TANK CLOSURE REPORT
FOR
UST AS-4151-1
BUILDING AS-4151

MCAS NEW RIVER, NORTH CAROLINA

NAVY CONTRACT NO. N62470-05-D-6200
DELIVERY ORDER NO. 0016

CATLIN PROJECT NO. 205-077

PREPARED BY:

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EXECUTIVE SUMMARY

A 1,000-gallon waste #6 oil tank (AS-4151-1) was located near the north-west corner of Building AS-4151 until removal on May 20, 1991. An as-built figure dated September 19, 1991 (NAVFAC Drawing No. 4207005) illustrates the approximate tank and soil sample locations taken at the time of removal (see Appendix A). Also according to information on the figure, the tank was mostly above ground with the bottom of the tank only one foot below land surface (BLS). No above ground or below ground piping was attached to the tank. Approximately three cubic yards of soil were removed to facilitate tank removal and the excavation was backfilled with off-site borrow material. Notes on the figures indicate the tank and soil were properly disposed. No tank disposal or soil sample records are on file with the Marine Corps Base Camp Lejeune Environmental Quality Branch or the North Carolina Department of Environment and Natural Resources (NCDENR).

Recently the (NCDENR) requested sampling and reporting in accordance with the Underground Storage Tank Closure Guidelines. CATLIN Engineers and Scientists personnel collected four soil samples around the approximate former tank location for laboratory analysis. A monitoring well was also installed and sampled by CATLIN adjacent to the approximate former tank location.

Known historical information and recent soil and groundwater sampling results have been combined in the following report. The report follows in general accordance with the latest North Carolina Department of Environment and Natural Resources *Underground Storage Tank Closure Report (following UST-12 format)* and *Site Investigation Report for Permanent Closure or Change-in-Service of UST (UST-2 Form).*

It is our understanding from the 1998 NCDENR *Guidelines for the Investigation and Remediation of Soils and Groundwater, Volume II, Petroleum Underground Storage Tanks (1998 Guidelines)* that since UST AS-4151-1 was removed in 1991, the soil action levels of 10 mg/kg GRO and 40 mg/kg DRO are applicable.

Since there are no soil contaminant concentrations greater than the action levels, no further soil investigation is recommended. Additionally, since there are no groundwater contaminant concentrations above the 2L GWQS, no further groundwater investigation is recommended.

TANK CLOSURE REPORT
FOR
UST AS-4151-1
BUILDING AS-4151

MCAS NEW RIVER, NORTH CAROLINA

JANUARY 28, 2008

A. SITE INFORMATION

1. SITE IDENTIFICATION

UST AS-4151-1
Building AS-4151
Campbell Street
MCAS, New River

Description of Geographical Point: Top of casing at monitoring well USTAS4151-1-MW01

Location Method: Trimble 5800 global positioning system

Latitude: 34° 43' 4.14" N Longitude: 77° 27' 6.74" W

2. CONTACT INFORMATION

2.1 UST and Property Owner/Operator

Commanding Officer-MCB Camp Lejeune, NC
PSC BOX 20004
Marine Corps Base
Camp Lejeune, NC 28542

Telephone: (910) 451-5068

2.2 Property Occupant

Building AS-4151
Campbell Street
MCAS New River, NC

2.3 Primary Contact Person

Ms. Johanna E. Arnold, Ph.D.
I&E / EMD / EQB
Marine Corps Base
PSC 20004
McHugh Boulevard
Building 12, Room 235
Camp Lejeune, North Carolina 28542-0004

Telephone: (910) 451-9114

2.4 Closure Contractor

Unknown

2.5 Primary Consultant

CATLIN Engineers and Scientists
Attn: Michael E. Mason, PE
P.O. Box 10279
Wilmington, North Carolina 28404-0279

Telephone Number: (910) 452-5861

2.6 Analytical Laboratory

SGS Environmental Services, Inc.
5500 Business Drive
Wilmington, NC 28405

Telephone: (910) 350-1903
North Carolina State Certification No. 481

3. RELEASE INFORMATION

No releases are on record for the AS-4151-1 tank.

B. SITE HISTORY AND CHARACTERIZATION

Site history information is summarized on Tables 1 and 2. The site vicinity and current site map with the approximate former tank location is illustrated on Figures 1 and 2, respectively.

According to the Environmental Quality Branch (EQB), a 1,000-gallon waste #6 oil tank (AS-4151-1) was removed on May 20, 1991 and two soil samples were collected, however, no documentation regarding the sample results is available. An

As-Built figure dated September 19, 1991 (NAVFAC Drawing No. 4207005) illustrates the approximate former tank and soil sample locations (see Appendix A). Also according to information on the drawing, the tank was mostly above ground with the bottom of the tank only one foot below land surface (BLS). Approximately three cubic yards of soil were removed to facilitate tank removal and the excavation was backfilled with off-site borrow material. A Tank Closure Report or Certificate of Disposal is not on file with the EQB or the North Carolina Department of Environment and Natural Resources (NCDENR).

There are currently two above ground storage tanks (ASTs) located near the former AS-4151-1 tank location. The current ASTs are identified as Tank #24576 containing a corrosion inhibitor and Tank #14275R containing a deposit inhibitor.

C. UST CLOSURE PROCEDURES

As previously mentioned, minimal historical tank closure information is available. Known information has been provided on the UST-2 Form in Appendix B. The bottom of the tank was approximately one foot BLS. There were no apparent lines attached to the tank. According to the EQB, approximately 300 gallons of waste #6 oil were removed from the tank and properly disposed. Reportedly, the tank was rendered non-explosive, plugged (leaving a small vent hole), and removed for disposal at an approved facility. Following tank and soil removal (purportedly three cubic yards), two soil samples were collected for laboratory analysis; however, analytical results are unknown. The former tank area was backfilled to grade with clean borrow material.

D. UST SITE INVESTIGATION

All field work during this recent investigation was conducted in general accordance with the CATLIN Standard Methods of Investigation provided in Appendix C. Site conditions observed during the December 2007 field investigation are shown on the photographs provided in Appendix D.

1. FIELD-SCREENING

Due to the shallow water table encountered during hand auger soil boring advancement (approximately three to four feet deep) no field screening with an organic vapor analyzer (OVA) equipped with a photo-ionization detector was conducted during soil sampling. Soils collected during boring advancement for monitoring well construction were screened with an OVA. The OVA results ranged from 1.6 to 15.5 parts per million and are provided on the USTAS4151-1-MW01 boring log in Appendix E.

2. SOIL SAMPLING INFORMATION

Hand auger borings (four total) were advanced near the approximate former AS-4151-1 tank excavation sidewalls on December 18, 2007. One grab soil sample

was collected from each hand auger boring approximately two feet BLS and approximately one foot above the water table. A duplicate soil sample (DUP AS4151-1-SB01) was collected from the AS4151-1-SB01 boring location.

A mixture of sands and clays were encountered at each boring location. Complete boring lithological descriptions can be found on the boring logs in Appendix E. Soil boring/sample locations are illustrated on Figure 3.

A total of five soil samples were collected and submitted for total petroleum hydrocarbon (TPH) gasoline and diesel range organics (GRO and DRO) laboratory analysis by Environmental Protection Agency (EPA) Method 8015. Soils were also analyzed at the laboratory for the presence of Chromium and Lead per EPA Method 6010B. The sample identifications and dates are provided in Table 3. Soil sample times and laboratory submittal information is included on the Chain of Custody document following the laboratory analytical report in Appendix F.

3. GROUNDWATER SAMPLING INFORMATION

Well construction information is summarized on Table 4. A soil boring record and groundwater monitoring well as-built detail is included in Appendix E. A Well Construction Record has been submitted to the Division of Water Quality (DWQ) and a copy is also included in Appendix E. The monitoring well location is illustrated on Figure 3.

The boring for monitoring well construction was advanced by a North Carolina licensed well driller utilizing 4.25-inch hollow stem augers and a trailer mounted D-50 drill rig on December 19, 2007. Cuttings generated during drilling activities were spread on-site.

The well was constructed of new, threaded, polyvinyl chloride (PVC) casing and screen. No glues or cements were used in joining PVC components. New, nitrile gloves were worn while handling all well materials.

Shallow Type II monitoring well USTAS4151-1-MW01 was constructed to 13 feet BLS using a 0.5 foot pointed PVC sediment trap (well point), 9.5 feet of two inch diameter 0.010 inch slotted PVC well screen and two inch diameter solid PVC riser to the surface.

The annular space for the well was filled with coarse sand pack at least one foot above the well screen, one foot of bentonite chips, and then grout to within one-half foot of the ground surface. The bentonite chips are poured from the surface while simultaneously pouring water to facilitate hydration.

The well was finished with concrete, a flush-mount steel wellhead, and a locking cap. Following well construction, an appropriately sized pump was used to develop the well by over-pumping and surging. Through development,

unwanted fine materials were removed from the natural formation surrounding the well.

A groundwater sample (USTAS4151-1-MW01) was collected on December 26, 2007 and submitted for laboratory analysis per EPA Methods 6210D and 625, Massachusetts Department of Environmental Protection (MADEP) extractable and volatile petroleum hydrocarbons (EPH/VPH), Chromium and Lead. The sample time and laboratory submittal information is included on the Chain of Custody document following the laboratory analytical report in Appendix F.

4. QUALITY CONTROL MEASURES

Clean disposable nitrile gloves were used for each sampling event. Soil samples were collected by hand from the hand auger bucket and packed directly into new laboratory provided glassware. The hand auger was decontaminated with Liqui-Nox®, pesticide grade isopropyl alcohol, and rinsed with distilled water before each boring and prior to soil sample collection.

A minimum of three well water volumes were removed from the well using a new pre-cleaned, disposable bailer. A groundwater sample was then collected using the bailer and poured into appropriate laboratory glassware.

All samples were placed into appropriate sample jars (provided by the laboratory) with Teflon® lid liners, labeled with the site location, date and time, initials of person collecting sample, sample identification number, and tests required. One duplicate soil sample was collected and submitted for laboratory analysis. Samples were then placed on ice in a cooler and maintained at approximately 4° Celsius during storage and transport to the laboratory. A temperature blank was preserved in the cooler along with the site samples. A Chain of Custody form was maintained from the point of sampling until delivery to the laboratory.

Specific laboratory receipt dates and times are indicated on the Chain of Custody document provided following the analytical reports in Appendix F. The laboratory method blank and quality control analyses were within acceptable ranges.

