

APPENDIX F
Schnabel:
Installed Monitoring Wells
(MW-1 & MW-2) Report

**Monitoring Well Installation &
Residential Well Sampling
Battlefield Golf Club Water Project
Centerville Turnpike South
Murray Drive & Whittamore Road
Chesapeake, Virginia**

**Project 08330106
February 3, 2009**

February 3, 2009

Mr. Robert Sciacchitano, P.E.
URS Corporation
277 Bendix Road, Suite 500
Virginia Beach, Virginia 23452

Subject: 08330106, Monitoring Well Installation and Residential Well
Sampling, Battlefield Golf Club Water Project, Centerville
Turnpike South, Murray Drive and Whittamore Road, Chesapeake,
Virginia

Dear Robert:

Schnabel Engineering, LLC is pleased to submit this report concerning monitoring well installation and residential well sampling at the Battlefield Golf Club Water Project.

PROJECT DESCRIPTION

Two test wells were installed and water samples were obtained from two residential wells as part of this study.

FIELD ACTIVITIES

Fishburne Drilling, Inc., Chesapeake, Virginia installed two monitoring wells (MW-1 and MW-2) on November 24, 25 and 26, 2008. The two-inch diameter monitoring wells were installed to depths of 45 and 90 feet below ground surface. Monitoring Well MW-1 was installed to 90 feet and MW-2 was installed to 45 feet. MW-1 was constructed as a Type III monitoring well. The monitoring wells were installed within an easement along the east side of Bonney Road in a grassy area near the northern terminus of Bonney Road. A permit was granted by the City of Chesapeake prior to drilling activities. The drilling and well construction activities were performed under the observation of Schnabel personnel. The test boring locations are shown on

"We are committed to serving our clients by exceeding their expectations."

Geotechnical • Construction Monitoring • Dam Engineering • Geoscience • Environmental

Figure 1 in Appendix A. Monitoring well construction details and protocol for installing monitoring wells in test borings are also included in Appendix A.

Test borings were advanced with a 2.9375-inch O.D. tri-cone roller bit, 4.25-inch and 8.25-inch I.D. hollow stem augers. Soil samples were collected in MW-1 at a minimum of every five feet from 18 to 90 feet in the test boring. We collected two undisturbed samples from the MW-1 test boring. The undisturbed samples were collected from depths of 55 to 57 feet and 60 to 62 feet below ground surface. Boring logs are included in Appendix A.

The wells were developed using a submersible pump. Several groundwater measurements were obtained in MW-1 and MW-2. Measurements were referenced to the ground surface (the rim of protective manhole cover) at each well location. The groundwater measurements obtained from MW-1 and MW-2 are indicated in the table below.

Well Number	Date	Water Level (ft)	Time
MW-1	12-10-08	21.53	7:24 AM
MW-1	12-17-08	15.33	6:55 AM
MW-1	12-19-08	11.82	6:45 AM
MW-1	12-22-08	9.52	5:35 PM
MW-1	12-23-08	8.03	7:16 AM
MW-1	12-24-08	7.01	6:25 AM
MW-1	1-5-09	6.28	7:44 AM
MW-1	1-15-09	5.61	2:51 PM
MW-2	12-10-08	4.08	7:09 AM
MW-2	12-17-08	3.07	6:58 AM
MW-2	12-19-08	3.35	6:43 AM
MW-2	12-22-08	3.06	5:39 PM
MW-2	12-23-08	3.17	7:20 AM
MW-2	12-24-08	3.17	6:28 AM
MW-2	1-5-09	4.03	7:46 AM
MW-2	1-15-09	3.87	2:53 PM

Field sampling of two residential wells was conducted on December 22, 2008. The residential well samples were collected from 1204 and 1208 Murray Drive. The well samples were collected from exterior spigots at the rear of each residence. A field blank sample was also

collected on December 22, 2008. The samples were submitted to REIC Consultants, Inc., Beaver, West Virginia for laboratory analysis. The water samples were analyzed according to the Well Specification – Water Analysis Parameters from URS dated September 17, 2008. Modifications to the Water Analysis Parameters provided by URS included the exemption of E. Coli, Color and Asbestos and the addition of Total Organic Carbon (TOC). Certificates of Analysis and Chains of Custody are included in Appendix B.

SOIL LABORATORY TESTING

Permeability tests were performed on the undisturbed samples in our geotechnical laboratory. The summary of soil laboratory test results and laboratory test curves are included in Appendix C.

This letter report summarizes our activities to date for the Battlefield Golf Club Water Project. We have endeavored to complete the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions as this project. No other representation, express or implied, is included or intended, and no warranty or guarantee is included or intended in this report, or any other instrument of service.

We appreciate the opportunity to be of service and look forward to a continued cordial working relationship on this project. If you have any questions, please do not hesitate to contact us.

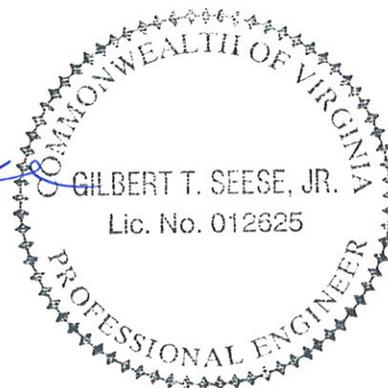
Very truly yours,
SCHNABEL ENGINEERING, LLC



Russell W. Rountree
Senior Staff Scientist



Gilbert T. Seese, P.E.
Principal



RWR:GTS:dah

Appendices:

Appendix A – Subsurface Exploration Data

Appendix B – Laboratory Analytical Chemical Data

Appendix C – Soil Laboratory Test Data

APPENDIX A

Subsurface Exploration Data

Protocol for Installing Monitoring Wells within Test Borings (2 Sheets)

Location Plan (Figure 1)

General Notes for Subsurface Exploration Logs

Identification of Soils

Test Boring Logs (MW-1 and MW-2)

Monitoring Well Construction Details (2 Sheets)

PROTOCOL FOR INSTALLING MONITORING WELLS IN TEST BORINGS

I. DRILLING METHODS AND PROCEDURE

Drilling and sampling was performed using a 2-15/16 inch, tri-cone roller bit, a 5-7/8 inch, tri-cone roller bit, 8-1/4 inch I.D., hollow-stem auger and 4-1/4 inch I.D., hollow-stem auger drill and split-barrel (spoon) soil sampling device.

- A. Monitoring well locations were staked by Schnabel Engineering. A permit was obtained from the City of Chesapeake prior to drilling at the monitoring well locations.
- B. The Unified Soil Classification System, ASTM D 2487-83, with additional descriptive terms was used for visual sample classifications.
- C. Elevations at the top of the wells was provided by URS Corporation.

II. MONITORING WELL MW-1

- A. The following procedure was followed to develop and finish the borehole as a monitoring well.
 - 1. Upon encountering the clay layer at a depth of approximately 52 feet, a six-inch diameter PVC casing was installed to depth of 53 feet. The six-inch casing was then grouted with a slurry mixture of bentonite cement and allowed to cure for a minimum of 24 hours.
 - 2. Upon curing of the grout, drilling and sampling were resumed through the six-inch casing to a depth of 90 feet. Upon completion of drilling, 2-inch diameter Schedule 40 PVC pipe was installed at the desired depth of the borehole. The monitoring well was furnished with 10 feet of No. 10 slot, 2-inch diameter Schedule 40 PVC, screen flush jointed to permanent casing. No organic solvents were used during well construction.
 - 3. The monitoring well screen was surrounded with a filter pack compatible with surrounding medium consisting of graded washed filter sand placed above the top of the screen. A minimum two-foot thick bentonite clay seal

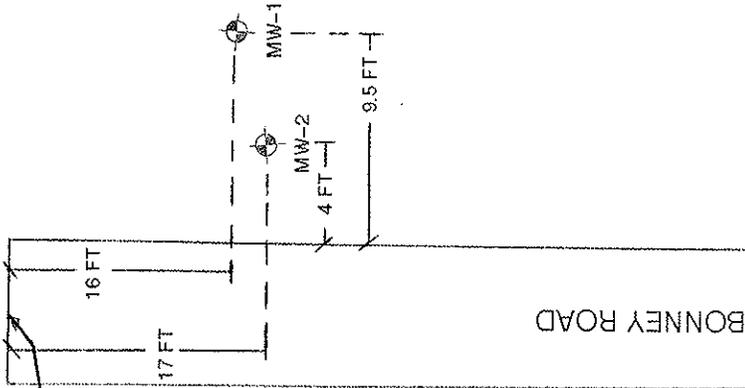
was placed above the filter pack. A slurry mixture of bentonite and cement was used to grout the annulus above the bentonite seal in the well.

4. The permanent monitoring well casing was finished flush with the ground surface. The well head was finished with a cap, and an outer (surface) protective steel casing with a locking cap. The protective casing was set into a thick concrete collar at grade.
5. Well development consisted of purging the well using a 12-volt submersible pump. Development was complete when a significant drop in the turbidity of the water was observed.

III. MONITORING WELL MW-2

1. Upon completion of drilling, 2-inch diameter Schedule 40 PVC pipe was installed at the desired depth of the borehole. The monitoring well was furnished with 10 feet of No. 10 slot, 2-inch diameter Schedule 40 PVC, screen flush jointed to permanent casing. No organic solvents were used during well construction.
2. The monitoring well screen was surrounded with a filter pack compatible with surrounding medium consisting of graded washed filter sand placed above the top of the screen. A minimum two-foot thick bentonite clay seal was placed above the filter pack. A slurry mixture of bentonite and cement was used to grout the annulus above the bentonite seal in the wells.
3. The permanent monitoring well casing was finished flush with the ground surface. The well head was finished with a cap, and an outer (surface) protective steel casing with a locking cap. The protective casing was set into a thick concrete collar at grade.
4. Well development consisted of purging the well using a 12-volt submersible pump. Development was complete when a significant drop in the turbidity of the water was observed.

TERMINUS OF BONNEY ROAD



RESIDENTIAL

RESIDENTIAL

MURRAY DRIVE

LEGEND:



MW-2 APPROXIMATE MONITORING WELL LOCATION



Schnabel Engineering

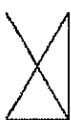
BATTLEFIELD GOLF CLUB WATER PROJECT,
MONITORING WELL INSTALLATION

BONNEY ROAD AND MURRAY DRIVE, CHESAPEAKE,
VIRGINIA

LOCATION PLAN	SCALE: NTS	DATE: 1/09	PROJECT NO.:
	DRAWN BY: RR	CHECK BY: GS	08330106
			FIGURE: 1

SCHNABEL ENGINEERING
GENERAL NOTES FOR SUBSURFACE EXPLORATION LOGS

1. Numbers in sampling data column next to Standard Penetration Test (SPT) symbols indicate blows required to drive a 2 inch O.D., 1-3/8 inch I.D. sampling spoon 6 inches using a 140 pound hammer falling 30 inches. The Standard Penetration Test (SPT) N value is the number of blows required to drive the sampler 12 inches, after a 6 inch seating interval. The Standard Penetration Test is performed in general accordance with ASTM-1586.
2. Visual classification of soil is in accordance with terminology set forth in "Identification of Soil." The ASTM D-2487 group symbols (e.g. CL) shown in the classification column are based on visual observations.
3. Estimated ground water levels indicated on the logs are only estimates from available data and may vary with precipitation, porosity of the soil, site topography, and other factors.
4. Refusal at the surface of rock, boulder, or other obstruction is defined as an SPT resistance of 100 blows for 2 inches or less of penetration.
5. The logs and related information depict subsurface conditions only at the specific locations and at the particular time when drilled or excavated. Soil conditions at other locations may differ from conditions occurring at these locations. Also, the passage of time may result in a change in the subsurface soil and ground water conditions at the subsurface exploration location.
6. The stratification lines represent the approximate boundary between soil and rock types as obtained from the subsurface exploration. Some variation may also be expected vertically between samples taken. The soil profile, water level observations and penetration resistances presented on these logs have been made with reasonable care and accuracy and must be considered only an approximate representation of subsurface conditions to be encountered at the particular location.
7. Key to symbols and abbreviations:



S-1, SPT - Sample No., Standard Penetration Test
 5+10+1 - Number of blows in each 6-in increment



UD-1, UNDIST - Sample No., 2" or 3" Undisturbed Tube Sample
 REC=24", 100% - Recovery in inches, Percent Recovery



C-1, CORE - Core No., Rock Core
 Run = 5.0 ft - Run Length in feet
 REC = 60" 100% - Recovery in inches, Percent Recovery
 RQD = 60" 100% - RQD in inches, Percent RQD

MC - Moisture Content
 PP - Pocket Penetrometer Reading (tsf)
 FID - Flame Ionization Detector Reading (ppm)
 PID - Photoionization Detector Reading (ppm)
 GP - Geostick Penetration Reading (inches)
 LL - Liquid Limit
 PL - Plastic Limit
 TPH - Total Petroleum Hydrocarbons

SCHNABEL ENGINEERING

IDENTIFICATION OF SOILS

I. DEFINITION OF SOIL GROUP NAMES (ASTM D-2487)

SYMBOL GROUP NAME

Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels – More than 50% of coarse fraction retained on No. 4 sieve Coarse, ¾" to 3" Fine, No. 4 to ¾"	Clean Gravels Less than 5% fines	GW	WELL GRADED GRAVEL
			GP	POORLY GRADED GRAVEL
		Gravels with fines More than 12% fines	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	Sands – 50% or more of coarse Fraction passes No. 4 sieve Coarse, No. 10 to No. 4 Medium, No. 40 to No. 10 Fine, No. 200 to No. 40	Clean Sands Less than 5% fines	SW	WELL GRADED SAND
			SP	POORLY GRADED SAND
Sands with fines More than 12% fines		SM	SILTY SAND	
		SC	CLAYEY SAND	
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays – Liquid Limit less than 50 Low to medium plasticity	Inorganic	CL	LEAN CLAY
			ML	SILT
		Organic	OL	ORGANIC CLAY
				ORGANIC SILT
	Silts and Clays – Liquid Limit 50 or more Medium to high plasticity	Inorganic	CH	FAT CLAY
			MH	ELASTIC SILT
		Organic	OH	ORGANIC CLAY
				ORGANIC SILT
Highly Organic Soils	Primarily organic matter, dark in color and organic odor	PT	PEAT	

