15/2009
4-Nitroaniline	BQL	1600	1	3/15/2009
Nitrobenzene	BQL	321	1	3/15/2009
2-Nitrophenol	BQL	321	1	3/15/2009
4-Nitrophenol	BQL	1600	1	3/15/2009
Diphenylamine *	BQL	321	1	3/15/2009
Pentachlorophenol	BQL	1600	1	3/15/2009
Phenanthrene	BQL	321	1	3/15/2009
Phenol	BQL	321	1	3/15/2009
Pyrene	BQL	321	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	321	1	3/15/2009
2,4,5-Trichlorophenol	BQL	321	1	3/15/2009
2,4,6-Trichlorophenol	BQL	321	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
2-Fluorophenol	10	9	90
Nitrobenzene-d5	10	9	90
Phenol-d6	10	9.2	92
2,4,6-Tribromophenol	10	8.4	84
4-Terphenyl-d14	10	7.9	79

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: 

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S009
Client Project ID: CTO 005
Lab Sample ID: G649-130-4H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 37.34 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:35
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 95.74

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	280	1	3/15/2009
Acenaphthylene	BQL	280	1	3/15/2009
Anthracene	BQL	280	1	3/15/2009
Benzo[a]anthracene	BQL	280	1	3/15/2009
Benzo[a]pyrene	BQL	280	1	3/15/2009
Benzo[b]fluoranthene	BQL	280	1	3/15/2009
Benzo[g,h,i]perylene	BQL	280	1	3/15/2009
Benzo[k]fluoranthene	BQL	280	1	3/15/2009
Benzoic Acid	BQL	559	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	280	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	280	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	280	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	280	1	3/15/2009
4-bromophenyl phenyl ether	BQL	280	1	3/15/2009
Butylbenzylphthalate	BQL	280	1	3/15/2009
2-Chloronaphthalene	BQL	280	1	3/15/2009
2-Chlorophenol	BQL	280	1	3/15/2009
4-Chloro-3-methylphenol	BQL	280	1	3/15/2009
4-Chloroaniline	BQL	1400	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	280	1	3/15/2009
Chrysene	BQL	280	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	280	1	3/15/2009
Dibenzofuran	BQL	280	1	3/15/2009
Di-n-Butylphthalate	BQL	280	1	3/15/2009
1,2-Dichlorobenzene	BQL	280	1	3/15/2009
1,3-Dichlorobenzene	BQL	280	1	3/15/2009
1,4-Dichlorobenzene	BQL	280	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	559	1	3/15/2009
2,4-Dichlorophenol	BQL	280	1	3/15/2009
Diethylphthalate	BQL	280	1	3/15/2009
Dimethylphthalate	BQL	280	1	3/15/2009
2,4-Dimethylphenol	BQL	280	1	3/15/2009
Di-n-octylphthalate	BQL	280	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1400	1	3/15/2009
2,4-Dinitrophenol	BQL	1400	1	3/15/2009
2,4-Dinitrotoluene	BQL	280	1	3/15/2009
2,6-Dinitrotoluene	BQL	280	1	3/15/2009
Fluoranthene	BQL	280	1	3/15/2009
Fluorene	BQL	280	1	3/15/2009
Hexachlorobenzene	BQL	280	1	3/15/2009
Hexachlorobutadiene	BQL	280	1	3/15/2009
Hexachlorocyclopentadiene	BQL	559	1	3/15/2009
Hexachloroethane	BQL	280	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	280	1	3/15/2009
Isophorone	BQL	280	1	3/15/2009
2-Methylnaphthalene	BQL	280	1	3/15/2009
2-Methylphenol	BQL	280	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S009
Client Project ID: CTO 005
Lab Sample ID: G649-130-4H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 37.34 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:35
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 95.74

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	280	1	3/15/2009
Naphthalene	BQL	280	1	3/15/2009
2-Nitroaniline	BQL	280	1	3/15/2009
3-Nitroaniline	BQL	1400	1	3/15/2009
4-Nitroaniline	BQL	1400	1	3/15/2009
Nitrobenzene	BQL	280	1	3/15/2009
2-Nitrophenol	BQL	280	1	3/15/2009
4-Nitrophenol	BQL	1400	1	3/15/2009
Diphenylamine *	BQL	280	1	3/15/2009
Pentachlorophenol	BQL	1400	1	3/15/2009
Phenanthrene	BQL	280	1	3/15/2009
Phenol	BQL	280	1	3/15/2009
Pyrene	BQL	280	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	280	1	3/15/2009
2,4,5-Trichlorophenol	BQL	280	1	3/15/2009
2,4,6-Trichlorophenol	BQL	280	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	7	70
2-Fluorophenol	10	7	70
Nitrobenzene-d5	10	7.4	74
Phenol-d6	10	7.2	73
2,4,6-Tribromophenol	10	6.8	68
4-Terphenyl-d14	10	6.5	65

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: 

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S010
Client Project ID: CTO 005
Lab Sample ID: G649-130-5H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 36.23 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:40
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 96.02

