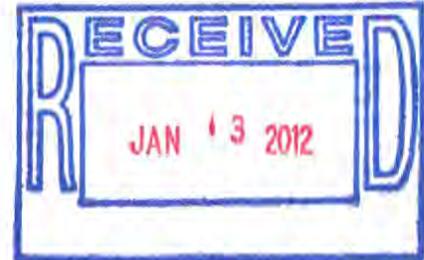


January 13, 2012

Mr. Craig E. Haden
NC Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina, 27699-1589



Reference: Preliminary Site Assessment
Bridge 71
NC 96, Johnston County, North Carolina
WBS Element 17BP.4.R.2
ATC Project No. 45.19873.0004

Dear Mr. Haden:

ATC Associates of North Carolina, P.C. (ATC) has prepared this report to document the results of a preliminary site assessment (PSA) conducted at the above referenced site. The assessment was conducted in accordance with the Technical and Cost Proposal submitted to the North Carolina Department of Transportation (NCDOT) on November 21, 2011, and a Notice to Proceed letter issued by the NCDOT on December 6, 2011. This report describes field activities, laboratory results, and conclusions for data collected in response to a NCDOT geotechnical investigation.

1.0 BACKGROUND INFORMATION

Bridge 71 (site) is located over Buffalo Creek off of North Carolina Highway 96. This site is approximately 900 feet south of Old Moore Road in Johnston County, North Carolina. A site plan is included as *Figure 1*. The surrounding properties are zoned agriculture and residential. ATC understands that possible contamination was reported during an NCDOT geotechnical investigation conducted in the site vicinity. As part of this PSA, soil and groundwater assessment were completed in the area of reported possible contamination, the details of which are described in the sections below.

2.0 FIELD ACTIVITIES

2.1 Soil Assessment

On December 23, 2011, ATC mobilized to the site with Regional Probing to conduct soil and groundwater sampling activities. Based on a previous NCDOT geotechnical investigation, the

boring was placed approximately 2 feet from end bent EB2-A. Prior to drilling, ATC notified the North Carolina 811 service in order to identify buried utilities on-site. The location of the soil boring is shown on the attached *Figure 1*. The boring was advanced to a depth of 5 feet below ground surface (bgs) via hand auger prior to utilizing direct-push drilling techniques to complete the sampling. Soil samples were collected every 2 feet and screened with a photo-ionization detector (PID). The boring was advanced to a depth of 19 feet bgs to determine the approximate depth of the surficial water table. Based on the observed soil saturation, ATC believes this depth to be approximately 16 feet bgs. Soils encountered in the boring consisted primarily of brown and tan silty sand grading into gray sandy clay containing sand lenses. The highest PID reading collected during the soil assessment was 0.5 parts per million (ppm) in the interval from 14-16 feet bgs. At this interval, a noticeable creosote odor was observed. Therefore, a soil sample was submitted at the 14-16 feet bgs interval to SGS North American Inc. (SGS) in Wilmington, North Carolina. Following proper chain-of-custody protocol, the sample was placed in laboratory supplied containers in an ice filled cooler for analysis of Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) and Diesel Range Organics (TPH-DRO) by EPA Method SW-846 8015C. After the completion of soil sampling, a temporary monitoring well was installed, the details of which are discussed below.

2.2 Groundwater Assessment

Following the completion of soil sampling, a temporary monitoring well (TW-1) was installed to a depth of 19 feet bgs. The well was constructed using 5 feet of 0.010-inch machine slotted 1-inch poly vinyl chloride (PVC) well screen and 14 feet of solid PVC riser. The annular space of the boring was filled with washed silica sand to an approximate depth of 13 feet bgs and bentonite to an approximate depth of 0.5 feet bgs.

After completion of the temporary well installation, a peristaltic pump and dedicated polyethylene tubing were used to collect a groundwater sample from TW-1. Prior to the initiation of sampling, an approximate depth to water of 15.5 feet bgs was measured and 2 gallons of purge water were vacated from the well. The samples were submitted to SGS under chain-of-custody protocol for analysis of volatile organic compounds (VOCs) by EPA Method 6200B and 602 and semivolatile organic compounds (SVOCs) by EPA Method 8270D. Following sampling, the boring was filled with native soil and finished to 6 inches below surface grade with bentonite. The boring was then filled to surface grade with asphalt patch. A boring log is included in *Appendix A*.