Following field work completion and upon review of field notes and the proposed workplan it was realized that the site and subsequent samples were improperly identified. This investigation was being conducted in concurrence with an adjacent site investigation and the identifications were transposed. The correct sample identifications have been marked by hand and initialed on the attached laboratory analytical report.

5. INVESTIGATION RESULTS

The soil sample results are summarized in Table 3 and illustrated on Figure 3. The complete analytical report is provided in Appendix F. All GRO concentrations were reported below the laboratory quantitation limits (approximately 6 milligrams per kilogram). Only soil samples AS4151-1-SB01 (2-3'), DUP AS4151-1-SB01, and AS4151-1-SB03 (2-3') revealed detectable DRO concentrations of 18.2 milligrams per kilogram (mg/kg) , 24.9, and 30.3 mg/kg, respectively. The AS415-1-SB01 (2-3') soil sample was collected from north of the approximate former tank location and the AS4151-1-SB03 (2-3') soil sample was collected south of the approximate former tank location. Minor concentrations of Chromium and Lead below the lowest corresponding maximum soil contaminant concentration were detected in each soil sample.

The top of casing (TOC) elevation was established at the well utilizing a Trimble 5800 global positioning system survey equipment. Depth to groundwater was measured at 3.93 feet below the monitoring well USTAS4151-1-MW01 TOC. The USTAS4151-1-MW01 TOC elevation was surveyed at 18.08 feet above mean sea level. The depth to water, water table elevation and TOC elevation information is provided on the boring log and well construction record in Appendix E and on Table 4.

The USTAS4151-1-MW01 groundwater sample information is summarized on Table 3 and illustrated on Figure 3. The complete analytical report is provided in Appendix F. No compound or analyte concentrations were detected above the North Carolina Administrative Code (NCAC) T15A:02L Groundwater Quality Standards (2L GWQS). Estimated concentrations of numerous compounds were detected above the laboratory method detection limit but below the laboratory reporting limit and only cis-1,2-Dichloroethene concentrations were detected above the laboratory reporting limit.

E. CONCLUSIONS AND RECOMMENDATIONS

Soil samples were collected from around the approximate former AS-4151-1 tank location. Four soil borings were advanced and samples were collected from each boring for TPH GRO and DRO and Chromium and Lead laboratory analysis. The soil samples collected to the north and south of the approximate former tank location revealed minor DRO concentrations above 10 mg/kg but less than 40 mg/kg.

The groundwater sample collected for laboratory analysis from monitoring well USTAS4151-1-MW01 installed near the approximate former AS-4151-1 tank location did not reveal any contaminant concentrations above the 2L GWQS.

Information provided by the EQB indicated the bottom of the AS-4151-1 tank was only one foot BLS. It is possible the minor DRO impacted soils revealed were the result of historical surface spills rather than a leaking tank. Although minimal

information is available regarding the history and removal of the AS-4151-1 tank, a release resulting in petroleum impacts to groundwater was not revealed during this investigation. The minor DRO impacted soils identified to the north and south of the approximate former AS-4151-1 tank location are apparently not acting as a secondary source to impact groundwater.

It is our understanding from the 1998 NCDENR *Guidelines for the Investigation and Remediation of Soils and Groundwater, Volume II, Petroleum Underground Storage Tanks (1998 Guidelines)* that since tank AS-4151-1 was removed in 1994, the soil action levels of 10 mg/kg GRO and 40 mg/kg DRO are applicable. Therefore, no further action is recommended at the AS-4151-1 site.

F. LIMITATIONS

This report is based on the agreed work scope and a review of available data from limited sampling. It is possible that this investigation may have failed to reveal the presence of contamination on the subject site where such contamination may exist. Although CATLIN has used accepted methods appropriate for soil and groundwater sampling, CATLIN cannot guarantee that additional soil and/or groundwater contamination does not exist.

G. REFERENCES

NAVFAC Drawing No. 4207005, "Fuel Tank Removal and Replacement Site Details Buildings M-231, SA-21, AS-4151, RR-15", September 19, 1991.

North Carolina Department of Environment, Health, & Natural Resources, Groundwater Section, "Guidelines for the Investigation and Remediation of Soils and Groundwater, Volume II, Petroleum Underground Storage Tanks", January 2, 1998.

North Carolina Department of Environment and Natural Resources, Underground Storage Tank Section, "Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement", effective July 1, 2007.

H. SIGNATURE OF PROFESSIONAL ENGINEER

Michael E. Mason, P.E.
Contract Manager

Benjamin J. Ashba
Project Manager

TABLES

TABLE 1 (B-1)
SITE HISTORY - UST/AST SYSTEM INFORMATION

Incident Name: AS-4151-1

UST ID Number	Previous Contents	Capacity (gallons)	Construction Details	Tank Dimensions	Description of Associated Piping and Pumps	Date Tank Installed	Status of UST	Was release associated with the UST System
AS-4151-1	Waste #6 Oil	1,000	Steel	Unknown	None	Unknown	Removed May 1991	Unknown

TABLE 2 (B-2)
SITE HISTORY - UST OWNER AND OPERATOR INFORMATION

Incident Name: AS-4151-1

UST ID Number: AS-4151-1	**Facility ID Number:** None
Owner/Operator: Commanding Officer Marine Corps Base Camp Lejeune, NC	**Dates of Operation:** Unknown to May 1991
Address: PSC BOX 20004 Marine Corps Base Camp Lejeune, NC 28542	
Telephone: (910) 451-5068	

TABLE 3 (B-3)

SUMMARY OF SOIL LABORATORY RESULTS – TOTAL PETROLEUM HYDROCARBON GASOLINE AND DIESEL RANGE ORGANICS, CHROMIUM, AND LEAD – EPA METHODS 8015 AND 6010B

Incident Name: AS-4151-1

Sample ID	Contaminant of Concern →		Gasoline Range Organics	Diesel Range Organics	Chromium	Lead
	Date Collected	Sample Depth (ft. BLS)				
NCDENR Action Level (mg/kg)			10	40	NE	NE
AS4151-1-SB01 (2-3')	12/19/2007	2-3	<7.05	18.2	24.1 B	17.9 B
DUP AS4151-1-SB01	12/19/2007	2-3	<9.54	24.9	12.7 B	9.91 B
AS4151-1-SB02 (1-2')	12/19/2007	1-2	<5.82	7.48	15.2 B	11.3 B
AS4151-1-SB03 (2-3')	12/19/2007	2-3	<5.55	30.3	14.2 B	15.6 B
AS4151-1-SB04 (1-2')	12/19/2007	1-2	<5.27	8.36	6.73 B	4.72 B

ft. BLS = feet below land surface

All results in milligrams per kilogram (mg/kg).

DUP = Duplicate sample

NE = None Established

B = Compound also detected in batch blank.

Bold results indicate concentrations above the Action Level.

TABLE 4 (B-7)

MONITORING WELL CONSTRUCTION INFORMATION

Incident Name: AS-4151-1

Well ID	Date Installed (m/dd/yy)	Date Water Level Measured (m/dd/yy)	Well Casing Depth (ft. BLS)	Screened Interval (x to y ft. BLS)	Bottom of Well (ft. BLS)	Top of Casing Elevation (ft.)	Depth to Water from Top of Casing (ft.)	Free-Phase Product Thickness (ft.)	Ground Water Elevation (ft.)	Comments
USTAS4151-1-MW01	12/19/2007	12/26/2007	3	3-12.5	13	18.08	3.93	0	14.15	Monitoring

ft BLS = feet below land surface

TABLE 5 (B-4)
SUMMARY OF GROUNDWATER LABORATORY RESULTS
EPA METHODS 6210D AND 625, MADEP EPH/VPH, CHROMIUM, AND LEAD

Incident Name: AS-4151-1

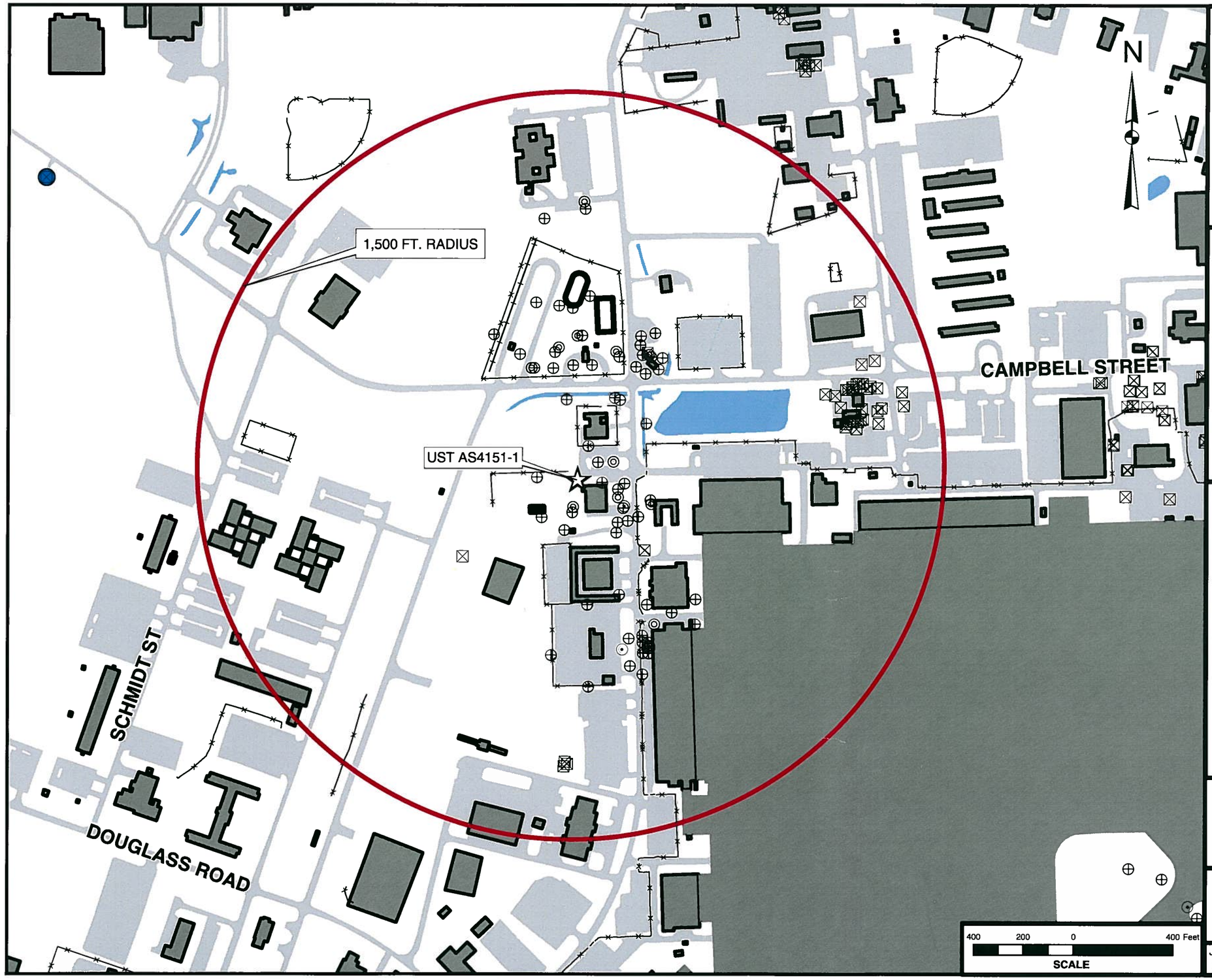
Well ID	Contaminant of Concern →		Benzene	Chloromethane	cis-1,2-Dichloroethene	Methylene chloride	All other EPA Method 6210D Compounds	Acenaphthene	All other EPA Method 625 Compounds	All MADEP EPH/VPH Analytes	Chromium	Lead
	Sample ID	**Date Collected**										
GCL (µg/L)			5,000	2,600	70,000	4,600	Varies	2,120	Varies	Varies	50,000	15,000
2L GWQS (µg/L)			1	2.6	70	4.6	Varies	80	Varies	Varies	50	15
USTAS4151-1-MW01	USTAS4151-1-MW01	12/26/07	0.150 J	0.380 J	0.590	0.220 J	BMDL	4.20 J	BMDL	BRL	BMDL	BMDL

