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August 8, 2008

NAVFAC Mid-Atlantic  
Marine Corps North Carolina IPT  
Environmental Business Line  
Code: OPNCEV 3MA  
Attn: Mr. Melvin Acree  
6506 Hampton Boulevard  
Building C, Room 314  
Norfolk, VA 23508-1278

Re: **UST Closure Report Addendum**  
**UST AS-4151-2**  
Marine Corps Base, Camp Lejeune, North Carolina  
Navy Contract No. N62470-05-D-6200  
Delivery Order No. 0016  
CATLIN Project No. 205-077

Dear Mr. Acree:

This letter and the following attachments are provided as an addendum to the previously submitted *UST Closure Report for UST AS-4151-2* dated January 28, 2008.

### **Background**

A 1,000-gallon diesel fuel tank (USTAS-4151-2) was located near the southwest corner of Building AS-4151 from 1977 until removal on March 30, 1994. 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. This soil and groundwater sampling is documented in the *UST Closure Report for USTAS-4151-2 (UST Closure Report)* dated January 28, 2008. As detailed in *UST Closure Report*, minor diesel range organics (10.7 milligrams per kilogram) were revealed in one soil sample (USTAS4151-2-SB02 (0-1')). The site vicinity and site layout are illustrated on the attached Figure 1 and Figure 2, respectively.

Following review by the North Carolina Department of Environment and Natural Resources (NCDENR), Mr. Bruce Reed with the UST Section requested that an additional soil sample be collected for laboratory analysis adjacent to the previous (December 2007) USTAS4151-2-SB02 (0-1') soil sample. The previous soil sample results revealed 10.7 mg/Kg total petroleum hydrocarbon (TPH) diesel range organics (DRO), which is above the 10 mg/Kg State Action Level. This letter documents the recent re-sampling and laboratory analysis.

## **Methods**

Clean disposable nitrile gloves were used for boring advancement and soil sample collection. The soil sample USTAS4151-2-SB02A was collected by hand from the hand auger bucket and packed directly into new laboratory provided glassware. The hand auger was decontaminated with Liqui-Nox<sup>®</sup>, pesticide grade isopropyl alcohol, and rinsed with distilled water before boring advancement and prior to soil sample collection.

The soil sample was placed into the appropriate sample jars (provided by the laboratory) with Teflon<sup>®</sup> lid liners, labeled with the site location, date and time, initials of person collecting sample, sample identification number, and tests required. 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 attached Chain of Custody document.

## **Soil Sampling**

A hand auger boring was advanced near the approximate former USTAS-4151-2 excavation sidewalls and adjacent to the December 2007 soil sample AS4151-2-SB02. One grab soil sample (USTAS4151-2-SB02A) was collected from the hand auger boring approximately one foot BLS and approximately one foot above the water table.

A mixture of sands and clays were encountered at the boring location. Complete boring lithological descriptions can be found on the attached boring log. The soil boring/sample location is illustrated on Figure 2.

The USTAS4151-2-SB02A soil sample was collected and submitted for TPH DRO laboratory analysis by Environmental Protection Agency (EPA) Method 8015. The sample identifications and dates are provided on the attached Table Addendum. Soil sample times and laboratory submittal information is included on the Chain of Custody document following the attached laboratory analytical report.

Laboratory analysis for TPH DRO per EPA Method 8015 did not reveal any DRO concentrations above the laboratory reporting limit. The complete analytical report is attached. The recent USTAS4151-2-SB02A soil sample results have been included on the attached Table Addendum along with the previous (December 2007) soil sampling results.

### **Summary and Conclusion**

The soil sample USTAS4151-2-SB02 collected in December 2007 revealed 10.7 milligrams per kilogram (mg/kg) TPH DRO, which is above the NCDENR 10 mg/kg Action Level. The recently (June 30, 2008) collected soil sample USTAS4151-2-SB02A (adjacent to the December 2007 USTAS4151-2-SB02 soil sample) did not reveal any TPH DRO concentrations above the laboratory reporting limit.

CATLIN recommends forwarding this letter and all attachments to the NCDENR Wilmington Regional Office with a request for Low Risk Classification and "No Further Action" status.

CATLIN appreciates the opportunity to continue to provide services to NAVFAC Mid-Atlantic and the MCB on your environmental projects. Please feel free to call us at 910-452-5861 with any questions or comments.

Sincerely,



Michael E. Mason, P.E.  
Program Manager

A handwritten signature in blue ink, appearing to read "Benjamin J. Ashba for".