3.0 LABORATORY RESULTS AND CONCLUSIONS

The results of the laboratory analyses for soil sample SB-1 indicated no detectable concentrations of TPH-GRO or TPH-DRO above their respective laboratory detection limits. The results of the laboratory analyses for groundwater sample TW-1 indicated VOCs and SVOCs at concentrations above NC Title 15A NCAC 2L .0202 Groundwater Standards (2L Standards). These constituents include naphthalene, 2-methylnaphthalene, acenaphthene, and dibenzofuran. The laboratory analytical reports are included in *Appendix B* and a summary of the laboratory results is provided in *Tables 1 and 2*.

ATC has completed PSA activities including soil and groundwater sampling at the Bridge 71 site in Johnston County. The results of the assessment indicate that soil has not been impacted above action levels in the vicinity of end bent EB2-A. However, groundwater is impacted above 2L Standards. Based on a review of the constituents detected and area structures, ATC concludes that the impacts may be associated with creosote treated pilings used during the bridge construction. ATC recommends that the collected data be provided to the NCDENR Inactive Hazardous Sites Branch. Additional assessment and a receptor survey are recommended to confirm the source and evaluate the extent of impacts. If impacted soil or groundwater are encountered during construction activities, appropriate measures should be taken to protect worker safety. In addition, any impacted soil or groundwater disturbed during construction should be handled and disposed of in accordance with applicable regulations.

ATC appreciates the opportunity to assist you with this project. If you have questions or require additional information, please do not hesitate to contact us at (919) 871-0999.

Sincerely,

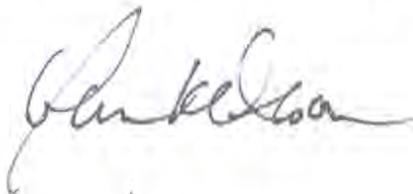
ATC Associates of North Carolina, P.C.



Justin C. Ballard, P.G.
Project Geologist



Jeffrey A. Corson
Project Manager



Genna K. Olson, P.G.
Senior Project Manager

Attachments:

1. Table 1 – Soil Analytical Data
2. Table 2 – Groundwater Analytical Data
3. Figure 1 – Site Plan
4. Appendix A – Boring Log
5. Appendix B – Laboratory Analytical Reports

TABLES

**TABLE 1
SOIL ANALYTICAL DATA**

BRIDGE #71 - BUFFALO CREEK
 NC 96 - JOHNSTON COUNTY, NORTH CAROLINA
 WBS ELEMENT: 17BP.4.R.2
 ATC PROJECT No. 45.19873.0004

EPA Method:				SW-846 8015C	
Boring I.D.	Depth (feet)	Sampling Date	PID Reading (ppm)	TPH-GRO	TPH-DRO
SB-1	14-16	12/23/2011	0.5	<3.53	<7.17
NCDENR Action Level				10	10

Notes:

1. TPH = Total petroleum hydrocarbons.
2. GRO = Gasoline range organics.
3. DRO = Diesel range organics.
4. Concentrations reported in milligrams per kilogram (mg/kg).
5. "<" = not detected at or above the laboratory detection limit.
6. **Bold** indicates concentrations above NCDENR Action Level.

**TABLE 2
GROUNDWATER ANALYTICAL DATA**

BRIDGE #71 - BUFFALO CREEK
NC 96 - JOHNSTON COUNTY, NORTH CAROLINA
WBS ELEMENT: 17BP.4.R.2
ATC PROJECT No. 45.19873.0004

Analytical		EPA METHOD 6200B & EPA METHOD 602							
Chemical of Concern		Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Naphthalene	1,2-Dibromoethane (EDB)	Isopropylether (IPE)
Well ID	Date Sampled								
TW-1	12/23/2011	<1.0	<1.0	2.6	5.17	<2.0	812	<20	<20
2L GW Standards:		1	600	600	500	20	6	0.40	70
GCLs:		5,000	257,500	84,500	87,500	200,000	15,500	380	70,000

Notes:

1. All measurements are in micrograms per liter (ug/L)
2. "<" or ND = None detected above method detection limit.
3. NC 2L GW Standard = Title 15A NCAC 2L .0202 Groundwater Standard
4. GCL = Gross Contaminant Level established by NCDENR.
5. MTBE = Methyl tertiary butyl ether
6. Values in **BOLD** indicate levels above 2L Groundwater Standards.
7. Temporary well TW-1 was installed, sampled, and abandoned on 12/23/2011.

