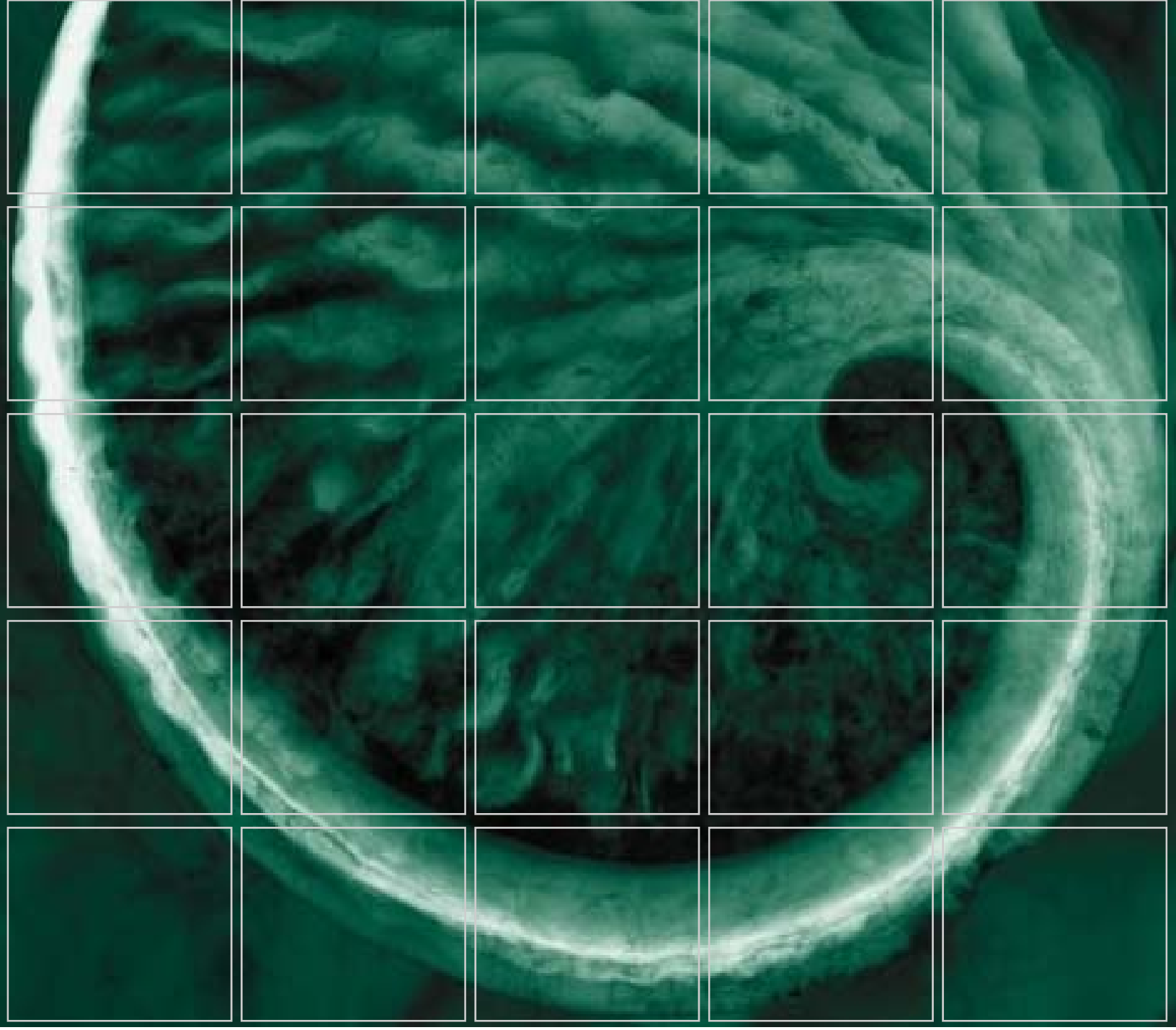

R.J. Reynolds Tobacco Company

Groundwater and Surface Water Monitoring Semi-Annual Summary Report – June 2013

Ash Landfill Permit # 34-05
Edwards Road,
Rural Hall, Forsyth County,
North Carolina

Delivering sustainable solutions in a more competitive world

ERM

ERM NC, Inc.

8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226
(704) 541-8345
(704) 541-8416 (fax)

June 7, 2013

North Carolina Department of Environment and Natural Resources
Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699-1646
Attention: Ms. Jaclynne Drummond

Via Overnight Courier

Subject: Ground Water and Surface Water Monitoring
Semi-Annual Summary Report – April 2012
R.J. Reynolds Ash Landfill – Permit #34-05
Edwards Road
Rural Hall, Forsyth County, North Carolina

Dear Ms. Drummond:

On behalf of R.J. Reynolds Tobacco Company, ERM NC, Inc. (ERM) is submitting the summary report for the April 2013 ground water and surface water monitoring event associated with the subject property. A CD with the electronic laboratory data files is enclosed at the back of the summary report. Please contact Ms. Yong Yi of R.J. Reynolds Tobacco Company at 336-741-1491 or myself if you have any questions or comments.

Sincerely,

Alan Martin, P.G.
Project Manager

Attachments:
Environmental Monitoring Reporting Form
Ground Water and Surface Water Monitoring Semi-Annual Summary Report (including CD)

cc: Ms. Yong Yi - R.J. Reynolds Tobacco Company

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

ERM NC, Inc. (consultant)

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Alan Martin Phone: 704-541-8345

E-mail: alan.martin@erm.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
R.J. Reynolds Industrial Landfill	Edwards Road (S.R. 1903) Rural Hall, Forsyth County	34-05	0.0503	April 17-19, 2013

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☐ Detection Monitoring ☒ Assessment Monitoring ☐ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Alan Martin, P.G. Project Manager 704-541-8345

Facility Representative Name (Print) Title (Area Code) Telephone Number

June 7, 2013 Affix NC Licensed/ Professional Geologist Seal

Signature Date

NORTH CAROLINA LICENSED SEAL 1846 GEOLOGIST ALAN D. MARTIN

ERM NC, Inc. - 8000 Corporate Center Drive, #200, Charlotte, NC 28226

Facility Representative Address

NC Professional Geologic Corporation # C-470

NC PE Firm License Number (if applicable effective May 1, 2009)

R.J. Reynolds Tobacco Company

Groundwater and Surface Water Monitoring Semi-Annual Summary Report – April 2013

Ash Landfill Permit # 34-05
Edwards Road,
Rural Hall, Forsyth County,
North Carolina

June 7, 2013

Project No. 0176359

Alan Martin, P.G.
Project Manager

Thomas M. Wilson, P.G.
Principal-in-Charge

ERM NC, Inc.
8000 Corporate Center Drive
Suite 200
Charlotte, North Carolina 28226
(704) 541-8345
(702) 541-8416 (fax)

ERM

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1.0 INTRODUCTION

In accordance with the April 27, 2004 *Amended Monitoring Plan for Closure,* the December 23, 2003 *Closure Verification and Monitoring/Maintenance Plans* (hereafter collectively referred to as "Post-Closure Monitoring Plan") and the *Industrial Solid Waste Landfill Facility Permit No. 34-05-indus-1986* as amended through August 12, 2011, this report presents the results of the April 2013 ground water and surface water sampling event conducted at the closed Edwards Road Landfill previously operated by R.J. Reynolds Tobacco Company. The closed landfill is located northeast of the jurisdictional boundaries of Rural Hall, Forsyth County, North Carolina and the location of the Site along with topographic map coverage of the vicinity are shown on Figure 1.

The current monitoring data, as well as previously submitted monitoring data, reveals the detection of certain inorganic compounds in excess of the North Carolina Groundwater Standards (15A NCAC 2L) and Surface Water Standards (15A NCAC 2B).

Installation of a synthetic cap and construction of drainage improvements over the limits of waste in accordance with plans previously approved by the North Carolina Division of Waste Management (DWM) were completed in September 2012. The April 2013 ground water and surface water sampling event represents the second monitoring event conducted at the site since the completion of the synthetic cap installation and the drainage improvements.

2.0 HISTORICAL GROUNDWATER AND SURFACE WATER QUALITY

Groundwater and surface water quality monitoring has been conducted in the vicinity of the Edwards Road Landfill since 1989 in accordance with the conditions of Permit Number 34-05 and subsequent to the closure of the landfill, in accordance with the approved Post Closure Monitoring Plan. Figure 2 depicts the locations of the groundwater monitor wells and surface water sampling locations and Table 1 presents a summary of available well construction details. Historical laboratory analytical results for available groundwater and surface water samples are summarized in Appendix A.

3.0 SUMMARY OF MONITORING PROGRAM

Routine ground water and surface water monitoring activities were conducted on April 17-19 and are summarized in the following table:

Sample Location I.D.	Metals [1] (EPA 6020 B)	Nitrate, Sulfate (EPA 353.2 / 300.0)	Total Dissolved Solids (SM 2540C)	Total Organic Carbon (SM 5310C)	Field Parameters [2]
Ground Water:					
W-1	✓	✓	✓	✓	✓
W-2	✓	✓	✓	✓	✓
W-3	✓	✓	✓	✓	✓
W-3B	✓	✓	✓	✓	✓
W-5	--	--	--	--	--
W-6	✓	✓	✓	✓	✓
W-7	✓	✓	✓	✓	✓
W-8	✓	✓	✓	✓	✓
W-9	✓	✓	✓	✓	✓
PW-1	✓	✓	✓	✓	✓
PZ-1	✓	✓	✓	✓	--
PZ-2	✓	✓	✓	✓	--
PZ-3	✓	✓	✓	✓	--
PZ-4	✓	✓	✓	✓	--
PZ-5	Dry, no sample collected		--	--	--
Subtotal	*13*	*13*	*13*	*13*	*9*
Surface Water:					
SS-01	✓	✓	✓	✓	✓
SS-02	✓	✓	✓	✓	✓
SS-10	--	--	--	--	--
SS-15	--	--	--	--	✓
SS-20	✓	✓	✓	✓	✓
SS-25	✓	✓	✓	✓	✓
SS-30	✓	✓	✓	✓	✓
SS-40	✓	✓	✓	✓	✓
SS-50	Dry, no sample collected		--	--	--
SS-60	✓	✓	✓	✓	✓
SS-70	✓	✓	✓	✓	✓
SS-80	✓	✓	✓	✓	✓
SS-90	✓	✓	✓	✓	✓
Subtotal	*10*	*10*	*10*	*10*	*10*
TOTAL	**23**	**23**	**23**	**23**	**19**

1 *Aluminum, arsenic, barium, cadmium, chromium (total), copper, iron, lead, manganese, mercury, selenium, silver and zinc.*
2 *Field parameters include temperature, pH, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential (Eh).*

Depth-to-water measurements for available monitor wells from the April 2013 sampling event are presented in Table 2. Groundwater flow directions are presented on Figure 3. Groundwater and surface water analytical data from the April 2013 sampling event are presented in Table 3. Historical analytical data for both ground water and surface water are presented in Appendix A. Laboratory data sheets for the April 2013 sampling event are presented in Appendix B. Groundwater and surface water sample analytical results from the April 2013 sampling event are presented on Figures 4 and 5, respectively. Figure 6 depicts the isoconcentration contours of sulfates in ground water at the site and Figure 7 presents a hydrogeologic conceptual site model and cross-section. Sulfate concentrations in groundwater and surface water over time are presented graphically on Figures 8 and 9, respectively.

4.0 DESCRIPTION OF WATER QUALITY CONDITIONS

Shallow groundwater beneath the Site migrates either along the top of bedrock or along the permeable zones within the shallow fractured bedrock zone and discharges into nearby creeks. The regional groundwater flow regime within the lower portion of the deep bedrock aquifer is north-eastward toward the nearest regional drainage feature, Town Fork Creek. The depth to groundwater in the top-of-rock aquifer zone ranges from approximately 0 feet at the creeks to 14 feet in shallow monitor wells. The depth to water in the bedrock aquifer ranges from artesian conditions to approximately 108.6 feet below ground surface in the measured wells. The depth to water decreased by 2.13 feet in monitoring well W-3 when compared to the March 2012 groundwater measurements.

