

December 19, 2011

Mr. Terry W. Fox, L.G.
NCDOT Geotechnical Engineering Branch
1589 Mail Service Center
Raleigh, North Carolina 27611

Re: Confirmation Soil Assessment
Parcel 149
Piney Green Road from NC 24 to US 17
Onslow County, North Carolina
State Project U-3810, WBS No. 35801.1.1

Dear Terry:

GEL Engineering of NC, Inc. (GEL) performed the referenced confirmation soil assessment at the referenced site in accordance with NCDOT's notice to proceed dated October 20, 2011. The location of the site is shown in Figure 1. The purpose of the soil assessment was to confirm the analytical results for soil sample S12-2, which was collected at a depth of 8 feet below ground surface as part of preliminary site assessment (PSA) conducted at the site in April 2010 by GEL under State Project U-3810 (WBS No. 35801.1.1).

Methylene chloride was detected in soil sample S12-2 at a concentration of 0.035 milligrams per kilogram (mg/kg), which exceeds the North Carolina Department of Environment and Natural Resources (NCDENR) Soil-to-Water Maximum Soil Contaminant Concentration (MSCC) of 0.20 mg/kg. Based on the MSCC exceedance, GEL indicated in its PSA report for Parcel 149 that there was an estimated 60 cubic yards of soil in the vicinity of soil sample location S12-2 that had been potentially impacted by methylene chloride. NCDOT requested GEL to collect a confirmation soil sample at the same location and depth as soil sample S12-2 and have the sample analyzed for methylene chloride to confirm the April 2010 analytical results for sample S12-2.

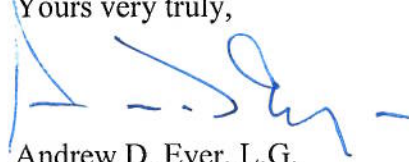
GEL collected confirmation soil sample S12-2A on October 21, 2011 at the location shown in Figure 2 using a decontaminated hand auger. The soil sample was collected from the bucket of the hand auger using an Encore™ sampler, and transferred to new preserved sample containers (with preservative) which were put into a cooler with ice. A photograph of the boring location is presented in Attachment A. The location of confirmation sample S12-2A was the approximate same location as PSA soil sample S12-2, and the depth at which S12-2A was collected was the same as sample S12-2 (8 feet below ground surface). The sample was submitted to SGS Laboratories for analysis of methylene chloride by EPA Method 8260B.

Mr. Terry W. Fox
December 19, 2011
Page 2

A copy of the analytical report for sample S12-2A is provided in Attachment B. As shown in the analytical results and on Figure 2, methylene chloride was not detected above the laboratory reporting limit of 0.0207 mg/kg. Based on the analytical results for S12-2A, methylene chloride has not impacted the soil in the vicinity of soil samples S12-2 and S12-2A. GEL believes that the methylene chloride concentration detected in the April 2010 PSA soil sample S12-2 is anomalous, and is most likely a laboratory artifact. Therefore, no further action is recommended.

GEL appreciates the opportunity to assist NCDOT with this project. If you have any questions concerning this letter report please call me at (919) 323-8828.