**TABLE 2
GROUNDWATER ANALYTICAL DATA**

BRIDGE #71 - BUFFALO CREEK
 NC 96 - JOHNSTON COUNTY, NORTH CAROLINA
 WBS ELEMENT: 17BP.4.R.2
 ATC PROJECT No. 45.19873.0004

Analytical		EPA METHOD 8270D					
Chemical of Concern		Naphthalene	2-Methylnaphthalene	Fluorene	Phenanthrene	Acenaphthene	Dibenzofuran
Well ID	Date Sampled						
TW-1	12/23/2011	893	122	89.7	75.9	144	76.5
2L GW Standards:		6	30	300	200	80	28
GCLs:		15,500	12,500	990	410	2,120	28,000

Notes:

1. All measurements are in micrograms per liter (ug/L)
2. "<" or ND = None detected above method detection limit.
3. NC 2L GW Standard = Title 15A NCAC 2L .0202 Groundwater Standard
4. GCL = Gross Contaminant Level established by NCDENR.
5. MTBE = Methyl tertiary butyl ether
6. Values in **BOLD** indicate levels above 2L Groundwater Standards.
7. Temporary well TW-1 was installed, sampled, and abandoned on 12/23/2011.

FIGURE

LEGEND

- NCDOT GEOTECHNICAL BORING
- ⊕ ATC SOIL BORING AND TEMPORARY WELL
- TPH-GRO TOTAL PETROLEUM HYDROCARBONS
GASOLINE RANGE ORGANICS
- TPH-DRO TOTAL PETROLEUM HYDROCARBONS
DIESEL RANGE ORGANICS

TW-I	SCREENING 14'-19'	*GROUNDWATER 12/23/11
	NAPHATHALENE ug/L	893
	2-METHYLNAPHTHALENE ug/L	122
	ACENAPHTHENE ug/L	144
	DIBENZOFURAN ug/L	76.5

SB-I	COLLECTED 14'-16'	SOIL 12/23/11
	TPH-GRO mg/kg	<3.53
	TPH-DRO mg/kg	<7.17



TITLE FIGURE 1

SITE PLAN
BRIDGE 71 - BUFFALO CREEK
NC 96 - JOHNSTON COUNTY
JOHNSTON COUNTY, NORTH CAROLINA



RALEIGH, NORTH CAROLINA (919) 871-0999 FAX (919) 871-0335

SCALE	DATE	PROJECT NO.
1"=40'-0"	01-10-2012	45.19873.0004

- NOTES:
- SOIL BORING ADVANCED ON 12/23/2011 AND SAMPLE COLLECTED AT 14-16 FEET BELOW GROUND SURFACE (bgs).
 - TEMPORARY WELL SET AT 19 FEET bgs.
 - VALUES IN BOLD INDICATE CONCENTRATIONS ARE AT OR ABOVE 2L STANDARDS.
 - ONLY GROUNDWATER CONCENTRATIONS EXCEEDING 2L STANDARDS SHOWN.

CAD FILE	WBS ELEMENT	PREP. BY	REV. BY
1253829	17BP.4.R.2	JB	JC

APPENDIX A
BORING LOG



WELL LOG: SB-1 and TW-1

(Page 1 of 1)

Client: NCDOT Bridge 71 Johnston County, NC WBS Element 17BP.4.R.2 ATC Project No. 45.19873.0004	Date Drilled : 12/23/2011 Drilling Company : Regional Probing Drilling Method : Direct-Push	Boring Diameter : 2.25 inches Sampling Method : Macrocore Sampling Interval : Continuous Logged By : Justin Ballard
--	---	--