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	287	1	3/15/2009
Acenaphthylene	BQL	287	1	3/15/2009
Anthracene	BQL	287	1	3/15/2009
Benzo[a]anthracene	BQL	287	1	3/15/2009
Benzo[a]pyrene	BQL	287	1	3/15/2009
Benzo[b]fluoranthene	BQL	287	1	3/15/2009
Benzo[g,h,i]perylene	BQL	287	1	3/15/2009
Benzo[k]fluoranthene	BQL	287	1	3/15/2009
Benzoic Acid	BQL	575	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	287	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	287	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	287	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	287	1	3/15/2009
4-bromophenyl phenyl ether	BQL	287	1	3/15/2009
Butylbenzylphthalate	BQL	287	1	3/15/2009
2-Chloronaphthalene	BQL	287	1	3/15/2009
2-Chlorophenol	BQL	287	1	3/15/2009
4-Chloro-3-methylphenol	BQL	287	1	3/15/2009
4-Chloroaniline	BQL	1440	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	287	1	3/15/2009
Chrysene	BQL	287	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	287	1	3/15/2009
Dibenzofuran	BQL	287	1	3/15/2009
Di-n-Butylphthalate	BQL	287	1	3/15/2009
1,2-Dichlorobenzene	BQL	287	1	3/15/2009
1,3-Dichlorobenzene	BQL	287	1	3/15/2009
1,4-Dichlorobenzene	BQL	287	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	575	1	3/15/2009
2,4-Dichlorophenol	BQL	287	1	3/15/2009
Diethylphthalate	BQL	287	1	3/15/2009
Dimethylphthalate	BQL	287	1	3/15/2009
2,4-Dimethylphenol	BQL	287	1	3/15/2009
Di-n-octylphthalate	BQL	287	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1440	1	3/15/2009
2,4-Dinitrophenol	BQL	1440	1	3/15/2009
2,4-Dinitrotoluene	BQL	287	1	3/15/2009
2,6-Dinitrotoluene	BQL	287	1	3/15/2009
Fluoranthene	BQL	287	1	3/15/2009
Fluorene	BQL	287	1	3/15/2009
Hexachlorobenzene	BQL	287	1	3/15/2009
Hexachlorobutadiene	BQL	287	1	3/15/2009
Hexachlorocyclopentadiene	BQL	575	1	3/15/2009
Hexachloroethane	BQL	287	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	287	1	3/15/2009
Isophorone	BQL	287	1	3/15/2009
2-Methylnaphthalene	BQL	287	1	3/15/2009
2-Methylphenol	BQL	287	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S010
Client Project ID: CTO 005
Lab Sample ID: G649-130-5H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 36.23 g

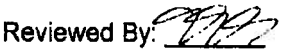
Analyzed By: DCS
Date Collected: 3/12/2009 17:40
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 96.02

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	287	1	3/15/2009
Naphthalene	BQL	287	1	3/15/2009
2-Nitroaniline	BQL	287	1	3/15/2009
3-Nitroaniline	BQL	1440	1	3/15/2009
4-Nitroaniline	BQL	1440	1	3/15/2009
Nitrobenzene	BQL	287	1	3/15/2009
2-Nitrophenol	BQL	287	1	3/15/2009
4-Nitrophenol	BQL	1440	1	3/15/2009
Diphenylamine *	BQL	287	1	3/15/2009
Pentachlorophenol	BQL	1440	1	3/15/2009
Phenanthrene	BQL	287	1	3/15/2009
Phenol	BQL	287	1	3/15/2009
Pyrene	BQL	287	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	287	1	3/15/2009
2,4,5-Trichlorophenol	BQL	287	1	3/15/2009
2,4,6-Trichlorophenol	BQL	287	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.8	98
2-Fluorophenol	10	8.7	87
Nitrobenzene-d5	10	9.8	98
Phenol-d6	10	8.4	84
2,4,6-Tribromophenol	10	9.2	92
4-Terphenyl-d14	10	7.2	72

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: 

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S011
Client Project ID: CTO 005
Lab Sample ID: G649-130-6H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.47 g

Analyzed By: DCS
Date Collected: 3/12/2009 17:44
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 92.33