4.1 GROUNDWATER

During the April 2013 ground water sampling event nine monitor wells and four temporary piezometers were sampled utilizing a low flow, low volume sample collection technique. Presently, groundwater within the Site contains concentrations of sulfates, total dissolved solids plus four metals above the applicable North Carolina groundwater standards (NC 2L standard). Sulfate, the primary constituent related to the landfill, was detected in three groundwater samples in excess of the NC 2L standard. Manganese was detected in seven of the 13 ground water samples in excess of the applicable NC 2L standard. Iron was also detected in seven of the 13 groundwater samples in excess of the NC 2L standards. Selenium was detected in the groundwater sample from W-3 in excess of the NC 2L standard. Chromium was detected in the groundwater samples from the background well W-6 and W-8 in excess of the NC 2L standard. Elevated concentrations of total dissolved solids, manganese and iron were detected in the bedrock aquifer at monitoring well W-3B. Elevated concentrations of manganese and iron were also detected in the bedrock aquifer monitoring well W-7.

As noted in Section 1.0, installation of the synthetic cap and construction of drainage improvements over the limits of waste were completed in September 2012. The April 2013 samples were collected approximately seven months after the cap installation. Compared to the March 2012 results, sulfate concentrations from the April 2013 samples from the shallow monitor wells W-1, W-2 and W-3 located near the limits of waste increased slightly. The recent iron and total dissolved solids concentrations in each of these wells decreased compared to the March 2012 results. Manganese concentrations decreased in W-2 and increased in wells W-1 and W-3.

Overall, the April 2013 groundwater quality results indicate that groundwater quality improvements are not yet evident. This is consistent with the findings of 2012 groundwater modeling developed to evaluate the simulated changes to groundwater and surface water quality over time with an improved landfill cap. The modeling indicated that concentrations in groundwater would attenuate gradually over a period of years due to the relatively low ground water flow rates at the site. Based on the modeling and the post-capping groundwater monitoring results, additional time will

be required before improvements to shallow groundwater quality occur as a result the improved landfill cap.

4.2 SURFACE WATER

During the April 2013 sampling event, 10 surface water samples were collected. Concentrations of sulfates, total dissolved solids and manganese in all samples were below the applicable North Carolina surface water standards (NC 2B standards). Sulfate concentrations in eight of the 10 samples decreased compared to the September 2012 surface water sample results. Iron concentrations in the upstream SS-20 and SS-25 samples exceed the applicable NC 2B standard. Historically, the laboratory results display a generally stable to declining trend and the analytical results remain in the normal range of fluctuation. Laboratory results from the surface water samples collected indicate concentrations of aluminum in exceedance of the applicable North Carolina surface water standard (NC 2B standard) at ten sample points, including the upstream (background) sample point SS-20.

Overall, the April 2013 surface water quality results indicate surface water quality improvements at the site. This is consistent with the findings of 2012 groundwater modeling which indicated reductions in sulfate concentrations in surface waters would occur within the first year after the completion of the synthetic cap installation and the drainage improvements at the landfill.

5.0 PRELIMINARY ANALYSIS

The April 2013 monitoring results demonstrate:

- Sulfate, total dissolved solids and four metals in groundwater samples exceed the NC 2L standards. Concentrations of all detected analytes in groundwater were within the normal range of historical fluctuations.

- Sulfate, manganese, iron and total dissolved solids concentrations in groundwater samples from the Site have generally remained stable or have trended downward compared to historical results. Based on the monitoring data, the site conceptual model and contaminant fate-and-transport modeling, affected groundwater from the Site is migrating toward and is intercepted by Leak Creek and the unnamed northwest tributary.

- No elevated concentrations of sulfates have been detected in off-site groundwater samples. Sulfate levels observed in the off-site monitoring well W-9 to the southeast and sidegradient of the landfill are comparable to background levels observed in the upgradient monitoring well W-6.

- Concentrations of sulfates, total dissolved solids and manganese in all samples detected in surface water samples did not exceed the applicable NC 2B standards. Iron concentrations exceed the NC 2B standard in two upstream surface water

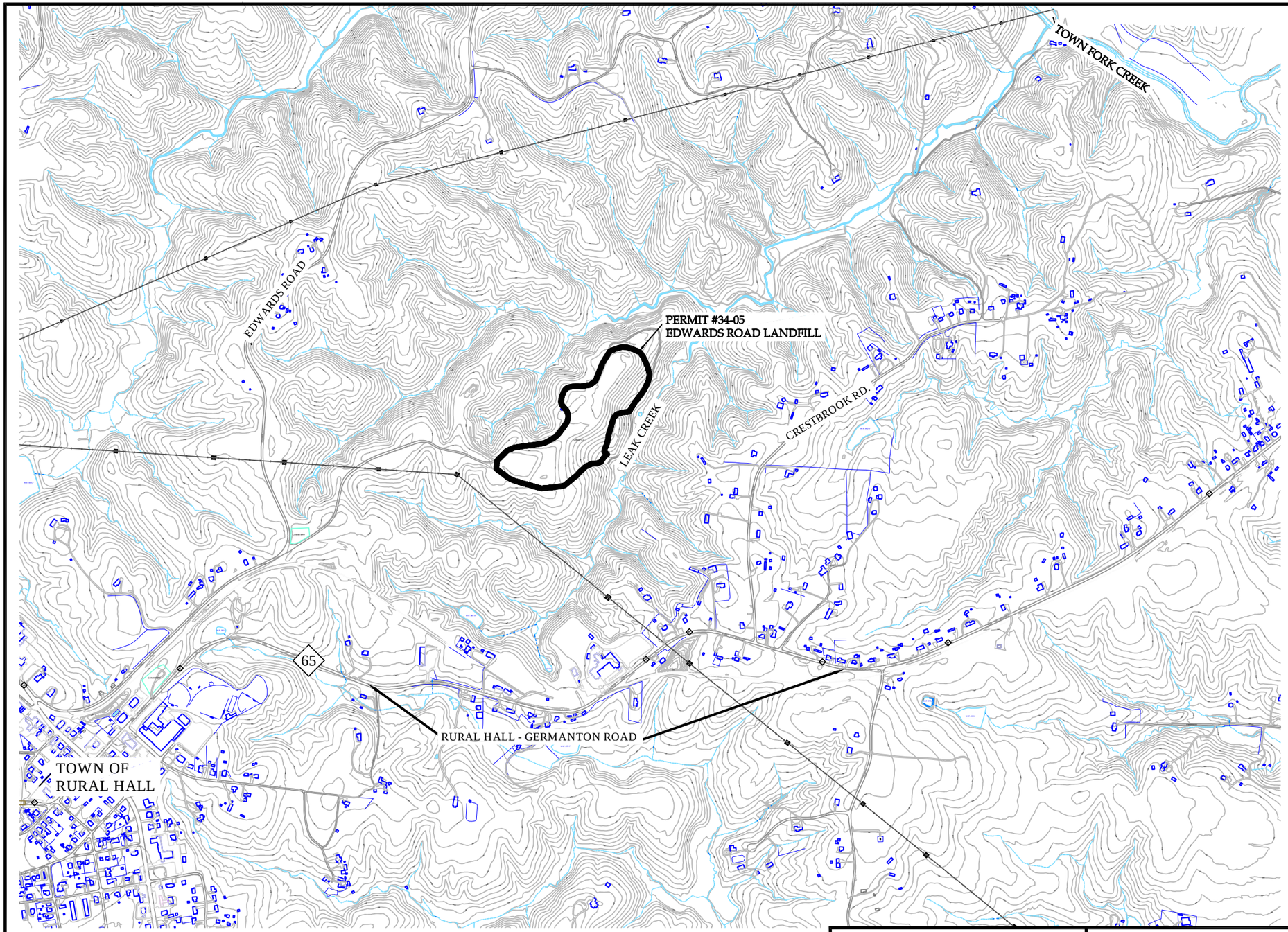
samples. Concentrations of aluminum detected in surface water samples exceeded the NC 2B standards at each of the ten locations, including the upstream, background locations. The presence of aluminum and iron in the surface water samples is attributed to their natural occurrence in Piedmont soils and groundwater. Concentrations of other detected analytes in surface water were within the normal range of historical fluctuations.

- Installation of the synthetic cap and construction of drainage improvements over the limits of waste were completed in September 2012. The April 2013 samples were collected approximately seven months after the cap installation. The April 2013 groundwater monitoring results indicate that, due to the relatively low ground water flow rates at the site, groundwater quality improvements are not yet evident and additional time will be required before improvements to shallow groundwater quality occur as a result the improved landfill cap. However, the April 2013 surface water quality results indicate surface water quality improvements at the site due to the cap installation and the drainage improvements at the landfill

The schedule for routine monitoring activities is summarized below.

Activity	Target Completion Date
Conduct Semi-Annual Water Quality Monitoring Event	September 2013
Submit Water Quality Monitoring Summary Report to NCDENR	December 2013
Conduct Semi-Annual Water Quality Monitoring Event	April 2014
Submit Water Quality Monitoring Summary Report to NCDENR	June 2014

FIGURES



NOTES:

TOPOGRAPHIC INFORMATION SHOWN IS A COMPILATION OF NC FLOODPLAIN MAPPING PROGRAM 2008 AND FORSYTH COUNTY INFORMATION 2005.

CONTOUR INTERVAL IS 10-FT.

LIMITS OF LANDFILL ARE APPROXIMATE BASED ON AVAILABLE HISTORIC DATA.

PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.

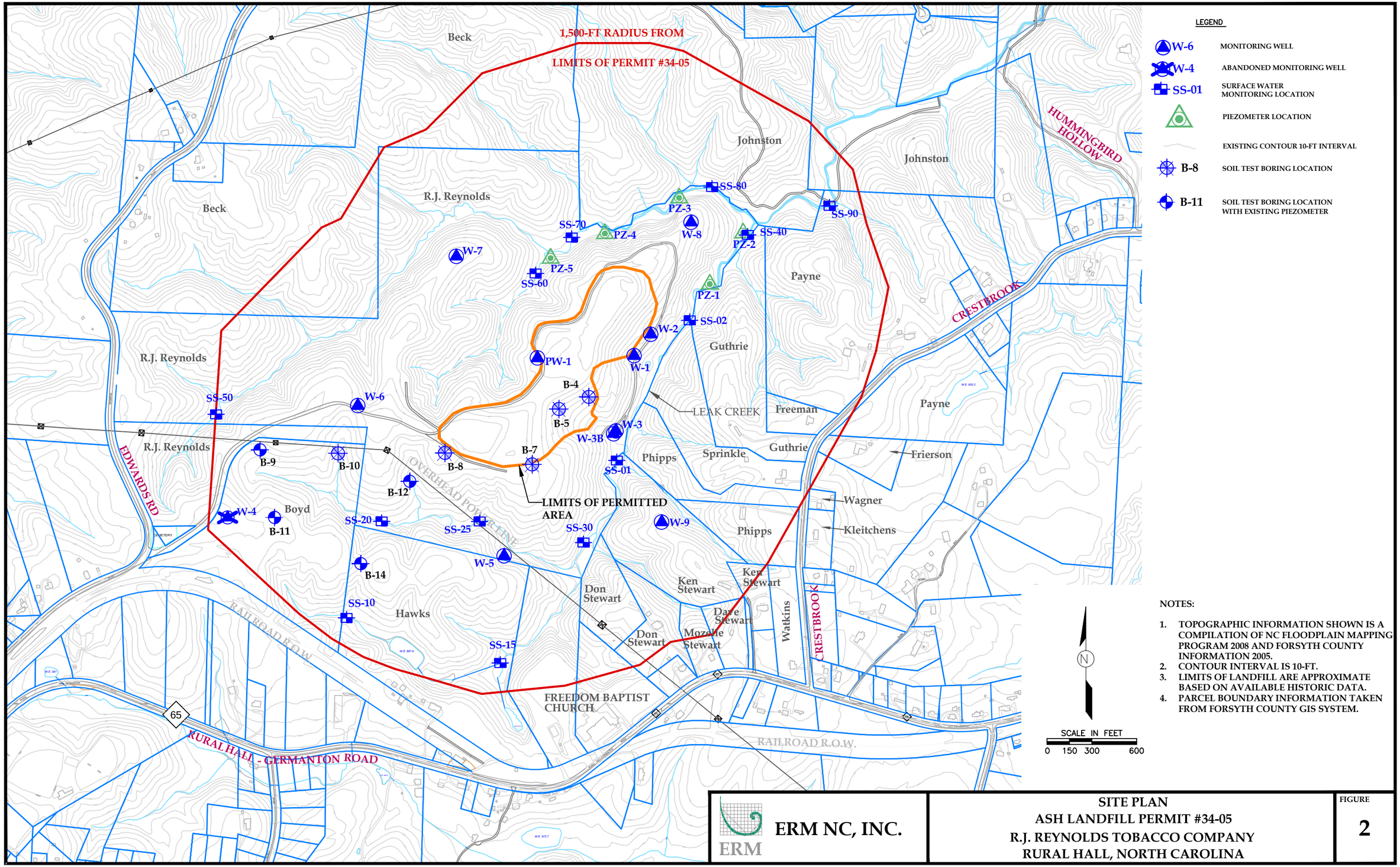
N

SCALE IN FEET
0 250 500 1000

ERM NC, PC
ERM

SITE LOCATION PLAN
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE
1



LEGEND

W-6	MONITORING WELL
W-4	ABANDONED MONITORING WELL
SS-01	SURFACE WATER MONITORING LOCATION
	PIEZOMETER LOCATION
	EXISTING CONTOUR 10-FT INTERVAL
B-8	SOIL TEST BORING LOCATION
B-11	SOIL TEST BORING LOCATION WITH EXISTING PIEZOMETER