DEPTH	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	
0			Asphalt		Well: TW-1 Top of Casing: Not Surveyed
2	SM	[Dotted pattern]	Brown, tan, and white, semi moist, SILTY SAND with GRAVEL.	0.2	
4				0.2	
6				0.2	
8	SP	[Dotted pattern]	Brown, semi moist, fine grained SAND.	0.2	
10				0.2	
12				0.2	
14	SM	[Dotted pattern]	Brown, semi moist, SILTY SAND.	0.4	
16	CL	[Diagonal lines]	Gray, mottled, semi moist, SANDY SILT and SANDY CLAY with a creosote odor.	0.5	
18	SW	[Dotted pattern]	Gray, wet, medium and fine grained SAND.	NS	

Direct-push refusal at 19 feet below ground surface (bgs).
 Temporary well TW-1 set at 19 feet bgs and screened from 14-19 feet bgs.
 Depth to water approximately 15.5 feet bgs.
 NS = Not Sampled.

01-18-2012 S:\Environ\NCDOT\NCDOT Projects\Bridges 71-80\Bridges 71-80\Bridges 71 Report\SB-1 and TW-1.bor

APPENDIX B
LABORATORY ANALYTICAL REPORTS



Laboratory Report of Analysis

To: Justin Ballard
ATC Associates
2725 E. Millbrook Rd
Suite 121
Raleigh, NC 27604

Report Number: 31103599

Client Project: Bridge #71 17BP-4.R.2

Dear Justin Ballard,

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.

Digitally signed by: Michael Page
Date: 2012.01.04 11:06:26 -05'00'

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>
SB-1 (14-16 feet)	31103599001	12/23/2011 11:05	12/24/2011 10:00	Soil-Solid as dry weight
TW-1	31103599002	12/23/2011 11:30	12/24/2011 10:00	Water
Trip Blanks (Not on COC)	31103599003	12/23/2011 00:00	12/24/2011 10:00	Water



Results of **SB-1 (14-16 feet)**

Client Sample ID: **SB-1 (14-16 feet)**
Client Project ID: **Bridge #71 17BP-4.R.2**
Lab Sample ID: 31103599001-A
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:05
Received Date: 12/24/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 86.30

Results by **SW-846 8015C GRO**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.53	mg/kg	1	12/30/2011 17:00
Surrogates						
4-Bromofluorobenzene	110		70.0-130	%	1	12/30/2011 17:00

Batch Information

Analytical Batch: **VGC1596**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**
Analytical Date/Time: 12/30/2011 17:00

Prep Batch: **VXX2561**
Prep Method: **SW-846 5035**
Prep Date/Time: 12/27/2011 11:05
Prep Initial Wt./Vol.: 6.567 g
Prep Extract Vol: 5 mL



Results of SB-1 (14-16 feet)

Client Sample ID: **SB-1 (14-16 feet)**
Client Project ID: **Bridge #71 17BP-4.R.2**
Lab Sample ID: 31103599001-C
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:05
Received Date: 12/24/2011 10:00
Matrix: Soil-Solid as dry weight
Solids (%): 86.30

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		7.17	mg/kg	1	01/3/2012 18:47
Surrogates						
o-Terphenyl	81.3		40.0-140	%	1	01/3/2012 18:47

Batch Information

Analytical Batch: XGC1817
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF
Analytical Date/Time: 01/03/2012 18:47

Prep Batch: XXX2106
Prep Method: SW-846 3541
Prep Date/Time: 12/29/2011 10:10
Prep Initial Wt./Vol.: 32.31 g
Prep Extract Vol: 10 mL



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599002-B
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:30
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SM 6200-B

Table with 7 columns: Parameter, Result, Qual, LOQ/CL, Units, DF, Date Analyzed. Lists various chemical compounds and their detection results (ND) and detection limits.