II. DEFINITION OF SOIL COMPONENT PROPORTIONS (ASTM D-2487)

Examples

Adjective Form	GRAVELLY SANDY	>30% to <50% coarse grained component in a fine-grained soil	GRAVELLY LEAN CLAY
	CLAYEY SILTY	>12% to <50% fine grained component in a coarse-grained soil	SILTY SAND
"With"	WITH GRAVEL WITH SAND	>15% to <30% coarse grained component in a fine-grained soil	FAT CLAY WITH GRAVEL
	WITH GRAVEL WITH SAND	>15% to <50% coarse grained component in a coarse-grained soil	POORLY GRADED GRAVEL WITH SAND
	WITH SILT WITH CLAY	>5% to <12% fine grained component in a coarse-grained soil	POORLY GRADED SAND WITH SILT

III. GLOSSARY OF MISCELLANEOUS TERMS

- SYMBOLS** Unified Soil Classification Symbols are shown above as group symbols. A dual symbol "--" indicates the soil belongs to two groups. A borderline symbol "/" indicates the soil belongs to two possible groups.
- FILL**..... Man-made deposit containing soil, rock and often foreign matter.
- PROBABLE FILL**..... Soils which contain no visually detected foreign matter but which are suspect with regard to origin.
- DISINTEGRATED ROCK (DR)**..... Residual materials with a standard penetration resistance (SPT) between 60 blows per foot and refusal. Refusal is defined as a SPT of 100 blows for 2" or less penetration.
- PARTIALLY WEATHERED ROCK (PWR)**..... Residual materials with a standard penetration resistance (SPT) between 100 blows per foot and refusal. Refusal is defined as a SPT of 100 blows for 2" or less penetration.
- BOULDERS & COBBLES** Boulders are considered rounded pieces of rock larger than 12 inches, while cobbles range from 3 to 12 inch size.
- LENSES**..... 0 to ½ inch seam within a material in a test pit.
- LAYERS**..... ½ to 12 inch seam within a material in a test pit.
- POCKET**..... Discontinuous body within a material in a test pit.
- MOISTURE CONDITIONS**..... Wet, moist or dry to indicate visual appearance of specimen.
- COLOR**..... Overall color, with modifiers such as light to dark or variation in coloration.



TEST BORING LOG

Project: Battlefield Golf Club Water Project
 Bonney Road and Murray Drive
 Chesapeake, Virginia

Boring Number: **MW-1**
 Contract Number: 08330106
 Sheet: 2 of 3

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA		TESTS	REMARKS	
					DEPTH	DATA			
	POORLY GRADED SAND, fine to medium grained sand, wet, gray, estimated <5% silt (continued)	SP				S-3, SPT 6+7+8+14 REC=24", 100%		NORFOLK FORMATION (continued)	
						S-4, SPT 14+20+24+22 REC=24", 100%			
37.0	SILTY SAND, fine to medium grained sand, wet, gray	SM	-27.9	B1		S-5, SPT 4+6+6+6 REC=24", 100%			
								S-6, SPT 3+3+2+3 REC=24", 100%	
47.0	CLAYEY SAND, fine to medium grained sand, wet, dark gray	SC	-37.9			S-7, SPT 2+3+3+4 REC=24", 100%			
52.0	LEAN CLAY WITH SAND, moist, dark gray, contains mica	CL	-42.9	B2		S-8, SPT 2+2+2+2 REC=24", 100%	PP =0.50 tsf	2 15/16" tri-cone roller bit used during sampling to 55 feet. 8 1/4" I.D. hollow stem augers used to set the 6" casing to 53 feet. 5 7/8" tri-cone roller bit used during sampling	
							UD-1 REC=16", 67%		PP =1.25 tsf
							S-9, SPT		PP =0.25 tsf

TEST BORING LOG REVISED MW BORING LOGS.GPJ_SCHNABEL DATA TEMPLATE 2008_07_06.GDT 2/2/09

(continued)



TEST BORING LOG

Project: Battlefield Golf Club Water Project
Bonney Road and Murray Drive
Chesapeake, Virginia

Boring Number: **MW-1**
Contract Number: 08330106
Sheet: 3 of 3

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
62.0	LEAN CLAY WITH SAND, moist, dark gray, contains mica (continued)	CL	-52.9	B2	60	1+2+2+2 REC=24", 100%	PP =0.25 tsf	from 55 to 90 feet and to set 2" well. NORFOLK FORMATION (continued)
	SILTY SAND, fine to medium grained sand, wet, greenish gray, estimated 5 - 10% shells				65	UD-2 REC=15", 63%		
	Changes to contains lean clay layers, estimated <5% shells	SM		C1	70	S-10, SPT 4+8+5+7 REC=24", 100%		Two-inch monitoring well installed to 90.45 feet upon completion.
					75	S-11, SPT 6+11+12+10 REC=24", 100%		
						S-12, SPT 3+8+10+12 REC=24", 100%		
77.0	LEAN CLAY WITH SAND, wet, gray, contains silty sand lenses	CL	-67.9	C2	80	S-13, SPT 3+6+6+11 REC=24", 100%	PP =1.25 tsf	YORKTOWN FORMATION
82.0	CLAYEY SAND, fine to medium grained sand, wet, greenish gray, estimated 5 - 10% shells	SC	-72.9	C1	85	S-14, SPT 6+12+14+14 REC=24", 100%		
87.0	SILTY SAND, fine to medium grained sand, wet, greenish gray, estimated <5% shells	SM	-77.9			S-15, SPT 6+14+18+22 REC=24", 100%		
90.0			-80.9		90			

Bottom of Boring at 90.0 ft.
Observation well installed upon completion.

TEST BORING LOG REVISED MW BORING LOGS.GPJ_SCHNABEL_DATA TEMPLATE 2008_07_06.GDT 2/2/09



TEST BORING LOG

Project: Battlefield Golf Club Water Project
Bonney Road and Murray Drive
Chesapeake, Virginia

Boring Number: **MW-2**
Contract Number: 08330106
Sheet: 1 of 2

Contractor: Fishburne Drilling
Chesapeake, Virginia
Contractor Foreman: T. Donahue
Schnabel Representative: R. Rountree
Equipment: CME-550X
Method: 4-1/4" I.D. Hollow Stem Auger

Hammer Type: Auto Hammer (140 lb)
Dates Started: 11/25/08 **Finished:** 11/25/08

Ground Surface Elevation: 9.0 (ft) **Total Depth:** 45.0 ft

Groundwater Observations					
	Date	Time	Depth	Casing	Caved
Encountered	11/25	11:31 AM	5.0'	---	---
Completion	11/26	3:42 PM	---	---	---
Casing Pulled	11/26	4:21 PM	---	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA		TESTS	REMARKS
					DEPTH	DATA		
		▽						Elevation referenced to top of concrete curb (assumed 100.0). Auger probe to 45.5 feet; see Boring Log MW-1 for strata descriptions.
					5			
					10			
					15			
					20			
								Two-inch monitoring well installed to 45.04 feet upon completion.

TEST BORING LOG REVISED MW BORING LOGS.GPJ SCHNABEL DATA TEMPLATE 2008.07.06.GDT 2/2/09

(continued)



TEST BORING LOG

Project: Battlefield Golf Club Water Project
 Bonney Road and Murray Drive
 Chesapeake, Virginia

Boring Number: **MW-2**
 Contract Number: 08330106
 Sheet: 2 of 2

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
						30		
						35		
						40		
						45		

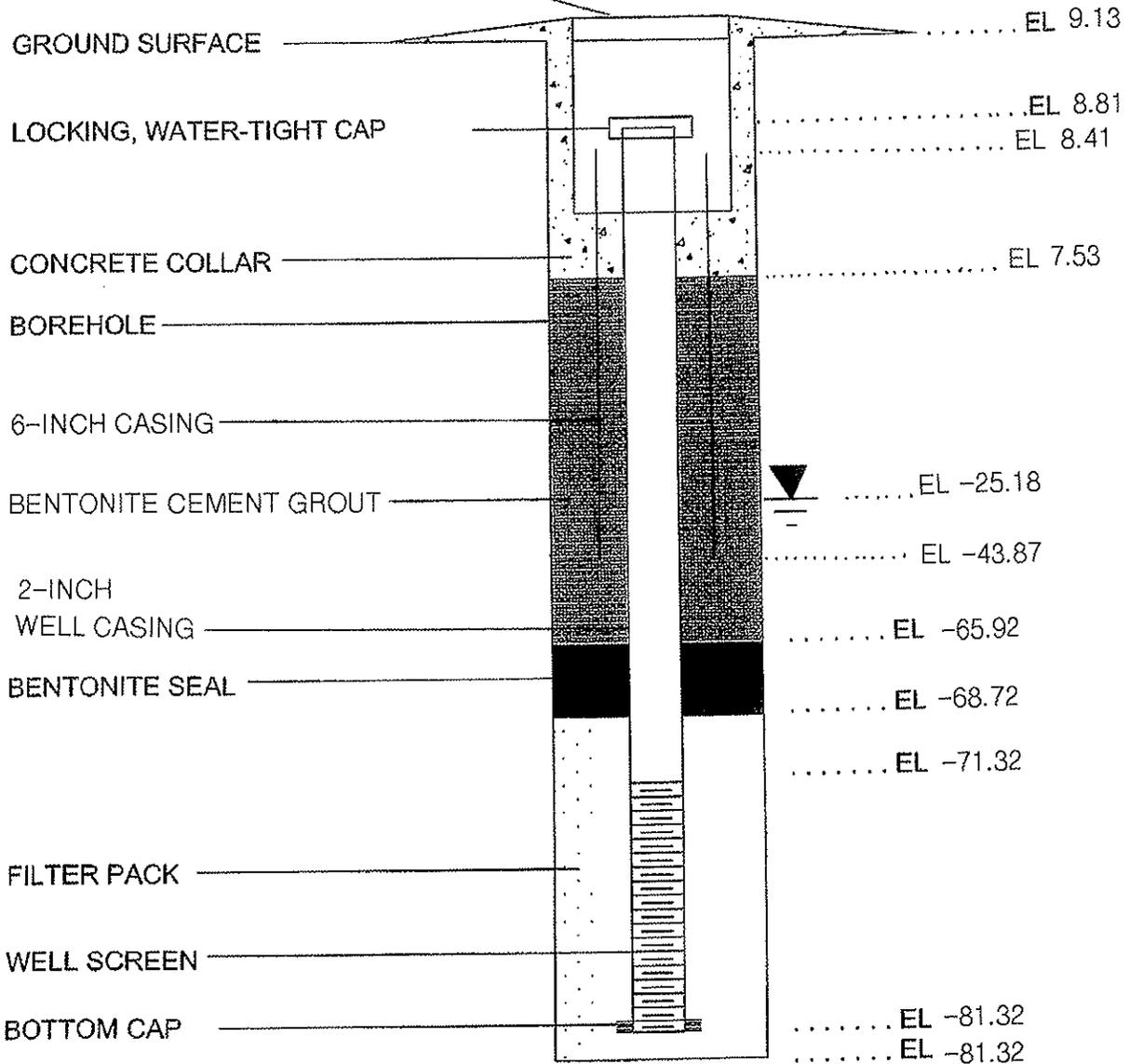
Bottom of Boring at 45.0 ft.
 Observation well installed upon completion.

CONSTRUCTION DETAILS FOR MONITORING WELL MW-1

BORING NUMBER: MW-1
 SCREEN SIZE AND TYPE: 10 FT, NO. 10 SLOT PVC
 CASING SIZE AND TYPE: 2 IN. SCH. 40 PVC FLUSH JOINT
 FILTER PACK MATERIAL: NO. 2 FILTER SAND
 DEVELOPMENT: SUBMERSIBLE PUMP