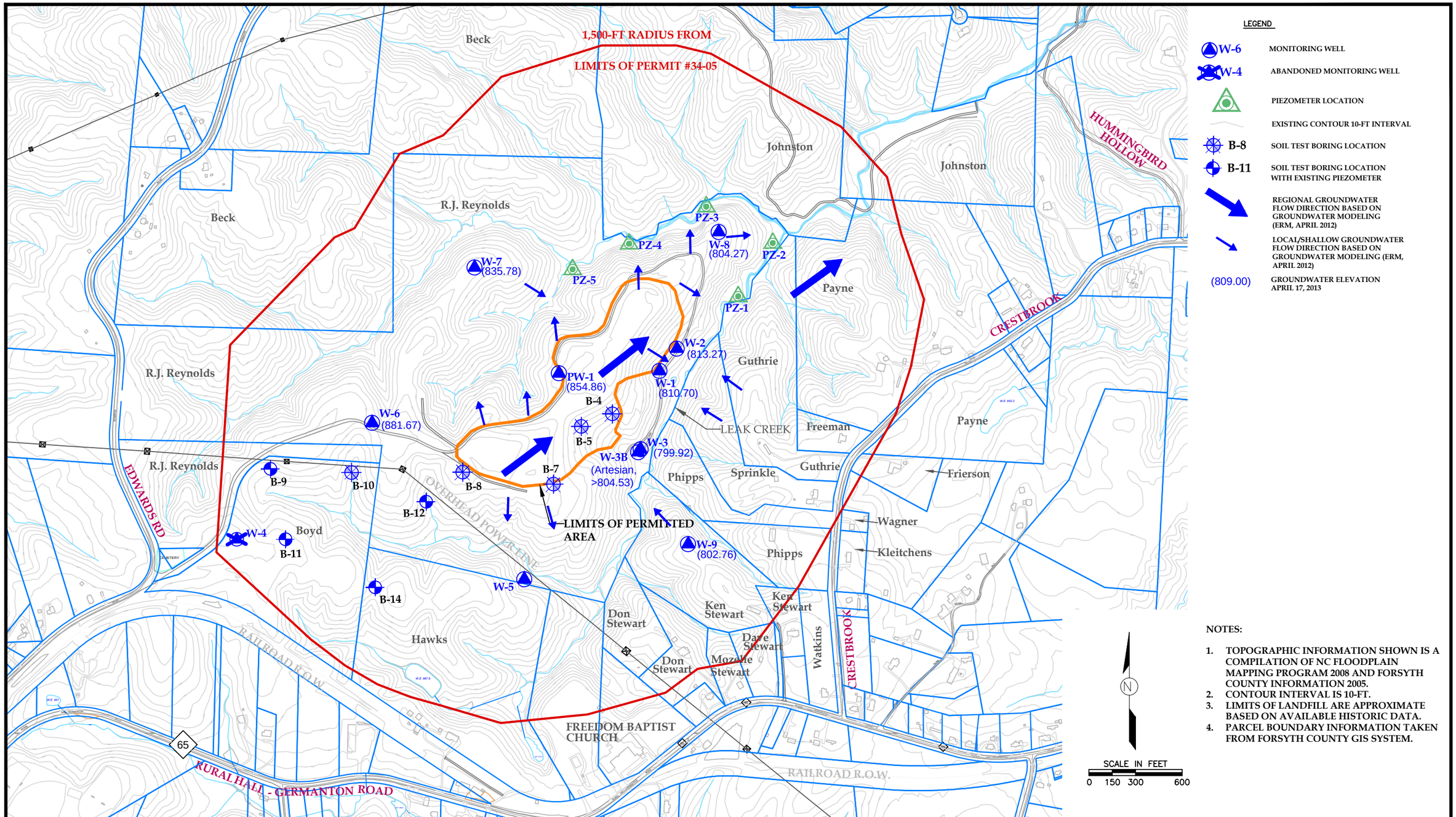
NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN IS A COMPILATION OF NC FLOODPLAIN MAPPING PROGRAM 2008 AND FORSYTH COUNTY INFORMATION 2005.
2. CONTOUR INTERVAL IS 10-FT.
3. LIMITS OF LANDFILL ARE APPROXIMATE BASED ON AVAILABLE HISTORIC DATA.
4. PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.

ERM NC, INC.

SITE PLAN
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE
2



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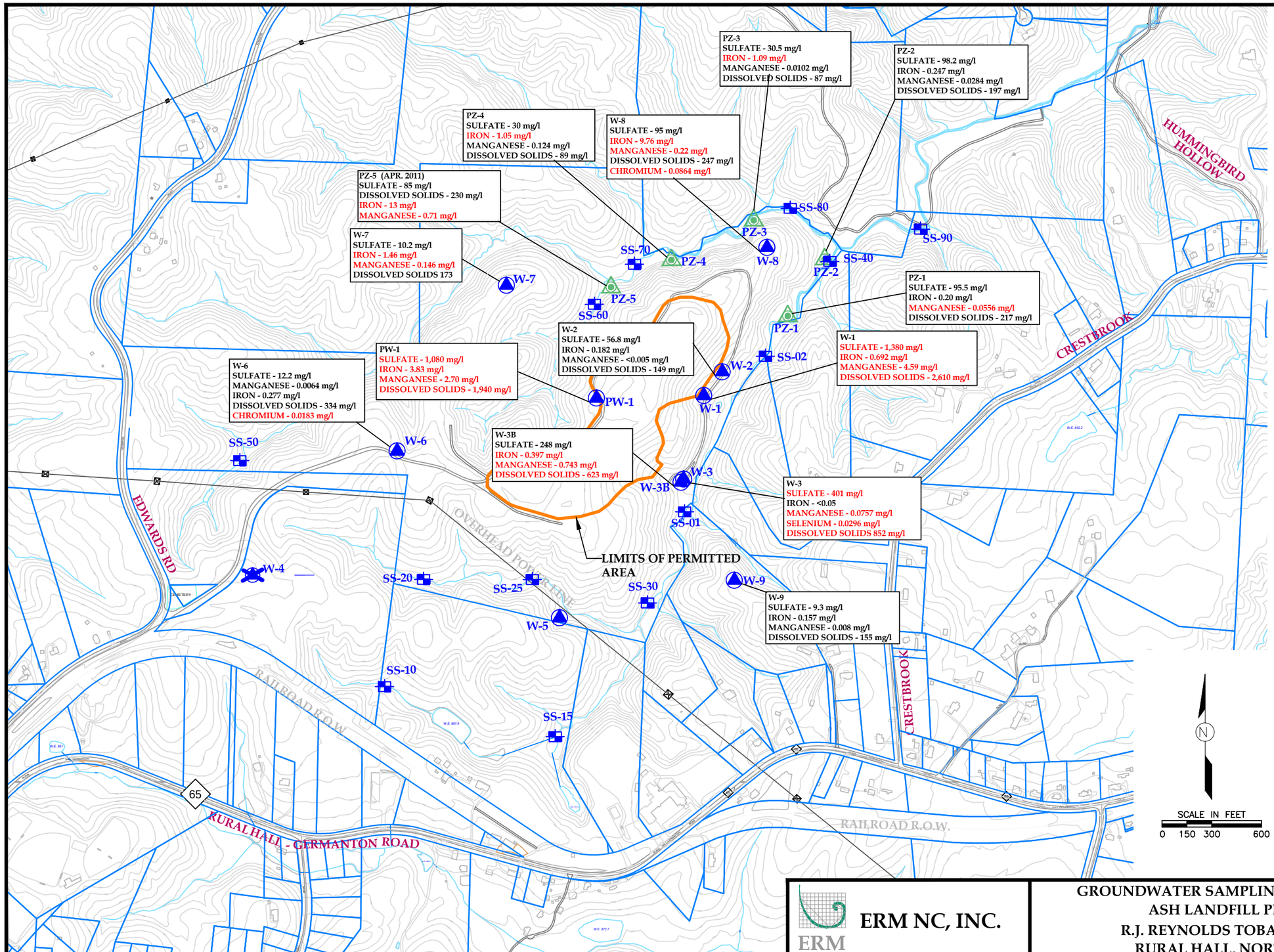
4. PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.

ERM NC, INC.

GROUNDWATER FLOW DIRECTIONS
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE 3



LEGEND

W-6	MONITORING WELL
W-4	ABANDONED MONITORING WELL
SS-01	SURFACE WATER MONITORING LOCATION
	PIEZOMETER LOCATION
	EXISTING CONTOUR 10-FT INTERVAL

NC 2L GROUNDWATER STANDARDS

ARSENIC	0.010
BARIUM	0.700
CADMIUM	0.002
CHROMIUM (TOTAL)	0.010
IRON	0.300
LEAD	0.015
MANGANESE	0.050
SELENIUM	0.020
SULFATE	250
DISSOLVED SOLIDS	500
pH	6.5-8.5

NOTE: CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L) UNLESS OTHERWISE INDICATED.