Print Date: 01/04/2012

N.C. Certification # 481

16000 American Blvd

5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 f 910.350.1557 www.us.sgs.com

Member of SGS Group



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599002-B
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:30
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Hexachlorobutadiene	ND		20.0	ug/L	40	12/27/2011 14:22
Isopropylbenzene (Cumene)	ND		20.0	ug/L	40	12/27/2011 14:22
Methylene chloride	ND		200	ug/L	40	12/27/2011 14:22
Naphthalene	812		20.0	ug/L	40	12/27/2011 14:22
Styrene	ND		20.0	ug/L	40	12/27/2011 14:22
Tetrachloroethene	ND		20.0	ug/L	40	12/27/2011 14:22
Toluene	ND		20.0	ug/L	40	12/27/2011 14:22
Trichloroethene	ND		20.0	ug/L	40	12/27/2011 14:22
Trichlorofluoromethane	ND		20.0	ug/L	40	12/27/2011 14:22
Vinyl chloride	ND		20.0	ug/L	40	12/27/2011 14:22
cis-1,2-Dichloroethene	ND		20.0	ug/L	40	12/27/2011 14:22
m,p-Xylene	ND		40.0	ug/L	40	12/27/2011 14:22
n-Propylbenzene	ND		20.0	ug/L	40	12/27/2011 14:22
o-Xylene	ND		20.0	ug/L	40	12/27/2011 14:22
sec-Butylbenzene	ND		20.0	ug/L	40	12/27/2011 14:22
tert-Butyl methyl ether (MTBE)	ND		20.0	ug/L	40	12/27/2011 14:22
tert-Butylbenzene	ND		20.0	ug/L	40	12/27/2011 14:22
trans-1,2-Dichloroethene	ND		20.0	ug/L	40	12/27/2011 14:22
Surrogates						
1,2-Dichloroethane-d4	104		64.0-140	%	40	12/27/2011 14:22
4-Bromofluorobenzene	102		85.0-115	%	40	12/27/2011 14:22
Toluene d8	103		82.0-117	%	40	12/27/2011 14:22

Batch Information

Analytical Batch: VMS1798
Analytical Method: SM 6200-B
Instrument: MSD4
Analyst: DVO
Analytical Date/Time: 12/27/2011 14:22

Prep Batch: VXX2551
Prep Method: SM 6200-B Prep
Prep Date/Time: 12/27/2011 08:05
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599002-A
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:30
Received Date: 12/24/2011 10:00
Matrix: Water

Results by EPA 602

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Benzene	ND		1.00	ug/L	1	12/27/2011 19:41
Diisopropyl Ether	ND		1.00	ug/L	1	12/27/2011 19:41
Ethyl Benzene	2.60		1.00	ug/L	1	12/27/2011 19:41
tert-Butyl methyl ether (MTBE)	ND		2.00	ug/L	1	12/27/2011 19:41
Toluene	ND		1.00	ug/L	1	12/27/2011 19:41
m,p-Xylene	5.17		2.00	ug/L	1	12/27/2011 19:41
o-Xylene	ND		2.00	ug/L	1	12/27/2011 19:41

Surrogates

a,a,a-Trifluorotoluene	100		85.0-115	%	1	12/27/2011 19:41
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Batch Information

Analytical Batch: VGC1590
Analytical Method: EPA 602
Instrument: GC3
Analyst: BAO
Analytical Date/Time: 12/27/2011 19:41

Prep Batch: VXX2553
Prep Method: EPA 601/602 Prep
Prep Date/Time: 12/27/2011 10:10
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of TW-1

Client Sample ID: TW-1
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599002-G
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:30
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SW-846 8270D