CONTRACT NO.: 08330106
 DATE WATER LEVEL
 OBTAINED: 12-1-08
 DATE INSTALLED: 11-26-08
 DATE DEVELOPED: 12-1-08

FLUSHMOUNT BOLT-DOWN
 PROTECTIVE COVERING

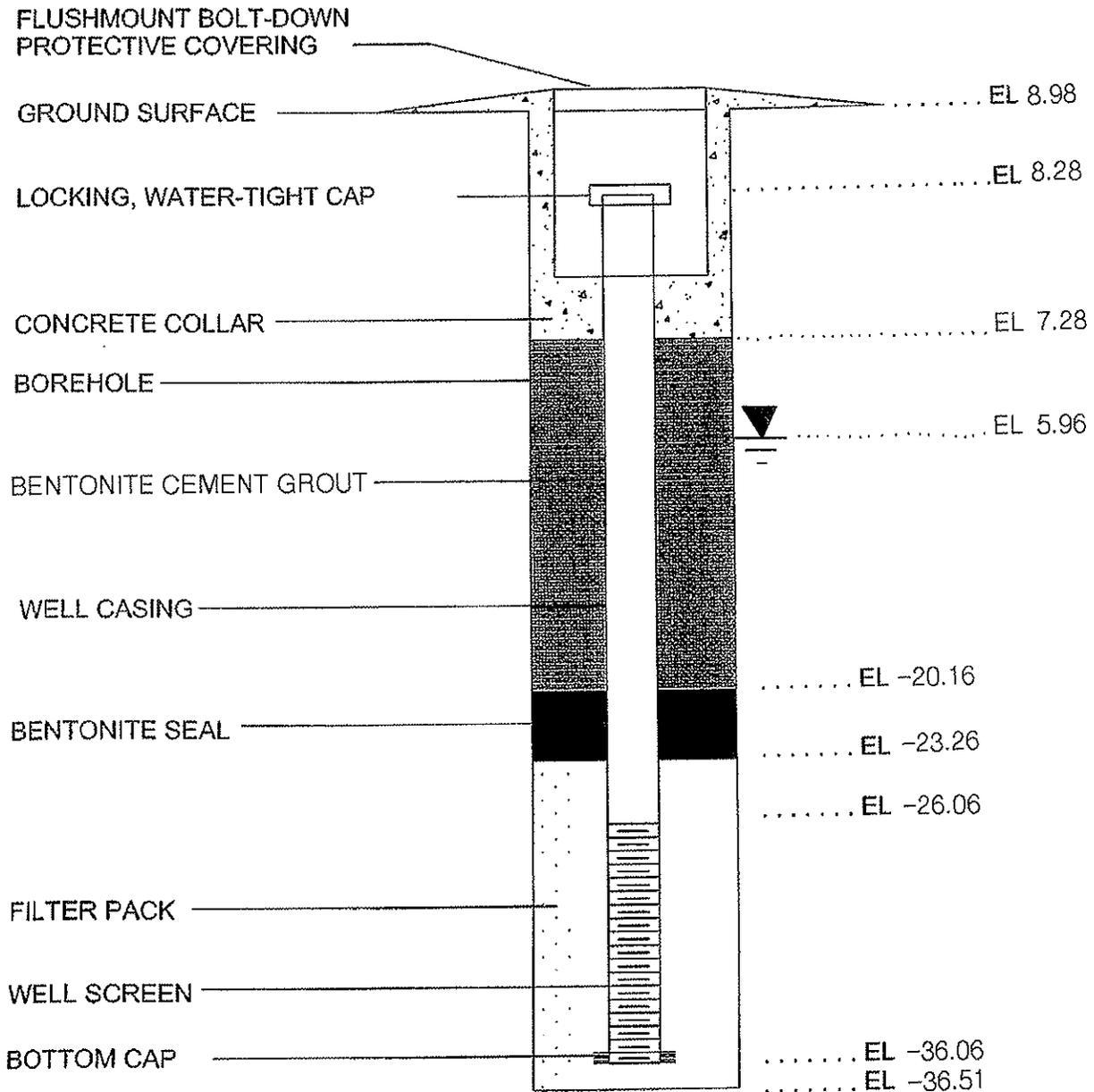


NOT TO SCALE

CONSTRUCTION DETAILS FOR MONITORING WELL MW-2

BORING NUMBER: MW-2
SCREEN SIZE AND TYPE: 10 FT, NO. 10 SLOT PVC
CASING SIZE AND TYPE: 2 IN. SCH. 40 PVC FLUSH JOINT
FILTER PACK MATERIAL: NO. 2 FILTER SAND
DEVELOPMENT: SUBMERSIBLE PUMP

CONTRACT NO.: 08330106
DATE WATER LEVEL
OBTAINED: 12-1-08
DATE INSTALLED: 11-25 & 26-08
DATE DEVELOPED: 12-1-08



APPENDIX B

Laboratory Analytical Chemical Data

Certificates of Analysis and Chains of Custody

1204 MURRAY DRIVE



Improving the environment, one client at a time...

225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

January 22, 2009

Mr. Russell Rountree
SCHNABEL ENGINEERING SOUTH LLC
300 ED WRIGHT LN SUITE 1
NEWPORT NEWS VA 23606

TEL: (757) 947-1220

FAX (757) 947-1220

RE: 08330106

Order No.: 0812H90

Dear Mr. Russell Rountree:

REI Consultants, Inc. received 1 sample(s) on 12/23/2008 for the analyses presented in the following report.

Please note two changes you may see on your report.

- Results for "Dissolved" parameters will be shown under a separate sample ID, rather than as a separate analysis under the same sample ID. The sample ID for "Dissolved" parameters will include "Field Filtered" or "Lab Filtered", as appropriate.
- Metals results will no longer be identified as "Total" or "Total Recoverable". The methods have not been changed, only their appearance on the report.

If you have any questions regarding these results, please do not hesitate to call.

Sincerely,

Scott Gross

Project Manager





225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

Improving the environment, one client at a time...

Report Narrative

Project Manager:: Scott Gross

WO#: 0812H90
Date: 1/22/2009

CLIENT: SCHNABEL ENGINEERING SOUTH LL
Project: 08330106

All analyses were performed using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. REI Consultants, Inc. (REIC) technical managers have verified compliance of reported results with the REIC's Quality Program and SOPs, except as noted in this case narrative. Any deviation from compliance is explained below and/or identified within the body of this report by a qualifier footnote which is defined at the bottom of each page.

All samples were analyzed using the methods stated in the analytical report without modification, unless otherwise noted.

All sample results are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5), may vary slightly from the sum of the individual parameter results. This apparent anomaly is caused by rounding individual results and summations at reporting, as required by EPA.

Following standard laboratory protocol, sample preservation, such as pH, is verified at time of extraction or analysis based on client requested parameters. Improper preservation is noted on the analytical bench sheet, extraction log, or preservation log and client is notified by close of following business day. All results are reported using preservation compliant samples unless otherwise noted in the analytical report.

The test results in this report meet all NELAP requirements for parameters for which accreditations are required or available. Any exceptions are noted in this report. This report may not be reproduced, except in full, without the written approval of REIC.

In compliance with federal guidelines and standard operating procedures, all reports, including raw data and supporting quality control, will be disposed of after five years unless otherwise arranged by the client via written notification or contract requirement.

If you have any questions please contact the project manager whose name is listed above.

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: 1204 MURRAY DRIVE
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812H90 **Lab ID** 0812H90-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 4:45:00 PM
Matrix: DRINKING WATER

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP			E200.7			Analyst: BP	
Aluminum	0.188	mg/L		0.100	0.200	12/24/08 12:16 PM	12/31/08 12:27 AM
Boron	0.163	mg/L		0.100	NA	12/24/08 12:16 PM	12/31/08 12:27 AM
Iron	0.184	mg/L		0.100	0.300	12/24/08 12:16 PM	12/31/08 12:27 AM
Magnesium	18.8	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:27 AM
Manganese	ND	mg/L		0.050	0.050	12/24/08 12:16 PM	12/31/08 12:27 AM
Silica (as SiO2)	19.2	mg/L		0.210	NA	12/24/08 12:16 PM	12/29/08 2:46 PM
Sodium	106	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:27 AM
METALS BY ICP-MS			E200.8			Analyst: BM	
Antimony	ND	mg/L		0.0010	0.0060	12/24/08 12:16 PM	12/29/08 4:01 PM
Arsenic	ND	mg/L		0.0050	0.0100	12/24/08 12:16 PM	12/29/08 4:01 PM
Barium	ND	mg/L		0.100	2.00	12/24/08 12:16 PM	12/29/08 4:01 PM
Beryllium	ND	mg/L		0.0020	0.0040	12/24/08 12:16 PM	12/29/08 4:01 PM
Cadmium	ND	mg/L		0.0010	0.0050	12/24/08 12:16 PM	12/29/08 4:01 PM
Chromium	0.0052	mg/L		0.0050	0.100	12/24/08 12:16 PM	12/29/08 4:01 PM
Cobalt	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:01 PM
Copper	ND	mg/L		0.0500	1.30	12/24/08 12:16 PM	12/29/08 4:01 PM
Lead	ND	mg/L		0.0050	0.0150	12/24/08 12:16 PM	12/29/08 4:01 PM
Molybdenum	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:01 PM
Nickel	ND	mg/L		0.0100	0.100	12/24/08 12:16 PM	12/29/08 4:01 PM
Selenium	ND	mg/L		0.0050	0.0500	12/24/08 12:16 PM	12/29/08 4:01 PM
Silver	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:01 PM
Thallium	ND	mg/L		0.0010	0.0020	12/24/08 12:16 PM	12/29/08 4:01 PM
Vanadium	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:01 PM
Zinc	0.0151	mg/L		0.0100	5.00	12/24/08 12:16 PM	12/29/08 4:01 PM
HARDNESS, CALCIUM			SM2340 B			Analyst: BP	
Hardness, Calcium (As CaCO3)	67.4	mg/L		1.00	NA		12/31/08 12:27 AM
HARDNESS			SM2340 B			Analyst: BP	
Hardness, Total (As CaCO3)	145	mg/L		1.00	NA	12/24/08 12:16 PM	12/31/08 12:27 AM
MERCURY, TOTAL			E245.1			Analyst: CGW	
Mercury	ND	mg/L		0.0010	0.0020	12/24/08 12:08 PM	12/30/08 10:49 AM
PCB			E505			Analyst: Sub	
Aroclor 1016	See Attached			NA	NA		
Aroclor 1221	See Attached			NA	NA		
Aroclor 1232	See Attached			NA	NA		
Aroclor 1242	See Attached			NA	NA		
Aroclor 1248	See Attached			NA	NA		

Key: MCL Maximum Contaminant Level **Qualifiers:** B Analyte detected in the associated Method Blank
 MDL Minimum Detection Limit E Estimated Value above quantitation range
 NA Not Applicable H Holding times for preparation or analysis exceeded
 ND Not Detected at the PQL or MDL S Spike/Surrogate Recovery outside accepted recovery limit
 PQL Practical Quantitation Limit * Value exceeds Maximum Contaminant Level Page 2 of 5
 TIC Tentatively Identified Compound, Estimated Concentrati

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: 1204 MURRAY DRIVE
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812H90 **Lab ID** 0812H90-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 4:45:00 PM
Matrix: DRINKING WATER

Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY EPA		E504.1			Analyst: JG	
1,2-Dibromoethane	ND mg/L		0.000020	0.000050	01/02/09 1:30 PM	01/02/09 5:53 PM
SEMIVOLATILE ORGANIC COMPOUNDS		E515.1			Analyst: JG	
2,4,5-TP (Silvex)	ND mg/L		0.000608	0.0500	12/23/08 2:00 PM	12/30/08 12:00 AM
2,4-D	ND mg/L		0.000122	0.0700	12/23/08 2:00 PM	12/30/08 12:00 AM
Dalapon	ND mg/L		0.00790	0.200	12/23/08 2:00 PM	12/30/08 12:00 AM
Dinoseb	ND mg/L		0.000122	0.00700	12/23/08 2:00 PM	12/30/08 12:00 AM
Pentachlorophenol	ND mg/L		0.000608	0.00100	12/23/08 2:00 PM	12/30/08 12:00 AM
Picloram	ND mg/L		0.000608	0.500	12/23/08 2:00 PM	12/30/08 12:00 AM
VOLATILE ORGANIC COMPOUNDS		E524.2			Analyst: SDG	
Benzene	ND µg/L		1.0	5.0		12/30/08 1:37 PM
Carbon tetrachloride	ND µg/L		1.0	5.0		12/30/08 1:37 PM
1,2-Dichlorobenzene	ND µg/L		1.0	600		12/30/08 1:37 PM
1,4-Dichlorobenzene	ND µg/L		1.0	75.0		12/30/08 1:37 PM
1,2-Dichloroethane	ND µg/L		1.0	5.0		12/30/08 1:37 PM
1,1-Dichloroethene	ND µg/L		1.0	7.0		12/30/08 1:37 PM
cis-1,2-Dichloroethene	ND µg/L		1.0	70.0		12/30/08 1:37 PM
trans-1,2-Dichloroethene	ND µg/L		1.0	100		12/30/08 1:37 PM
1,2-Dichloropropane	ND µg/L		1.0	5.0		12/30/08 1:37 PM
Ethylbenzene	ND µg/L		1.0	700		12/30/08 1:37 PM
Methylene chloride	ND µg/L		1.0	5.0		12/30/08 1:37 PM
Styrene	ND µg/L		1.0	100		12/30/08 1:37 PM
Tetrachloroethene	ND µg/L		1.0	5.0		12/30/08 1:37 PM
Surr: 1,2-Dichlorobenzene-d4	80.1 %REC		75-125	NA		12/30/08 1:37 PM
Surr: 4-Bromofluorobenzene	85.0 %REC		75-125	NA		12/30/08 1:37 PM
RESIDUAL CHLORINE - LAB TEST, HOLD TIME E		SM4500-CL-G			Analyst: CC	
Chlorine, Total Residual	ND µg/L		100	NA		12/24/08 10:00 AM
TURBIDITY		SM2130 B			Analyst: CC	
Turbidity	0.65 NTU	*	0.50	0.50		12/24/08 9:30 AM
COLIFORM BY P/A		SM9223 B			Analyst: CC	
Fecal Coliform	ABSENT NA		NA	NA	12/23/08 2:15 PM	12/24/08 2:15 PM
Total Coliform	ABSENT NA		NA	NA	12/23/08 2:15 PM	12/24/08 2:15 PM
CYANIDE		E335.4			Analyst: BA	
Cyanide, Total	ND mg/L		0.020	NA		12/24/08 9:00 AM

Key: MCL Maximum Contaminant Level **Qualifiers:** B Analyte detected in the associated Method Blank
 MDL Minimum Detection Limit E Estimated Value above quantitation range
 NA Not Applicable H Holding times for preparation or analysis exceeded
 ND Not Detected at the PQL or MDL S Spike/Surrogate Recovery outside accepted recovery limit
 PQL Practical Quantitation Limit * Value exceeds Maximum Contaminant Level Page 4 of 5
 TIC Tentatively Identified Compound, Estimated Concentration

Report Prepared for:

Scott Gross
REI Consultants, Inc.
225 Industrial Park Dr.
Beaver WV 25813

**REPORT OF
LABORATORY
ANALYSIS FOR
2,3,7,8-TCDD**

Report Summary:

Enclosed are analytical results of one drinking water sample analyzed for 2,3,7,8-TCDD content. This sample was analyzed according to Method 1613B by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

The results reported for this sample and the associated quality control samples were all within the criteria described in Method 1613B; with the exception of a blank internal standard recovery below the target range for the method. If you have any questions or concerns regarding these results, please contact Nate Habte, your Pace Project Manager.