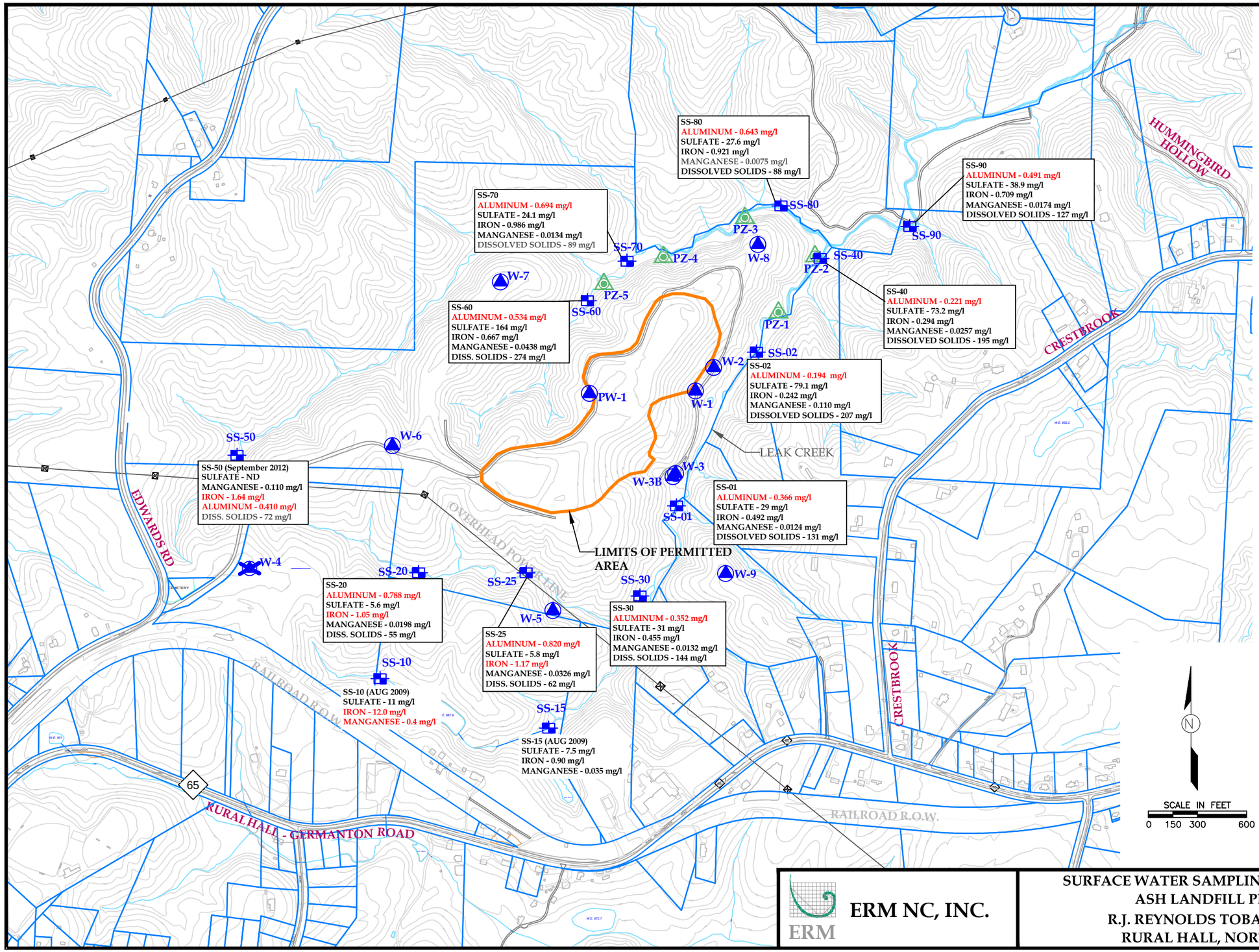
NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN IS A COMPILATION OF NC FLOODPLAIN MAPPING PROGRAM 2008 AND FORSYTH COUNTY INFORMATION 2005.
2. CONTOUR INTERVAL IS 10-FT.
3. LIMITS OF LANDFILL ARE APPROXIMATE BASED ON AVAILABLE HISTORIC DATA.
4. PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.
5. MONITOR WELLS SAMPLES IN APRIL 2013 UNLESS OTHERWISE INDICATED.

ERM NC, INC.

GROUNDWATER SAMPLING RESULTS APRIL 2013
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE
4



LEGEND

W-6	MONITORING WELL
W-4	ABANDONED MONITORING WELL
SS-01	SURFACE WATER MONITORING LOCATION
	PIEZOMETER LOCATION
	EXISTING CONTOUR 10-FT INTERVAL

NC 2B SURFACE WATER STANDARDS

ALUMINUM	0.087
BARIUM	1
CADMIUM	0.002
CHROMIUM (TOTAL)	0.05
IRON	1
LEAD	0.025
MANGANESE	0.2
MERCURY	0.000012
SELENIUM	0.005
SULFATE	250
pH	6.0-9.0
DISSOLVED SOLIDS	500
TEMPERATURE	NE
CONDUCTIVITY	NE
TURBIDITY	NE
ORP	NE
DISSOLVED OXYGEN	NE

NOTE: CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L) UNLESS OTHERWISE INDICATED.

NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN IS A COMPILATION OF NC FLOODPLAIN MAPPING PROGRAM 2008 AND FORSYTH COUNTY INFORMATION 2005.
2. CONTOUR INTERVAL IS 10-FT.
3. LIMITS OF LANDFILL ARE APPROXIMATE BASED ON AVAILABLE HISTORIC DATA.
4. PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.
5. SURFACE WATER SAMPLES FROM APRIL 2013, UNLESS OTHERWISE NOTED.

ERM NC, INC.

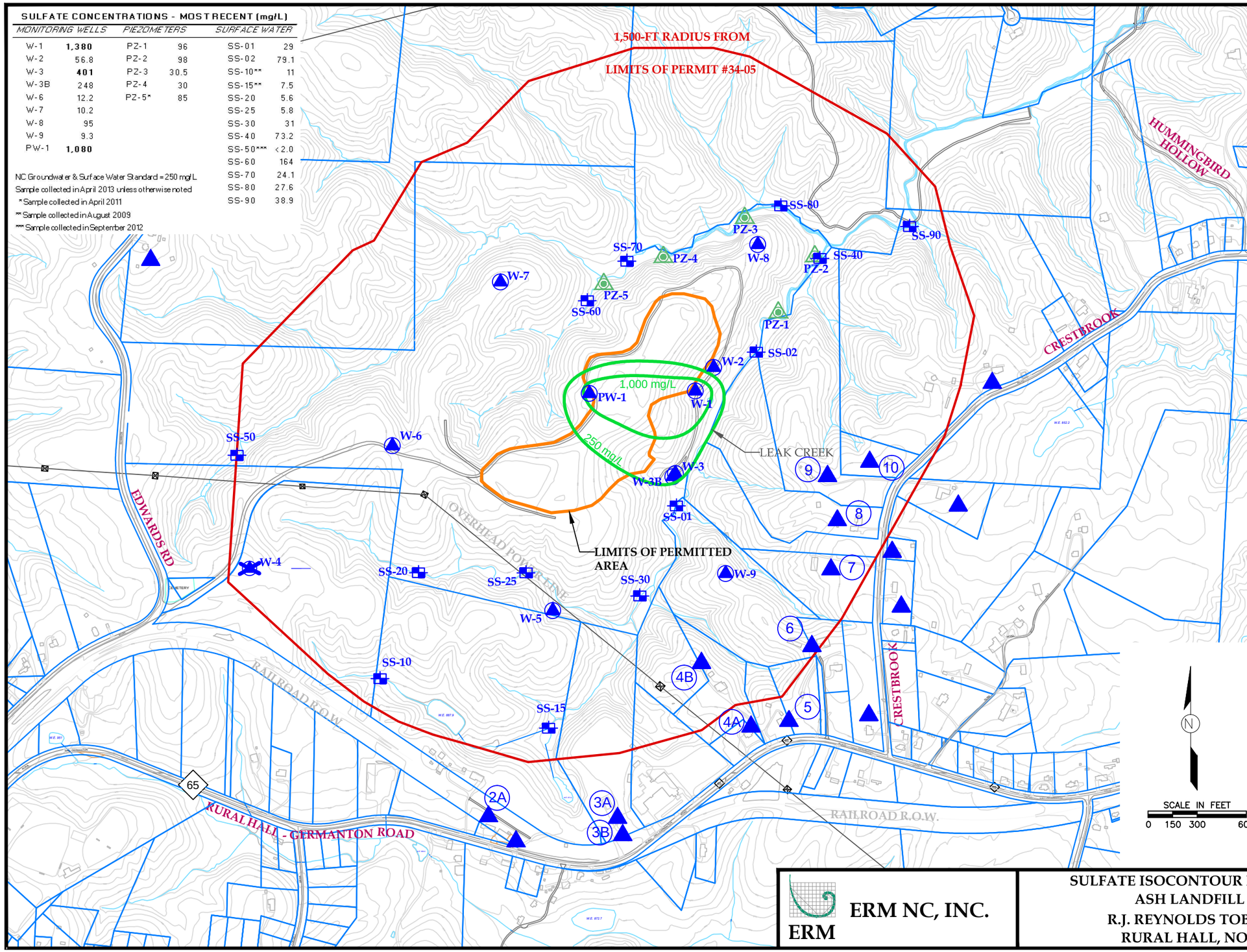
SURFACE WATER SAMPLING RESULTS APRIL 2013
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE 5

SULFATE CONCENTRATIONS - MOST RECENT (mg/L)

MONITORING WELLS		PIEZOMETERS		SURFACE WATER	
W-1	**1,380**	PZ-1	96	SS-01	29
W-2	56.8	PZ-2	98	SS-02	79.1
W-3	**401**	PZ-3	30.5	SS-10**	11
W-3B	248	PZ-4	30	SS-15**	7.5
W-6	12.2	PZ-5*	85	SS-20	5.6
W-7	10.2			SS-25	5.8
W-8	95			SS-30	31
W-9	9.3			SS-40	73.2
PW-1	**1,080**			SS-50***	<2.0
				SS-60	164
				SS-70	24.1
				SS-80	27.6
				SS-90	38.9

NC Groundwater & Surface Water Standard = 250 mg/L
Sample collected in April 2013 unless otherwise noted
* Sample collected in April 2011
** Sample collected in August 2009
*** Sample collected in September 2012



LEGEND

- W-6 — MONITORING WELL
- W-4 — ABANDONED MONITORING WELL
- SS-01 — SURFACE WATER MONITORING LOCATION
- PIEZOMETER LOCATION
- EXISTING CONTOUR 10-FT INTERVAL
- GROUNDWATER SULFATE ISOCONTOUR
- 5 — WELL ID ASSIGNED DURING SAMPLING (SOME WELLS UNIDENTIFIED); WELL ID CORRESPONDS TO TABLE 1; WATER SUPPLY WELL IDENTIFIED

NC WATER STANDARDS

	2L	2B
ALUMINUM	-	0.087
ARSENIC	0.010	-
BARIUM	0.700	1.000
CADMIUM	0.002	0.002
CHROMIUM (TOTAL)	0.010	0.050
IRON	0.300	1.000
LEAD	0.015	0.025
MANGANESE	0.050	0.200
MERCURY	0.001	0.000012
SELENIUM	0.020	0.005
SULFATE	250	250
DISSOLVED SOLIDS	500	-
pH	6.5-8.5	6.0-9.0

NOTE: CONCENTRATIONS ARE IN MILLIGRAMS PER LITER (mg/L) UNLESS OTHERWISE INDICATED.

N

SCALE IN FEET
0 150 300 600

NOTES:

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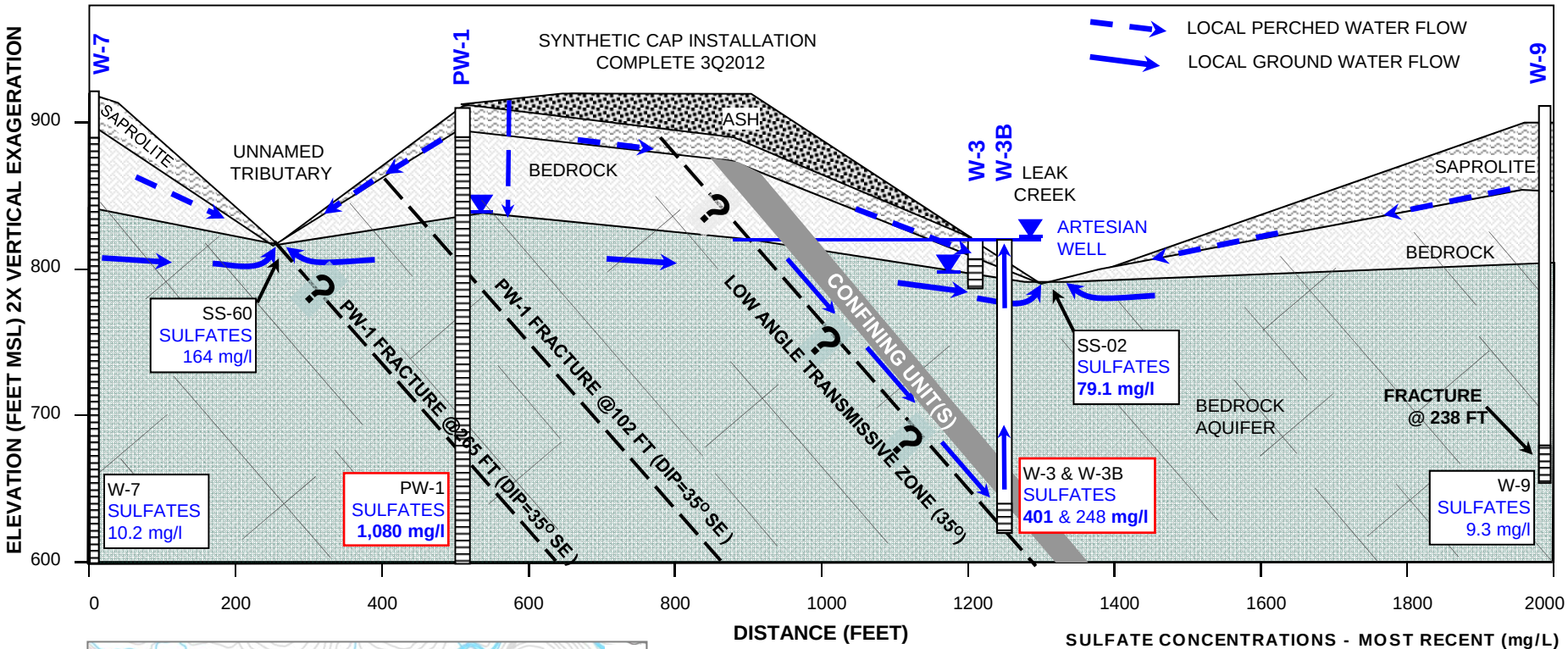
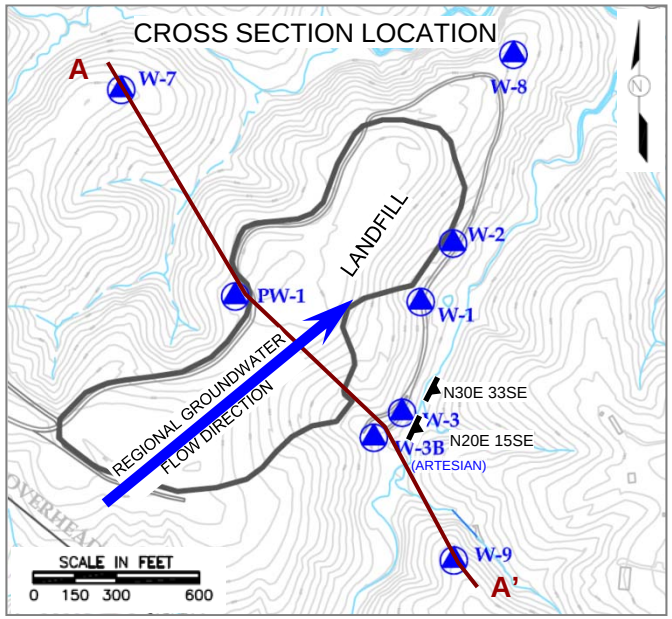
2. CONTOUR INTERVAL IS 10-FT.
3. LIMITS OF LANDFILL ARE APPROXIMATE BASED ON AVAILABLE HISTORIC DATA.
4. PARCEL BOUNDARY INFORMATION TAKEN FROM FORSYTH COUNTY GIS SYSTEM.

ERM NC, INC.

SULFATE ISOCONTOUR MAP - GROUNDWATER
ASH LANDFILL PERMIT #34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE
6





SULFATE CONCENTRATIONS - MOST RECENT (mg/L)

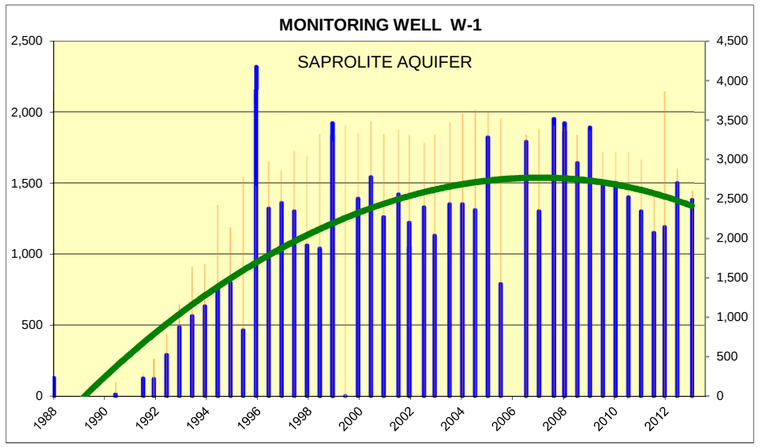
MONITORING WELLS		*PIEZOMETERS*		*SURFACE WATER*	
W-1	**1,380**	PZ-1	96	SS-01	29
W-2	56.8	PZ-2	98	SS-02	79.1
W-3	**401**	PZ-3	30.5	SS-10**	11
W-3B	248	PZ-4	30	SS-15**	7.5
W-6	12.2	PZ-5*	85	SS-20	5.6
W-7	10.2			SS-25	5.8
W-8	95			SS-30	31
W-9	9.3			SS-40	73.2
PW-1	**1,080**			SS-50***	<2.0
				SS-60	164
				SS-70	24.1
				SS-80	27.6
				SS-90	38.9

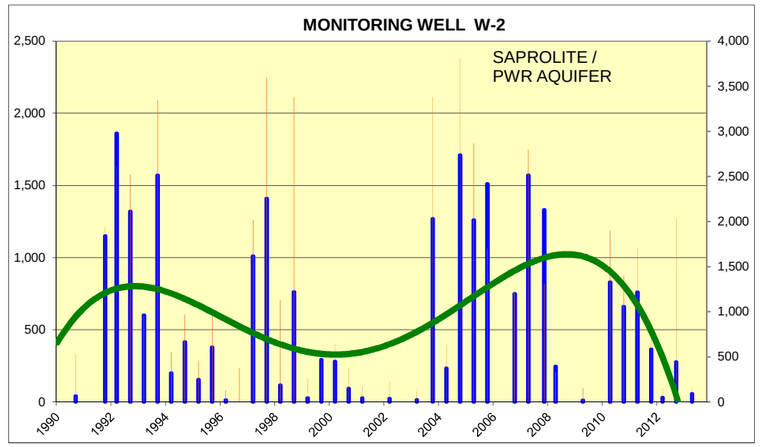
NC Groundwater & Surface Water Standard = 250 mg/L
Sample collected in April 2013 unless otherwise noted
* Sample collected in April 2011
** Sample collected in August 2009
*** Sample collected in September 2012

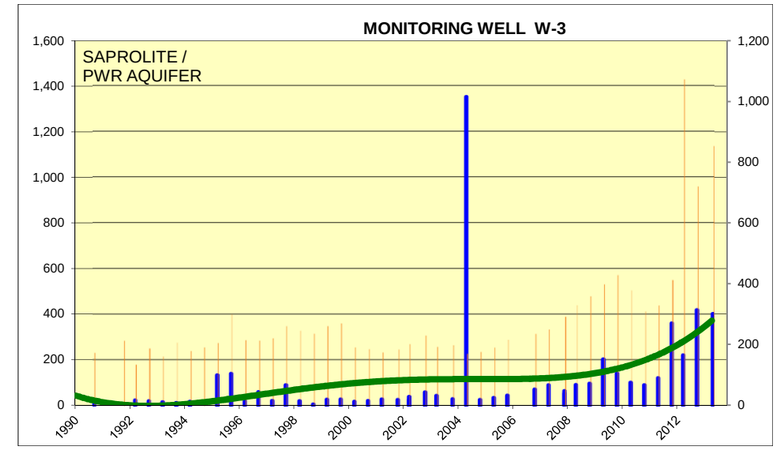
ERM NC, INC.

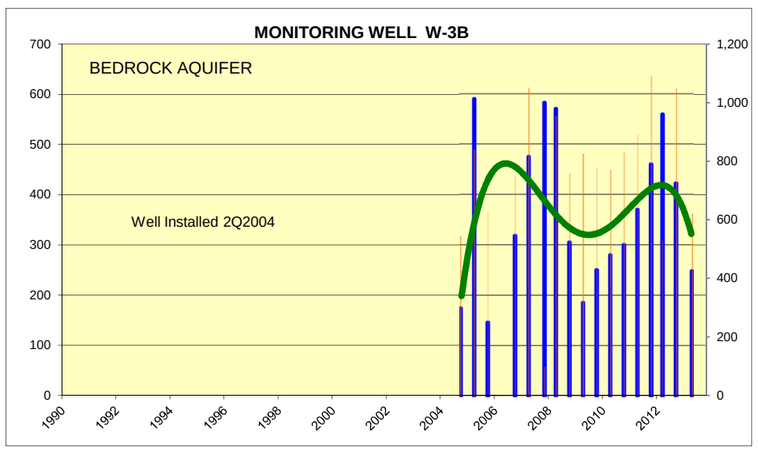
HYDROGEOLOGIC CONCEPTUAL MODEL
ASH LANDFILL PERMIT # 34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