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
1,2-Dichlorobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
1,3-Dichlorobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
1,4-Dichlorobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
2,4,5-Trichlorophenol	ND		51.0	ug/L	10	01/3/2012 11:08
2,4,6-Trichlorophenol	ND		51.0	ug/L	10	01/3/2012 11:08
2,4-Dichlorophenol	ND		51.0	ug/L	10	01/3/2012 11:08
2,4-Dinitrophenol	ND		255	ug/L	10	01/3/2012 11:08
2,4-Dinitrotoluene	ND		51.0	ug/L	10	01/3/2012 11:08
2,6-Dinitrotoluene	ND		51.0	ug/L	10	01/3/2012 11:08
2-Chloronaphthalene	ND		51.0	ug/L	10	01/3/2012 11:08
2-Chlorophenol	ND		51.0	ug/L	10	01/3/2012 11:08
2-Methylnaphthalene	122		51.0	ug/L	10	01/3/2012 11:08
2-Methylphenol	ND		51.0	ug/L	10	01/3/2012 11:08
2-Nitroaniline	ND		51.0	ug/L	10	01/3/2012 11:08
2-Nitrophenol	ND		51.0	ug/L	10	01/3/2012 11:08
3 and/or 4-Methylphenol	ND		51.0	ug/L	10	01/3/2012 11:08
3,3'-Dichlorobenzidine	ND		102	ug/L	10	01/3/2012 11:08
3-Nitroaniline	ND		255	ug/L	10	01/3/2012 11:08
4,6-Dinitro-2-methylphenol	ND		255	ug/L	10	01/3/2012 11:08
4-Chloro-3-methylphenol	ND		51.0	ug/L	10	01/3/2012 11:08
4-Chloroaniline	ND		255	ug/L	10	01/3/2012 11:08
4-Chlorophenyl phenyl ether	ND		51.0	ug/L	10	01/3/2012 11:08
Acenaphthene	144		51.0	ug/L	10	01/3/2012 11:08
Acenaphthylene	ND		51.0	ug/L	10	01/3/2012 11:08
Anthracene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzo(a)anthracene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzo(a)pyrene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzo(b)fluoranthene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzo(g,h,i)perylene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzo(k)fluoranthene	ND		51.0	ug/L	10	01/3/2012 11:08
Benzoic acid	ND		51.0	ug/L	10	01/3/2012 11:08
Bis(2-Chloroethoxy)methane	ND		51.0	ug/L	10	01/3/2012 11:08
Bis(2-Chloroethyl)ether	ND		51.0	ug/L	10	01/3/2012 11:08
Bis(2-Chloroisopropyl)ether	ND		51.0	ug/L	10	01/3/2012 11:08
Bis(2-Ethylhexyl)phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
4-Bromophenyl phenyl ether	ND		51.0	ug/L	10	01/3/2012 11:08
Butyl benzyl phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
Chrysene	ND		51.0	ug/L	10	01/3/2012 11:08
Di-n-butyl phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
Di-n-octyl phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
Dibenz(a,h)anthracene	ND		51.0	ug/L	10	01/3/2012 11:08
Dibenzofuran	76.5		51.0	ug/L	10	01/3/2012 11:08

Print Date: 01/04/2012

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5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 f 910.350.1557 www.us.sgs.com

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Results of TW-1

Client Sample ID: TW-1
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599002-G
Lab Project ID: 31103599

Collection Date: 12/23/2011 11:30
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SW-846 8270D

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
Dimethyl phthalate	ND		51.0	ug/L	10	01/3/2012 11:08
2,4-Dimethylphenol	ND		51.0	ug/L	10	01/3/2012 11:08
Diphenylamine	ND		51.0	ug/L	10	01/3/2012 11:08
Fluoranthene	ND		51.0	ug/L	10	01/3/2012 11:08
Fluorene	89.7		51.0	ug/L	10	01/3/2012 11:08
Hexachlorobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
Hexachlorobutadiene	ND		51.0	ug/L	10	01/3/2012 11:08
Hexachlorocyclopentadiene	ND		102	ug/L	10	01/3/2012 11:08
Hexachloroethane	ND		51.0	ug/L	10	01/3/2012 11:08
Indeno(1,2,3-cd)pyrene	ND		51.0	ug/L	10	01/3/2012 11:08
Isophorone	ND		51.0	ug/L	10	01/3/2012 11:08
Naphthalene	893		51.0	ug/L	10	01/3/2012 11:08
4-Nitroaniline	ND		255	ug/L	10	01/3/2012 11:08
Nitrobenzene	ND		51.0	ug/L	10	01/3/2012 11:08
4-Nitrophenol	ND		255	ug/L	10	01/3/2012 11:08
Pentachlorophenol	ND		255	ug/L	10	01/3/2012 11:08
Phenanthrene	75.9		51.0	ug/L	10	01/3/2012 11:08
Phenol	ND		51.0	ug/L	10	01/3/2012 11:08
Pyrene	ND		51.0	ug/L	10	01/3/2012 11:08
n-Nitrosodi-n-propylamine	ND		51.0	ug/L	10	01/3/2012 11:08
Surrogates						
2,4,6-Tribromophenol	80.0		29.3-152	%	10	01/3/2012 11:08
2-Fluorobiphenyl	101		50.0-107	%	10	01/3/2012 11:08
2-Fluorophenol	79.0		33.1-118	%	10	01/3/2012 11:08
Nitrobenzene-d5	93.0		46.0-118	%	10	01/3/2012 11:08
Phenol-d6	86.0		49.0-120	%	10	01/3/2012 11:08
Terphenyl-d14	99.0		22.1-142	%	10	01/3/2012 11:08