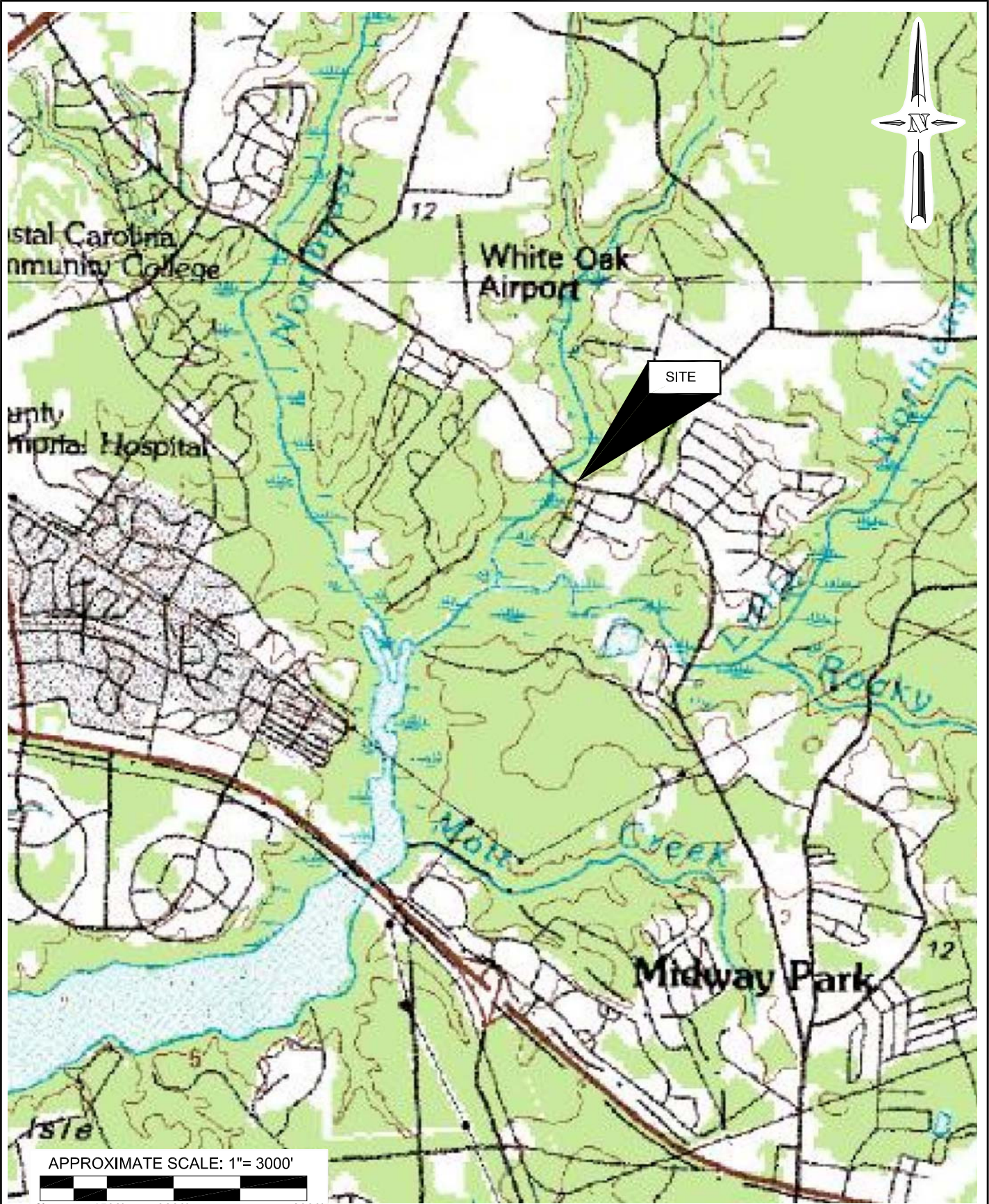
Yours very truly,



Andrew D. Eyer, L.G.
Senior Project Manager

attachments

fc: ncdt00711.121911



APPROXIMATE SCALE: 1"= 3000'

0' 1500' 3000' 6000'

DRAWING TAKEN FROM USGS 7.5 MINUTE TOPOGRAPHIC MAP (CAMP LEJEUNE, NC QUADRANGLE)

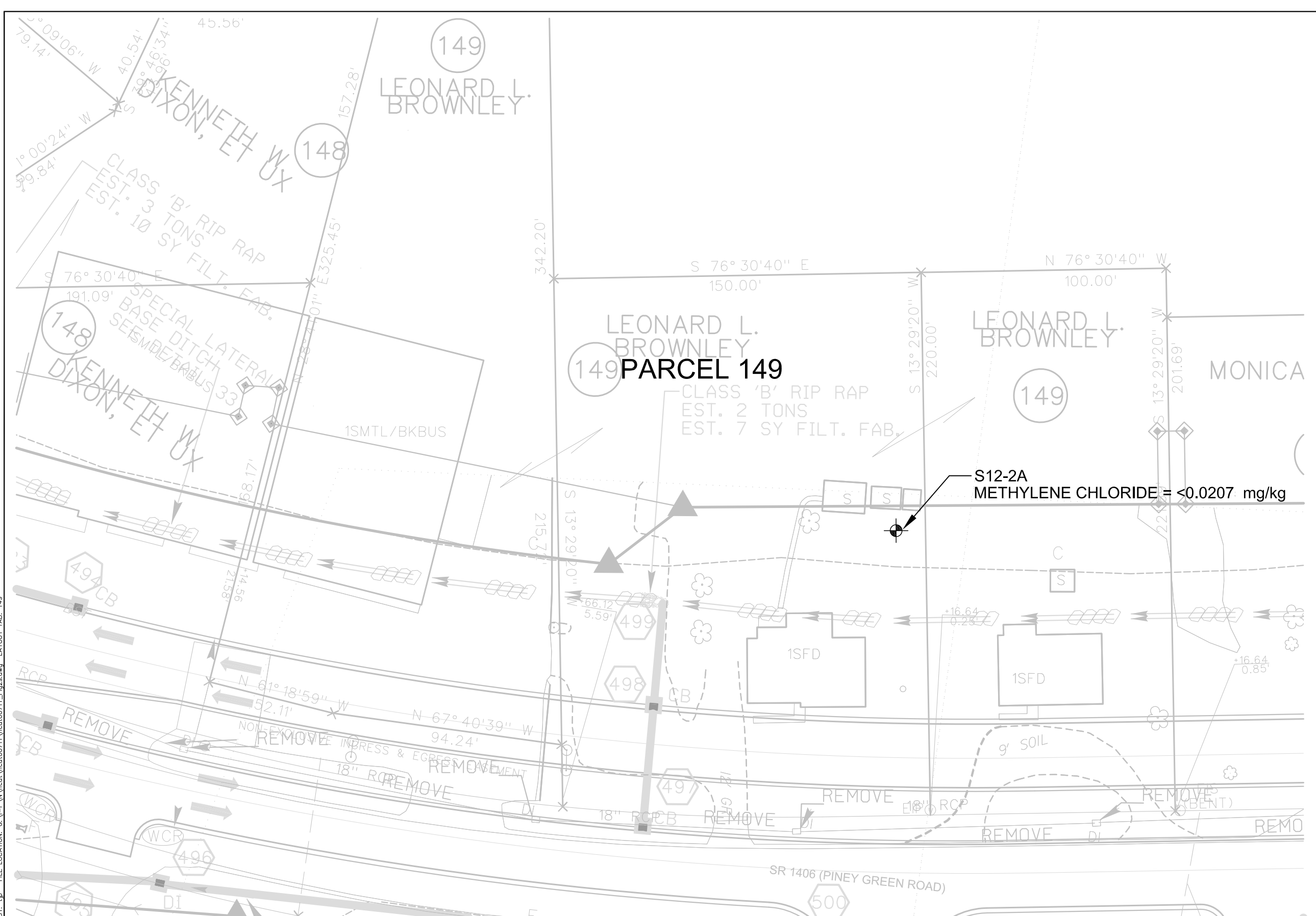
GEL Engineering of NC Inc.