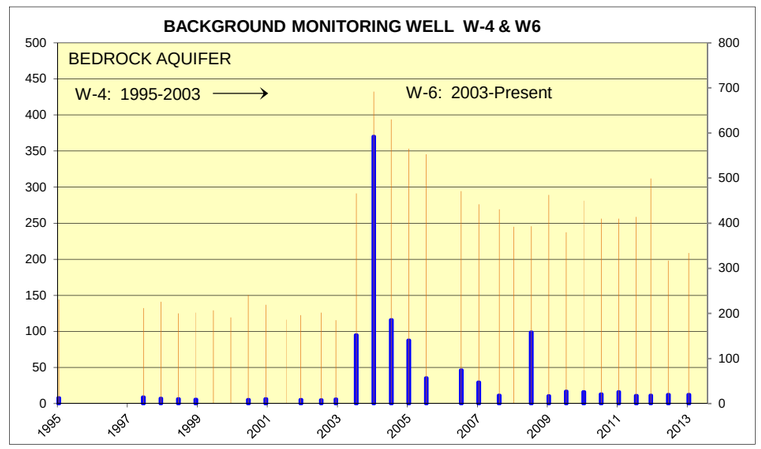
FIGURE
7

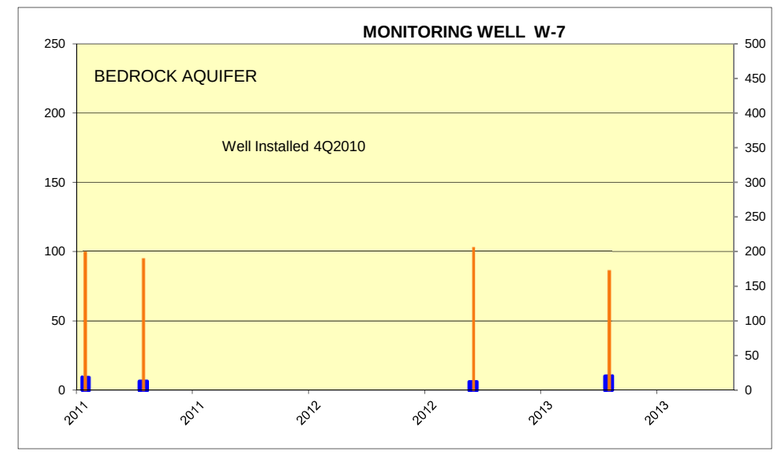


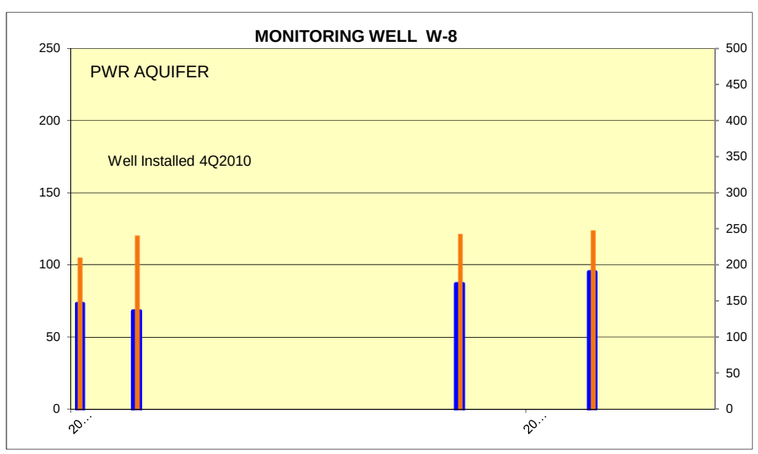


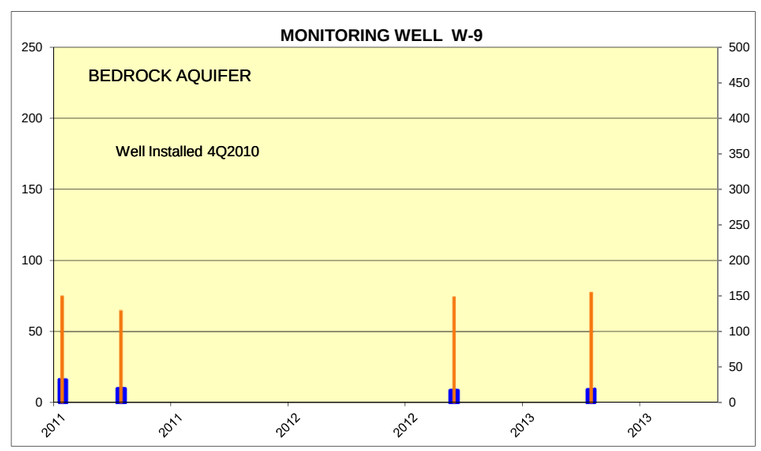


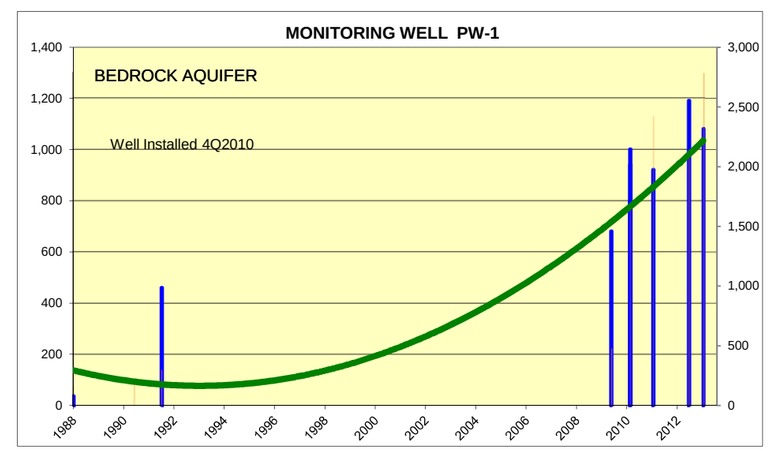












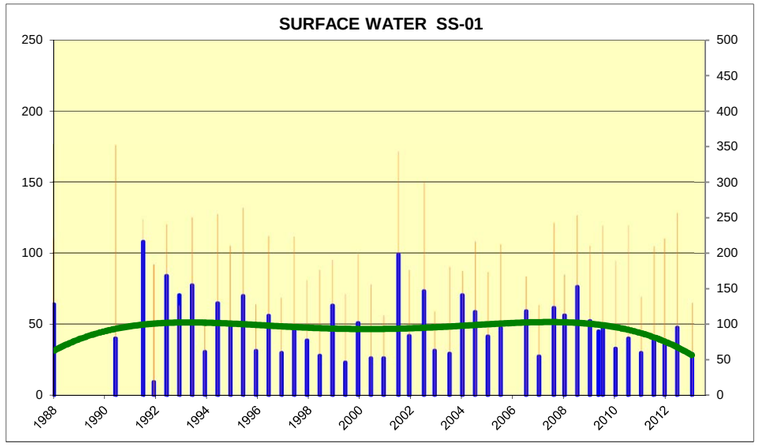
LEGEND

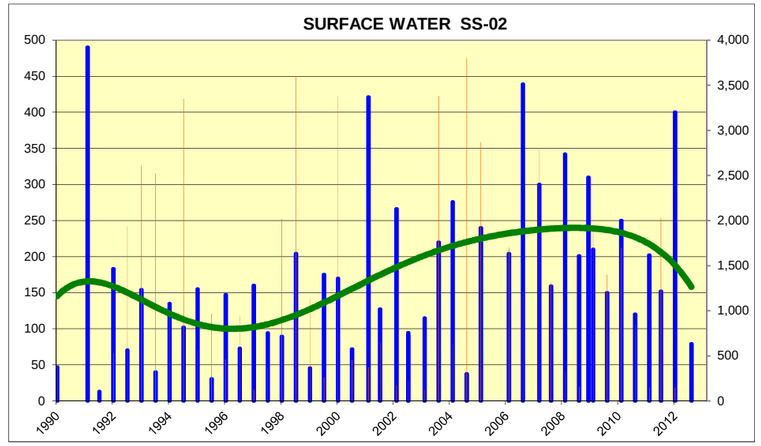
	NC2L GW STD	NC2B SW STD
Sulfates	250 mg/L	250 mg/L
Total Dissolved Solids	500 mg/L	500 mg/L

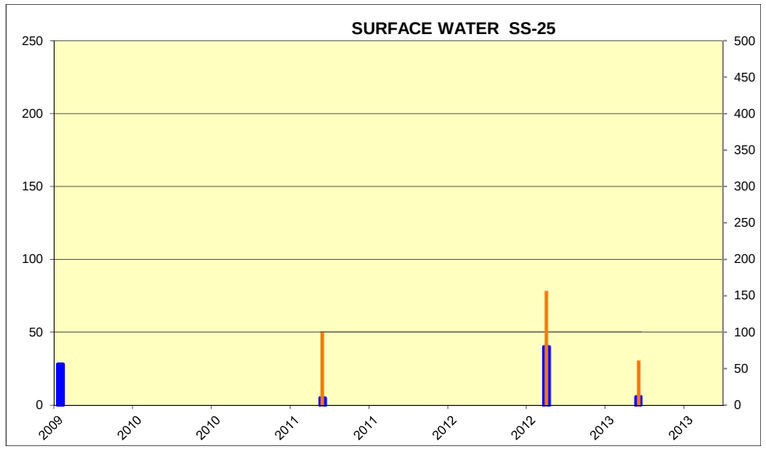
ERM NC, Inc.

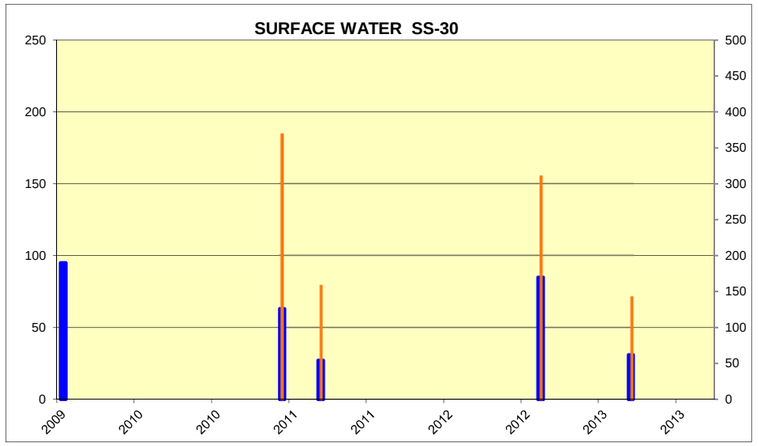
SULFATE TRENDS - GROUNDWATER
ASH LANDFILL PERMIT # 34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

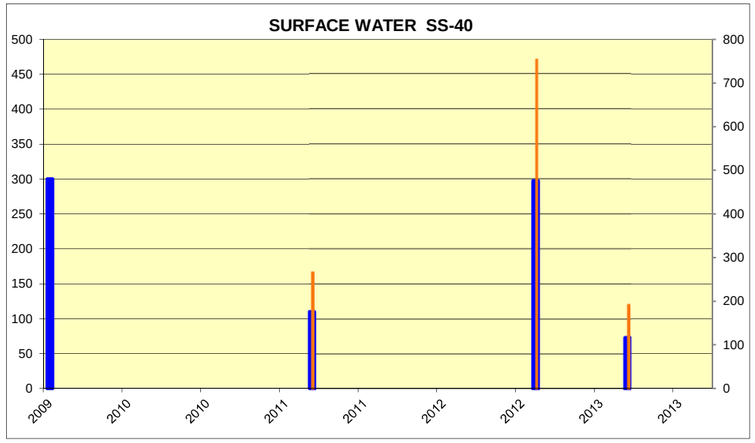
FIGURE
8

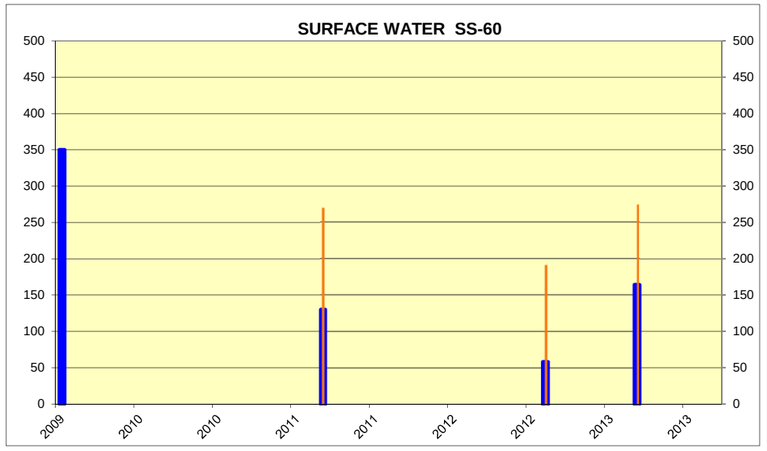


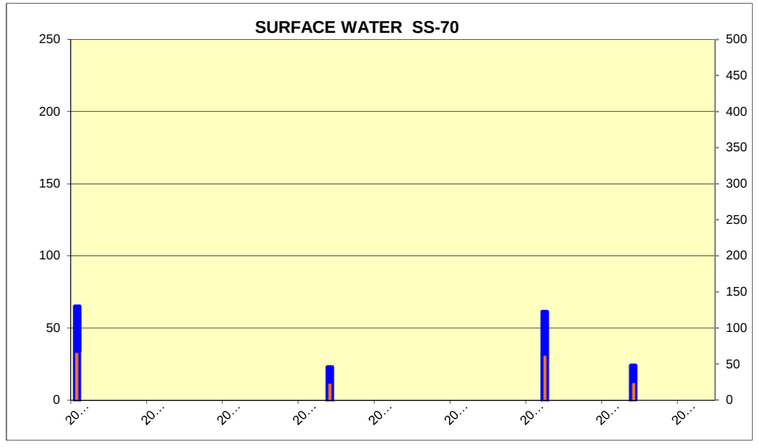


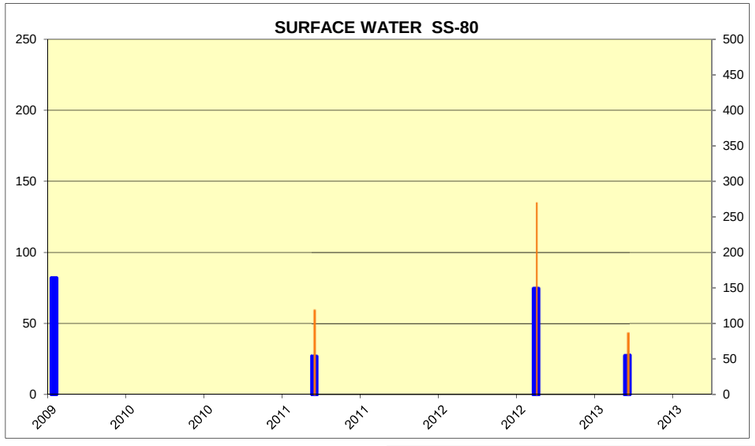


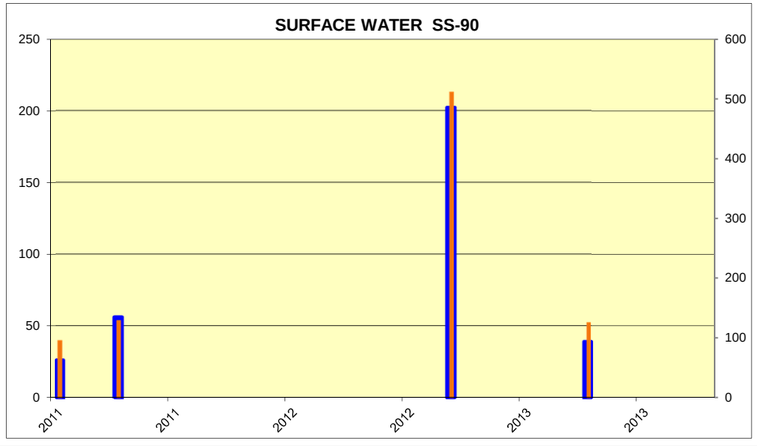












LEGEND

- Sulfates
- Total Dissolved Solids

	NC2L GW STD	NC2B SW STD
Sulfates	250 mg/L	250 mg/L
Total Dissolved Solids	500 mg/L	500 mg/L

ERM NC, Inc.