Report Prepared Date:

January 12, 2009

Report Information:

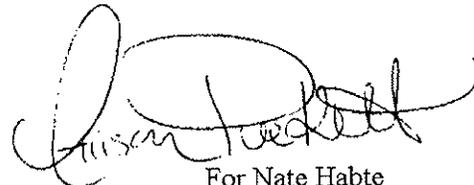
Pace Project #: 1087001
Sample Receipt Date: 12/30/2008
Client Project #: 0812H90
Client Sub PO #: N/A
State Cert #: 9952C

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 Drinking Water Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nate Habte, your Pace Project Manager.

This report has been reviewed and prepared by:



For Nate Habte

Nate Habte, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
natnael.habte@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

REI Consultants, Inc.
225 Industrial Park Drive
Beaver, WV 25813

TEL: 304.255.2500

FAX: 304.255.2572

CHAIN-OF-CUSTODY RECORD

1087001

Subcontractor:

PACE ANALYTICAL SERVICES INC.
1700 Elm St Suite 200
Minneapolis, MN 55414

TEL: (919) 596-1935
FAX:
Acct #:

23-Dec-08

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
0812H90-01A	Drinking Water	12/22/2008 4:45:00 PM	PLASTIC, GLA	SW8280 (1)

2378. TCOD

General Comments:

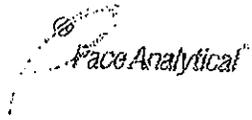
State Code: VA
After analysis, the samples do not need to be returned and can be disposed per your standard laboratory practices.

Q Method 1631 per Scott G. @ 12/30/08

Relinquished by:	Date/Time	Received by:	Date/Time
<i>[Signature]</i>		<i>[Signature]</i>	12/30/08

F-3.0

Sample Condition Upon Receipt



Client Name: REI

Project # 10787001

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 12 26x 713136162 0327

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank: Yes No

Thermometer Used 80344042, 179425 Type of Ice: Wet Blue None Samples on Ice, cooling process has begun

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No Date and initials of person examining contents: 12/30/08 sh

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, Wt-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: (Signature)

Date: 12/30/08



Drinking Water Analysis Results
2,3,7,8-TCDD -- USEPA Method 1613B

Sample ID.....0812H90-01A
 Client.....REI Consultants, Inc.
 Lab Sample ID.....1087001001

Date Collected.....12/22/2008
 Date Received.....12/30/2008
 Date Extracted.....01/05/2009

	Sample 0812H90-01A	Method Blank	Lab Spike	Lab Spike Dup
[2,3,7,8-TCDD]	ND	ND	--	--
RL	5 pg/L	5 pg/L	--	--
2,3,7,8-TCDD Recovery	--	--	99%	102%
Spike Recovery Limit	--	--	73-146%	73-146%
RPD				2.8%
IS Recovery	70%	30% !	75%	64%
IS Recovery Limits	31-137%	31-137%	25-141%	25-141%
CS Recovery	85%	77%	96%	83%
CS Recovery Limits	42-164%	42-164%	37-158%	37-158%
Filename	R90106A17	R90106A05	R90106A03	R90106A04
Analysis Date	01/06/2009	01/06/2009	01/06/2009	01/06/2009
Analysis Time	16:06	10:24	09:27	09:53
Analyst	SMT	SMT	SMT	SMT
Volume	0.963L	0.900L	0.907L	0.913L
Dilution	NA	NA	NA	NA
ICAL Date	12/31/2008	12/31/2008	12/31/2008	12/31/2008
CCAL Filename	R90106A02	R90106A02	R90106A02	R90106A02

- ! = Outside the Control Limits
- ND = Not Detected
- RL = Reporting Limit
- Limits = Control Limits from Method 1613 (10/94 Revision), Tables 6A and 7A
- RPD = Relative Percent Difference of Lab Spike Recoveries
- IS = Internal Standard [2,3,7,8-TCDD-¹³C]
- CS = Cleanup Standard [2,3,7,8-TCDD-³⁷Cl₄]

Analyst: 

Project No.....1087001



the standard in safety

Underwriters
Laboratories

LABORATORY REPORT

This report contains 4 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

*This report may not be reproduced, except in full, without written approval from
Underwriters Laboratories Inc. (UL).*

Underwriters Laboratories Inc.
110 S. Hill Street, South Bend, IN 46817-2702 USA
Tel: 600 332.4345 / Fax: 574.233.8207 / Web: ul.com



the standard in safety

Underwriters Laboratories

Laboratory Report

Client: REIC
Attn: Joy Mullins
225 Airport Industrial Park Road
P.O. Box 286
Beaver, WV 25813

Report: 218270
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Copies to: None

Sample Information					
UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
1998296	0812H90-01A	505	12/22/08 16:45	Client	12/30/08 09:30
1998297	0812H90-01A	525.2	12/22/08 16:45	Client	12/30/08 09:30
1998298	0812H90-01A	531.1	12/22/08 16:45	Client	12/30/08 09:30
1998299	0812H90-01A	547	12/22/08 16:45	Client	12/30/08 09:30
1998300	0812H90-01A	548.1	12/22/08 16:45	Client	12/30/08 09:30
1998301	0812H90-01A	549.2	12/22/08 16:45	Client	12/30/08 09:30

Report Summary

Note: Sample containers, except for Method 549.2, were provided by the client.

Note: The samples submitted for Methods 548.1 and 549.2 analysis were received outside the seven day hold time. The client was notified of the situation and analysis was authorized by Scott Gross of REIC.

Note: In the Method 549.2 analysis, the diquat recovery in the MS (33%) was outside the acceptance limits of 63-97%.

Note: In the Method 525.2 analysis, the di(2-ethylhexyl)phthalate recovery in the LFB (142%) was outside the acceptance limits of 70-130%.

Note: In the Method 525.2 analysis, the di(2-ethylhexyl)phthalate recovery in the FBL (206%) was outside the acceptance limits of 50-200%.

Note: In the Method 525.2 analysis, heptachlor epoxide is not reportable in the sample submitted due to matrix interference.

Detailed quantitative results are presented on the following pages.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from Underwriters Laboratories (UL).

Traci Chlebowski
Authorized Signature

Project Manager
Title

1/20/09
Date

Client Name: REIC
Report #: 218270

Semi-volatile Organic Chemicals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
12674-11-2	Aroclor 1016	505	---	0.08	< 0.08	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
11104-28-2	Aroclor 1221	505	---	0.19	< 0.19	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
11141-16-5	Aroclor 1232	505	---	0.23	< 0.23	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
53469-21-9	Aroclor 1242	505	---	0.26	< 0.26	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
12672-29-6	Aroclor 1248	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
11097-69-1	Aroclor 1254	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
11096-82-5	Aroclor 1260	505	---	0.2	< 0.2	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	12/31/08 13:50	12/31/08 22:07	1998296
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
309-00-2	Aldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
50-32-8	Benzo[a]pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
23184-66-9	Butachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
60-57-1	Dieldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	0.8	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
51218-45-2	Metolachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
21087-64-9	Metribuzin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
1918-16-7	Propachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	12/31/08 09:30	12/31/08 21:08	1998297
116-06-3	Aldicarb	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
1646-88-4	Aldicarb sulfone	531.1	---	0.7	< 0.7	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
1646-87-3	Aldicarb sulfoxide	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
63-25-2	Carbaryl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
16655-82-6	3-Hydroxycarbofuran	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
16752-77-5	Methomyl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	12/31/08 08:20	12/31/08 18:34	1998298
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	12/31/08 13:00	01/02/09 18:55	1998299
145-73-3	Endothall	548.1	100 *	9.0	< 9.0	ug/L	12/31/08 08:05	01/02/09 16:15	1998300
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	12/31/08 08:20	12/31/08 13:08	1998301

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	A	

1208 MURRAY DRIVE



Improving the environment, one client at a time...

225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

January 22, 2009

Mr. Russell Rountree
SCHNABEL ENGINEERING SOUTH LLC
300 ED WRIGHT LN SUITE 1
NEWPORT NEWS VA 23606

TEL: (757) 947-1220

FAX (757) 947-1220

RE: 08330106

Order No.: 0812H94

Dear Mr. Russell Rountree:

REI Consultants, Inc. received 1 sample(s) on 12/23/2008 for the analyses presented in the following report.

Please note two changes you may see on your report.

- Results for "Dissolved" parameters will be shown under a separate sample ID, rather than as a separate analysis under the same sample ID. The sample ID for "Dissolved" parameters will include "Field Filtered" or "Lab Filtered", as appropriate.
- Metals results will no longer be identified as "Total" or "Total Recoverable". The methods have not been changed, only their appearance on the report.

If you have any questions regarding these results, please do not hesitate to call.

Sincerely,

Scott Gross

Project Manager





225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

Improving the environment, one client at a time...

Report Narrative

Project Manager: Scott Gross

WO#: 0812H94

Date: 1/22/2009

CLIENT: SCHNABEL ENGINEERING SOUTH LL
Project: 08330106

All analyses were performed using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. REI Consultants, Inc. (REIC) technical managers have verified compliance of reported results with the REIC's Quality Program and SOPs, except as noted in this case narrative. Any deviation from compliance is explained below and/or identified within the body of this report by a qualifier footnote which is defined at the bottom of each page.

All samples were analyzed using the methods stated in the analytical report without modification, unless otherwise noted.

All sample results are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5), may vary slightly from the sum of the individual parameter results. This apparent anomaly is caused by rounding individual results and summations at reporting, as required by EPA.

Following standard laboratory protocol, sample preservation, such as pH, is verified at time of extraction or analysis based on client requested parameters. Improper preservation is noted on the analytical bench sheet, extraction log, or preservation log and client is notified by close of following business day. All results are reported using preservation compliant samples unless otherwise noted in the analytical report.

The test results in this report meet all NELAP requirements for parameters for which accreditations are required or available. Any exceptions are noted in this report. This report may not be reproduced, except in full, without the written approval of REIC.

In compliance with federal guidelines and standard operating procedures, all reports, including raw data and supporting quality control, will be disposed of after five years unless otherwise arranged by the client via written notification or contract requirement.

If you have any questions please contact the project manager whose name is listed above.

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: 1208 MURRAY DRIVE
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812H94 **Lab ID** 0812H94-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 4:25:00 PM
Matrix: DRINKING WATER

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP			E200.7			Analyst: BP	
Aluminum	0.267	mg/L	*	0.100	0.200	12/24/08 12:16 PM	12/31/08 12:32 AM
Boron	0.111	mg/L		0.100	NA	12/24/08 12:16 PM	12/31/08 12:32 AM
Iron	1.79	mg/L	*	0.100	0.300	12/24/08 12:16 PM	12/31/08 12:32 AM
Magnesium	18.9	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:32 AM
Manganese	0.186	mg/L	*	0.050	0.050	12/24/08 12:16 PM	12/31/08 12:32 AM
Silica (as SiO2)	27.6	mg/L		0.210	NA	12/24/08 12:16 PM	12/29/08 2:52 PM
Sodium	81.1	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:32 AM
METALS BY ICP-MS			E200.8			Analyst: BM	
Antimony	ND	mg/L		0.0010	0.0060	12/24/08 12:16 PM	12/29/08 4:19 PM
Arsenic	ND	mg/L		0.0050	0.0100	12/24/08 12:16 PM	12/29/08 4:19 PM
Barium	ND	mg/L		0.100	2.00	12/24/08 12:16 PM	12/29/08 4:19 PM
Beryllium	ND	mg/L		0.0020	0.0040	12/24/08 12:16 PM	12/29/08 4:19 PM
Cadmium	ND	mg/L		0.0010	0.0050	12/24/08 12:16 PM	12/29/08 4:19 PM
Chromium	0.0071	mg/L		0.0050	0.100	12/24/08 12:16 PM	12/29/08 4:19 PM
Cobalt	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:19 PM
Copper	ND	mg/L		0.0500	1.30	12/24/08 12:16 PM	12/29/08 4:19 PM
Lead	ND	mg/L		0.0050	0.0150	12/24/08 12:16 PM	12/29/08 4:19 PM
Molybdenum	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:19 PM
Nickel	ND	mg/L		0.0100	0.100	12/24/08 12:16 PM	12/29/08 4:19 PM
Selenium	ND	mg/L		0.0050	0.0500	12/24/08 12:16 PM	12/29/08 4:19 PM
Silver	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:19 PM
Thallium	ND	mg/L		0.0010	0.0020	12/24/08 12:16 PM	12/29/08 4:19 PM
Vanadium	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:19 PM
Zinc	0.0218	mg/L		0.0100	5.00	12/24/08 12:16 PM	12/29/08 4:19 PM
HARDNESS, CALCIUM			SM2340 B			Analyst: BP	
Hardness, Calcium (As CaCO3)	104	mg/L		1.00	NA		12/31/08 12:32 AM
HARDNESS			SM2340 B			Analyst: BP	
Hardness, Total (As CaCO3)	182	mg/L		1.00	NA	12/24/08 12:16 PM	12/31/08 12:32 AM
MERCURY, TOTAL			E245.1			Analyst: CGW	
Mercury	ND	mg/L		0.0010	0.0020	12/24/08 12:08 PM	12/30/08 10:50 AM
PCB			E505			Analyst: Sub	
Aroclor 1016	See Attached			NA	NA		
Aroclor 1221	See Attached			NA	NA		
Aroclor 1232	See Attached			NA	NA		
Aroclor 1242	See Attached			NA	NA		
Aroclor 1248	See Attached			NA	NA		

Key: MCL Maximum Contaminant Level
 MDL Minimum Detection Limit
 NA Not Applicable
 ND Not Detected at the PQL or MDL
 PQL Practical Quantitation Limit
 TIC Tentatively Identified Compound, Estimated Concentration

Qualifiers: B Analyte detected in the associated Method Blank
 E Estimated Value above quantitation range
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate Recovery outside accepted recovery limit
 * Value exceeds Maximum Contaminant Level

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: 1208 MURRAY DRIVE
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812H94 **Lab ID** 0812H94-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 4:25:00 PM
Matrix: DRINKING WATER