Batch Information

Analytical Batch: XMS1353
Analytical Method: SW-846 8270D
Instrument: MSD10
Analyst: CMP
Analytical Date/Time: 01/03/2012 11:08

Prep Batch: XXX2104
Prep Method: SW-846 3520C
Prep Date/Time: 12/29/2011 09:17
Prep Initial Wt./Vol.: 981 mL
Prep Extract Vol: 5 mL



Results of Trip Blanks (Not on COC)

Client Sample ID: Trip Blanks (Not on COC)
Client Project ID: Bridge #71 17BP-4.R.2
Lab Sample ID: 31103599003-A
Lab Project ID: 31103599

Collection Date: 12/23/2011 00:00
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SM 6200-B

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,1,1-Trichloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,1,2,2-Tetrachloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,1,2-Trichloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,1-Dichloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,1-Dichloroethene	ND		0.500	ug/L	1	12/27/2011 11:38
1,1-Dichloropropene	ND		0.500	ug/L	1	12/27/2011 11:38
1,2,3-Trichlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,2,3-Trichloropropane	ND		0.500	ug/L	1	12/27/2011 11:38
1,2,4-Trichlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,2,4-Trimethylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,2-Dibromo-3-chloropropane	ND		5.00	ug/L	1	12/27/2011 11:38
1,2-Dibromoethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,2-Dichlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,2-Dichloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
1,2-Dichloropropane	ND		0.500	ug/L	1	12/27/2011 11:38
1,3,5-Trimethylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,3-Dichlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
1,3-Dichloropropane	ND		0.500	ug/L	1	12/27/2011 11:38
1,4-Dichlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
2,2-Dichloropropane	ND		0.500	ug/L	1	12/27/2011 11:38
2-Chlorotoluene	ND		0.500	ug/L	1	12/27/2011 11:38
4-Chlorotoluene	ND		0.500	ug/L	1	12/27/2011 11:38
4-Isopropyltoluene	ND		0.500	ug/L	1	12/27/2011 11:38
Benzene	ND		0.500	ug/L	1	12/27/2011 11:38
Bromobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
Bromochloromethane	ND		0.500	ug/L	1	12/27/2011 11:38
Bromodichloromethane	ND		0.500	ug/L	1	12/27/2011 11:38
Bromoform	ND		0.500	ug/L	1	12/27/2011 11:38
Bromomethane	ND		0.500	ug/L	1	12/27/2011 11:38
n-Butylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
Carbon tetrachloride	ND		0.500	ug/L	1	12/27/2011 11:38
Chlorobenzene	ND		0.500	ug/L	1	12/27/2011 11:38
Chloroethane	ND		0.500	ug/L	1	12/27/2011 11:38
Chloroform	ND		0.500	ug/L	1	12/27/2011 11:38
Chloromethane	ND		0.500	ug/L	1	12/27/2011 11:38
Dibromochloromethane	ND		0.500	ug/L	1	12/27/2011 11:38
Dibromomethane	ND		0.500	ug/L	1	12/27/2011 11:38
Dichlorodifluoromethane	ND		5.00	ug/L	1	12/27/2011 11:38
cis-1,3-Dichloropropene	ND		0.500	ug/L	1	12/27/2011 11:38
trans-1,3-Dichloropropene	ND		0.500	ug/L	1	12/27/2011 11:38
Diisopropyl Ether	ND		0.500	ug/L	1	12/27/2011 11:38
Ethyl Benzene	ND		0.500	ug/L	1	12/27/2011 11:38

Print Date: 01/04/2012

N.C. Certification # 481

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5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 f 910.350.1557 www.us.sgs.com

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Results of Trip Blanks (Not on COC)

Client Sample ID: **Trip Blanks (Not on COC)**
Client Project ID: **Bridge #71 17BP-4.R.2**
Lab Sample ID: 31103599003-A
Lab Project ID: 31103599