Benjamin J. Ashba  
Project Manager

Enclosure

cc: Ms. Susan Tsimpinos – NAVFAC Contracts (correspondence only)  
Commanding Officer, Attn: Director I&E/EMD/EQB

## **ATTACHMENTS**

## TABLE

**TABLE ADDENDUM  
SUMMARY OF SOIL LABORATORY RESULTS  
TOTAL PETROLEUM HYDROCARBON  
DIESEL RANGE ORGANICS  
EPA METHODS 8015**

Incident Name: AS-4151-2

Incident Number: 32457

Sample ID	Contaminant of Concern →		Diesel Range Organics
	Date Collected	Sample Depth (ft. BLS)	
NCDENR Action Level (mg/kg)			10
USTAS4151-2-SB01 (2-3')	12/19/2007	2-3	<6.89
USTAS4151-2-SB02 (0-1')	12/19/2007	0-1	10.7
USTAS4151-2-SB02A	6/30/2008	0-1	<7.13
USTAS4151-2-SB03 (1-2')	12/19/2007	1-2	9.21
USTAS4151-2-SB04 (2-3')	12/19/2007	2-3	<6.61

Note: Soil sample AS4151-2-SB02A collected adjacent to sample AS4151-2-SB02  
ft. BLS = feet below land surface  
All results in milligrams per kilogram (mg/kg).

## FIGURES

**UST CLOSURE ADDENDUM  
UST AS-4151-2  
BUILDING AS-4151  
MCAS NEW RIVER**



**LEGEND**

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

**NOTES**

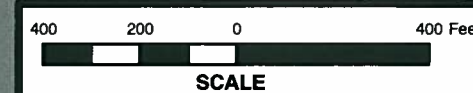
1. GIS Data Layers provided by MCB Camp Lejeune.