All results in micrograms per liter (µg/L).
BMDL = Below Method Detection Limit
BRL = Below Reporting Limit
Bold results indicate concentrations above 2L GWQS or GCL.
J = Estimated concentration, below calibration range and above method detection limit
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards

FIGURES

TANK CLOSURE
UST AS-4151-1
BUILDING AS-4151
MCAS NEW RIVER

NAVFAC
Naval Facilities Engineering Command



LEGEND

- Type I Monitoring Well
- Type II Monitoring Well
- Type III Monitoring Well
- Pumping Well
- Unknown Well Type
- Fence
- Approximate Former UST Locations
- Buildings and Structures
- Oil/Water Separators
- Slabs
- Roads
- Driveways
- Parking Lots
- Forestland

NOTES

1. GIS Data Layers provided by MCB Camp Lejeune.

CATLIN
Engineers and Scientists

SITE VICINITY MAP	FIGURE 1

Job No.:	Date:	Scale:	Drawn By:	Checked By:
205-077	DEC 2007	AS SHOWN	KAWS	MEM

205-077-LSAs-CLOSURES-FIGURES- JAN08 FIGURES-USTAS4151-1-FIGURE-1

TANK CLOSURE
UST AS-4151-1
BUILDING AS-4151
MCAS NEW RIVER

NAVFAC
Naval Facilities Engineering Command

LEGEND

- Type I Monitoring Well
- Type II Monitoring Well
- Type III Monitoring Well
- Pumping Well
- Unknown Well Type
- Fence
- Approximate Former UST Locations
- Buildings and Structures
- Oil/Water Separators
- Slabs
- Roads
- Driveways
- Parking Lots
- Forestland
- Above Ground Storage Tank (AST)

NOTES

1. GIS Data Layers provided by MCB Camp Lejeune.

CATLIN
Engineers and Scientists

SITE MAP

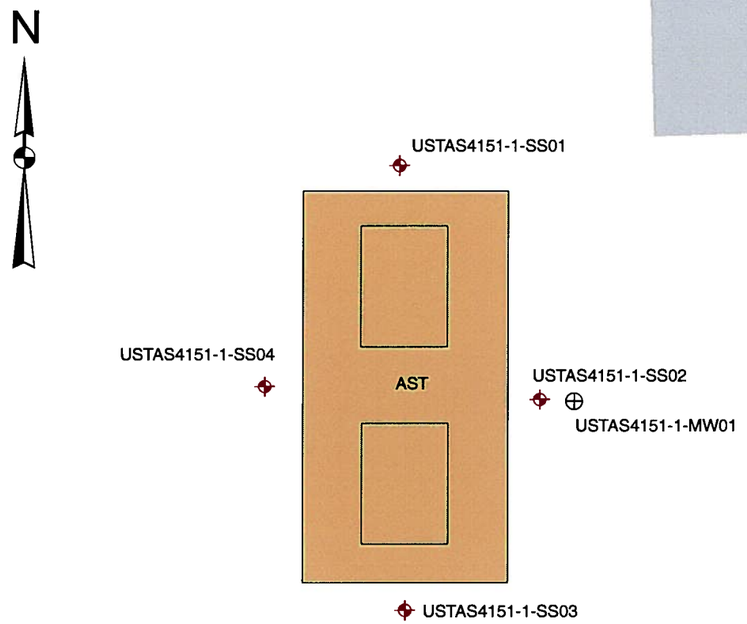
FIGURE 2

Job No.:	Date:	Scale:	Drawn By:	Checked By:
205-077	DEC 2007	AS SHOWN	KAWS	MEM

205-077-LSAs-CLOSURES-FIGURES- JAN08 FIGURES-USTAS4151-1-FIGURE-2

TANK CLOSURE
UST AS-4151-1
BUILDING AS-4151
MCAS NEW RIVER

NAVFAC Naval Facilities Engineering Command



Sample ID	Contaminant of Concern → Date Collected	Sample Depth (ft. BLS)	Gasoline Range Organics	Diesel Range Organics	Chromium	Lead
1998 NCDENR Action Level (mg/kg)			10	40	NE	NE
AS4151-1-SB01 (2-3')	12/19/2007	2-3	<7.05	18.2	24.1 B	17.9 B
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AS4151-1-SB04 (1-2')	12/19/2007	1-2	<5.27	8.36	6.73 B	4.72 B

ft. BLS = feet below land surface
All results in milligrams per kilogram (mg/kg).
DUP = Duplicate sample
NE = None Established
B = Compound also detected in batch blank.
Bold results indicate concentrations above the Action Level.

Well ID	Sample ID	Contaminant of Concern → Date Collected	Benzene	Chloromethane	cis-1,2-Dichloroethene	Methylene chloride	All other EPA Method 6210D Compounds	All EPA Method 625 Compounds	All MADEP EPH/VPH Analytes
GCL (µg/L)			5,000	2,600	70,000	4,600	Varies	Varies	Varies
2L GWQS (µg/L)			1	2.6	70	4.6	Varies	Varies	Varies
USTAS4151-1-MW01	USTAS4151-1-MW01	12/26/2007	0.150 J	0.380 J	0.59	0.220 J	BMDL	BMDL	BRL

All results in micrograms per liter (µg/L).
BMDL = Below Method Detection Limit
BRL = Below Reporting Limit
Bold results indicate concentrations above 2L GWQS or GCL.
J = Estimated concentration, below calibration range and above method detection limit
GCL = Gross Contaminant Level
2L GWQS = NCAC T15A:02L Groundwater Quality Standards

LEGEND

- Type I Monitoring Well
- Type II Monitoring Well
- Type III Monitoring Well
- Pumping Well
- Unknown Well Type
- Fence
- Approximate Former UST Locations
- Buildings and Structures
- Oil/Water Separators
- Slabs
- Roads
- Driveways
- Parking Lots
- Forestland
- Above Ground Storage Tank (AST)