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
PCB			E505			Analyst: Sub	
Aroclor 1254	See Attached			NA	NA		
Aroclor 1260	See Attached			NA	NA		
Chlordane	See Attached			NA	NA		
Toxaphene	See Attached			NA	NA		
SEMIVOLATILE ORGANIC COMPOUNDS			E525.2			Analyst: Sub	
Aalachlor	See Attached			NA	NA		
Atrazine	See Attached			NA	NA		
Benzo(a)pyrene	See Attached			NA	NA		
Di(2-ethylhexyl)adipate	See Attached			NA	NA		
Di(2-ethylhexyl)phthalate	See Attached			NA	NA		
Endrin	See Attached			NA	NA		
gamma-BHC	See Attached			NA	NA		
Heptachlor	See Attached			NA	NA		
Heptachlor epoxide	See Attached			NA	NA		
Hexachlorobenzene	See Attached			NA	NA		
Hexachlorocyclopentadiene	See Attached			NA	NA		
Methoxychlor	See Attached			NA	NA		
Simazine	See Attached			NA	NA		
CARBAMATES 531.1			E531.1			Analyst: Sub	
Aldicarb	See Attached			NA	NA		
Aldicarb sulfone	See Attached			NA	NA		
Aldicarb sulfoxide	See Attached			NA	NA		
Carbofuran	See Attached			NA	NA		
Oxamyl	See Attached			NA	NA		
GLYPHOSATE 547			E547			Analyst: Sub	
Glyphosate	See Attached			NA	NA		
ENDOTHALL 548.1			E548.1			Analyst: Sub	
Endothall	See Attached			NA	NA		
DIQUAT 549.2			E549.2			Analyst: Sub	
Diquat	See Attached			NA	NA		
DIOXIN			SW8280			Analyst: Sub	
2,3,7,8-TCDD	See Attached			NA	NA		
SEMIVOLATILE ORGANIC COMPOUNDS BY EPA			E504.1			Analyst: JG	
1,2-Dibromo-3-chloropropane	ND	mg/L		0.000020	0.000200	01/02/09 1:30 PM	01/02/09 6:07 PM

Key: MCL Maximum Contaminant Level
 MDL Minimum Detection Limit
 NA Not Applicable
 ND Not Detected at the PQL or MDL
 PQL Practical Quantitation Limit
 TIC Tentatively Identified Compound, Estimated Concentration

Qualifiers: B Analyte detected in the associated Method Blank
 E Estimated Value above quantitation range
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate Recovery outside accepted recovery limit
 * Value exceeds Maximum Contaminant Level

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT:	SCHNABEL ENGINEERING SOUTH LLC	WorkOrder:	0812H94	Lab ID	0812H94-01A
Client Sample ID:	1208 MURRAY DRIVE	DateReceived	12/23/2008		
Project:	08330106	Collection Date:	12/22/2008 4:25:00 PM		
Site ID:	BATTLEFIELD GOLF CLUB	Matrix:	DRINKING WATER		

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY EPA			E504.1			Analyst: JG	
1,2-Dibromoethane	ND	mg/L		0.000020	0.000050	01/02/09 1:30 PM	01/02/09 6:07 PM
SEMIVOLATILE ORGANIC COMPOUNDS			E515.1			Analyst: JG	
2,4,5-TP (Silvex)	ND	mg/L		0.000607	0.0500	12/23/08 2:00 PM	12/30/08 12:00 AM
2,4-D	ND	mg/L		0.000121	0.0700	12/23/08 2:00 PM	12/30/08 12:00 AM
Dalapon	ND	mg/L		0.00789	0.200	12/23/08 2:00 PM	12/30/08 12:00 AM
Dinoseb	ND	mg/L		0.000121	0.00700	12/23/08 2:00 PM	12/30/08 12:00 AM
Pentachlorophenol	ND	mg/L		0.000607	0.00100	12/23/08 2:00 PM	12/30/08 12:00 AM
Picloram	ND	mg/L		0.000607	0.500	12/23/08 2:00 PM	12/30/08 12:00 AM
VOLATILE ORGANIC COMPOUNDS			E524.2			Analyst: SDG	
Benzene	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
Carbon tetrachloride	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
1,2-Dichlorobenzene	ND	µg/L		1.0	600		12/29/08 10:46 AM
1,4-Dichlorobenzene	ND	µg/L		1.0	75.0		12/29/08 10:46 AM
1,2-Dichloroethane	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
1,1-Dichloroethene	ND	µg/L		1.0	7.0		12/29/08 10:46 AM
cis-1,2-Dichloroethene	ND	µg/L		1.0	70.0		12/29/08 10:46 AM
trans-1,2-Dichloroethene	ND	µg/L		1.0	100		12/29/08 10:46 AM
1,2-Dichloropropane	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
Ethylbenzene	ND	µg/L		1.0	700		12/29/08 10:46 AM
Methylene chloride	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
Styrene	ND	µg/L		1.0	100		12/29/08 10:46 AM
Tetrachloroethene	ND	µg/L		1.0	5.0		12/29/08 10:46 AM
Surr: 1,2-Dichlorobenzene-d4	88.2	%REC		75-125	NA		12/29/08 10:46 AM
Surr: 4-Bromofluorobenzene	94.5	%REC		75-125	NA		12/29/08 10:46 AM
RESIDUAL CHLORINE - LAB TEST, HOLD TIME E			SM4500-CL-G			Analyst: CC	
Chlorine, Total Residual	ND	µg/L		100	NA		12/24/08 11:30 AM
TURBIDITY			SM2130 B			Analyst: CC	
Turbidity	2.87	NTU	*	0.50	0.50		12/24/08 9:30 AM
COLIFORM BY P/A			SM9223 B			Analyst: CC	
Fecal Coliform	ABSENT	NA		NA	NA	12/23/08 2:57 PM	12/24/08 2:57 PM
Total Coliform	ABSENT	NA		NA	NA	12/23/08 2:57 PM	12/24/08 2:57 PM
CYANIDE			E335.4			Analyst: BA	
Cyanide, Total	ND	mg/L		0.020	NA		12/24/08 9:00 AM

Key: MCL Maximum Contaminant Level
 MDL Minimum Detection Limit
 NA Not Applicable
 ND Not Detected at the PQL or MDL
 PQL Practical Quantitation Limit
 TIC Tentatively Identified Compound, Estimated Concentrati

Qualifiers: B Analyte detected in the associated Method Blank
 E Estimated Value above quantitation range
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate Recovery outside accepted recovery limit
 * Value exceeds Maximum Contaminant Level

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: 1208 MURRAY DRIVE
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812H94 **Lab ID** 0812H94-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 4:25:00 PM
Matrix: DRINKING WATER

Analyses	Result Units	Qual	PQL	MCL	Prep Date	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY		E300.0			Analyst: CW	
Chloride	124 mg/L		5.00	250		12/30/08 11:04 PM
Fluoride	0.33 mg/L		0.20	4.00		12/30/08 11:04 PM
Sulfate	24.2 mg/L		5.00	250		12/30/08 11:04 PM
ANIONS BY ION CHROMATOGRAPHY		E300.0			Analyst: CW	
Nitrogen, Nitrate-Nitrite	ND mg/L		0.10	10.0		01/01/09 9:01 AM
TOTAL DISSOLVED SOLIDS		SM2540 C			Analyst: DSA	
Total Dissolved Solids	377 mg/L		1	500		12/23/08 6:05 PM
ALKALINITY		SM2320 B			Analyst: DSA	
Alkalinity, Total (As CaCO3)	156 mg/L		1.0	NA		12/24/08 7:45 AM
CORROSIVITY, LANGELIER INDEX		SM2330 B			Analyst: IL	
Langelier Index	-0.77 at 20 °C		NA	NA		01/05/09 12:00 AM
PH - LAB TEST, HOLD TIME EXPIRED		SM4500-H+-B			Analyst: DSA	
pH	6.98 SU		NA	NA		12/24/08 7:45 AM
ORGANIC CARBON, TOTAL		SM5310 C			Analyst: DSA	
Total Organic Carbon	2.01 mg/L		1.00	NA		12/24/08 7:12 AM

Key: MCL Maximum Contaminant Level **Qualifiers:** B Analyte detected in the associated Method Blank
 MDL Minimum Detection Limit E Estimated Value above quantitation range
 NA Not Applicable H Holding times for preparation or analysis exceeded
 ND Not Detected at the PQL or MDL S Spike/Surrogate Recovery outside accepted recovery limit
 PQL Practical Quantitation Limit * Value exceeds Maximum Contaminant Level Page 5 of 5
 TIC Tentatively Identified Compound, Estimated Concentration

Report Prepared for:

Scott Gross
REI Consultants, Inc.
225 Industrial Park Dr.
Beaver WV 25813

**REPORT OF
LABORATORY
ANALYSIS FOR
2,3,7,8-TCDD**

Report Summary:

This report contains results of one drinking water sample analyzed to determine 2,3,7,8-TCDD content. This sample was analyzed according to Method 1613 by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

Report Prepared Date:

January 8, 2009

Report Information:

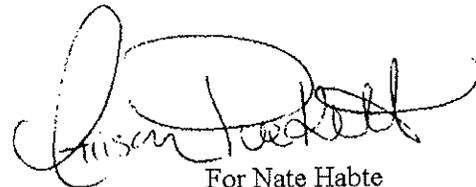
Pace Project #: 1086999
Sample Receipt Date: 12/30/2008
Client Project #: 0812H94
Client Sub PO #: N/A
State Cert #: 9952C

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 Drinking Water Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nate Habte, your Pace Project Manager.

This report has been reviewed and prepared by:



For Nate Habte

Nate Habte, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
natnael.habte@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

Sample Condition Upon Receipt

Pace Analytical

Client Name: REI

Project # 1086999

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 12 26x 713136162 0327

Optional
Proj. Site Date:
Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other Temp Blank: Yes _____ No

Thermometer Used 80344042, 179425 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: 12/30/08 sh

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody RefInqutshed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: 12/30/08



Drinking Water Analysis Results
2,3,7,8-TCDD -- USEPA Method 1613B

Sample ID.....0812H94-01A
 Client.....REI Consultants, Inc.
 Lab Sample ID.....1086999001

Date Collected.....12/23/2008
 Date Received.....12/30/2008
 Date Extracted.....01/06/2009

	Sample 0812H94-01A	Method Blank	Lab Spike	Lab Spike Dup
[2,3,7,8-TCDD]	ND	ND	--	--
RL	5 pg/L	5 pg/L	--	--
2,3,7,8-TCDD Recovery	--	--	104%	105%
Spike Recovery Limit	--	--	73-146%	73-146%
RPD				0.5%
IS Recovery	53%	52%	68%	48%
IS Recovery Limits	31-137%	31-137%	25-141%	25-141%
CS Recovery	84%	86%	85%	75%
CS Recovery Limits	42-164%	42-164%	37-158%	37-158%
Filename	R90106B06	R90106B05	R90106B03	R90106B04
Analysis Date	01/06/2009	01/06/2009	01/06/2009	01/06/2009
Analysis Time	22:45	22:16	21:19	21:48
Analyst	SMT	SMT	SMT	SMT
Volume	0.962L	0.934L	0.935L	0.913L
Dilution	NA	NA	NA	NA
ICAL Date	12/31/2008	12/31/2008	12/31/2008	12/31/2008
CCAL Filename	R90106B02	R90106B02	R90106B02	R90106B02

- ! = Outside the Control Limits
- ND = Not Detected
- RL = Reporting Limit
- Limits = Control Limits from Method 1613 (10/94 Revision), Tables 6A and 7A
- RPD = Relative Percent Difference of Lab Spike Recoveries
- IS = Internal Standard [2,3,7,8-TCDD-¹³C]
- CS = Cleanup Standard [2,3,7,8-TCDD-³⁷Cl₄]

Analyst: 

Project No.....1086999



the standard in safety

Underwriters
Laboratories

LABORATORY REPORT

This report contains 4 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from Underwriters Laboratories Inc. (UL).

Underwriters Laboratories Inc.
110 S. Hill Street, South Bend, IN 46617-2702 USA
T: 800-332-4345 / F: 574-233-8207 / W: ul.com



the standard in safety

Underwriters Laboratories

Laboratory Report

Client: REIC
Attn: Joy Mullins
225 Airport Industrial Park Road
P.O. Box 286
Beaver, WV 25813

Report: 218268
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Copies to: None

Sample Information					
UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
1998288	0812H94-01A	505	12/23/08 14:20	Client	12/30/08 09:30
1998289	0812H94-01A	525.2	12/23/08 14:20	Client	12/30/08 09:30
1998290	0812H94-01A	531.1	12/23/08 14:20	Client	12/30/08 09:30
1998291	0812H94-01A	548.1	12/23/08 14:20	Client	12/30/08 09:30
1998292	0812H94-01A	547	12/23/08 14:20	Client	12/30/08 09:30
1998293	0812H94-01A	549.2	12/23/08 14:20	Client	12/30/08 09:30

Report Summary

Note: Sample containers, except for Method 549.2, were provided by the client.

Note: The samples submitted for Methods 549.2 and 548.1 were analyzed outside the seven day hold time. The client was notified of the situation and analysis was authorized by Scott Gross of REIC.

Note: In the Method 525.2 analysis, heptachlor epoxide is not reportable in the sample submitted due to matrix interference.

Detailed quantitative results are presented on the following pages.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from Underwriters Laboratories (UL).