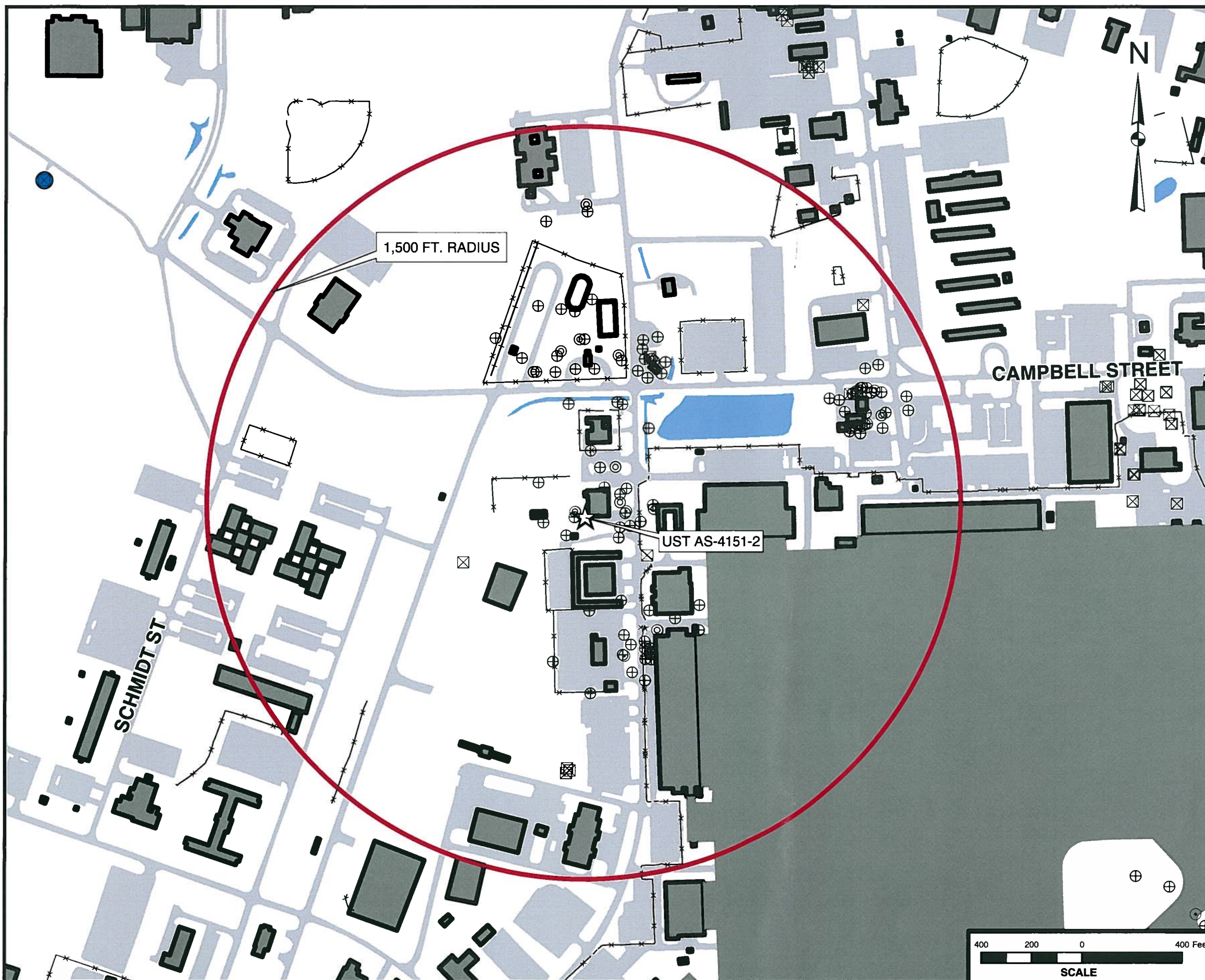
**SITE VICINITY MAP**

FIGURE

**1**



Job No.: 205-077	Date: JULY 2008	Scale: AS SHOWN	Drawn By: KAWS	Checked By: MEM
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**UST CLOSURE ADDENDUM  
UST AS-4151-2  
BUILDING AS-4151  
MCAS NEW RIVER**



**LEGEND**

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

**NOTES**

1. GIS Data Layers provided by MCB Camp Lejeune.
2. The UST AS-4151-2-SB02A soil sample was collected on June 30, 2008 and analyzed by SGS for diesel range organics. Laboratory analysis did not reveal diesel range organics above the reporting limit (7.13 mg/kg).