SULFATE TRENDS - SURFACE WATER
ASH LANDFILL PERMIT # 34-05
R.J. REYNOLDS TOBACCO COMPANY
RURAL HALL, NORTH CAROLINA

FIGURE 9

TABLES

TABLE 1
MONITOR WELL CONSTRUCTION DETAILS
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Well ID	Install Date	Northing	Easting	Ground Elevation (ft MSL)	TOC Elevation (ft MSL)	Boring Depth (ft BGL)	Outer Casing Depth (ft BGL)	Screened Interval (ft BGL)	Geologic Zone Screened	Comments
PW-1	5/26/87	912314.4964	1623168.8166	920.51	920.66	405 (soft bottom at 326)	21.5	21.5-405	Bedrock	Former supply well, pump removed (8/09): 6 inch dia. galv. casing; Construction details per Clayton Well Drilling log and video inspection by ERM (8/09 & 4/10); Open rock to 405 ft, Total well yield 25 gpm with no other obvious water-bearing zones below 103 ft (Clayton). Silted in to 326 ft (video).
W-1	10/13/87	912330.4235	1623815.4903	819.69	822.68	20.5	NA	10-20	Saprolite	2 inch dia. PVC, Well replaced 11/93, DWM permit-required sample location
W-2	12/6/89	912472.7625	1623927.6441	824.21	827.30	17	NA	7-17	Sap/PWR	2 inch dia. PVC, DWM permit-required sample location, (alternate IDs MW-1A, RH-MW-002)
W-3	12/7/89	911826.4895	1623693.8609	802.00	804.43	17	NA	7-17	Sap/PWR	2 inch dia. PVC, DWM permit-required sample location, (alternate IDs W-3A, W-2A, RH-MW-003)
W-3B	5/14/04	911806.8916	1623678.0188	801.23	804.32	210	Unknown	190-210	Bedrock	2 inch dia. PVC, DWM permit-required sample location, Artesian well
W-4	6/8/93	NE	NE	NE	NE	188	NA	138-188	Bedrock	2 inch dia. PVC, damaged, *abandoned 8/27/03, former background well, replaced with W-6 in 2003.*
W-5	5/17/93	NE	NE	NE	NE	24	NA	13-23.5	Bedrock	2 inch dia PVC, Phase 3 permanent MW
W-6	8/22/03	911995.8163	1621967.2266	977.93	980.71	200	NA	170-200	Bedrock	2 inch dia. PVC, DWM permit-required sample location, (alternate IDs MW-6), current background well, replaced W-4 as background well in 2003
W-7	12/15/10	912994.6847	1622626.2276	929.51	931.58	341	NA	42-341	Bedrock	6 inch dia. open-rock hole, 6" galavanized casing to 42 ft bgs, TOC value for 6" casing
W-8	12/14/10	913222.6284	1624196.9546	859.39	861.67	129	NA	45-65	PWR	2 inch dia. PVC
W-9	12/13/10	911216.1086	1624000.7073	909.35	911.38	259	NA	229-259	Bedrock	2 inch dia. PVC, Ken Stewart's pasture,
B-9	5/20/93	NE	NE	NE	NE	23	NA	18-22.5	Saprolite	2 inch dia PVC, Phase 3 temporary piezometer, no protective well box around well
B-10	5/19/93	NE	NE	NE	NE	14	NA	9-13.5	Saprolite	2 inch dia PVC, Phase 3 temporary piezometer, *not located October 2009*
B-11	5/20/93	NE	NE	NE	NE	54	NA	48-53	Saprolite	2 inch dia PVC, Phase 3 temporary piezometer, no protective well box around well
B-12	5/19/93	NE	NE	NE	NE	8.5	NA	3.5-8	Saprolite	2 inch dia PVC, Phase 3 temporary piezometer, no protective well box around well
B-14	5/20/93	NE	NE	NE	NE	54	NA	48-53	Saprolite	2 inch dia PVC, Phase 3 temporary piezometer, no protective well box around well
PZ-1	12/15/10	NE	NE	NE	NE	1.5	NA	1.0 - 1.5	Alluvium	1 inch dia PVC temporary piezometer
PZ-2	12/15/10	NE	NE	NE	NE	4.0	NA	3.0 - 4.0	Alluvium	1 inch dia PVC temporary piezometer
PZ-3	12/15/10	NE	NE	NE	NE	1.5	NA	0.5 - 1.5	Alluvium	1 inch dia PVC temporary piezometer
PZ-4	12/16/10	NE	NE	NE	NE	5.0	NA	4.2 - 5.0	Alluvium	1 inch dia PVC temporary piezometer
PZ-5	12/16/10	NE	NE	NE	NE	5.0	NA	3.0 - 5.0	Alluvium	1 inch dia PVC temporary piezometer

NE - Not Established
MSL - above mean sea level
BGL - Below ground level
TOC - Top of casing
PWR = Partially Weathered Rock
Survey data by Lawrence Associates, P.A., January 4, 2010, January 4, 2011 & February 28, 2011

TABLE 2
GROUND WATER ELEVATIONS
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Gauging Date	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL
Well Identification	**PW-1**		**W-1**		**W-2**		**W-3**		**W-3B**		**W-5**		**W-6**		**W-7**	
TOC Elevation:	920.66		822.68		827.30		804.43		804.32		Not Established		980.71		931.58	
Screened Interval (Ft BGL)	21.5-405 (Open hole)		10-20		7-17		7-17		190-210		13-23.5		170-200		42-341 (Open hole)	
Geologic Zone Screened	Bedrock		Saprolite		Saprolite/PWR		Saprolite/PWR		Bedrock		Bedrock		Bedrock		Bedrock	
At Installation	NA	--	13.5	809.18	11	816.30	14	790.43	Artesian	> 804.53	6	--	50	930.71	240	691.58
Historical Data Not Presented	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19-Oct-2006	--	--	11.59	811.09	13.32	813.98	7.54	796.89	Artesian	> 804.53	--	--	99.00	881.71	--	--
27-Apr-2007	--	--	10.88	811.80	13.96	813.34	6.98	797.45	Artesian	> 804.53	--	--	94.48	886.23	--	--
19-Nov-2007	--	--	13.29	809.39	16.08	811.22	7.78	796.65	Artesian	> 804.53	--	--	105.00	875.71	--	--
30-Apr-2008	--	--	12.84	809.84	14.68	812.62	7.04	797.39	Artesian	> 804.53	--	--	99.29	881.42	--	--
30-Apr-2009	--	--	13.23	809.45	15.18	812.12	7.12	797.31	Artesian	> 804.53	--	--	98.28	882.43	--	--
12-Oct-2009	72.00	848.66	14.53	808.15	17.50	809.80	7.63	796.80	[1] -1.22	805.54	10.08	--	99.64	881.07	--	--
19-Apr-2010	67.00	853.66	10.75	811.93	14.16	813.14	6.37	798.06	[1] -1.05	805.37	8.38	--	98.29	882.42	--	--
11-Oct-2010	--	--	12.04	810.64	15.85	811.45	6.99	797.44	[1] -0.89	805.21	9.73	--	98.93	881.78	--	--
5-Jan-2011	--	--	11.97	810.71	13.53	813.77	6.88	797.55	[1] -0.98	805.30	9.67	--	98.92	881.79	94.73	836.85
28-Feb-2011	65.30	855.36	11.66	811.02	14.57	812.73	6.65	797.78	[1] -1.37	805.69	9.50	--	99.01	881.70	94.59	836.99
20-Apr-2011	64.75	855.91	10.92	811.76	14.05	813.25	6.25	798.18	[1] -1.63	805.95	7.85	--	98.42	882.29	94.20	837.38
17-Oct-2011	--	--	12.55	810.13	15.18	812.12	7.24	797.19	[1] -1.36	805.68	--	--	99.41	881.30	--	--
6-Feb-2012	64.96	855.70	11.97	810.71	13.52	813.78	6.52	797.91	Artesian	> 804.32	--	--	99.22	881.49	94.71	836.87
16-Mar-2012	--	--	11.95	810.73	15.45	811.85	6.64	797.79	Artesian	> 804.32	--	--	99.05	881.66	--	--
24-Sep-2012	66.03	854.63	11.93	810.75	15.36	811.94	4.87	799.56	Artesian	> 804.53	--	--	99.63	881.08	96.05	835.53
17-Apr-2013	65.80	854.86	11.98	810.70	14.03	813.27	4.51	799.92	Artesian	> 804.53	--	--	99.04	881.67	95.80	835.78

TABLE 2
GROUND WATER ELEVATIONS
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Gauging Date	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL	Depth ft BTOC	Elevation ft MSL
Well Identification	**W-8**		**W-9**		**B-9**		**B-10**		**B-11**		**B-12**		**B-14**		**Leak Creek Stream**	
TOC Elevation:	861.67		911.38		Not Established		Not Established		Not Established		Not Established		Not Established		787.16	
Screened Interval (Ft BGL)	45-65		229-259		18-22.5		9-13.5		48-53		3.5-8		48-53		Not Applicable	
Geologic Zone Screened	PWR		Bedrock		Bedrock		Saprolite		Saprolite		Saprolite		Saprolite		Stream Elevation	
At Installation	16.8	--	11.2	--	16.8	--	11.2	--	NA	--	6.4	--	NA	--	Iron rod installed in	
Historical Data Not Presented	--	--	--	--	--	--	--	--	--	--	--	--	--	--	stream bed 2/28/11	
19-Oct-2006	--	--	--	--	--	--	--	--	--	--	--	--	--	--	immediately east of	
27-Apr-2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	wells W-3 & W-3B. TOC	
19-Nov-2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	elevation represents top	
30-Apr-2008	--	--	--	--	--	--	--	--	--	--	--	--	--	--	of iron rod.	
30-Apr-2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12-Oct-2009	--	--	--	--	20.40	--	Not located	--	--	--	10.26	--	--	--	--	--
19-Apr-2010	--	--	--	--	18.78	--	--	--	--	--	6.18	--	--	--	--	--
11-Oct-2010	--	--	--	--	21.63	--	--	--	--	--	9.40	--	--	--	--	--
5-Jan-2011	52.67	809.00	110.47	800.91	22.05	--	--	--	--	--	9.05	--	--	--	--	--
28-Feb-2011	53.45	808.22	112.03	799.35	22.63	--	--	--	--	--	--	--	--	--	1.50	785.66
20-Apr-2011	53.54	808.13	110.03	801.35	21.45	--	--	--	--	--	5.46	--	--	--	--	--
17-Oct-2011	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6-Feb-2012	54.74	806.93	109.84	801.54	--	--	--	--	--	--	--	--	--	--	--	--
16-Mar-2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24-Sep-2012	55.47	806.20	110.26	801.12	--	--	--	--	--	--	--	--	--	--	--	--
17-Apr-2013	57.40	804.27	108.62	802.76	--	--	--	--	--	--	--	--	--	--	--	--

NE - Not Established
MSL - above mean sea level

BTOC = Below Top of Casing
PWR = Partially Weathered Rock

BGL - Below ground level

[1] - Artesian condition, Value represents water level above permanent TOC.
Measured via temporary standpipe installed on permanent casing.