Traci Chlebowski
Authorized Signature

Project Manager
Title

1/20/09
Date

Client Name: REIC
Report #: 218268

Semi-volatile Organic Chemicals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
12674-11-2	Aroclor 1016	505	---	0.08	< 0.08	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
11104-28-2	Aroclor 1221	505	---	0.19	< 0.19	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
11141-16-5	Aroclor 1232	505	---	0.23	< 0.23	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
53469-21-9	Aroclor 1242	505	---	0.26	< 0.26	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
12672-29-6	Aroclor 1248	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
11097-69-1	Aroclor 1254	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
11096-82-5	Aroclor 1260	505	---	0.2	< 0.2	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	12/31/08 13:50	12/31/08 21:20	1998288
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
309-00-2	Aldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
50-32-8	Benzo[a]pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
23184-66-9	Butachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
60-57-1	Dieldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
51218-45-2	Metolachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
21087-64-9	Metribuzin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
1918-16-7	Propachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	12/31/08 09:30	12/31/08 20:29	1998289
116-06-3	Aldicarb	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
1646-88-4	Aldicarb sulfone	531.1	---	0.7	< 0.7	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
1646-87-3	Aldicarb sulfoxide	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
63-25-2	Carbaryl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
16655-82-6	3-Hydroxycarbofuran	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
16752-77-5	Methomyl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	12/31/08 08:20	12/31/08 17:58	1998290
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	12/31/08 13:00	01/02/09 18:29	1998292
145-73-3	Endothal	548.1	100 *	9.0	< 9.0	ug/L	12/31/08 08:05	01/02/09 15:59	1998291
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	12/31/08 08:20	12/31/08 12:53	1998293

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	A	I

FIELD BLANK



225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

Improving the environment, one client at a time...

January 22, 2009

Mr. Russell Rountree
SCHNABEL ENGINEERING SOUTH LLC
300 ED WRIGHT LN SUITE 1
NEWPORT NEWS VA 23606

TEL: (757) 947-1220

FAX (757) 947-1220

RE: 08330106

Order No.: 0812I02

Dear Mr. Russell Rountree:

REI Consultants, Inc. received 1 sample(s) on 12/23/2008 for the analyses presented in the following report.

Please note two changes you may see on your report.

- Results for "Dissolved" parameters will be shown under a separate sample ID, rather than as a separate analysis under the same sample ID. The sample ID for "Dissolved" parameters will include "Field Filtered" or "Lab Filtered", as appropriate.
- Metals results will no longer be identified as "Total" or "Total Recoverable". The methods have not been changed, only their appearance on the report.

If you have any questions regarding these results, please do not hesitate to call.

Sincerely,

Scott Gross

Project Manager





225 Industrial Park Drive
Beaver, WV 25813
TEL: 304.255.2500
FAX: 304.255.2572
Website: www.reiclabs.com

Improving the environment, one client at a time...

Report Narrative

Project Manager:: Scott Gross

WO#: 0812102
Date: 1/22/2009

CLIENT: SCHNABEL ENGINEERING SOUTH LL
Project: 08330106

All analyses were performed using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. REI Consultants, Inc. (REIC) technical managers have verified compliance of reported results with the REIC's Quality Program and SOPs, except as noted in this case narrative. Any deviation from compliance is explained below and/or identified within the body of this report by a qualifier footnote which is defined at the bottom of each page.

All samples were analyzed using the methods stated in the analytical report without modification, unless otherwise noted.

All sample results are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (HAA5), may vary slightly from the sum of the individual parameter results. This apparent anomaly is caused by rounding individual results and summations at reporting, as required by EPA.

Following standard laboratory protocol, sample preservation, such as pH, is verified at time of extraction or analysis based on client requested parameters. Improper preservation is noted on the analytical bench sheet, extraction log, or preservation log and client is notified by close of following business day. All results are reported using preservation compliant samples unless otherwise noted in the analytical report.

The test results in this report meet all NELAP requirements for parameters for which accreditations are required or available. Any exceptions are noted in this report. This report may not be reproduced, except in full, without the written approval of REIC.

In compliance with federal guidelines and standard operating procedures, all reports, including raw data and supporting quality control, will be disposed of after five years unless otherwise arranged by the client via written notification or contract requirement.

If you have any questions please contact the project manager whose name is listed above.

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT:	SCHNABEL ENGINEERING SOUTH LLC	WorkOrder:	0812I02	Lab ID	0812I02-01A
Client Sample ID:	FIELD BLANK	DateReceived	12/23/2008		
Project:	08330106	Collection Date:	12/22/2008 5:30:00 PM		
Site ID:	BATTLEFIELD GOLF CLUB	Matrix:	DRINKING WATER		

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
METALS BY ICP			E200.7			Analyst: BP	
Aluminum	ND	mg/L		0.100	0.200	12/24/08 12:16 PM	12/31/08 12:38 AM
Boron	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/31/08 12:38 AM
Iron	ND	mg/L		0.100	0.300	12/24/08 12:16 PM	12/31/08 12:38 AM
Magnesium	ND	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:38 AM
Manganese	ND	mg/L		0.050	0.050	12/24/08 12:16 PM	12/31/08 12:38 AM
Silica (as SiO2)	ND	mg/L		0.210	NA	12/24/08 12:16 PM	12/29/08 2:57 PM
Sodium	ND	mg/L		0.500	NA	12/24/08 12:16 PM	12/31/08 12:38 AM
METALS BY ICP-MS			E200.8			Analyst: BM	
Antimony	ND	mg/L		0.0010	0.0060	12/24/08 12:16 PM	12/29/08 4:24 PM
Arsenic	ND	mg/L		0.0050	0.0100	12/24/08 12:16 PM	12/29/08 4:24 PM
Barium	ND	mg/L		0.100	2.00	12/24/08 12:16 PM	12/29/08 4:24 PM
Beryllium	ND	mg/L		0.0020	0.0040	12/24/08 12:16 PM	12/29/08 4:24 PM
Cadmium	ND	mg/L		0.0010	0.0050	12/24/08 12:16 PM	12/29/08 4:24 PM
Chromium	ND	mg/L		0.0050	0.100	12/24/08 12:16 PM	12/29/08 4:24 PM
Cobalt	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:24 PM
Copper	ND	mg/L		0.0500	1.30	12/24/08 12:16 PM	12/29/08 4:24 PM
Lead	ND	mg/L		0.0050	0.0150	12/24/08 12:16 PM	12/29/08 4:24 PM
Molybdenum	ND	mg/L		0.100	NA	12/24/08 12:16 PM	12/29/08 4:24 PM
Nickel	ND	mg/L		0.0100	0.100	12/24/08 12:16 PM	12/29/08 4:24 PM
Selenium	ND	mg/L		0.0050	0.0500	12/24/08 12:16 PM	12/29/08 4:24 PM
Silver	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:24 PM
Thallium	ND	mg/L		0.0010	0.0020	12/24/08 12:16 PM	12/29/08 4:24 PM
Vanadium	ND	mg/L		0.0500	NA	12/24/08 12:16 PM	12/29/08 4:24 PM
Zinc	ND	mg/L		0.0100	5.00	12/24/08 12:16 PM	12/29/08 4:24 PM
HARDNESS, CALCIUM			SM2340 B			Analyst: BP	
Hardness, Calcium (As CaCO3)	ND	mg/L		1.00	NA		12/31/08 12:38 AM
HARDNESS			SM2340 B			Analyst: BP	
Hardness, Total (As CaCO3)	1.47	mg/L		1.00	NA	12/24/08 12:16 PM	12/31/08 12:38 AM
MERCURY, TOTAL			E245.1			Analyst: CGW	
Mercury	ND	mg/L		0.0010	0.0020	12/24/08 12:08 PM	12/30/08 10:52 AM
PCB			E505			Analyst: Sub	
Aroclor 1016	See Attached			NA	NA		
Aroclor 1221	See Attached			NA	NA		
Aroclor 1232	See Attached			NA	NA		
Aroclor 1242	See Attached			NA	NA		
Aroclor 1248	See Attached			NA	NA		

Key:	MCL	Maximum Contaminant Level	Qualifiers:	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit		E	Estimated Value above quantitation range
	NA	Not Applicable		H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL		S	Spike/Surrogate Recovery outside accepted recovery limit
	PQL	Practical Quantitation Limit		*	Value exceeds Maximum Contaminant Level
	TIC	Tentatively Identified Compound, Estimated Concentration			

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT: SCHNABEL ENGINEERING SOUTH LLC
Client Sample ID: FIELD BLANK
Project: 08330106
Site ID: BATTLEFIELD GOLF CLUB

WorkOrder: 0812I02 **Lab ID** 0812I02-01A
DateReceived 12/23/2008
Collection Date: 12/22/2008 5:30:00 PM
Matrix: DRINKING WATER

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
PCB			E505				Analyst: Sub
Aroclor 1254	See Attached			NA	NA		
Aroclor 1260	See Attached			NA	NA		
Chlordane	See Attached			NA	NA		
Toxaphene	See Attached			NA	NA		
SEMIVOLATILE ORGANIC COMPOUNDS			E525.2				Analyst: Sub
Alachlor	See Attached			NA	NA		
Atrazine	See Attached			NA	NA		
Benzo(a)pyrene	See Attached			NA	NA		
Di(2-ethylhexyl)adipate	See Attached			NA	NA		
Di(2-ethylhexyl)phthalate	See Attached			NA	NA		
Endrin	See Attached			NA	NA		
gamma-BHC	See Attached			NA	NA		
Heptachlor	See Attached			NA	NA		
Heptachlor epoxide	See Attached			NA	NA		
Hexachlorobenzene	See Attached			NA	NA		
Hexachlorocyclopentadiene	See Attached			NA	NA		
Methoxychlor	See Attached			NA	NA		
Simazine	See Attached			NA	NA		
CARBAMATES 531.1			E531.1				Analyst: Sub
Aldicarb	See Attached			NA	NA		
Aldicarb sulfone	See Attached			NA	NA		
Aldicarb sulfoxide	See Attached			NA	NA		
Carbofuran	See Attached			NA	NA		
Oxamyl	See Attached			NA	NA		
GLYPHOSATE 547			E547				Analyst: Sub
Glyphosate	See Attached			NA	NA		
ENDOTHALL 548.1			E548.1				Analyst: Sub
Endothall	See Attached			NA	NA		
DIQUAT 549.2			E549.2				Analyst: Sub
Diquat	See Attached			NA	NA		
DIOXIN			SW8280				Analyst: Sub
2,3,7,8-TCDD	See Attached			NA	NA		
SEMIVOLATILE ORGANIC COMPOUNDS BY EPA			E504.1				Analyst: JG
1,2-Dibromo-3-chloropropane		ND mg/L		0.000020	0.000200	01/02/09 1:30 PM	01/02/09 6:21 PM

Key: MCL Maximum Contaminant Level
 MDL Minimum Detection Limit
 NA Not Applicable
 ND Not Detected at the PQL or MDL
 PQL Practical Quantitation Limit
 TIC Tentatively Identified Compound, Estimated Concentration

Qualifiers: B Analyte detected in the associated Method Blank
 E Estimated Value above quantitation range
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate Recovery outside accepted recovery limit
 * Value exceeds Maximum Contaminant Level

CLIENT:	SCHNABEL ENGINEERING SOUTH LLC	WorkOrder:	0812102	Lab ID	0812102-01A
Client Sample ID:	FIELD BLANK	DateReceived	12/23/2008		
Project:	08330106	Collection Date:	12/22/2008 5:30:00 PM		
Site ID:	BATTLEFIELD GOLF CLUB	Matrix:	DRINKING WATER		

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY EPA			E504.1			Analyst: JG	
1,2-Dibromoethane	ND	mg/L		0.000020	0.000050	01/02/09 1:30 PM	01/02/09 6:21 PM
SEMIVOLATILE ORGANIC COMPOUNDS			E515.1			Analyst: JG	
2,4,5-TP (Silvex)	ND	mg/L		0.000603	0.0500	12/23/08 2:00 PM	12/30/08 12:00 AM
2,4-D	ND	mg/L		0.000121	0.0700	12/23/08 2:00 PM	12/30/08 12:00 AM
Dalapon	ND	mg/L		0.00783	0.200	12/23/08 2:00 PM	12/30/08 12:00 AM
Dinoseb	ND	mg/L		0.000121	0.00700	12/23/08 2:00 PM	12/30/08 12:00 AM
Pentachlorophenol	ND	mg/L		0.000603	0.00100	12/23/08 2:00 PM	12/30/08 12:00 AM
Picloram	ND	mg/L		0.000603	0.500	12/23/08 2:00 PM	12/30/08 12:00 AM
VOLATILE ORGANIC COMPOUNDS			E524.2			Analyst: SDG	
Benzene	ND	µg/L		1.0	5.0		12/30/08 2:09 PM
Carbon tetrachloride	ND	µg/L		1.0	5.0		12/30/08 2:09 PM
1,2-Dichlorobenzene	ND	µg/L		1.0	600		12/30/08 2:09 PM
1,4-Dichlorobenzene	ND	µg/L		1.0	75.0		12/30/08 2:09 PM
1,2-Dichloroethane	ND	µg/L		1.0	5.0		12/30/08 2:09 PM
1,1-Dichloroethene	ND	µg/L		1.0	7.0		12/30/08 2:09 PM
cis-1,2-Dichloroethene	ND	µg/L		1.0	70.0		12/30/08 2:09 PM
trans-1,2-Dichloroethene	ND	µg/L		1.0	100		12/30/08 2:09 PM
1,2-Dichloropropane	ND	µg/L		1.0	5.0		12/30/08 2:09 PM
Ethylbenzene	ND	µg/L		1.0	700		12/30/08 2:09 PM
Methylene chloride	15.0	µg/L	*	1.0	5.0		12/30/08 2:09 PM
Styrene	ND	µg/L		1.0	100		12/30/08 2:09 PM
Tetrachloroethene	ND	µg/L		1.0	5.0		12/30/08 2:09 PM
Surr: 1,2-Dichlorobenzene-d4	85.4	%REC		75-125	NA		12/30/08 2:09 PM
Surr: 4-Bromofluorobenzene	85.8	%REC		75-125	NA		12/30/08 2:09 PM
RESIDUAL CHLORINE - LAB TEST, HOLD TIME E			SM4500-CL-G			Analyst: CC	
Chlorine, Total Residual	ND	µg/L		100	NA		12/24/08 11:30 AM
TURBIDITY			SM2130 B			Analyst: CC	
Turbidity	ND	NTU		0.50	0.50		12/24/08 9:30 AM
COLIFORM BY P/A			SM9223 B			Analyst: CC	
Fecal Coliform	ABSENT	NA		NA	NA	12/23/08 3:49 PM	12/24/08 3:49 PM
Total Coliform	ABSENT	NA		NA	NA	12/23/08 3:49 PM	12/24/08 3:49 PM
CYANIDE			E335.4			Analyst: BA	
Cyanide, Total	ND	mg/L		0.020	NA		12/24/08 9:00 AM

Key:	MCL	Maximum Contaminant Level	Qualifiers:	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit		E	Estimated Value above quantitation range
	NA	Not Applicable		H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL		S	Spike/Surrogate Recovery outside accepted recovery limit
	PQL	Practical Quantitation Limit		*	Value exceeds Maximum Contaminant Level
	TIC	Tentatively Identified Compound, Estimated Concentration			

REI Consultants, Inc.