NOTES

1. GIS Data Layers provided by MCB Camp Lejeune.

CATLIN Engineers and Scientists

SITE PLAN WITH SOIL AND GROUNDWATER SAMPLE LOCATIONS AND RESULTS

FIGURE 3

Job No.:	Date:	Scale:	Drawn By:	Checked By:
205-077	DEC 2007	AS SHOWN	KAWS	MEM

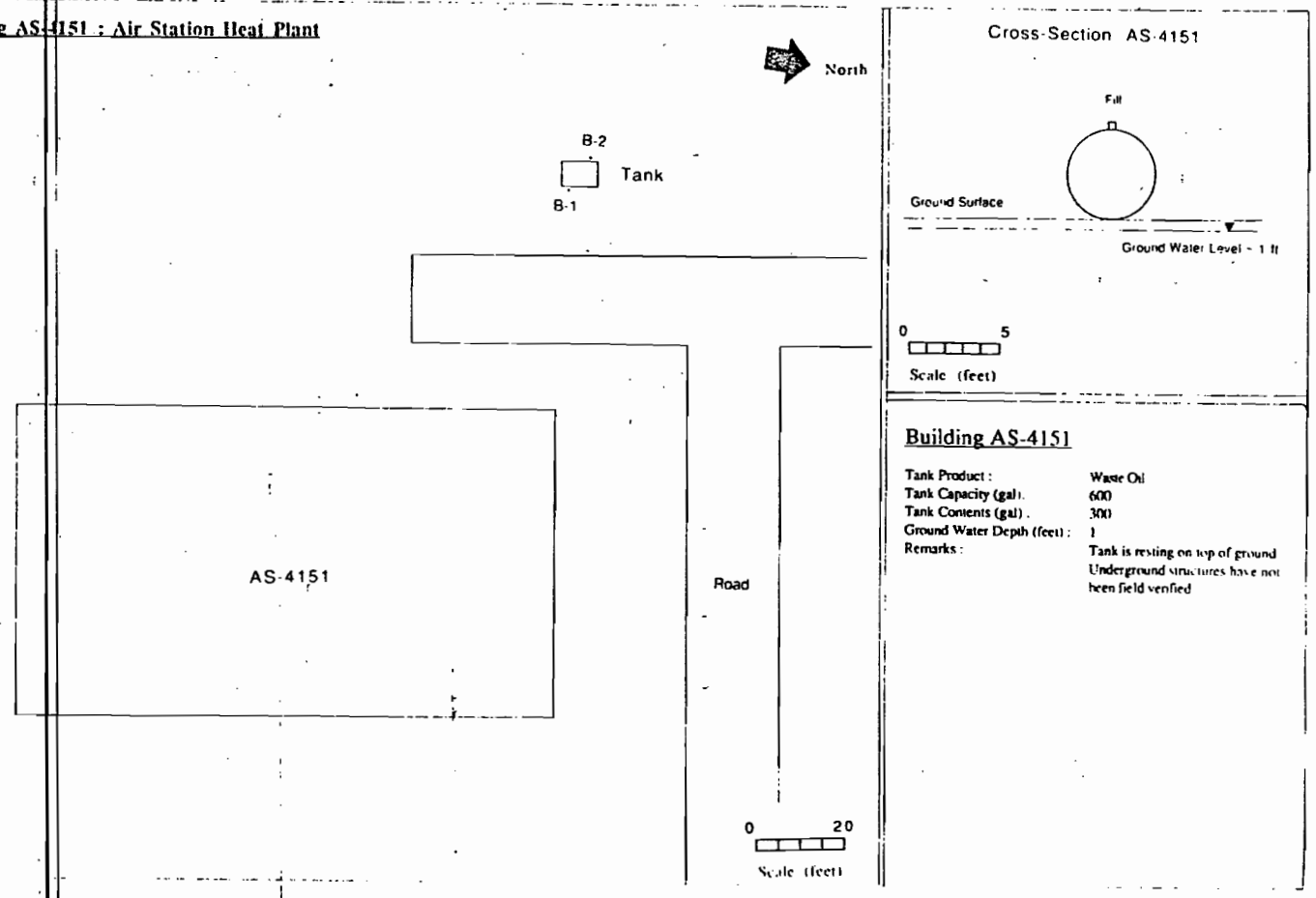
205-077-LSAs-CLOSURES-FIGURES- JAN08 FIGURES-USTAS4151-1-FIGURE-3

APPENDIX A

HISTORICAL DOCUMENTS

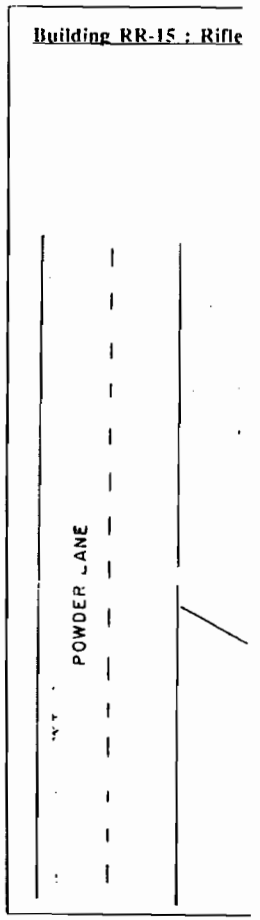
explosive environment within the

Building AS-4151 : Air Station Heat Plant



Building AS-4151

Tank Product :	Waste Oil
Tank Capacity (gal).	600
Tank Contents (gal) .	300
Ground Water Depth (feet) :	1
Remarks :	Tank is resting on top of ground Underground structures have not been field verified



Building RR-15 : Rifle

Building AS-4151 : Air Station Heat Plant

AS-4151 has one 1,000-gallon capacity tank located approximately 50 feet west of the north west corner of the main building to be removed. The tank contains approximately 300 gallons of waste #6 oil. There are no apparent lines attached to the tank. The bottom of the tank is buried about 1 foot below the surface of the ground.

Soils below the tanks are clayey sands and very wet. Groundwater may be only 1 to 2 feet below the surface.

Below is a site specific procedure for the closure of the the UST at Building AS-4151.

Step 1. Remove and properly dispose of all flammable liquids from the tank and submit disposal manifests.

Step 2. Render the environment within the tank to a non-explosive condition. Maintain this non-explosive environment within the tank throughout the excavation and tank removal process.

Step 3. Temporarily plug all openings to the tank, leave a small vent hole to allow pressure changes due to temperature to equalize within the tank.

Step 4. Excavate soil surrounding tank to a sufficient depth to remove tank from ground without deformation. Clean the exterior of the tank by scraping to remove extraneous soil and transport tank to an approved facility for final disposal. Sludge from inside the tank should be solidified, containerized in 55-gallon drums, and disposed of at an approved facility.

Step 5. Allow the Contracting Officer to inspect soil below the tank for evidence of petroleum contamination and to collect soil samples for laboratory analysis.

Step 6. Excavate any contaminated soil as directed by the Contracting Officer. It is estimated that 3 cubic yards of soil will need to be excavated, transported, and stockpiled at a designated area near SA-21.

Step 7. Backfill the excavation with approved borrow material, grade, and re-establish vegetation.

Building RR-15 : Rifle Range

RR-15 has one 500-gallon capacity
near the southwest corner of the mai
buried approximately 4 feet below th

Fill materials surrounding the tanks
the tank. Groundwater is estimated u

Below is a site specific procedure for

Step 1. Drain product from piping i
from the tank and submit disposal m

Step 2. Render the environment
explosive environment within the tan

Step 3. Remove soil to the top o
disconnect all piping from the tank.

APPENDIX B

UST-2 FORM

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 PSC BOX 20004	
City MCB Campl Lejeune	County Onslow
State NC	Zip Code 28542
Phone Number (910) 451-5068	

II. LOCATION OF TANKS

Facility Name or Company Building AS-4151		
Facility ID # (If known)		
Street Address Campbell		
City MCAS New River	County Onslow	Zip Code 28542
Phone Number none		

III. CONTACT PERSONNEL

Contact for Facility: Commanding Officer -Marine Corps Base		Job Title: Commanding Officer	Phone. No: (910) 451-5068
Closure Contractor Name: Unknown	Closure Contractor Company: Unknown	Address: Unknown	Phone. No: Unknown
Primary Consultant Name: Michael E. Mason	Primary Consultant Company: CATLIN	Address: 220 Old Dairy Rd. ILM, NC 28405	Phone. No: 910-452-5861

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
AS-4151-1	1000	Unknown	Other Petrole	5/20/91	5/20/91		☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

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
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

* 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
Michael E. Mason - CATLIN Agent for MCB Camp Lejeune & MCAS New River	Michael E. Mason	1/28/2008

APPENDIX C

CATLIN STANDARD METHODS OF INVESTIGATION

CATLIN STANDARD METHODS OF INVESTIGATION

1.0 DATA COLLECTION

1.1 BACKGROUND DATA

Background data and history information relevant to the site investigation is generated through numerous sources. These sources may include, but are not limited to, the following:

- Conversations with the client and regulatory officials involved with the incident.
- Review of pertinent regulatory correspondence.
- Review of previous and existing reports and other technical data.
- Review of available historical records.

1.2 SURVEYS AND POTENTIAL RECEPTOR DATA

Physical survey and potential receptor data are collected in accordance with the intended level of investigation. In general, the purpose is to collect sufficient information for site assessment and corrective action planning.

Individual receptors are identified and evaluated in the context of their potential for contaminant impact. Potential receptors of contamination can include surface water bodies, groundwater supply wells, wellhead protection areas, and subsurface building structures.

1.2.1 Horizontal Survey

Horizontal survey data are generated using either accepted general field surveying techniques, or existing survey maps; or by using a combination of existing data and field generated information. The survey area generally extends to a point at least 50 feet beyond suspected plume boundaries. A receptor scale survey of a larger area surrounding a site will be made if appropriate and necessary.

1.2.2 Vertical Survey

A vertical survey is conducted at the site typically within an accuracy of 0.01 foot. The datum plane is generally assumed unless otherwise noted. Assumed temporary benchmarks (TBM) are selected near ground level. The vertical survey includes such points as top of all well casings, selected ground shots, important utility inverts, utility fluid levels, important surface water levels, and other items determined to be significant.

1.3 DRILLING AND MONITORING WELL/PIEZOMETER INSTALLATION

Necessary permits are applied for and obtained in accordance with federal, state, and local requirements prior to drilling or well construction activities. Additionally, the well locations are scanned for underground utilities prior to conducting intrusive subsurface activities. Wells are installed under applicable licensing requirements, and are designed and constructed in accordance with accepted standards and practices. Any wells purposely installed at off-site locations are permitted through appropriate right-of-entry agreements with all necessary property owners and/or their agents.

1.3.1 Drilling Methods and Subsurface Data Collection

Drilling is accomplished utilizing one or more of the following methods:

Auger Drilling

Auger drilling is the preferred, most often used method of subsurface investigation and is accomplished using a vehicle or trailer mounted drill rig. Continuous flight auger types used vary upon the site and situation; ranging from the 4-inch outside diameter solid stem to the 12-inch outside diameter hollow stem. Auger type is selected based upon appropriateness and/or site-specific requirements.

Hand Augering

Hand augering is utilized when economically and scientifically feasible, or when no other method is suitable. Hand augers typically produce three-inch diameter holes and are generally limited to depths of less than 15 feet.

Direct Push

Direct push methods of subsurface investigation are used generally for soil screening purposes or collection of groundwater samples where permanent wells are not viable.

Other Methods

Other drilling methods, such as mud and air rotary, rock coring, cable tool, and large bucket augering are used when site conditions or project requirements dictate.

Regardless of the drilling method used, the drill rig(s) and all drilling tools are thoroughly cleaned between boreholes to prevent cross introduction of contaminants. Split spoon samples are collected and field-described at intervals of five feet or less, and cuttings are continuously monitored for organic vapors. Drill cuttings are containerized for off-site disposal or are spread on the ground surface in proximity to the well or boring in accordance with North Carolina Department of Environment and Natural Resources (NCDENR) requirements. A geologist or engineer, trained in using visual/manual techniques, is always present during drilling and is

responsible for subsurface contaminant and geologic data collection. Soils are classified in general agreement with the Unified Soils Classification System (USCS).

1.3.2 Hydropunch Installation

Hydropunch penetrometers (Hydropunches) are used to delineate the spatial extent of dissolved and free phase plumes. Soil borings are advanced to the appropriate depth and then the Hydropunch is advanced through the soil boring into undisturbed material. Groundwater samples are collected by pulling back on the body of the Hydropunch and allowing the groundwater to enter the screened portion of the sample chamber. Samples are retrieved using a decontaminated Teflon bailer or peristaltic pump.

1.3.3 Well Installation

Wells are typically constructed of threaded PVC casing and screen. No glues or cements are used in joining PVC components. Well diameter, slot sizes, and protective covers vary depending upon site-specific conditions or situation-specific requirements.

1.3.4 Well Development

Wells are developed by over-pumping or surging using appropriate pumps, blocks, or bailers. Through development, unwanted fine materials are removed from the natural formation surrounding the well. Well development will be performed no sooner than 24-hours after grouting is completed for the Type III wells. Water generated during development is containerized and properly disposed or is discharged onto the ground in proximity of the well in accordance with NCDENR requirements.