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	334	1	3/15/2009
Acenaphthylene	BQL	334	1	3/15/2009
Anthracene	BQL	334	1	3/15/2009
Benzo[a]anthracene	BQL	334	1	3/15/2009
Benzo[a]pyrene	BQL	334	1	3/15/2009
Benzo[b]fluoranthene	BQL	334	1	3/15/2009
Benzo[g,h,i]perylene	BQL	334	1	3/15/2009
Benzo[k]fluoranthene	BQL	334	1	3/15/2009
Benzoic Acid	BQL	667	1	3/15/2009
Bis(2-chloroethoxy)methane	BQL	334	1	3/15/2009
Bis(2-chloroethyl)ether	BQL	334	1	3/15/2009
Bis(2-chloroisopropyl)ether	BQL	334	1	3/15/2009
Bis(2-ethylhexyl)phthalate	BQL	334	1	3/15/2009
4-bromophenyl phenyl ether	BQL	334	1	3/15/2009
Butylbenzylphthalate	BQL	334	1	3/15/2009
2-Chloronaphthalene	BQL	334	1	3/15/2009
2-Chlorophenol	BQL	334	1	3/15/2009
4-Chloro-3-methylphenol	BQL	334	1	3/15/2009
4-Chloroaniline	BQL	1670	1	3/15/2009
4-Chlorophenyl phenyl ether	BQL	334	1	3/15/2009
Chrysene	BQL	334	1	3/15/2009
Dibenzo[a,h]anthracene	BQL	334	1	3/15/2009
Dibenzofuran	BQL	334	1	3/15/2009
Di-n-Butylphthalate	BQL	334	1	3/15/2009
1,2-Dichlorobenzene	BQL	334	1	3/15/2009
1,3-Dichlorobenzene	BQL	334	1	3/15/2009
1,4-Dichlorobenzene	BQL	334	1	3/15/2009
3,3'-Dichlorobenzidine	BQL	667	1	3/15/2009
2,4-Dichlorophenol	BQL	334	1	3/15/2009
Diethylphthalate	BQL	334	1	3/15/2009
Dimethylphthalate	BQL	334	1	3/15/2009
2,4-Dimethylphenol	BQL	334	1	3/15/2009
Di-n-octylphthalate	BQL	334	1	3/15/2009
4,6-Dinitro-2-methylphenol	BQL	1670	1	3/15/2009
2,4-Dinitrophenol	BQL	1670	1	3/15/2009
2,4-Dinitrotoluene	BQL	334	1	3/15/2009
2,6-Dinitrotoluene	BQL	334	1	3/15/2009
Fluoranthene	BQL	334	1	3/15/2009
Fluorene	BQL	334	1	3/15/2009
Hexachlorobenzene	BQL	334	1	3/15/2009
Hexachlorobutadiene	BQL	334	1	3/15/2009
Hexachlorocyclopentadiene	BQL	667	1	3/15/2009
Hexachloroethane	BQL	334	1	3/15/2009
Indeno(1,2,3-c,d)pyrene	BQL	334	1	3/15/2009
Isophorone	BQL	334	1	3/15/2009
2-Methylnaphthalene	BQL	334	1	3/15/2009
2-Methylphenol	BQL	334	1	3/15/2009

Results for Semivolatiles
by GCMS 8270

Client Sample ID: TT3114-S011
Client Project ID: CTO 005
Lab Sample ID: G649-130-6H
Lab Project ID: G649-130
Report Basis: Dry weight
Initial Weight: 32.47 g

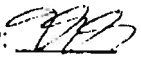
Analyzed By: DCS
Date Collected: 3/12/2009 17:44
Date Received: 3/13/2009
Date Extracted: 3/13/2009
Matrix: Soil
% Solids: 92.33

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
3- & 4-Methylphenol	BQL	334	1	3/15/2009
Naphthalene	BQL	334	1	3/15/2009
2-Nitroaniline	BQL	334	1	3/15/2009
3-Nitroaniline	BQL	1670	1	3/15/2009
4-Nitroaniline	BQL	1670	1	3/15/2009
Nitrobenzene	BQL	334	1	3/15/2009
2-Nitrophenol	BQL	334	1	3/15/2009
4-Nitrophenol	BQL	1670	1	3/15/2009
Diphenylamine *	BQL	334	1	3/15/2009
Pentachlorophenol	BQL	1670	1	3/15/2009
Phenanthrene	BQL	334	1	3/15/2009
Phenol	BQL	334	1	3/15/2009
Pyrene	BQL	334	1	3/15/2009
1,2,4-Trichlorobenzene	BQL	334	1	3/15/2009
2,4,5-Trichlorophenol	BQL	334	1	3/15/2009
2,4,6-Trichlorophenol	BQL	334	1	3/15/2009

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.3	83
2-Fluorophenol	10	8.2	82
Nitrobenzene-d5	10	8.9	89
Phenol-d6	10	8.5	85
2,4,6-Tribromophenol	10	8.4	84
4-Terphenyl-d14	10	7.4	74

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.

Reviewed By: 

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio
- West Virginia

www.us.sgs.com

(1) CLIENT: State of Virginia
CONTACT: Theresa Ellerman PHONE NO: (757) 274-4949
PROJECT: CTO 005 SITE/PWSID#: TT3114
REPORTS TO: Shaun Winitworth EMAIL:
INVOICE TO: Mike Cline QUOTE #:
P.O. #: CTO 005

SGS Reference #: 6649-130
page 1 of 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	Analysis Required (3) MADEP VPH	MADEP EPH	8260	8270	REMARKS/ LOC ID
	TT3114-S006	3/12/09	1350	S	6			x	x	x	x	3'ft
	TT3114-S007	3/12/09	1357	S	6			x	x	x	x	3'ft
	TT3114-S008	3/12/09	1725	S	6			x	x	x	x	
	TT3114-S009	3/12/09	1735	S	6			x	x	x	x	
	TT3114-S010	3/12/09	1740	S	6			x	x	x	x	
	TT3114-S011	3/12/09	1744	S	6			x	x	x	x	
	Trip Blanks	3/12/09	0900	-	2			x		x		

SGS Environmental Services, Inc.