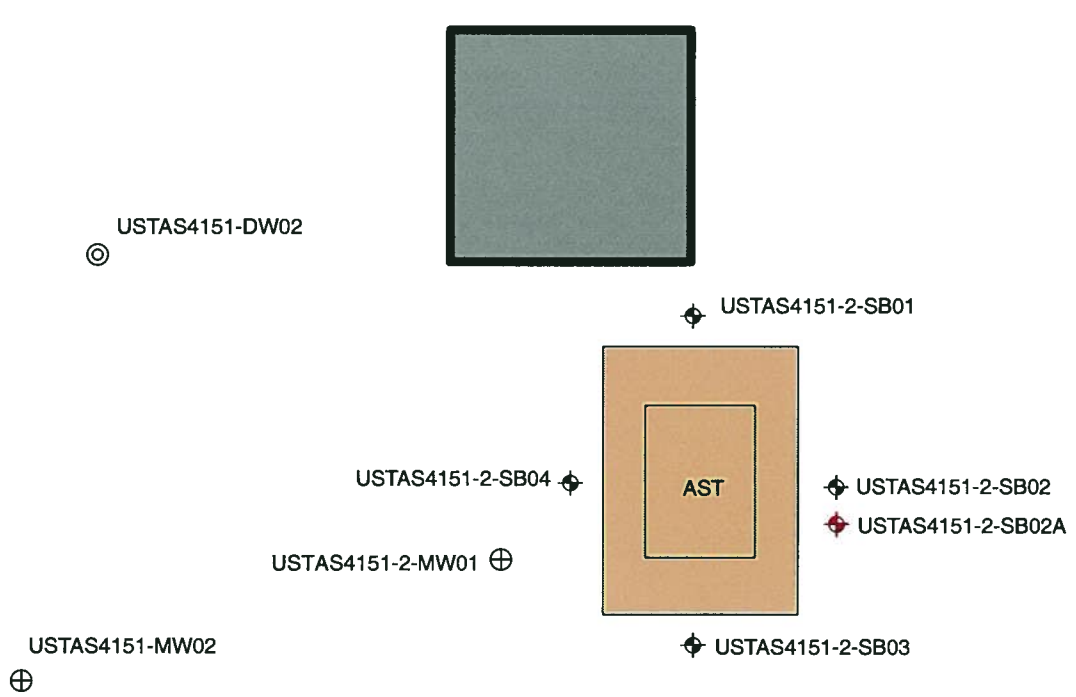
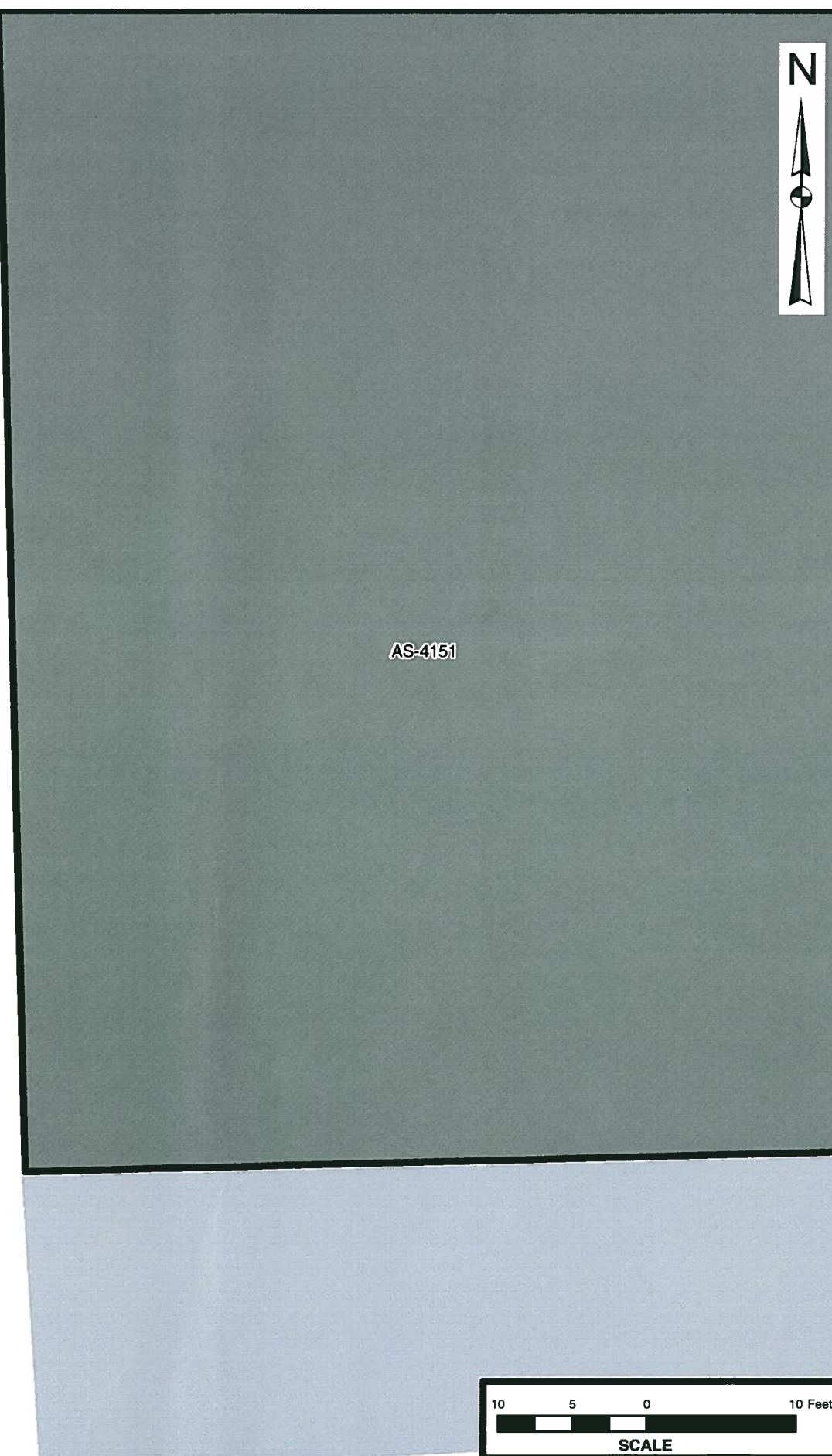
SITE PLAN WITH  
SOIL SAMPLE LOCATION