1.4 HYDROGEOLOGIC DATA COLLECTION

Data used to help characterize hydrogeologic conditions at a site are obtained through various procedures including, but not necessarily limited to, those described below:

1.4.1 Regional Geology

Information pertaining to the regional geologic framework is compiled from existing publications, maps, and scientific papers.

1.4.2 Site Geology

Shallow site geology is generally determined from field descriptions and borehole samples. Interpretations with regard to hydrogeologically important contacts, zones, fractures, faults, cleavage, and facies changes are made when possible.

1.4.3 Groundwater Occurrence and Characteristics

Groundwater data is obtained utilizing a number of methods and procedures, not limited to the general list below:

Well Water Levels

After well development, wells are allowed to stabilize for a minimum of 24 hours prior to measuring. Water level and free product thickness (where applicable) measurements are performed using an electronic interface probe or steel tape with water/product finding pastes.

The specific gravity of any accumulated product is determined and used to calculate true hydraulic grade from measured water levels. This information is combined with vertical survey data to determine relative potentiometric surface elevations for all wells.

Aquifer Testing

Various aquifer tests may be used to make determinations of hydraulic conductivity. Slug or pumping tests are often used to characterize site hydrogeologic conditions and to develop remedial action alternatives utilizing appropriate pumping technologies.

Other Methods

Other methods may be deemed appropriate for determining various groundwater characteristics. These other methods may include nested well configurations and/or clustered piezometer installations; sieve or pipette analysis; fracture trace analysis; computer modeling; and geophysical logging.

1.5 PETROLEUM HYDROCARBON DATA COLLECTION

1.5.1 Collection Methods

Petroleum hydrocarbon data is obtained through various methods including, but not limited to, the following:

Field Analysis

- Direct thickness measurement of phase separated components using tapes and/or probes.
- Manual vapor analysis using a photoionization detector (PID) or flame ionization detector (FID).
- Detectable odor and visual observation.

Laboratory Analysis

- Laboratory analysis of phase-separated products.

- Laboratory vapor, soil, and groundwater analysis using appropriate EPA Methods.

1.5.2 Field Sampling

Field sampling procedures are performed in accordance with recommended protocol, accepted industry standards, and under appropriate chain-of-custody procedures. Generally, sampling procedures are as follows:

Product Samples

Product samples are obtained using clean equipment and containers. Each is shipped to the analytical laboratory in protective containers.

Vapor Samples

PID/FID readings are measured from soil sample headspace using containerized samples that have been brought to ambient temperature.

Carbon tubes are utilized in conjunction with a laboratory-calibrated vacuum pump to obtain vapor samples. The carbon tubes are sealed and refrigerated for shipment to the analytical laboratory (This method is known as the Carbon Adsorption Method).

Soil Samples

Soil samples are immediately packed into clean containers, and refrigerated for shipment to the analytical laboratory.

Groundwater Samples

Groundwater samples are collected in accordance with the following procedures:

- Creeks/Lakes/Etc.

  Grab samples are obtained.

- Domestic Wells

  Wells are pumped for a time sufficient to completely purge the well and any pressure or holding tanks prior to sampling.

- Monitoring Wells

  Water level measurements are made and well volumes calculated for each well.

  Three well volumes are removed from each well using a thoroughly cleaned Teflon bailer or appropriate purging pump. If it is not possible to

remove three volumes, due to very low yields, a minimum of one volume is removed prior to obtaining a sample.

Where analysis for metals is required, wells are typically sampled utilizing low flow techniques, which reduce turbidity and the potential for matrix interference.

Samples are collected and containerized in a manner that minimizes agitation and contact with the air.

Sampling records are field prepared.

Samples are labeled and proper Chain-of-Custody documents are maintained.

Samples are promptly protectively packed, refrigerated, and shipped to the analytical laboratory for analysis.

2.0 DATA EVALUATION

Data obtained as a result of the site investigation is compiled and evaluated and a report is prepared for client review and distribution to the appropriate agencies. Generally, specific data are evaluated as follows:

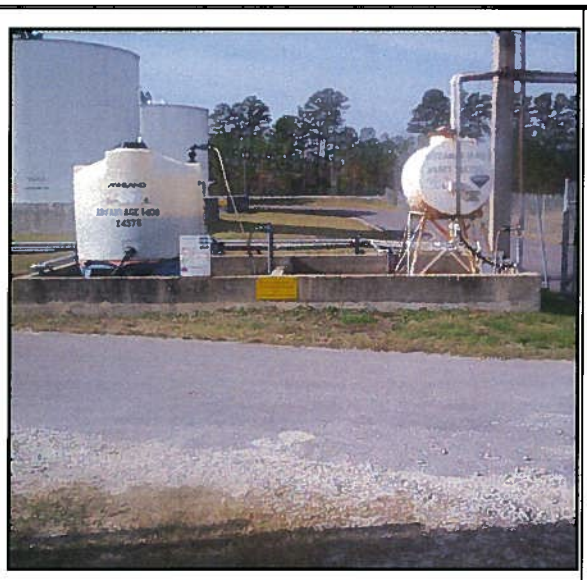
- Background data are evaluated in context with the suspected or confirmed problem.
- Survey data are utilized to develop site maps and to evaluate contaminant receptors.
- Well construction records are compiled and presented as part of the report. As-built information is used in combination with other data to evaluate subsurface conditions and monitoring well screen settings as they relate to the investigation.
- Subsurface drilling logs are used to develop geologic cross-sections, fence diagrams, isopaths, structure contours, or other constructions. Regional geologic data are used to obtain an overall framework.
- Hydrogeologic data are used to develop contour maps, flow nets and other constructions. The data is also used to calculate various hydrogeologic parameters that describe aquifer characteristics.
- Hydrocarbon data are utilized to develop various plume geometry and isoconcentration maps.
- All data are compiled and utilized for making specific recommendations with regard to remedial action alternatives.

APPENDIX D

PHOTOGRAPHS

PHOTOGRAPHS
Former UST AS-41515-1 Location

December 2007



Looking West –
Away from Building AS-4151

Looking East –
Towards Building AS-4151

Looking North –
Away from Building AS-4151

Looking South-Southeast –
Toward Building AS-4151

APPENDIX E

BORING LOGS, AS-BUILT, AND WELL CONSTRUCTION RECORD

WELL LOG

CATLIN ENGINEERS and SCIENTISTS
205-077 Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 205-077	STATE: NC	COUNTY: Onslow	LOCATION: MCAS, New River
PROJECT NAME: AS-4151-1 and AS-4151-2 Tank Closures		LOGGED BY: Justin Heter	WELL ID: USTAS4151-1 -MW01
		DRILLER: Bobbie D. Fowler	
NORTHING: 3844487.9	EASTING: 275472.8	CREW: Tony Chance	
SYSTEM: UTM NAD83 (m)	BORING LOCATION: USTAS4151-1 (see map)		T.O.C. ELEV.: 18.08
DRILL MACHINE: Diedrich D-50	METHOD: H.S. Augers	0 HOUR DTW: 5.0	TOTAL DEPTH: 15.0
START DATE: 12/19/07	FINISH DATE: 12/19/07	24 HOUR DTW: 3.9	WELL DEPTH: 13.0

DEPTH	BLOW COUNT 6in	6in	6in	6in	OVA (ppm)	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION	WELL DETAIL
										0.0	18.7	0.0
0.0	P	U	S	H	NM		SW/ SC		Dark gray, Clayey SAND w/large gravel @ 1ft. BLS.	2.0	16.7	-0.6
2.0	P	U	S	H	1.6		CL		Dark gray, Sandy CLAY. Med. plasticity.	4.0	14.7	1.0
4.0	P	U	S	H	6.1		CL/ CH		Brown, Sandy CLAY to CLAY. HIgh plasticity.	6.0	12.7	2.0
6.0	P	U	S	H	15.5		CL		Brown, Sandy CLAY.	8.0	10.7	3.0
										9.0	9.7	
9.0	W	O	H	2	2.6		CH		Gray, CLAY. High plasticity.	11.0	7.7	
										13.0	5.7	12.5
13.0	P	U	S	H			CL/ CH		Gray, CLAY to Sandy CLAY. High plasticity. No HCO.	15.0	3.7	13.0
									Boring Terminated at Elevation 3.7 ft CLAY to SANDY CLAY.			15.0

2" Sch. 40 PVC

2" Slot .010 Sch. 40 PVC

Portland Cement | Bentonite Pellets | #2 Medium Sand

CATLIN BORING LOG 205-077 AS-4151.GPJ TEST.GDT 1/25/08

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION #: 2869

1. WELL CONTRACTOR:

Bobbie D. Fowler
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): USTAS4151-1 -MW01
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): _____
DATE DRILLED: 12/19/2007
TIME COMPLETED: 12:00 **AM** ☐ **PM** ☒

3. WELL LOCATION:

CITY: MCAS, New River COUNTY: Onslow
Building AS-4151 - White Street, 28545
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

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

NORTHING: 3,844,487.9
EASTING: 275,472.8
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:
STREET ADDRESS: Building AS-4151 - White Street
MCAS, New River | NC | 28545
City or Town | State | Zip Code
CONTACT PERSON: Mr. Andrew Smith
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: 13
b. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
c. WATER LEVEL Below Top of Casing: 3.93 FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS -0.64 **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	0.64	To 3 ft.	2"	Sch. 40	PVC
From		To ft.	"		
From		To ft.	"		

7. GROUT:

	Depth		Material	Method
From	0.7	To 1 Ft.	Portland Cement	Surface Pour
From	1	To 2 Ft.	Bent. Pellets	Surface Pour
From		To Ft.		

8. SCREEN:

	Depth		Diameter	Slot Size	Material
From	3	To 12.5 Ft.	2 in.	Slot .010 in.	PVC
From		To Ft.	in.	in.	
From		To Ft.	in.	in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From	2	To 15 Ft.	#2 Medium	Torpedo Sand
From		To Ft.		
From		To Ft.		

10. DRILLING LOG

From	To	Formation Description
		SEE ATTACHED

11. REMARKS:

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.