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	3/13/09	14:20	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)
DOD Project? YES NO
Cooler ID _____
Special Deliverable Requirements: EDD
Requested Turnaround Time and-or Special Instructions: Rush Turn - Email results to swinitworth@cosageva.com tellerman@cosageva.com
Samples Received Cold? YES NO
Cooler TB
Temperature °C: 5.2, 5.5
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Page 50 of 50

200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
550 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

Shaun Whitworth
Osage of Virginia
2618 A Colley Ave
Norfolk, VA 23517

Report Number: G649-133

Client Project: CTO 005

Dear Shaun Whitworth,

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS Environmental Services at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS Environmental Services, Inc.

Ashley Nifong 3/23/09

Project Manager Date
Ashley Nifong

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S012
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	03/19/09 13:30
Date Received	03/20/09
Date Extracted	03/20/09
Date Analyzed	03/21/09 00:52 - 03/21/09 00:52
Dry Weight	94.6
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	82.4		70	130
Surrogate % Recovery - FID	94.5		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g649-133-1a	Lab Info: g649-133-1a
FID Info: VP032009/028F0101.D	PID Info: VP032009/028R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	Trip Blank
Sample Matrix	Soil
Collection Option (for Soil)*	NA
Date Collected	03/19/09 00:00
Date Received	03/20/09
Date Extracted	03/20/09
Date Analyzed	03/20/09 22:37 - 03/20/09 22:37
Dry Weight	100
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result mg/Kg	Report Limit mg/Kg	Flags
C_5-C_8 Aliphatics**	BQL	10.0	
C_9-C_{12} Aliphatics**	BQL	10.0	
C_9-C_{10} Aromatics**	BQL	10.0	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	87.6		70	130
Surrogate % Recovery - FID	100		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info:	g649-133-2a	Lab Info:	g649-133-2a
FID Info:	VP032009/023F0101.D	PID Info:	VP032009/023R0101.D

Reviewed By:

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/15/09 PID Initial Calibration Date: 03/15/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	8.21	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	24.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	7.07	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/20/09 Filename: VP032009/007F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR ✓	Limits
C_5-C_8 Aliphatics	200	16	-9.4	±25%
C_9-C_{12} Aliphatics	200	16	2.3	±25%
C_9-C_{10} Aromatics	200	16	-5.0	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/15/09 PID Initial Calibration Date: 03/15/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR ✓	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	8.21	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	24.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	7.07	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 03/20/09 Filename: VP032009/031F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR ✓	Limits
C_5-C_8 Aliphatics	200	16	-23.6	±25%
C_9-C_{12} Aliphatics	200	16	3.0	±25%
C_9-C_{10} Aromatics	200	16	-11.4	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Osage of Virginia

Project Name: CTO 005

Sample Information	
Sample Identification	TT3114-S012
Sample Matrix	Soil
Date Collected	03/19/09 13:30
Date Received	03/20/09
Date Extracted	03/20/09
Date Analyzed	03/23/09 09:45 - 03/23/09 09:45
Dry Weight	94.6
Dilution Factor	1 - 1
Initial weight (g)	14.23
Final Volume (mL)	10.0

Analytical Results			
Analytes**	Result mg/Kg	Report Limit mg/Kg	Flags
C9-C18 Aliphatics	BQL	10.0	
C19-C36 Aliphatics	BQL	10.0	
C11-C22 Aromatics	BQL	10.0	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	95.8		40	140
Aromatic (ortho-terphenyl)	94.9		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G649-133-1D	Lab Info: G649-133-1D
Aliphatic: EP032309/003F0101.D	Aromatic: EP032309/003F0101.D

Reviewed By:

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF ✓ r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/23/09 / 03/23/09 Filenames: ep032309/001f0101.d / ep032309/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF ✓ %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	-3.5	≤±25%
C19-C36 Aliphatics	100	16.7	-9.9	≤±25%
C11-C22 Aromatics	100	16.7	0.4	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF / r if LR ✓	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 03/23/09
03/23/09

Filenames: ep032309/001f1301.d
ep032309/002f1401.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF / %Drift if LR ✓	Limits
C9-C18 Aliphatics	100	16.7	6.1	≤±25%
C19-C36 Aliphatics	100	16.7	6.3	≤±25%
C11-C22 Aromatics	100	16.7	-4.7	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

SGS Environmental Services Inc.
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Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio
- West Virginia

www.us.sgs.com

(1)
CLIENT: OSAGE of VA
CONTACT: THERESA ELLERMAN PHONE NO: (757) 274-4449
PROJECT: CTO 005 SITE/PWSID#: TT3114
REPORTS TO: EMAIL:
Shaun Whitworth @osageva.com
INVOICE TO: QUOTE #:
P.O. #:

SGS Reference #: 6649-133

page _____ of _____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	Analysis Required (3) MADEP VPH	MADEP EPH	REMARKS/ LOC ID
	TT3114-SO12	3/19/09	1330	S	3			X	X	
	TRIP BLANKS	3/19/09	0900	—	1			X		

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
	3/20/09	1212	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)
DOD Project? (YES) NO
Cooler ID _____
Special Deliverable Requirements: EDD
Requested Turnaround Time and-or Special Instructions: 24 HR TURN
Email RESULTS: swhitworth@osageva.com
tellerman@osageva.com
Samples Received Cold? (YES) NO
Cooler TB
Temperature °C: 5.2 C
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

SGS Environmental Services, Inc.