an Affiliate of THE GEL GROUP INC

problem solved

P.O. Box 14262
 RTP, NC 27709
 P: 919.544.1100
 F: 919.406.1807
 www.gel.com

PROJECT: ncdt00711			
CONFIRMATION SOIL ASSESSMENT PARCEL 149 ONSLOW COUNTY, NORTH CAROLINA STATE PROJECT U-3810, WBS# 35801.1.1	USGS TOPOGRAPHIC LOCATION MAP	FIGURE 1	
DATE: December 19, 2011	DRAWN BY: TJP	APPRV. BY: ADE	



GEL Engineering of NC Inc.
 an Affiliate of THE GEL GROUP INC

Post Office Box 14262
 Research Triangle Park, NC 27709
 P 919-544-1100
 F 919-406-1807
 www.gel.com

problem solved

PROJECT: ncdt00711			
CONFIRMATION SOIL SAMPLING PARCEL NO. 149, LEONARD LEE BROWLEY 1381 PINEY GREEN ROAD JACKSONVILLE, NORTH CAROLINA STATE PROJECT U-3810, WBS #35801.1.1	SITE SKETCH SHOWING LOCATION OF CONFIRMATION SOIL SAMPLE S12-2		FIGURE 2
DATE: December 12, 2011	DRAWN BY: TJP	APPRV. BY: ADE	

PLOTTED: Dec 13, 2011 - 9:32pm BY: jlp FILE LOCATION: G:\P\N\ncdt00711\ncdt00711_Fig2.dwg LAYOUT TAB: 149

ATTACHMENT A

Photographs



View looking north showing boring S12-2A location at Parcel 149.

ATTACHMENT B

**Analytical Report and Chain of Custody Record
for Soil Sample S12-2A**

GEL ENGINEERING OF NC, INC.
an Affiliate of THE GEL GROUP, INC.

P.O. Box 14262 • Research Triangle Park, NC 27709 • 3200 Chapel Hill/Nelson Boulevard, Suite 205
Phone (919) 544-1100 • Fax (919) 544-4755 • www.gel.com

Laboratory Report of Analysis

To: Andrew Eyer
GEL Engineering of NC, Inc.
PO Box 14262
RTP, NC 27709

Report Number: **31102969**

Client Project: **Site 149, U-3810**

Dear Andrew Eyer,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. 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. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. 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 Michael D. Page at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

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

Sincerely,
SGS North America Inc.