Analytical Results

Date: 02-Feb-09

CLIENT:	SCHNABEL ENGINEERING SOUTH LLC	WorkOrder:	0812I02	Lab ID	0812I02-01A
Client Sample ID:	FIELD BLANK	DateReceived	12/23/2008		
Project:	08330106	Collection Date:	12/22/2008 5:30:00 PM		
Site ID:	BATTLEFIELD GOLF CLUB	Matrix:	DRINKING WATER		

Analyses	Result	Units	Qual	PQL	MCL	Prep Date	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY			E300.0				Analyst: CW
Chloride	ND	mg/L		1.00	250		12/30/08 11:22 PM
Fluoride	ND	mg/L		0.20	4.00		12/30/08 11:22 PM
Sulfate	ND	mg/L		5.00	250		12/30/08 11:22 PM
ANIONS BY ION CHROMATOGRAPHY			E300.0				Analyst: CW
Nitrogen, Nitrate-Nitrite	0.41	mg/L		0.10	10.0		01/01/09 9:39 AM
TOTAL DISSOLVED SOLIDS			SM2540 C				Analyst: DSA
Total Dissolved Solids	1	mg/L		1	500		12/24/08 10:07 PM
ALKALINITY			SM2320 B				Analyst: DSA
Alkalinity, Total (As CaCO3)	4.1	mg/L		1.0	NA		12/24/08 7:45 AM
CORROSIVITY, LANGELIER INDEX			SM2330 B				Analyst: IL
Langelier Index	-6.51	at 20 °C		NA	NA		01/05/09 12:00 AM
PH - LAB TEST, HOLD TIME EXPIRED			SM4500-H+-B				Analyst: DSA
pH	6.08	SU		NA	NA		12/24/08 7:45 AM
ORGANIC CARBON, TOTAL			SM5310 C				Analyst: DSA
Total Organic Carbon	ND	mg/L		1.00	NA		12/24/08 8:59 PM

Key:	MCL	Maximum Contaminant Level	Qualifiers:	B	Analyte detected in the associated Method Blank
	MDL	Minimum Detection Limit		E	Estimated Value above quantitation range
	NA	Not Applicable		H	Holding times for preparation or analysis exceeded
	ND	Not Detected at the PQL or MDL		S	Spike/Surrogate Recovery outside accepted recovery limit
	PQL	Practical Quantitation Limit		*	Value exceeds Maximum Contaminant Level
	TIC	Tentatively Identified Compound, Estimated Concentration			

Report Prepared for:

Scott Gross
REI Consultants, Inc.
225 Industrial Park Dr.
Beaver WV 25813

**REPORT OF
LABORATORY
ANALYSIS FOR
2,3,7,8-TCDD**

Report Summary:

Enclosed are analytical results of one drinking water sample analyzed for 2,3,7,8-TCDD content. This sample was analyzed according to Method 1613B by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

The results reported for this sample and the associated quality control samples were all within the criteria described in Method 1613B; with the exception of a blank internal standard recovery below the target range for the method. If you have any questions or concerns regarding these results, please contact Nate Habte, your Pace Project Manager.

Report Prepared Date:

January 12, 2009

Report Information:

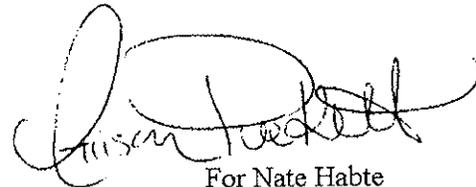
Pace Project #: 1087000
Sample Receipt Date: 12/30/2008
Client Project #: 0812I02
Client Sub PO #: N/A
State Cert #: 9952C

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 Drinking Water Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Nate Habte, your Pace Project Manager.

This report has been reviewed and prepared by:



For Nate Habte

Nate Habte, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
natnael.habte@pacelabs.com



Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

REI Consultants, Inc.
225 Industrial Park Drive
Beaver, WV 25813

TEL: 304.255.2500

FAX: 304.255.2572

FACE - MW
Subcontractor

~~EMSL ANALYTICAL
107 HADLON AV
WESTMONT, NJ 08108~~

TEL: (856) 858-4800
FAX:
Acct #:

CHAIN-OF-CUSTODY RECORD

187000

23-Dec-08

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
0812102-01A	Drinking Water	12/23/2008 2:45:09 PM	PLASTIC, GLA	SW8280

2378-7000

General Comments:

State Code: VA
After analysis, the samples do not need to be returned and can be disposed per your standard laboratory practices.

① Method 1613 per Scott G. @ 12/30/08

Relinquished by:	<i>[Signature]</i>	Date/Time	
Relinquished by:	<i>R. R. Becke</i>	Date/Time	12/30/08 9:48

T=3.0

Sample Condition Upon Receipt

Pace Analytical

Client Name: REI

Project # 10600

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1Z 2bX 71313612 0327

Optional:
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____ Temp Blank: Yes _____ No

Thermometer Used 80344042, 179425 Type of Ice: Wet Blue None Samples on Ice, cooling process has begun

Cooler Temperature 3.0 Biological Tissue is Frozen: Yes No

Date and initials of person examining contents: <u>12/30/08</u>

Temp should be above freezing to 8°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: (Signature)

Date: 12/30/08



Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612-607-6444

Drinking Water Analysis Results
2,3,7,8-TCDD -- USEPA Method 1613B

Sample ID.....0812I02-01A
Client.....REI Consultants, Inc.
Lab Sample ID.....1087000001

Date Collected.....12/23/2008
Date Received.....12/30/2008
Date Extracted.....01/05/2009

	Sample 0812I02-01A	Method Blank	Lab Spike	Lab Spike Dup
[2,3,7,8-TCDD]	ND	ND	--	--
RL	5 pg/L	5 pg/L	--	--
2,3,7,8-TCDD Recovery	--	--	99%	102%
Spike Recovery Limit	--	--	73-146%	73-146%
RPD				2.8%
IS Recovery	60%	30% !	75%	64%
IS Recovery Limits	31-137%	31-137%	25-141%	25-141%
CS Recovery	87%	77%	96%	83%
CS Recovery Limits	42-164%	42-164%	37-158%	37-158%
Filename	R90106A16	R90106A05	R90106A03	R90106A04
Analysis Date	01/06/2009	01/06/2009	01/06/2009	01/06/2009
Analysis Time	15:37	10:24	09:27	09:53
Analyst	SMT	SMT	SMT	SMT
Volume	0.955L	0.900L	0.907L	0.913L
Dilution	NA	NA	NA	NA
ICAL Date	12/31/2008	12/31/2008	12/31/2008	12/31/2008
CCAL Filename	R90106A02	R90106A02	R90106A02	R90106A02

- ! = Outside the Control Limits
- ND = Not Detected
- RL = Reporting Limit
- Limits = Control Limits from Method 1613 (10/94 Revision), Tables 6A and 7A
- RPD = Relative Percent Difference of Lab Spike Recoveries
- IS = Internal Standard [2,3,7,8-TCDD-¹³C₄]
- CS = Cleanup Standard [2,3,7,8-TCDD-³⁷Cl₄]

Analyst: 

Project No.....1087000



the standard in safety

Underwriters
Laboratories

LABORATORY REPORT

This report contains 4 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

*This report may not be reproduced, except in full, without written approval from
Underwriters Laboratories Inc. (UL).*

Underwriters Laboratories Inc.
110 S. Hill Street, South Bend, IN 46817-2702 USA
T: 600.332.4345 / F: 574.233.8207 / W: ul.com



the standard in safety

Underwriters Laboratories

Laboratory Report

Client: REIC
 Attn: Joy Mullins
 225 Airport Industrial Park Road
 P.O. Box 286
 Beaver, WV 25813
 Copies to: None

Report: 218271
 Priority: Standard Written
 Status: Final
 PWS ID: Not Supplied

Sample Information					
UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
1998304	0812102-01A	505	12/23/08 14:45	Client	12/30/08 09:30
1998305	0812102-01A	525.2	12/23/08 14:45	Client	12/30/08 09:30
1998306	0812102-01A	531.1	12/23/08 14:45	Client	12/30/08 09:30
1998307	0812102-01A	547	12/23/08 14:45	Client	12/30/08 09:30
1998308	0812102-01A	548.1	12/23/08 14:45	Client	12/30/08 09:30
1998309	0812102-01A	549.2	12/23/08 14:45	Client	12/30/08 09:30

Report Summary

Note: Sample containers, except for Method 549.2, were provided by the client.
 Note: The samples submitted for Methods 549.2 and 548.1 analysis were analyzed outside the seven day hold time. The client was notified of the situation and analysis was authorized by Scott Gross of REIC.
 Note: In the Method 525.2 analysis, heptachlor epoxide is not reportable in the sample submitted due to matrix interference.

Detailed quantitative results are presented on the following pages.
 We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Traci Chlebowski at (574) 233-4777.
 Note: This report may not be reproduced, except in full, without written approval from Underwriters Laboratories (UL).

Traci Chlebowski

 Authorized Signature

Project Manager

 Title

1-20-09

 Date

Client Name: REIC
 Report #: 218271

Semi-volatile Organic Chemicals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
12674-11-2	Aroclor 1016	505	---	0.08	< 0.08	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
11104-28-2	Aroclor 1221	505	---	0.19	< 0.19	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
11141-16-5	Aroclor 1232	505	---	0.23	< 0.23	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
53469-21-9	Aroclor 1242	505	---	0.26	< 0.26	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
12672-29-6	Aroclor 1248	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
11097-89-1	Aroclor 1254	505	---	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
11096-82-5	Aroclor 1260	505	---	0.2	< 0.2	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	12/31/08 13:50	12/31/08 22:54	1998304
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
309-00-2	Aldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
50-32-8	Benzo[a]pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
23184-66-9	Butachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
60-57-1	Dieldrin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
51218-45-2	Metolachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
21087-64-9	Metribuzin	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
1918-16-7	Propachlor	525.2	---	0.1	< 0.1	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	12/31/08 09:30	12/31/08 21:47	1998305
116-06-3	Aldicarb	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
1646-88-4	Aldicarb sulfone	531.1	---	0.7	< 0.7	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
1646-87-3	Aldicarb sulfoxide	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
63-25-2	Carbaryl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
16655-82-6	3-Hydroxycarbofuran	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
16752-77-5	Methomyl	531.1	---	0.5	< 0.5	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	12/31/08 08:20	12/31/08 19:11	1998306
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	12/31/08 13:00	01/02/09 19:47	1998307
145-73-3	Endothall	548.1	100 *	9.0	< 9.0	ug/L	12/31/08 08:05	01/05/09 19:40	1998308
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	12/31/08 08:20	12/31/08 13:24	1998309

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	

173036

REI Consultants, Inc.
225 Industrial Park Drive
Beaver, WV 25813

TEL: 304.255.2500

FAX: 304.255.2572

CHAIN-OF-CUSTODY RECORD

Subcontractor:

UNDERWRITERS LABORATORIES
110 SOUTH HILL STREET
SOUTH BEND, IN 46617

TEL: (574) 233-4777

FAX:

Acct #:

218271

100839500
100839500
100839500
100839500
100839500
100839500
100839500
100839500
100839500
100839500

23-Dec-08

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests																
				E505	E525.2	E531.1	E547	E548.1	E549.2											
0812102-01A	Drinking Water	12/23/2008 2:45:09 PM	PLASTIC, GLA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

548 + 549
none last day
of HT pm 1230

548 + 549
none last day
of HT pm 1230

2.8°C Wed

General Comments:

State Code: VA
After analysis, the samples do not need to be returned and can be disposed per your standard laboratory practices.