Page 10 of 10

Shane Chasteen
Richard Catlin & Associates
P.O. Box 10279
Wilmington, NC 28404-0279

Report Number: G128-2347

Client Project: TT-3114

Dear Shane Chasteen,

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Ashley Nifong at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS Environmental Services, Inc.

Lori Lu 4/6/09

Project Manager Date
pp Ashley Nifong

List of Reporting Abbreviations And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:
1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.021808.4

Results for Volatiles
by GC 602

Client Sample ID: TT3114-TW01
Client Project ID: TT-3114
Lab Sample ID: G128-2347-1D
Lab Project ID: G128-2347

Analyzed By: RSB
Date Collected: 3/31/2009 12:30
Date Received: 3/31/2009
Matrix: Water

Analyte	Result ug/L	RL ug/L	Dilution Factor	Date Analyzed
Benzene	BQL	1.00	1	4/2/2009
Diisopropyl ether (DIPE)	BQL	1.00	1	4/2/2009
Ethylbenzene	BQL	1.00	1	4/2/2009
Methyl-tert butyl ether (MTBE)	BQL	2.00	1	4/2/2009
Toluene	BQL	1.00	1	4/2/2009
m/p-Xylene	BQL	2.00	1	4/2/2009
o-Xylene	BQL	2.00	1	4/2/2009

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	39.9	99.7

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____
GC-VOA_WA

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT3114-TW01
Client Project ID: TT-3114
Lab Sample ID: G128-2347-1J
Lab Project ID: G128-2347

Initial/Final Amt: 948 mL / 5.0 mL

Analyzed By: DCS
Date Collected: 3/31/2009 12:30
Date Received: 3/31/2009
Date Extracted: 4/1/2009
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.27	0.786	1	4/2/2009	
Acenaphthylene	BQL	5.27	0.786	1	4/2/2009	
Anthracene	BQL	5.27	0.923	1	4/2/2009	
Benzo[a]anthracene	BQL	5.27	0.717	1	4/2/2009	
Benzo[a]pyrene	BQL	5.27	0.670	1	4/2/2009	
Benzo[b]fluoranthene	BQL	5.27	0.754	1	4/2/2009	
Benzo[g,h,i]perylene	BQL	5.27	0.649	1	4/2/2009	
Benzo[k]fluoranthene	BQL	5.27	0.580	1	4/2/2009	
Bis(2-chloroethoxy)methane	BQL	5.27	1.09	1	4/2/2009	
Bis(2-chloroethyl)ether	BQL	5.27	1.10	1	4/2/2009	
Bis(2-chloroisopropyl)ether	BQL	5.27	1.03	1	4/2/2009	
Bis(2-ethylhexyl)phthalate	BQL	5.27	0.432	1	4/2/2009	
4-bromophenyl phenyl ether	BQL	5.27	0.823	1	4/2/2009	
Butylbenzylphthalate	BQL	5.27	0.469	1	4/2/2009	
2-Chloronaphthalene	BQL	5.27	0.912	1	4/2/2009	
2-Chlorophenol	BQL	5.27	1.23	1	4/2/2009	
4-Chloro-3-methylphenol	BQL	5.27	0.839	1	4/2/2009	
4-Chlorophenyl phenyl ether	BQL	5.27	3.43	1	4/2/2009	
Chrysene	BQL	5.27	0.585	1	4/2/2009	
Dibenzo[a,h]anthracene	BQL	5.27	0.464	1	4/2/2009	
Di-n-Butylphthalate	BQL	5.27	0.870	1	4/2/2009	
3,3'-Dichlorobenzidine	BQL	10.5	1.29	1	4/2/2009	
2,4-Dichlorophenol	BQL	5.27	1.18	1	4/2/2009	
Diethylphthalate	BQL	5.27	0.781	1	4/2/2009	
Dimethylphthalate	BQL	5.27	0.585	1	4/2/2009	
2,4-Dimethylphenol	BQL	5.27	1.71	1	4/2/2009	
Di-n-octylphthalate	BQL	5.27	0.612	1	4/2/2009	
4,6-Dinitro-2-methylphenol	BQL	26.4	0.580	1	4/2/2009	
2,4-Dinitrophenol	BQL	26.4	0.675	1	4/2/2009	
2,4-Dinitrotoluene	BQL	5.27	0.564	1	4/2/2009	
2,6-Dinitrotoluene	BQL	5.27	0.686	1	4/2/2009	
Diphenylamine *	BQL	5.27	0.601	1	4/2/2009	
Fluoranthene	BQL	5.27	0.744	1	4/2/2009	
Fluorene	BQL	5.27	0.765	1	4/2/2009	
Hexachlorobenzene	BQL	5.27	0.533	1	4/2/2009	
Hexachlorobutadiene	BQL	5.27	0.802	1	4/2/2009	
Hexachlorocyclopentadiene	BQL	10.5	10.5	1	4/2/2009	
Hexachloroethane	BQL	5.27	0.786	1	4/2/2009	
Indeno(1,2,3-c,d)pyrene	BQL	5.27	2.41	1	4/2/2009	
Isophorone	BQL	5.27	0.934	1	4/2/2009	
Naphthalene	BQL	5.27	0.960	1	4/2/2009	
Nitrobenzene	BQL	5.27	1.11	1	4/2/2009	
2-Nitrophenol	BQL	5.27	1.30	1	4/2/2009	
4-Nitrophenol	BQL	26.4	1.14	1	4/2/2009	
N-Nitrosodi-n-propylamine	BQL	5.27	1.58	1	4/2/2009	
Pentachlorophenol	BQL	26.4	1.49	1	4/2/2009	
Phenanthrene	BQL	5.27	0.469	1	4/2/2009	