Bobbie D. Fowler — 1-28-08
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

Bobbie D. Fowler
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

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
205-077
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 205-077	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** MCAS, New River
PROJECT NAME: AS-4151-1 and AS-4151-2 Tank Closures		**LOGGED BY:** Justin Heter	**BORING ID:** AS4151-1 SB01
		DRILLER: Justin Heter	
NORTHING:	**EASTING:**	**CREW:**	
SYSTEM:	**BORING LOCATION:** USTAS4151-1 (see map)		**LAND ELEV.:** NM
DRILL MACHINE: Hand Auger	**METHOD:** Hand Auger	**0 HOUR DTW:** 5.0	**BORING DEPTH:** 6.0
START DATE: 12/18/07	**FINISH DATE:** 12/18/07	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	HAND AUGER	M			SC		1.0	Dark gray, Clayey SAND w/large gravel. No HCO.	
1.0	HAND AUGER	M			SW		2.0	Brown, f. SAND w/some gravel. Trace organic debris and clay.	
2.0	HAND AUGER	M		1135 (2-3')	CL		3.0	Dark gray, Sandy CLAY. Med. plasticity. Slight HCO.	
3.0	HAND AUGER	M							
4.0	HAND AUGER	W			CH			Gray, fat CLAY. High plasticity w/some sandy clay from 4'-5'. No HCO.	
5.0	HAND AUGER	W			▽		6.0		
6.0								Boring Terminated at Depth 6.0 ft High plasticity CLAY.	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 205-077 AS-4151.GPJ CATLIN.GDT 1/25/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
205-077
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 205-077	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** MCAS, New River
PROJECT NAME: AS-4151-1 and AS-4151-2 Tank Closures		**LOGGED BY:** Justin Heter **DRILLER:** Justin Heter	**BORING ID:** AS4151-1 SB02
NORTHING:	**EASTING:**	**CREW:**	
SYSTEM:	**BORING LOCATION:** USTAS4151-1 (see map)		**LAND ELEV.:** NM
DRILL MACHINE: Hand Auger	**METHOD:** Hand Auger	**0 HOUR DTW:** NM	**BORING DEPTH:** 2.0
START DATE: 12/18/07	**FINISH DATE:** 12/18/07	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	HAND AUGER	M			SC			Brown, Clayey SAND w/gravel. Hard layer of gravel @ 1.5'.	
1.0	HAND AUGER	M		1400 (1-2')			2.0		
2.0								Boring Terminated at Depth 2.0 ft CLAYEY SAND w/ organic debris and gravels.	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 205-077 AS-4151 GPJ CATLIN GDT 1/25/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
205-077
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 205-077	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** MCAS, New River
PROJECT NAME: AS-4151-1 and AS-4151-2 Tank Closures		**LOGGED BY:** Justin Heter **DRILLER:** Justin Heter	**BORING ID:** AS4151-1 SB03
NORTHING:	**EASTING:**	**CREW:**	
SYSTEM:	**BORING LOCATION:** USTAS4151-1 (see map)		**LAND ELEV.:** NM
DRILL MACHINE: Hand Auger	**METHOD:** Hand Auger	**0 HOUR DTW:** NM	**BORING DEPTH:** 3.0
START DATE: 12/18/07	**FINISH DATE:** 12/18/07	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	HAND AUGER	M			SC		1.0	Dark gray, Clayey SAND w/large gravel. No HCO.	
1.0	HAND AUGER	M			SW		2.0	Brown, f. SAND w/some gravel. Trace organic debris and clay.	
2.0	HAND AUGER	M		1405 (2-3')	CL		3.0	Dark gray, Sandy CLAY. Med. plasticity. Slight HCO.	
3.0								Boring Terminated at Depth 3.0 ft SANDY CLAY.	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 205-077 AS-4151 GPJ CATLIN GDT 1/25/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
205-077
Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 205-077	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** MCAS, New River
PROJECT NAME: AS-4151-1 and AS-4151-2 Tank Closures	**LOGGED BY:** Justin Heter		**BORING ID:** AS4151-1 SB04
	DRILLER: Justin Heter		
NORTHING:	**EASTING:**	**CREW:**	
SYSTEM:	**BORING LOCATION:** USTAS4151-1 (see map)		**LAND ELEV.:** NM
DRILL MACHINE: Hand Auger	**METHOD:** Hand Auger	**0 HOUR DTW:** 3.5	**BORING DEPTH:** 3.5
START DATE: 12/18/07	**FINISH DATE:** 12/18/07	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0	HAND AUGER	M			SC		1.0	Dark gray, Clayey SAND w/large gravel. No HCO.	
1.0	HAND AUGER	M		1410 (1-2')	SW		2.0	Brown, f. SAND w/some gravel. Trace organic debris and clay.	
2.0	HAND AUGER	Sat.			CL		3.5	Dark gray, Sandy CLAY. Med. plasticity. Slight HCO.	
3.5								Boring Terminated at Depth 3.5 ft SANDY CLAY.	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 205-077 AS-4151.GPJ CATLIN.GDT 1/25/08

APPENDIX F

LABORATORY ANALYTICAL REPORTS
AND
CHAIN OF CUSTODY DOCUMENTATION

Mr. Ben Ashba
Richard Catlin & Associates
P.O. Box 10279
Wilmington NC 28404-0279

Report Number: G128-2096

Client Project: AS4151-1

Dear Mr. Ashba:

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.

for Laboratory Director
R. Kendall Sutler

Date 1/9/08

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation 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 = Reporting 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.

SGS ENVIRONMENTAL SERVICES, INC.

Results for Volatiles
by GCMS 6210D

Client Sample ID: USTAS4151-2-MW01
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2096-2E
Lab Project ID: G128-2096

Analyzed By: MJC
Date Collected: 12/26/2007 15:00
Date Received: 12/26/2007
Matrix: Water
Sample Amount: 5 mL

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Benzene	**0.150**	0.500	0.0800	1	1/2/2008	J
Bromobenzene	BQL	0.500	0.143	1	1/2/2008	
Bromochloromethane	BQL	0.500	0.261	1	1/2/2008	
Bromodichloromethane	BQL	0.500	0.146	1	1/2/2008	
Bromoform	BQL	0.500	0.275	1	1/2/2008	
Bromomethane	BQL	0.500	0.261	1	1/2/2008	
n-Butylbenzene	BQL	0.500	0.105	1	1/2/2008	
sec-Butylbenzene	BQL	0.500	0.117	1	1/2/2008	
tert-Butylbenzene	BQL	0.500	0.128	1	1/2/2008	
Carbon tetrachloride	BQL	0.500	0.102	1	1/2/2008	
Chlorobenzene	BQL	0.500	0.0720	1	1/2/2008	
Chloroethane	BQL	0.500	0.568	1	1/2/2008	
Chloroform	BQL	0.500	0.121	1	1/2/2008	
Chloromethane	**0.380**	0.500	0.206	1	1/2/2008	J
2-Chlorotoluene	BQL	0.500	0.110	1	1/2/2008	
4-Chlorotoluene	BQL	0.500	0.107	1	1/2/2008	
Dibromochloromethane	BQL	0.500	0.124	1	1/2/2008	
1,2-Dibromo-3-chloropropane	BQL	5.00	0.900	1	1/2/2008	
Dibromomethane	BQL	0.500	0.199	1	1/2/2008	
1,2-Dibromoethane (EDB)	BQL	0.500	0.120	1	1/2/2008	
1,2-Dichlorobenzene	BQL	0.500	0.116	1	1/2/2008	
1,3-Dichlorobenzene	BQL	0.500	0.173	1	1/2/2008	
1,4-Dichlorobenzene	BQL	0.500	0.157	1	1/2/2008	
1,1-Dichloroethane	BQL	0.500	0.0880	1	1/2/2008	
1,1-Dichloroethene	BQL	0.500	0.204	1	1/2/2008	
1,2-Dichloroethane	BQL	0.500	0.132	1	1/2/2008	
cis-1,2-Dichloroethene	**0.590**	0.500	0.0350	1	1/2/2008	
trans-1,2-dichloroethene	BQL	0.500	0.158	1	1/2/2008	
1,2-Dichloropropane	BQL	0.500	0.0960	1	1/2/2008	
1,3-Dichloropropane	BQL	0.500	0.162	1	1/2/2008	
2,2-Dichloropropane	BQL	0.500	0.181	1	1/2/2008	
1,1-Dichloropropene	BQL	0.500	0.121	1	1/2/2008	
Dichlorodifluoromethane	BQL	5.00	0.254	1	1/2/2008	
Diisopropyl ether (DIPE)	BQL	0.500	0.0850	1	1/2/2008	
Ethylbenzene	BQL	0.500	0.111	1	1/2/2008	
Hexachlorobutadiene	BQL	0.500	0.229	1	1/2/2008	
Isopropylbenzene	BQL	0.500	0.127	1	1/2/2008	
4-Isopropyltoluene	BQL	0.500	0.124	1	1/2/2008	
Methylene chloride	**0.220**	5.00	0.199	1	1/2/2008	J
Methyl-tert-butyl ether (MTBE)	BQL	0.500	0.138	1	1/2/2008	
Naphthalene	BQL	0.500	0.173	1	1/2/2008	
n-Propyl benzene	BQL	0.500	0.120	1	1/2/2008	

SGS ENVIRONMENTAL SERVICES, INC.

Results for Volatiles
by GCMS 6210D

Client Sample ID: USTAS4151-1-MW01 (BA)
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2096-2E
Lab Project ID: G128-2096

Analyzed By: MJC
Date Collected: 12/26/2007 15:00
Date Received: 12/26/2007
Matrix: Water
Sample Amount: 5 mL

Compound	Result UG/L	Quantitation Limit UG/L	MDL UG/L	Dilution Factor	Date Analyzed	Flag
Styrene	BQL	0.500	0.109	1	1/2/2008	
1,1,1,2-Tetrachloroethane	BQL	0.500	0.125	1	1/2/2008	
1,1,2,2-Tetrachloroethane	BQL	0.500	0.187	1	1/2/2008	
Tetrachloroethene	BQL	0.500	0.112	1	1/2/2008	
Toluene	BQL	0.500	0.0910	1	1/2/2008	
1,2,3-Trichlorobenzene	BQL	0.500	0.176	1	1/2/2008	
1,2,4-Trichlorobenzene	BQL	0.500	0.0720	1	1/2/2008	
Trichloroethene	BQL	0.500	0.0870	1	1/2/2008	
1,1,1-Trichloroethane	BQL	0.500	0.111	1	1/2/2008	
1,1,2-Trichloroethane	BQL	0.500	0.175	1	1/2/2008	
Trichlorofluoromethane	BQL	0.500	0.247	1	1/2/2008	
1,2,3-Trichloropropane	BQL	0.500	0.203	1	1/2/2008	
1,2,4-Trimethylbenzene	BQL	0.500	0.121	1	1/2/2008	
1,3,5-Trimethylbenzene	BQL	0.500	0.106	1	1/2/2008	
Vinyl chloride	BQL	0.500	0.305	1	1/2/2008	
m-,p-Xylene	BQL	1.00	0.215	1	1/2/2008	
o-Xylene	BQL	0.500	0.110	1	1/2/2008	

	Spike Added	Spike Result	Percent Recovered
1,2-Dichloroethane-d4	10	11.3	113
Toluene-d8	10	9.94	99
4-Bromofluorobenzene	10	10.1	101

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

Reviewed By: _____

SGS ENVIRONMENTAL SERVICES, INC.