FIGURE

**2**



Job No.:	Date:	Scale:	Drawn By:	Checked By:
205-077	JULY 2008	AS SHOWN	KAWS	MEM



## **BORING LOG**




# 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 Tank Closure Addendum		LOGGED BY: Justin Heter	BORING ID: USTAS4151-1
		DRILLER: Justin Heter	SB03A
NORTHING: NM	EASTING: NM	CREW:	
SYSTEM: N/A	BORING LOCATION: Adjacent to USTAS4151-1 SB03		LAND ELEV.: NM
DRILL MACHINE: Hand Auger	METHOD: Hand Auger	0 HOUR DTW: NM	BORING DEPTH: 3.0
START DATE: 6/30/08	FINISH DATE: 6/30/08	24 HOUR DTW: NM	ROCK DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	U S C S	L O G	SOIL AND ROCK		
							DEPTH	DESCRIPTION	ELEVATION
0.0							0.0	LAND SURFACE	
	HAND AUGER	M			SC			Dark gray, Clayey SAND w/large gravel. No HCO.	1.0
1.0					SW			Brown, f. SAND w/some gravel. Trace organic debris and clay.	2.0
2.0				1300	CL			Dark gray, Sandy CLAY. Med. plasticity. Slight HCO.	3.0
3.0								Boring Terminated at Depth 3.0 ft	

CATLIN ENVIRO. LOG - 205-077\_AS4151-1.GPJ - CATLIN.GDT - 7/2/08

 = 0hr. DTW

 = 24hr. DTW

**LABORATORY ANALYTICAL REPORT AND  
CHAIN OF CUSTODY DOCUMENTATION**



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

Report Number: G128-2212

Client Project: AS4151-2

Dear Ben 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 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.

Ashley Nifong  
2008.07.01 15:53:41 -04'00'

---

Project Manager  
Ashley Nifong

Date

## 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

% solids = 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.



Print Date: 7/1/2008

Client Sample ID: **USTAS4151-2-SB02A**  
Client Project ID: AS4151-2  
Lab Sample ID: G128-2212-1H  
Lab Project ID: G128-2212

Collection Date: 30-Jun-08 13:20  
Received Date: 30-Jun-08  
Matrix: SOIL  
Solids: 84.47  
Basis: Dry

**Results by 8015DRO**

<u>PARAMETER</u>	<u>Result</u>	<u>RL/CL</u>	<u>MDL</u>	<u>Units</u>	<u>DF</u>	<u>Qual</u>	<u>Date Analyzed</u>
Diesel Range Organics	BQL	7.13		MG/KG	1		01-Jul-08 12:23

**Batch Information**

Analytical Batch: EP070108  
Analytical Method: 8015DRO  
Instrument: GC6  
Analyst: EAW

Prep Batch:  
Prep Method: 3541  
Prep Date/Time:  
Initial Prep Wt./Vol.: 33.23  
Prep Extract Vol: 10



**CHAIN OF CUSTODY RECORD**  
**SGS Environmental Services Inc.**

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

www.us.sgs.com

088203

<b>1</b> CLIENT: <u>Catlin</u>					SGS Reference: <u>G128-2212</u>					PAGE <u>1</u> OF <u>1</u>	
CONTACT: <u>Ben Ashba</u>			PHONE NO.: <u>(910) 452-5861</u>		<b>C O N T A I N E R S</b>	SAMPLE TYPE C= COMP G= GRAB	Preservatives Used Analysis Required <u>3</u>	<u>DRO</u> <u>0228/0928</u> <u>EPH/HPH</u>			
PROJECT: <u>AS4151-2</u>			SITE/PWSID#: <u>205-077</u>								
REPORTS TO: <u>Ben Ashba</u>			E-MAIL: FAX NO.: ( )								
INVOICE TO: <u>Sherla@Catlin</u>			QUOTE # <u>D00101</u> P.O. NUMBER <u>280030-4</u>								
LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX							REMARKS
	<u>USTAS4151-2-SB02A</u>	<u>6/30</u>	<u>1320</u>	<u>S</u>	<u>7</u>	<u>G</u>	<input checked="" type="checkbox"/>	<u>HOLD</u>			
<b>5</b> Collected/Relinquished By: (1) <u>Justin Hertz</u>		Date	Time	Received By:		Date	Time	<b>4</b> Shipping Carrier:		Samples Received Cold? (Circle) <u>YES</u> NO	
Relinquished By: (2)		Date	Time	Received By:		Date	Time	Shipping Ticket No:		Temperature (C): <u>12-8°C outside coming</u>	
Relinquished By: (3)		Date	Time	Received By:		Date	Time	Special Deliverable Requirements:		Chain of Custody Seal: (Circle) <u>down to top</u> INTACT      BROKEN <u>ABSENT</u>	
Relinquished By: (4)		Date	Time	Received By:		Date	Time	Special Instructions: <u>Test for DRO, HOLD other analysis until results</u>			
Requested Turnaround Time: <input checked="" type="checkbox"/> <u>RUSH 24 hr DRO</u> <input type="checkbox"/> STD								Date Needed			

Page 4 of 4