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT3114-TW01
Client Project ID: TT-3114
Lab Sample ID: G128-2347-1J
Lab Project ID: G128-2347

Initial/Final Amt: 948 mL / 5.0 mL

Analyzed By: DCS
Date Collected: 3/31/2009 12:30
Date Received: 3/31/2009
Date Extracted: 4/1/2009
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.27	1.12	1	4/2/2009	
Pyrene	BQL	5.27	2.18	1	4/2/2009	
1,2,4-Trichlorobenzene	BQL	5.27	0.759	1	4/2/2009	
2,4,6-Trichlorophenol	BQL	5.27	0.976	1	4/2/2009	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.2	82
2-Fluorophenol	10	8.2	82
Nitrobenzene-d5	10	8.2	82
Phenol-d6	10	8.7	87
2,4,6-Tribromophenol	10	9.3	93
4-Terphenyl-d14	10	9.2	92

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

SGS Environmental Services, Inc.

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT3114-TW01
Client Project ID: TT-3114
Lab Sample ID: G128-2347-1J
Lab Project ID: G128-2347
Sample Wt/Vol: 948 ML
Dilution: 1

Analyzed By: DES
Date Collected: 3/31/2009 12:30
Date Received: 3/31/2009
Date Extracted: 4/1/2009
Date Analyzed: 4/2/2009
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	1H-Inden-1-one, 2,3-dihydro-	5.69	83-33-0	97	40.2
2	Dimethylbenzene, Isomer of	5.97			28.2
3	Alkane, Unknown	5.82			22.8
4	Ethanone, 1-(2,5-dimethylphenyl)-	5.89	2142-73-6	97	14.1
5	Benzene, 2-propenyl-	6.36	300-57-2	91	9.23
6	Aromatic, Unknown	6.45			8.63
7	1H-Indene-1,2-diol, 2,3-dihydro-, trans-	6.60	4647-43-2	95	4.9

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-3114

Sample Information	
Sample Identification	TT3114-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	03/31/09 12:30
Date Received	03/31/09
Date Extracted	04/01/09 18:08 - 04/01/09 18:08
Date Analyzed	04/01/09 18:08 - 04/01/09 18:08
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	BQL	100	
C_9-C_{10} Aromatics**	BQL	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	100		70	130
Surrogate % Recovery - FID	99.7		70	130

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: g128-2347-1b	Lab Info: g128-2347-1b
FID Info: VP040109/023F0101.D	PID Info: VP040109/023R0101.D

Reviewed By: 

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/28/09 PID Initial Calibration Date: 03/28/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	7.11	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	0.99	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	11.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 04/01/09 Filename: VP040109/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-21.0 ✓	±25%
C_9-C_{12} Aliphatics	200	16	-15.2 ✓	±25%
C_9-C_{10} Aromatics	200	16	-0.7 ✓	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 03/28/09 PID Initial Calibration Date: 03/28/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	7.11	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	0.99	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	11.28	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 04/01/09 Filename: VP040109/031F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-21.9 ✓	±25%
C_9-C_{12} Aliphatics	200	16	-6.7 ✓	±25%
C_9-C_{10} Aromatics	200	16	8.0 ✓	±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-3114

Sample Information	
Sample Identification	TT3114-TW01
Sample Matrix	Water
Date Collected	03/31/09 12:30
Date Received	03/31/09
Date Extracted	04/01/09
Date Analyzed	04/02/09 16:42 - 04/02/09 17:10
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	972
Final Volume (mL)	5.0

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	97.4		40	140
Aromatic (ortho-terphenyl)	94.9		40	140
Fractionation 1 (2-bromonaphthalene)	94.5		40	140
Fractionation 2 (2-fluorobiphenyl)	96.4		40	140

** = Excludes any surrogates or internal standards and are unadjusted for individual analytes.

Lab Info: G128-2347-1L	Lab Info: G128-2347-1L
Aliphatic: EP040209/013F0601.D	Aromatic: EP040209/014F0701.D

Reviewed By: _____

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 04/02/09 / 04/02/09

Filenames: ep040209/001f0401.d / ep040209/002f0501.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	4.5 ✓	≤±25%
C19-C36 Aliphatics	100	16.7	3.6 ✓	≤±25%
C11-C22 Aromatics	100	16.7	8.3 ✓	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 02/24/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	6.70	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	4.67	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	2.55	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 04/02/09 / 04/03/09

Filenames: ep040209/033f2601.d / ep040209/034f2701.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	10.9	≤±25%
C19-C36 Aliphatics	100	16.7	10.8	≤±25%
C11-C22 Aromatics	100	16.7	9.6	≤±25%