Collection Date: 12/23/2011 00:00
Received Date: 12/24/2011 10:00
Matrix: Water

Results by SM 6200-B

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Hexachlorobutadiene	ND		0.500	ug/L	1	12/27/2011 11:38
Isopropylbenzene (Cumene)	ND		0.500	ug/L	1	12/27/2011 11:38
Methylene chloride	14.7		5.00	ug/L	1	12/27/2011 11:38
Naphthalene	ND		0.500	ug/L	1	12/27/2011 11:38
Styrene	ND		0.500	ug/L	1	12/27/2011 11:38
Tetrachloroethene	ND		0.500	ug/L	1	12/27/2011 11:38
Toluene	ND		0.500	ug/L	1	12/27/2011 11:38
Trichloroethene	ND		0.500	ug/L	1	12/27/2011 11:38
Trichlorofluoromethane	ND		0.500	ug/L	1	12/27/2011 11:38
Vinyl chloride	ND		0.500	ug/L	1	12/27/2011 11:38
cis-1,2-Dichloroethene	ND		0.500	ug/L	1	12/27/2011 11:38
m,p-Xylene	ND		1.00	ug/L	1	12/27/2011 11:38
n-Propylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
o-Xylene	ND		0.500	ug/L	1	12/27/2011 11:38
sec-Butylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
tert-Butyl methyl ether (MTBE)	ND		0.500	ug/L	1	12/27/2011 11:38
tert-Butylbenzene	ND		0.500	ug/L	1	12/27/2011 11:38
trans-1,2-Dichloroethene	ND		0.500	ug/L	1	12/27/2011 11:38
Surrogates						
1,2-Dichloroethane-d4	103		64.0-140	%	1	12/27/2011 11:38
4-Bromofluorobenzene	103		85.0-115	%	1	12/27/2011 11:38
Toluene d8	102		82.0-117	%	1	12/27/2011 11:38

Batch Information

Analytical Batch: VMS1798
Analytical Method: SM 6200-B
Instrument: MSD4
Analyst: DVO
Analytical Date/Time: 12/27/2011 11:38

Prep Batch: VXX2551
Prep Method: SM 6200-B Prep
Prep Date/Time: 12/27/2011 08:05
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL



Results of Trip Blanks (Not on COC)

Client Sample ID: **Trip Blanks (Not on COC)**
Client Project ID: **Bridge #71 17BP-4.R.2**
Lab Sample ID: 31103599003-A
Lab Project ID: 31103599

Collection Date: 12/23/2011 00:00
Received Date: 12/24/2011 10:00
Matrix: Water

Results by EPA 602

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Benzene	ND		1.00	ug/L	1	12/27/2011 18:34
Diisopropyl Ether	ND		1.00	ug/L	1	12/27/2011 18:34
Ethyl Benzene	ND		1.00	ug/L	1	12/27/2011 18:34
tert-Butyl methyl ether (MTBE)	ND		2.00	ug/L	1	12/27/2011 18:34
Toluene	ND		1.00	ug/L	1	12/27/2011 18:34
m,p-Xylene	ND		2.00	ug/L	1	12/27/2011 18:34
o-Xylene	ND		2.00	ug/L	1	12/27/2011 18:34

Surrogates

a,a,a-Trifluorotoluene	100		85.0-115	%	1	12/27/2011 18:34
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Batch Information

Analytical Batch: **VGC1590**
Analytical Method: **EPA 602**
Instrument: **GC3**
Analyst: **BAO**
Analytical Date/Time: **12/27/2011 18:34**

Prep Batch: **VXX2553**
Prep Method: **EPA 601/602 Prep**
Prep Date/Time: **12/27/2011 10:10**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: NCDOT-ATC Work Order No.: 31103599

- | | | |
|-----|--|----------------------------------|
| 1. | <input checked="" type="checkbox"/> Shipped
<input 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 checked="" type="checkbox"/> Custody Tape on Container
<input 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"/> HNO ₃ < 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
<input type="checkbox"/> NCDENR notified of Discrepancies* | _____

_____ |
| 10. | <input checked="" 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: Tue-12/27/11 00:00