Relinquished by:	Date/Time	Received by:	Date/Time
<i>[Signature]</i>		<i>[Signature]</i>	12/30/08 0930

APPENDIX C

Soil Laboratory Test Data

Summary of Laboratory Tests (1 Sheet)

Gradation Curves (2 Sheets)

Hydraulic Conductivity Determination (2 Sheets)

Summary Of Laboratory Tests

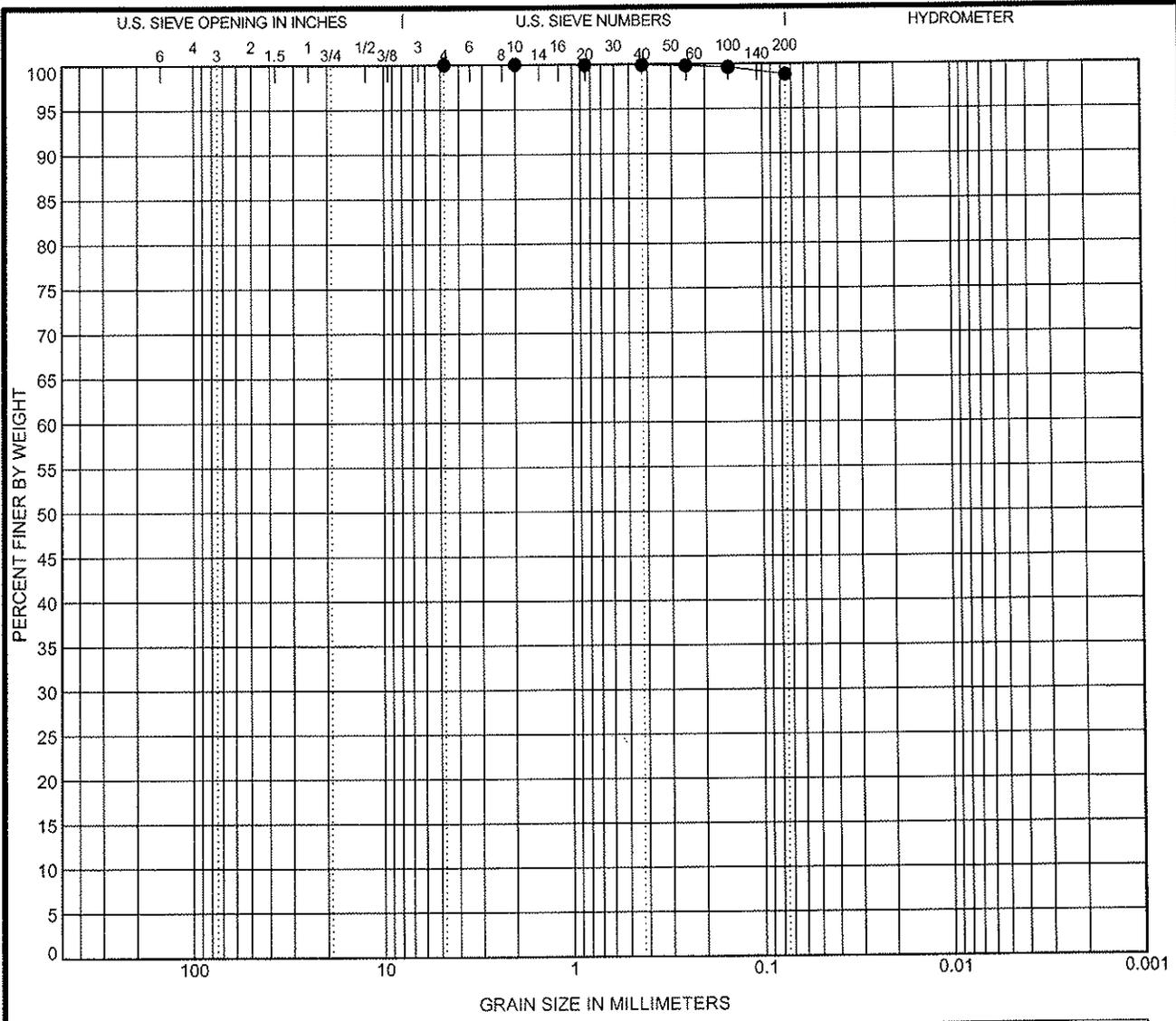
Appendix
Sheet 1 of 1
Project Number: 08330106

Boring No.	Sample Depth ft	Sample Type	Description of Soil Specimen	Wet Natural Density (pcf)	Natural Moisture (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	% Passing No. 40 Sieve	% Retained No. 4 Sieve
	Elevation ft										
MW-1	55.0-57.0	Tube	LEAN CLAY (CL), contains sand - gray	116.1	37.0	38	24	14	98.8	99.9	0.0
MW-1	60.0-62.0	Tube	LEAN CLAY WITH SAND (CL) - gray	115.3	37.6	33	23	10	81.3	98.1	0.2

Notes:
 1. Soil tests in general accordance with ASTM standards.
 2. Soil classifications are in general accordance with ASTM D2487 (as applicable), based on testing indicated and visual classification.
 3. Key to abbreviations: NP=Non-Plastic; -- indicates no test performed



Project: Battlefield Golf Club Water Project
 Bonney Road and Murray Drive
 Chesapeake, VA



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description					LL	PL	PI		
MW-1 55.0 ft	LEAN CLAY (CL), contains sand - gray					38	24	14		
Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
ASTM D422	4.75				0.0	1.2	98.8			

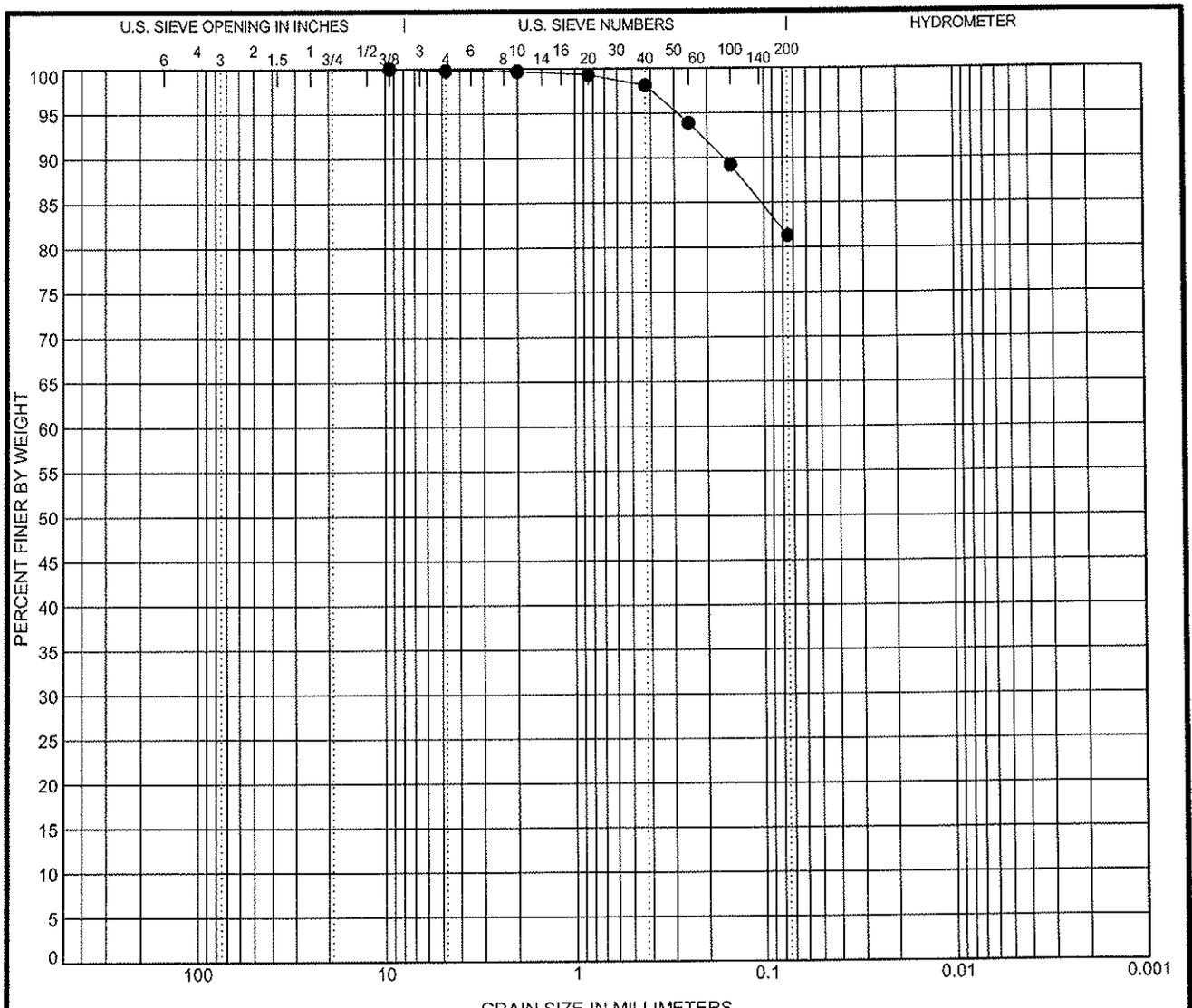
Percent Finer							
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4
% Finer	98.8	99.6	99.8	99.9	99.9	100.0	100.0

Tested By	Tested Date	Reviewed By	Calc By
DWC	12/10/08	CJS	MJF



GRADATION CURVE
 Project: Battlefield Golf Club Water Project
 Bonney Road and Murray Drive
 Chesapeake, VA
 Contract: 08330106

SIEVE 1/SHEET, 08330106.GPJ, SCHNABEL DATA TEMPLATE 2008.04.22.GDT, 2/9/09



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen	Sample Description	LL	PL	PI				
MW-1 60.0 ft	LEAN CLAY WITH SAND (CL) - gray	33	23	10				
Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D422	9.5				0.2	18.5	81.3	

Percent Finer								
Sieve Size	No. 200	No. 100	No. 60	No. 40	No. 20	No. 10	No. 4	3/8 in.
% Finer	81.3	89.2	93.9	98.1	99.3	99.7	99.8	100.0

Tested By	Tested Date	Reviewed By	Calc By
DWC	12/10/08	CJS	MJF



GRADATION CURVE
 Project: Battlefield Golf Club Water Project
 Bonney Road and Murray Drive
 Chesapeake, VA
 Contract: 08330106

SIEVE 1/SHEET 08330106.GPJ SCHNABEL DATA TEMPLATE 2008.04.22.GDT 2/3/09



Hydraulic Conductivity Determination

Using Flexible Wall Permeameter (ASTM D5084)

12/22/2008

Project: Battlefield Golf Club Water Project

Schnabel No.: 08330106

Bonney Road and Murray Drive

Boring No.: MW-1

Location: Chesapeake, VA

Depth: 55-57 ft.

Specimen Data

Specimen Type: Tube Sample

Cell Press., psi: 40.0

Consol. Stress (psi): 20.0

Back Press., psi: 20.0

Soil Description: LEAN CLAY (CL), contains sand - gray

Specific Gravity: 2.68

Remarks: Gs assumed.

	Initial	Final
Height (in.):	1.33	1.32
Diameter (in.):	2.885	2.84
Volume (in ³):	8.67	8.35
Volume (cm ³):	142.1	136.8
Moist Unit Weight (pcf):	114.9	118.4
Moisture Content (%):	37.0	35.9
Dry Unit Weight (pcf):	83.9	87.1
Saturation:	100	100
Void Ratio:	0.99	0.92

Liquid Limit (LL): 38

Plasticity Index (PI): 14

% < No. 200 Sieve: 98.8

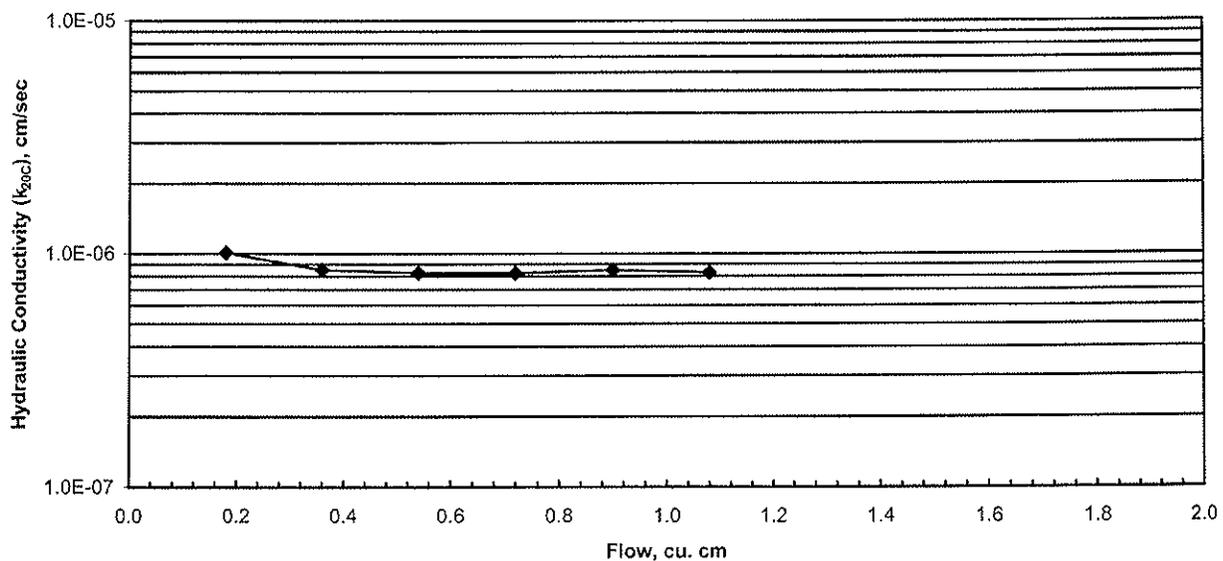
Test Data

Permeant: De-Aired Water

Hydraulic Gradient: 5

Hydraulic Conductivity (k_{20C}), cm/sec: 8.3E-07

Hydraulic Conductivity vs. Flow





Hydraulic Conductivity Determination

Using Flexible Wall Permeameter (ASTM D5084)

12/22/2008

Project: Battlefield Golf Club Water Project
Bonney Road and Murray Drive
 Location: Chesapeake, VA

Schnabel No.: 08330106
 Boring No.: MW-1
 Depth: 60-62 ft.

Specimen Data

Specimen Type: Tube Sample
 Consol. Stress (psi): 25.0
 Soil Description: LEAN CLAY WITH SAND (CL) - gray

Cell Press., psi: 45.0
 Back Press., psi: 20.0
 Specific Gravity: 2.68

Remarks: Gs assumed.

	Initial	Final
Height (in.):	1.34	1.31
Diameter (in.):	2.886	2.78
Volume (in ³):	8.75	7.97
Volume (cm ³):	143.3	130.6
Moist Unit Weight (pcf):	117.0	127.9
Moisture Content (%):	29.5	28.9
Dry Unit Weight (pcf):	90.4	99.2
Saturation:	93	100
Void Ratio:	0.85	0.69

Liquid Limit (LL): 33
 Plasticity Index (PI): 10
 % < No. 200 Sieve: 81.3

Test Data

Permeant: De-Aired Water
 Hydraulic Gradient: 5
 Hydraulic Conductivity (k_{20C}), cm/sec: 1.7E-06

Hydraulic Conductivity vs. Flow