Results for Semivolatiles by GCMS 625

Client Sample ID: USTAS4151-2-MW01
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2096-2J
Lab Project ID: G128-2096

Analyzed By: DCS
Date Collected: 12/26/2007 15:00
Date Received: 12/26/2007
Date Extracted: 12/27/2007
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	**4.20**	10.0	1.22	1	1/2/2008	J
Acenaphthylene	BQL	10.0	1.12	1	1/2/2008	
Anthracene	BQL	10.0	1.75	1	1/2/2008	
Benzo[a]anthracene	BQL	10.0	1.36	1	1/2/2008	
Benzo[a]pyrene	BQL	10.0	1.27	1	1/2/2008	
Benzo[b]fluoranthene	BQL	10.0	1.43	1	1/2/2008	
Benzo[g,h,i]perylene	BQL	10.0	4.57	1	1/2/2008	
Benzo[k]fluoranthene	BQL	10.0	1.09	1	1/2/2008	
Bis(2-chloroethoxy)methane	BQL	10.0	1.11	1	1/2/2008	
Bis(2-chloroethyl)ether	BQL	10.0	1.09	1	1/2/2008	
Bis(2-chloroisopropyl)ether	BQL	10.0	1.57	1	1/2/2008	
Bis(2-ethylhexyl)phthalate	BQL	10.0	1.33	1	1/2/2008	
4-bromophenyl phenyl ether	BQL	10.0	1.99	1	1/2/2008	
Butylbenzylphthalate	BQL	10.0	1.53	1	1/2/2008	
2-Chloronaphthalene	BQL	10.0	1.25	1	1/2/2008	
2-Chlorophenol	BQL	10.0	4.22	1	1/2/2008	
4-Chloro-3-methylphenol	BQL	10.0	3.26	1	1/2/2008	
4-Chlorophenyl phenyl ether	BQL	10.0	1.42	1	1/2/2008	
Chrysene	BQL	10.0	1.11	1	1/2/2008	
Dibenzo[a,h]anthracene	BQL	10.0	4.87	1	1/2/2008	
Di-n-Butylphthalate	BQL	10.0	1.65	1	1/2/2008	
3,3'-Dichlorobenzidine	BQL	20.0	4.10	1	1/2/2008	
2,4-Dichlorophenol	BQL	10.0	3.75	1	1/2/2008	
Diethylphthalate	BQL	10.0	1.48	1	1/2/2008	
Dimethylphthalate	BQL	10.0	1.04	1	1/2/2008	
2,4-Dimethylphenol	BQL	10.0	9.25	1	1/2/2008	
Di-n-octylphthalate	BQL	10.0	1.16	1	1/2/2008	
4,6-Dinitro-2-methylphenol	BQL	50.0	3.71	1	1/2/2008	
2,4-Dinitrophenol	BQL	50.0	4.20	1	1/2/2008	
2,4-Dinitrotoluene	BQL	10.0	1.52	1	1/2/2008	
2,6-Dinitrotoluene	BQL	10.0	1.41	1	1/2/2008	
Diphenylamine *	BQL	10.0	1.53	1	1/2/2008	
Fluoranthene	BQL	10.0	1.41	1	1/2/2008	
Fluorene	BQL	10.0	1.22	1	1/2/2008	
Hexachlorobenzene	BQL	10.0	1.22	1	1/2/2008	
Hexachlorobutadiene	BQL	10.0	1.58	1	1/2/2008	
Hexachlorocyclopentadiene	BQL	20.0	20.0	1	1/2/2008	
Hexachloroethane	BQL	10.0	1.58	1	1/2/2008	
Indeno(1,2,3-c,d)pyrene	BQL	10.0	4.57	1	1/2/2008	
Isophorone	BQL	10.0	1.27	1	1/2/2008	
Naphthalene	BQL	10.0	1.08	1	1/2/2008	
Nitrobenzene	BQL	10.0	1.32	1	1/2/2008	
2-Nitrophenol	BQL	10.0	3.52	1	1/2/2008	
4-Nitrophenol	BQL	50.0	3.17	1	1/2/2008	
N-Nitrosodi-n-propylamine	BQL	10.0	1.87	1	1/2/2008	
Pentachlorophenol	BQL	50.0	2.83	1	1/2/2008	
Phenanthrene	BQL	10.0	1.38	1	1/2/2008	

8270.xls

SGS ENVIRONMENTAL SERVICES, INC.

Results for Semivolatiles by GCMS 625

Client Sample ID: USTAS4151-2-MW01
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2096-2J
Lab Project ID: G128-2096

Analyzed By: DCS
Date Collected: 12/26/2007 15:00
Date Received: 12/26/2007
Date Extracted: 12/27/2007
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	10.0	3.38	1	1/2/2008	
Pyrene	BQL	10.0	2.08	1	1/2/2008	
1,2,4-Trichlorobenzene	BQL	10.0	1.33	1	1/2/2008	
2,4,6-Trichlorophenol	BQL	10.0	2.92	1	1/2/2008	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
2-Fluorophenol	10	7.5	75
Nitrobenzene-d5	10	8.3	83
Phenol-d6	10	6.8	68
2,4,6-Tribromophenol	10	7.9	79
4-Terphenyl-d14	10	9.1	91

Comments:

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

Flags:

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

Reviewed By: _____

8270.xls

SGS ENVIRONMENTAL SERVICES, INC.

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: USTAS4151-2-MW01
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2096-2J
Lab Project ID: G128-2096
Sample Wt/Vol: 500 ML
Dilution: 1

Analyzed By: DES
Date Collected: 12/26/2007 15:00
Date Received: 12/26/2007
Date Extracted: 12/27/2007
Date Analyzed: 1/2/2008
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result (ug/L)
1	Unknown	4.40			7.68
2					
3					
4					
5					
6					
7					
8					
9					
10					

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:

SV_TICS_for old msd6.xls

N.C. CERTIFICATION #481

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	USTAS4151-2MW01	Analyzed By:	PSW
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/26/2007 15:00
Lab Sample ID:	G128-2096-2	Date Received:	12/26/2007
Lab Project ID:	G128-2096	Matrix:	WATER
Batch ID:	10039		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	BQL	0.00500	0.000812	25	MG/L	6020	1/9/2008	
Lead	BQL	0.00500	0.000617	25	MG/L	6020	1/9/2008	

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL
Samples Prepared by 3030C

Reviewed By: METALS

SGS ENVIRONMENTAL SERVICES, INC.

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: AS4151-1 & AS4151-2

Sample Information	
Sample Identification	USTAS4151-1-MW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	12/26/07
Date Received	12/26/07
Date Extracted	12/27/07 23:58 - 12/27/07 23:58
Date Analyzed	12/27/07 23:58 - 12/27/07 23:58
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	79.6		70	130
Surrogate % Recovery - FID	96.6		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: g128-2096-2d	Lab Info: g128-2096-2d
FID Info: VP122707/036F0101.D	PID Info: VP122707/036R0101.D

Reviewed By:

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 12/08/07 PID Initial Calibration Date: 12/08/07

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	33.1	0.265	105	0.842	100	10
C_9-C_{12} Aliphatics	30.9	0.247	98.3	0.786	100	10
C_9-C_{10} Aromatics	27.7	0.222	88.1	0.705	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	11.01	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	15.27	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 12/27/07 Filename: VP122707/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	1.6	-19.5	±25%
C_9-C_{12} Aliphatics	200	1.6	-4.3	±25%
C_9-C_{10} Aromatics	200	1.6	-19.6	±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.

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: AS4151-1 & AS4151-2

Sample Information	
Sample Identification	USTAS4151-2-MW01
Sample Matrix	WATER
Date Collected	12/26/07
Date Received	12/26/07
Date Extracted	12/27/07
Date Analyzed	12/31/07 13:50 - 12/31/07 14:19
Dry Weight	100
Dilution Factor	1 - 1
Initial Volume (mL)	500
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 (chloro-octadecane)	70.6		40	140
Aromatic (ortho-terphenyl)	65.8		40	140
Fractionation 1 (2-bromonaphthalene)	83.8		40	140
Fractionation 2 (2-fluorobiphenyl)	84.7		40	140

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

Lab Info: G128-2096-2M	Lab Info: G128-2096-2M
Aliphatic: EP123107/005F0301.D	Aromatic: EP123107/006F0401.D

Reviewed By:

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL (10/17/06) (µg/L)	MDL (10/17/06) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	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	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{19}-C_{36} Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{11}-C_{22} Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 12/28/07 / 12/28/07

Filenames: ep122807/001f0101.d / ep122807/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	200	6.25	-7.3	≤±25%
C19-C36 Aliphatics	200	6.25	-8.1	≤±25%
C11-C22 Aromatics	200	6.25	1.4	≤±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: 12/26/07

Calibration Ranges and Limits

Range	MDL (10/17/06) (µg/L)	MDL (10/17/06) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	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	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{19}-C_{36} Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{11}-C_{22} Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 12/28/07, 12/29/07

Filenames: ep122807/040f3701.d, ep122807/041f3801.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	200	6.25	0.3	≤±25%
C19-C36 Aliphatics	200	6.25	0.8	≤±25%
C11-C22 Aromatics	200	6.25	6.1	≤±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 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

Range	MDL (10/17/06) (µg/L)	MDL (10/17/06) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	28.1	0.847	89	2.69	100	10
C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	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	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{19}-C_{36} Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{11}-C_{22} Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 12/31/07
12/31/07

Filenames: ep123107/001f0101.d
ep123107/002f0201.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	200	6.25	2.6	≤±25%
C19-C36 Aliphatics	200	6.25	2.1	≤±25%
C11-C22 Aromatics	200	6.25	4.1	≤±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 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 12/26/07

Calibration Ranges and Limits

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C19-C36 Aliphatics	36.5	1.17	116	3.72	100	10
C11-C22 Aromatics	27.6	9.47	87.8	30.1	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	400	12.5	3.80	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{19}-C_{36} Aliphatics	400	12.5	6.26	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		
C_{11}-C_{22} Aromatics	400	12.5	4.66	Calibration Factor
	200	6.25		
	100	3.13		
	50	1.56		
	10	0.313		