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- New Jersey
- North Carolina
- West Virginia
- Maryland
- New York
- Ohio

www.us.sgs.com

(1)

CLIENT: CATLIN

CONTACT: Shane Chasteen PHONE NO:

PROJECT: TT-3114 SITE/PWSID#: 209-022

REPORTS TO: Shane Chasteen EMAIL:

INVOICE TO: Sheila @ CATLIN QUOTE #: DOD 101

P.O. #: 290331-6

SGS Reference #: G128-2347

page 1 of 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	HCL	[redacted]	HCL	HCL							REMARKS/ LOC ID
							Analysis Required (3)	EPA 602	EPA 625 BNA + TICs	MADEP VPH	MADEP EPH							
	TT3114-TW01	3/31/09	1230	W	9	G		✓	✓	✓	✓							* Report Low Runs * Summary EDD Format * 1 week turnaround

N.C. Certification #481

SGS Environmental Services, Inc.

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Shane Chasteen	3/31/09	1555	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 3/31/09	Time 1555	Received For Laboratory By:

(4)

DOD Project? YES NO

Cooler ID _____

Special Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

1-week turnaround

Samples Received Cold? (YES) NO

Cooler TB

Temperature °C: 4.4 °C

Chain of Custody Seal: (Circle)

INTACT BROKEN (ABSENT)

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 550 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

APPENDIX F

PHOTOGRAPHS

UST TT-3114 prior to removal

UST TT-3114 during removal activities

UST TT-3114 after cleaning at RCRS, Building 977

APPENDIX G

WELL CONSTRUCTION/ABANDONMENT RECORD

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources - Division of Water Quality

WELL CONTRACTOR CERTIFICATION #: 2927

1. WELL CONTRACTOR:

William J. Miller
Well Contractor (Individual) Name

CATLIN Engineers and Scientists
Well Contractor Company Name

STREET ADDRESS 220 Old Dairy Road

Wilmington | North Carolina | 28405
City or Town | State | Zip Code

(910) - 452-5861
Area code - Phone number

2. WELL INFORMATION

SITE WELL ID #(if applicable): TT3114-TW01
STATE WELL PERMIT #(if applicable): N/A
DWQ or OTHER PERMIT # (if applicable): N/A
WELL USE (Check Applicable Box): Monitoring ☒ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☒ (list use): TEMPORARY WELL
DATE DRILLED: 03/30/2009
TIME COMPLETED: AM ☐ PM ☐

3. WELL LOCATION:

CITY: Jacksonville COUNTY: Onslow
Tarawa Terrace, MCB Camp Lejeune, North Carolina
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING
Slope ☐ Valley ☐ Flat ☒ Ridge ☐ Other:

NORTHING: 3,846,897.3
EASTING: 282,087.8
UTM NAD83 (m)
May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source: ☒ GPS ☐ Topo. map
(Location of well must be shown on a USGS topo map and attached to this form if not using a GPS.)

4. FACILITY - is the name of the business where the well is located.

FACILITY ID #(if applicable) N/A
NAME OF FACILITY: N/A
STREET ADDRESS: TT-3114, Tarawa Terrace
MCB Camp Lejeune

Jacksonville | NC |
City or Town | State | Zip Code

CONTACT PERSON: Dr. Johanna Arnold
STREET ADDRESS: Attn: I&E/ EMD/ EQB/ PSC Box 20004

Camp Lejeune | NC | 28542-0004
City or Town | State | Zip Code

(910)- 451-9017
Area code - Phone number

5. WELL DETAILS:

a. TOTAL DEPTH: 14.6
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
c. WATER LEVEL Below Top of Casing: 9.12 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 0.4 FT. Above Land Surface*
* Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118

e. YIELD (gpm): N/A METHOD OF TEST: N/A
f. DISINFECTION: Type N/A Amount: N/A
g. WATER ZONES (depth):
From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____

6. CASING:

	Depth	Diameter	Thickness/ Weight	Material
From 0	To 4.6 ft.	1"	Sch. 40	PVC
From ____	To ____ ft.	"		
From ____	To ____ ft.	"		

7. GROUT:

	Depth	Material	Method
From ____	To ____ Ft.		
From 0	To 1 Ft.	Bent. Pellets	Surface Pour
From ____	To ____ Ft.		

8. SCREEN:

	Depth	Diameter	Slot Size	Material
From 4.6	To 14.4 Ft.	1 in.	Slot .010 in.	PVC
From ____	To ____ Ft.	____ in.	____ in.	
From ____	To ____ Ft.	____ in.	____ in.	

9. SAND/GRAVEL PACK:

	Depth	Size	Material
From 1	To 14.6 Ft.	#2 Medium	Torpedo Sand
From ____	To ____ Ft.		
From ____	To ____ Ft.		

10. DRILLING LOG

From	To	Formation Description
		SEE ATTACHED

11. REMARKS:

Set 1" TEMPORARY monitoring well. Abandoned well subsequent to sampling.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE: 5-7-09

William J. Miller
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days, Attn: Information Management, 1617 Mail Service Center - Raleigh, NC 27699167, Phone No. (919) 733-7015 ext 568.