Michael D. Page
Project Manager
michael.page@sgs.com

Date

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Amount detected is between the Method Detection Limit and the Lower Calibration Limit
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
S12-2A	31102969001	10/21/2011 12:05	10/22/2011 12:30	Soil-Solid as dry weight

Results of S12-2A

Client Sample ID: **S12-2A**
 Client Project ID: **Site 149, U-3810**
 Lab Sample ID: 31102969001-A
 Lab Project ID: 31102969

Collection Date: 10/21/2011 12:05
 Received Date: 10/22/2011 12:30
 Matrix: Soil-Solid as dry weight
 Solids (%): 85.60

Results by SW-846 8260B

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Methylene chloride	ND		20.7	ug/Kg	1	10/25/2011 17:08

Surrogates

1,2-Dichloroethane-d4	114		55.0-173	%	1	10/25/2011 17:08
4-Bromofluorobenzene	100		23.0-141	%	1	10/25/2011 17:08
Toluene d8	97.0		57.0-134	%	1	10/25/2011 17:08

Batch Information

Analytical Batch: **VMS1647**
 Analytical Method: **SW-846 8260B**
 Instrument: **MSD9**
 Analyst: **DVO**
 Analytical Date/Time: **10/25/2011 17:08**

Prep Batch: **VXX2268**
 Prep Method: **SW-846 5035 SL**
 Prep Date/Time: **10/24/2011 14:08**
 Prep Initial Wt./Vol.: **5.63 g**
 Prep Extract Vol: **5 mL**



CHAIN OF CUSTODY RECORD
SGS North America Inc.

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

www.us.sgs.com

106107

1

CLIENT: GEL ENG. OF NC, INC

CONTACT: A. EYER PHONE NO.: (919) 323-8828

PROJECT: SITE 149, U-3810 SITE/PWSID#: WBS# 35806.1.1

REPORTS TO: A. EYER

INVOICE TO: ade@gel.com FAX NO.: (919) 237-9188

QUOTE #: NC DOT

P.O. NUMBER:

SGS Reference:

31102969

PAGE 1 OF 1

2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX
	<u>S12-2A</u>	<u>11/21/11</u>	<u>1205</u>	<u>soil</u>

No	CONTAINERS	SAMPLE TYPE	C= COMP G= GRAB	Analysis Required	Preservatives Used	REMARKS
			<u>G</u>	<u>METHYLENE CHLORIDE</u>	<u>NY</u>	<u>% MOISTURE</u>
						<u>B260B</u>

5

Collected/Relinquished By: (1)	Date	Time	Received By:	Time
<u>[Signature]</u>	<u>10/21/11</u>	<u>1520</u>	<u>[Signature]</u>	
Relinquished By: (2)	Date	Time	Received By:	Time
Relinquished By: (3)	Date	Time	Received By:	Time
Relinquished By: (4)	Date	Time	Received By:	Time
<u>[Signature]</u>	<u>10/21/11</u>	<u>1230</u>	<u>[Signature]</u>	

4

Shipping Carrier: _____

Shipping Ticket No: _____

Special Deliverable Requirements: _____

Special Instructions: _____

Requested Turnaround Time: RUSH STD _____ Date Needed

Samples Received Cold? (Circle) YES NO

Temperature °C: 2.0

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Onebar

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: NCDOT-GE

Work Order No.: 31102969

- | | | |
|-----|--|-------------------------|
| 1. | <input type="checkbox"/> Shipped
<input checked="" type="checkbox"/> Hand Delivered | Notes: _____
_____ |
| 2. | <input checked="" type="checkbox"/> COC Present on Receipt
<input type="checkbox"/> No COC
<input type="checkbox"/> Additional Transmittal Forms | _____
_____ |
| 3. | <input type="checkbox"/> Custody Tape on Container
<input checked="" type="checkbox"/> No Custody Tape | _____
_____ |
| 4. | <input checked="" type="checkbox"/> Samples Intact
<input type="checkbox"/> Samples Broken / Leaking | _____
_____ |
| 5. | <input checked="" type="checkbox"/> Chilled on Receipt Actual Temp.(s) in °C: <u>2</u>
<input type="checkbox"/> Ambient on Receipt
<input type="checkbox"/> Walk-in on Ice; Coming down to temp.
<input type="checkbox"/> Received Outside of Temperature Specifications | _____

_____ |
| 6. | <input checked="" type="checkbox"/> Sufficient Sample Submitted
<input type="checkbox"/> Insufficient Sample Submitted | _____
_____ |
| 7. | <input type="checkbox"/> Chlorine absent
<input type="checkbox"/> HNO3 < 2
<input type="checkbox"/> HCL < 2
<input type="checkbox"/> Additional Preservatives verified (see notes) | _____

_____ |
| 8. | <input checked="" type="checkbox"/> Received Within Holding Time
<input type="checkbox"/> Not Received Within Holding Time | _____
_____ |
| 9. | <input checked="" type="checkbox"/> No Discrepancies Noted
<input type="checkbox"/> Discrepancies Noted | _____
_____ |
| 10. | <input type="checkbox"/> No Headspace present in VOC vials
<input type="checkbox"/> Headspace present in VOC vials >6mm | _____
_____ |

Comments: _____

Inspected and Logged in by: JJ
Date: Mon-10/24/11 00:00