Calibration Check Date: 12/31/07
12/31/07

Filenames: ep123107/009f0701.d
ep123107/010f0801.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	200	6.25	6.7	≤±25%
C19-C36 Aliphatics	200	6.25	6.4	≤±25%
C11-C22 Aromatics	200	6.25	6.1	≤±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

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T-105 P.02/03 F-138
+9104527563
N.C. CERTIFICATION #481 From-CATLIN ENGINEERS AND SCIENTISTS
dec-27-07 12:12pm

(1)

CLIENT: CATLIN

CONTACT: Ben Ashba PHONE NO:(910) 452-5861

PROJECT: AS4151-1 & AS4151-2 SITE/PWSID#: 205-077

REPORTS TO: Ben Ashba E-MAIL: FAX NO.:( )

INVOICE TO: Sheila@CATLIN QUOTE # P.O. NUMBER

SGS Reference: G128-2096

PAGE ____ OF ____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) EPA 6210 D	EPA 625 BNA + TICS	EPA 602	3030C Chrom Lead	MADEP EPH & VPH	REMARKS
NOT INCLUDED IN THIS REPORT	USTAS4151-2 MW01	12/26	1520	W	8	G		X	X	X	X		
	USTAS4151-2 MW01 (BA)	12/26 WL	1500 WL	W	8	G		X	X		X	X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:	Date	Time
J. Holder (WL)	12/26	1632	A. Thompson (WL)	12/26	1632
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By:	Date	Time

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: ____ °F ____

Special Deliverable Requirements:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH ____ Date Needed ☐ STD

Mr. Ben Ashba
Richard Catlin & Associates
P.O. Box 10279
Wilmington NC 28404-0279

Report Number: G128-2092

Client Project: AS4151-1

Dear Mr. Ashba:

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.

Laboratory Director
R. Kendall Sutler

Date 1/3/08

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation 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 = Reporting 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.

SGS ENVIRONMENTAL SERVICES, INC.

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: AS4151-2-SB01 (2-3')
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2092-5
Lab Project ID: G128-2092
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 12/19/2007 11:35
Date Received: 12/19/2007
Matrix: Soil
Solids 76.16

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	7.05	5035	1	12/24/07
Diesel Range Organics	**18.2**	7.99	3541	1	12/20/07

Comments:

Flags:

Reviewed By: _____
TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: AS4151-SB02 (1-2')
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2092-6
Lab Project ID: G128-2092
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 12/19/2007 14:00
Date Received: 12/19/2007
Matrix: Soil
Solids 85.14

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.82	5035	1	12/24/07
Diesel Range Organics	**7.48**	7.00	3541	1	12/20/07

Comments:

Flags:

Reviewed By: _____
TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

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

Client Sample ID: AS4151-2-SB03 (2-3')
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2092-7
Lab Project ID: G128-2092
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 12/19/2007 14:05
Date Received: 12/19/2007
Matrix: Soil
Solids 79.75

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.55	5035	1	12/24/07
Diesel Range Organics	**30.3**	7.66	3541	1	12/20/07

Comments:

Flags:

Reviewed By: _____
TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: AS4151-2-SB04 (1-2')
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2092-8
Lab Project ID: G128-2092
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 12/19/2007 14:10
Date Received: 12/19/2007
Matrix: Soil
Solids 85.80

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.27	5035	1	12/24/07
Diesel Range Organics	**8.36**	6.91	3541	1	12/20/07

Comments:

Flags:

Reviewed By: _____
TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Total Petroleum Hydrocarbons

by **GC/FID 8015**

Client Sample ID: Dup. AS4151-2-SB01
Client Project ID: AS4151-1 & AS4151-2
Lab Sample ID: G128-2092-9
Lab Project ID: G128-2092
Report Basis: Dry Weight

Analyzed By: DVG
Date Collected: 12/19/2007 14:45
Date Received: 12/19/2007
Matrix: Soil
Solids 75.57

Analyte	Result MG/KG	RL MG/KG	Prep Method	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	9.54	5035	1	12/24/07
Diesel Range Organics	**24.9**	8.03	3541	1	12/20/07

Comments:

Flags:

Reviewed By: _____
TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

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

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB9995
Lab Project ID:
Report Basis: Dry Weight

Analyzed By: EAW
Date Collected:
Date Received:
Matrix: SOIL
Solids 100.00

Analyte	Result mg/KG	RL mg/KG	Prep Method	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.25	3541	1	12/20/07

Comments:

Flags:

Reviewed By:

TPH.XLS

SGS ENVIRONMENTAL SERVICES, INC.

QC Results for Total Petroleum Hydrocarbons
by GC/FID

Client Sample ID: Batch QC
Lab Sample ID: G128-2092-3E
Batch ID: 9995

Analyzed By: EAW
Matrix: Soil
Solids 82.57

MS/MSD

Analyte	Sample	Spiked	MS	REC		Spiked	MSD	REC		RPD
units	MG/KG	MG/KG	MG/KG	%		MG/KG	MG/KG	%		%
DRO	17.2	75.5	125	143	#	75.3	133	154	#	7.41

LCS

Analyte		Spiked	Result	REC		LIMITS		
units		MG/KG	MG/KG	%		Lower	Upper	
DRO		62.5	55.8	89.3		40	140	

Comments: Sample was a non-homogenous matrix.
= Outside Control Limits

Reviewed By: alc

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	AS4151-2-SB01 (2-3')	Analyzed By:	RML
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/19/2007 11:35
Lab Sample ID:	G128-2092-5	Date Received:	12/19/2007
Lab Project ID:	G128-2092	Matrix:	SOIL
Batch ID:	10038	Solids	76.16
Report Basis:	Dry		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**24.1**	1.26	0.139	1	MG/KG	6010B	12/31/2007	B
Lead	**17.9**	1.26	0.811	1	MG/KG	6010B	12/31/2007	B

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By: _____

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	AS4151-2-SB02 (1-2')	Analyzed By:	RML
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/19/2007 14:00
Lab Sample ID:	G128-2092-6	Date Received:	12/19/2007
Lab Project ID:	G128-2092	Matrix:	SOIL
Batch ID:	10038	Solids	85.14
Report Basis:	Dry		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**15.2**	0.995	0.109	1	MG/KG	6010B	12/31/2007	B
Lead	**11.3**	0.995	0.639	1	MG/KG	6010B	12/31/2007	B

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By: _____
METALS.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	AS4151-2-SB03 (2-3')	Analyzed By:	RML
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/19/2007 14:05
Lab Sample ID:	G128-2092-7	Date Received:	12/19/2007
Lab Project ID:	G128-2092	Matrix:	SOIL
Batch ID:	10038	Solids	79.75
Report Basis:	Dry		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**14.2**	1.21	0.133	1	MG/KG	6010B	12/31/2007	B
Lead	**15.6**	1.21	0.774	1	MG/KG	6010B	12/31/2007	B

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By: _____
METALS.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	AS4151-SB04 (1-2')	Analyzed By:	RML
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/19/2007 14:10
Lab Sample ID:	G128-2092-8	Date Received:	12/19/2007
Lab Project ID:	G128-2092	Matrix:	SOIL
Batch ID:	10038	Solids	85.80
Report Basis:	Dry		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**6.73**	0.971	0.107	1	MG/KG	6010B	12/31/2007	B
Lead	**4.72**	0.971	0.624	1	MG/KG	6010B	12/31/2007	B

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By: _____
METALS.XLS

SGS ENVIRONMENTAL SERVICES, INC.

Results for Metals

Client Sample ID:	Dup. AS4151-2-SB01	Analyzed By:	RML
Client Project ID:	AS4151-1 & AS4151-2	Date Collected:	12/19/2007 14:45
Lab Sample ID:	G128-2092-9	Date Received:	12/19/2007
Lab Project ID:	G128-2092	Matrix:	SOIL
Batch ID:	10038	Solids	75.57
Report Basis:	Dry		

Metals	Result	RL	MDL	DF	Units	Method	Date Analyzed	Flags
Chromium	**12.7**	1.10	0.121	1	MG/KG	6010B	12/31/2007	B
Lead	**9.91**	1.10	0.708	1	MG/KG	6010B	12/31/2007	B

Comments
BQL = Below Quantitation Limits
DF = Dilution Factor
J = Between MDL and RL
B= Amount in Prep Blank > MDL

Reviewed By:

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SGS ENVIRONMENTAL SERVICES, INC.

N.C. CERTIFICATION #481

(1)
CLIENT: Catlin
CONTACT: Ben Ashba PHONE NO: (910) 452.5861
PROJECT: AS4151-1 & AS4151-2 SITE/PWSID#: 205-077
REPORTS TO: Ben Ashba E-MAIL:
FAX NO.: ( )
INVOICE TO: Sheila @ Catlin QUOTE #
P.O. NUMBER

SGS Reference: G128-2092 PAGE 1 OF

Preservatives Used: MEOH | – | –

Analysis Required (3): GRO | DRO | 6010B Cr + Pb | ICPMS Method IS 6020 [illegible] 12/20

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	GRO	DRO	6010B Cr + Pb	REMARKS
NOT INCLUDED IN THIS REPORT	~~AS4151-1-SB01 (2-3')~~ (1 changed to 2)	12/19/07	1050	S	3	G	✓	✓	✓	No jars/containers for 6010B
	~~AS4151-1-SB02 (0-1')~~ (1 changed to 2)		1120				✓	✓	✓	
	~~AS4151-1-SB03 (1-2')~~ (1 changed to 2)		1125				✓	✓	✓	
	~~AS4151-1-SB04 (2-3')~~ (1 changed to 2)		1130				✓	✓	✓	
	AS4151-2-SB01 (2-3')		1135				✓	✓	X	Added per B. Ashba on 12/27 WL.
	AS4151-2-SB02 (1-2')		1400				✓	✓	X	
	AS4151-2-SB03 (2-3')		1405				✓	✓	X	
	AS4151-2-SB04 (1-2')		1410				✓	✓	X	
	Dup. AS4151-2-SB01		1445				✓	✓	X	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:	Date	Time
[signature]	12/19/07	1635			
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By: [signature]	12/19/07	1635

(4)
Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) **YES** (circled) NO
Temperature °C: 4.6
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT** (circled)
Special Instructions:
Requested Turnaround Time:
☐ RUSH ______ Date Needed ☑ STD