Modified from Form GW-1b Rev. 7/05

WELL LOG

CATLIN Engineers and Scientists
209-022 Wilmington, NC
SHEET 1 OF 1

PROJECT NO.: 209-022	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: Six TT Sites Well Installation	LOGGED BY: Steve Tyler		WELL ID: TT3114-TW01
	DRILLER: William J. Miller		
NORTHING: 3846897.3	EASTING: 282087.8	CREW: N/A	
SYSTEM: UTM NAD83 (m)	BORING LOCATION: See map.		T.O.C. ELEV.: NM
DRILL MACHINE: Power Probe	METHOD: Direct Push	0 HOUR DTW: NM	TOTAL DEPTH: 16.0
START DATE: 3/30/09	FINISH DATE: 3/30/09	24 HOUR DTW: 9.1	WELL DEPTH: 14.6

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	WELL DETAIL
									0.0	LAND SURFACE	0.4 / 0.0
							SM			Olive, SILTY f. SAND. Grades to a tan color with depth. Wet at approximately 7.0' BLS.	1.0; 2" Sch. 40 PVC; 4.6
									9.0		
							SC			Tan, CLAYEY f. SAND to SANDY CLAY.	1" Slot 010 Sch 40 PVC
									11.0		
							SW			White, f. SAND. Some fines.	14.4 / 14.6; 14.6
									16.0		
										Boring Terminated at Depth 16.0 ft in Set TEMPORARY 1" monitoring well to 14.6' BLS. Abandoned well subsequent to sampling.	

Bentonite Pellets #2 Medium Sand

CATLIN BORING LOG 209-022 SIX TT SITES.GPJ CATLIN.GDT 4/6/09

WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources - Division of Water Quality

WELL CONTRACTOR CERTIFICATION #: 2927

CATLIN PROJECT NO.: 209-022

1. WELL CONTRACTOR:

William J. Miller
Well Contractor (Individual) Name

CATLIN Engineers and Scientists
Well Contractor Company Name

STREET ADDRESS 220 Old Dairy Road

Wilmington | North Carolina | 28405
City or Town | State | Zip Code

(910) - 452-5861
Area code - Phone number

2. WELL INFORMATION

SITE WELL ID # (if applicable): TT3114-TW01
STATE WELL PERMIT # (if applicable): N.A.
COUNTY WELL PERMIT # (if applicable): N.A.
DWQ or OTHER PERMIT # (if applicable):
WELL USE (Check Applicable Box): Monitoring ☒ Residential ☐
Municipal/Public ☐ Industrial/Commercial ☐ Agricultural ☐
Recovery ☐ Injection ☐ Irrigation ☐
Other (list use): TEMPORARY WELL

3. WELL LOCATION:

COUNTY: Onslow QUADRANGLE:
NEAREST TOWN: Jacksonville
TT-3114, Tarawa Terrace, MCB Camp Lejeune
(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code

TOPOGRAPHIC / LAND SETTING
Slope ☐ Valley ☐ Flat ☒ Ridge ☐ Other:

NORTHING: 3,846,897.3
EASTING: 282,087.8
UTM NAD83 (m)
May be in degrees, minutes, seconds, or in a decimal

Latitude/longitude source: (GPS) Topo. map

(Location of well must be shown on a USGS topo map and attached to this form if not using a GPS.)

4a. FACILITY - The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only)

FACILITY ID # (if applicable)

NAME OF FACILITY:

STREET ADDRESS: Tarawa Terrace, MCB Camp Lejeune

Jacksonville | North Carolina
City or Town | State | Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME: Dr. Johanna Arnold

STREET ADDRESS: Attn: I&E/ EMD/ EQB/ PSC Box 20004

Camp Lejeune | NC | 28542-0004
City or Town | State | Zip Code

(910) 451-9017
Area code - Phone number

5. WELL DETAILS:

a. Total Depth: 14.6 ft. Diameter: 1 in.
b. Water Level (Below Measuring Point): 9.12 ft.
Measuring point is 0.4 ft. above land surface

6. CASING:

	Length		Diameter	
a. Casing Depth (if known):	4.6	ft.	1	in.
b. Casing Removed:	5	ft.	1	in.

7. DISINFECTION: N/A
(Amount of 70% calcium hypochlorite used)

8. SEALING MATERIAL:

Neat Cement
Cement _____ lb.
Water _____ gal.

Sand Cement
Cement _____ lb.
Water _____ gal.

Bentonite
Bentonite 5 lb.
Type: Slurry ___ Pellets X
Water _____ gal.

Other
Type material _____
Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:
Screen and casing removed. Hole backfilled with Benseal.

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 3/31/2009

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

[signature] 4-7-09
SIGNATURE OF CERTIFIED WELL CONTRACTOR **DATE**

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL **DATE**
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113)

William J. Miller
PRINTED NAME OF PERSON ABANDONING THE WELL

Submit a copy to the owner and the original to the Division of Water Quality within 30 days.
Attn: Information Management, 1617 Mail Service Center - Raleigh, NC 27699167, Phone No. (919) 733-7015 ext 568.

Modified from Form GW-30 Rev. 5/06