TABLE 3
GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS SUMMARY - APRIL 2013
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		NE	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [1]	0.002	0.050	0.007	1.0	0.025	0.200 [1]	0.000012	0.005	0.00006	0.050	10.0 [1]	250 [1]	500 [1]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
GROUND WATER MONITORING WELLS																								
PW-1 (21'-326' interval)	4/18/13	1.080	<0.01	0.0554	<0.001	<0.005	<0.005	**3.83**	<0.005	**2.70**	<0.0002	<0.01	<0.005	**0.0101**	0.63	**1,080**	**1,940**	14.2	**6.2**	16.2	2401	3.03	-453	0.60
W-1	4/18/13	0.501	<0.01	0.0352	<0.001	<0.005	<0.005	**0.692**	<0.005	**4.59**	<0.0002	<0.01	<0.005	<0.01	0.36	**1,380**	**2,610**	23.5	**6.3**	17.5	3354	8.0	-442	0.32
W-2	4/18/13	0.192	<0.01	**0.339**	<0.001	<0.005	<0.005	0.182	<0.005	<0.005	<0.0002	<0.01	<0.005	<0.01	0.43	56.8	149	5.0	**6.5**	16.7	261	NM	97	7.37
W-3	4/18/13	<0.1	<0.01	0.0562	<0.001	<0.005	<0.005	<0.05	<0.005	**0.0757**	<0.0002	**0.0296**	<0.005	<0.01	0.84	**401**	**852**	10.6	**5.7**	14.0	1146	1.11	-443	0.54
W-3B	4/18/13	<0.1	<0.01	0.0403	<0.001	<0.005	<0.005	**0.397**	<0.005	**0.743**	<0.0002	<0.01	<0.005	<0.01	<0.02	248	**623**	16.8	6.6	14.9	961	0.0	-71	0.47
W-6	4/19/13	0.517	<0.01	0.0411	<0.001	**0.0183**	<0.005	0.277	<0.005	0.0064	<0.0002	<0.01	<0.005	**0.0212**	<0.02	12.2	334	4.9	**10.4**	15.8	620	8.6	-451	0.40
W-7	4/18/13	0.403	<0.01	**0.14**	<0.001	<0.005	0.006	**1.46**	<0.005	**0.146**	<0.0002	<0.01	<0.005	<0.01	<0.02	10.2	173	29.0	6.9	15.7	271	17.1	-448	1.70
W-8	4/18/13	5.940	<0.01	**0.465**	<0.001	**0.0864**	**0.0856**	**9.76**	<0.005	**0.22**	<0.0002	<0.01	<0.005	**0.122**	0.29	95.0	247	5.2	**5.8**	19.5	330	9.6	-428	5.30
W-9	4/19/13	0.281	<0.01	**0.115**	<0.001	0.0085	<0.005	0.157	<0.005	0.008	<0.0002	<0.01	<0.005	<0.01	<0.02	9.3	155	2.4	**9.6**	16.5	286	9.7	-455	0.22
PZ-1	4/17/13	0.182	<0.01	0.0643	<0.001	<0.005	<0.005	0.20	<0.005	**0.0556**	<0.0002	<0.01	<0.005	<0.01	0.24	95.5	217	5.0	Insufficient volume available for field parameters					---
PZ-2	4/17/13	0.222	<0.01	0.0637	<0.001	<0.005	<0.005	0.247	<0.005	0.0284	<0.0002	<0.01	<0.005	<0.01	0.18	98.2	197	4.6	Insufficient volume available for field parameters					---
PZ-3	4/17/13	0.914	<0.01	0.0557	<0.001	<0.005	<0.005	**1.09**	<0.005	0.0102	<0.0002	<0.01	<0.005	<0.01	<0.02	30.5	87	3.2	Insufficient volume available for field parameters					---
PZ-4	4/17/13	0.889	<0.01	0.0537	<0.001	<0.005	<0.005	**1.05**	<0.005	0.0124	<0.0002	<0.01	<0.005	<0.01	<0.02	30.0	89	3.3	Insufficient volume available for field parameters					---
PZ-5	4/17/13	Dry, no sample collected			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SURFACE WATER																								
SS-01	4/17/13	**0.366**	<0.01	0.0735	<0.001	<0.005	<0.005	**0.492**	<0.005	0.0124	<0.0002	<0.01	<0.005	<0.01	0.14	29.0	131	4.4	8.0	20.9	297	4.9	76	6.87
SS-02	4/17/13	**0.194**	<0.01	0.0714	<0.001	<0.005	<0.005	0.242	<0.005	**0.110**	<0.0002	<0.01	<0.005	<0.01	0.21	79.1	207	5.0	8.1	20.8	382	4.7	80	7.97
SS-20	4/17/13	**0.788**	<0.01	0.056	<0.001	<0.005	<0.005	**1.05**	<0.005	0.0198	<0.0002	<0.01	<0.005	<0.01	<0.02	5.6	55.0	2.8	7.5	19.8	283	7.2	158	8.70
SS-25	4/17/13	**0.820**	<0.01	0.0549	<0.001	<0.005	<0.005	**1.17**	<0.005	0.0326	<0.0002	<0.01	<0.005	<0.01	<0.02	5.8	62.0	2.9	7.5	19.6	336	6.8	163	8.90
SS-30	4/17/13	**0.352**	<0.01	0.0764	<0.001	<0.005	<0.005	**0.455**	<0.005	0.0132	<0.0002	<0.01	<0.005	<0.01	0.19	31.0	144	18.2	7.8	21.1	268	8.7	62	6.24
SS-40	4/17/13	**0.221**	<0.01	0.0607	<0.001	<0.005	<0.005	0.294	<0.005	0.0257	<0.0002	<0.01	<0.005	<0.01	0.18	73.2	195	5.0	8.2	19.9	329	4.9	69	6.94
SS-50	4/17/13	Dry, no sample collected			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SS-60	4/17/13	**0.534**	<0.01	0.0634	<0.001	<0.005	<0.005	**0.667**	<0.005	0.0438	<0.0002	<0.01	<0.005	<0.01	<0.02	164	274	4.2	7.8	20.2	380	8.6	71	10.79
SS-70	4/17/13	**0.694**	<0.01	0.0513	<0.001	<0.005	<0.005	**0.986**	<0.005	0.0134	<0.0002	<0.01	<0.005	<0.01	<0.02	24.1	89.0	3.3	8.0	19.3	129	7.3	61	7.67
SS-80	4/17/13	**0.643**	<0.01	0.0525	<0.001	<0.005	<0.005	**0.921**	<0.005	0.0075	<0.0002	<0.01	<0.005	<0.01	<0.02	27.6	88.0	3.2	7.4	20.1	139	7.6	71	7.14
SS-90	4/17/13	**0.491**	<0.01	0.056	<0.001	<0.005	<0.005	**0.709**	<0.005	0.0174	<0.0002	<0.01	<0.005	<0.01	0.035	38.9	127	3.7	7.9	19.7	203	6.9	66	7.59

All concentrations in milligrams per liter (mg/L).
-- - Not sampled
NE - Not established
[1] - No freshwater aquatic life standard established. Water Supply criteria presented.

Bold indicates exceedance of Solid Waste Section Limits (SWSL)
Gray background indicates exceedance of applicable NC Ground Water or Surface Water Standard

J - Estimated value between laboratory method detection limit (MDL) and practical quantitation limit (PQL)

APPENDIX A HISTORICAL GROUNDWATER AND SURFACE WATER QUALITY ANALYTICAL DATA

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-1	4/29/88	8.03	<0.010	0.235	0.008	0.016	<0.020	17.4	<0.005	1.10	<0.00020	<0.010	<0.010	0.031	2.20	130	156	2.24	5.9					
	7/13/89	--	<0.010	0.100	<0.002	<0.020	--	--	<0.005	--	<0.00020	0.005	<0.010	<0.020	--	--	--	--	--	--	--	--	--	--
	9/24/90	5.62	<0.010	0.189	<0.002	<0.020	<0.020	8.90	<0.005	0.150	<0.00020	0.059	<0.010	<0.020	0.71	13.5	185	13.0	6.3	19.3	195	--	--	--
	10/24/91	0.161	<0.010	0.346	<0.002	<0.020	<0.020	0.150	<0.005	0.097	<0.00020	0.0239	<0.010	<0.020	0.238	126	303	12.0	6.2	20.3	425	--	--	--
(RHMW-001)	3/26/92	2.85	<0.010	0.736	<0.002	<0.020	<0.020	0.833	<0.005	1.83	0.00032	0.0219	<0.010	0.038	1.25	123	482	14.0	6.6	9.3	682	--	--	--
	9/30/92	--	<0.010	0.120	<0.002	<0.020	<0.020	--	<0.005	0.310	<0.00020	0.032	<0.010	<0.020	0.382	292	798	5.0	5.9	17.8	1,153	--	--	--
	3/31/93	0.364	<0.010	0.137	<0.002	<0.020	<0.020	1.13	<0.005	2.23	<0.00020	0.0132	<0.010	0.033	0.550	486	1,169	33.0	5.5	16.1	1,587	--	--	--
	9/17/93	28.6	<0.010	0.697	0.004	<0.020	0.044	59.7	0.013	3.49	<0.00020	0.0051	<0.010	0.195	0.925	565	1,643	6.0	5.9	18.0	2,310	--	--	--
well replaced 11/93	3/30/94	5.32	<0.010	0.545	<0.002	<0.020	0.020	18.8	0.008	0.505	<0.00020	0.006	<0.010	0.107	0.39	633	1,680	--	5.6	15.2	1,250	--	--	--
	9/30/94	1.81	<0.010	<0.250	<0.002	<0.020	0.022	9.96	<0.005	4.47	<0.00020	0.013	<0.010	0.019	0.45	758	2,420	123	6.0	18.1	3,010	--	--	--
	3/31/95	24.0	<0.010	1.25	<0.002	<0.020	0.026	53.9	0.011	1.58	<0.00020	0.012	<0.010	0.115	0.85	797	2,140	--	5.9	15.8	2,820	--	--	--
	9/29/95	7.65	<0.010	0.367	0.004	<0.020	0.024	18.8	0.010	4.02	<0.00020	0.012	<0.010	--	1.00	464	2,780	4.04	4.5	16.2	3,720	--	--	--
	3/20/96	149	<0.010	0.960	0.050	0.200	0.220	--	0.063	11.4	<0.00020	<0.010	<0.010	0.695	--	2,320	2,670	8.75	6.5	15.0	3,060	--	--	--
	9/27/96	7.11	<0.010	<0.250	<0.002	<0.020	<0.020	22.6	0.007	2.30	<0.00020	<0.010	<0.010	0.051	1.52	1,320	2,970	3.81	6.1	19.0	3,350	--	--	--
	3/29/97	2.99	<0.010	<0.250	<0.002	<0.020	<0.020	--	0.016	2.34	<0.00020	<0.010	<0.010	0.072	1.20	1,360	2,860	6.87	6.0	14.0	1,890	--	--	--
	9/17/97	2.94	<0.010	<0.250	0.003	<0.020	<0.020	12.9	0.006	3.68	<0.00020	0.033	<0.010	0.136	1.70	1,300	3,110	5.29	6.3	17.0	3,540	--	--	--
	3/27/98	2.40	<0.010	<0.250	<0.002	<0.020	<0.020	7.83	<0.005	2.34	<0.00020	0.016	<0.010	<0.020	0.575	1,060	3,040	3.64	6.5	19.6	627	--	--	--
	9/30/98	2.35	<0.010	<0.250	<0.002	<0.020	<0.020	5.18	0.015	2.71	<0.00020	0.021	<0.010	<0.020	1.05	1,030	3,210	17.5	6.2	20.0	1,250	--	--	--
	9/30/98	1.25	<0.010	<0.250	<0.002	<0.020	<0.020	4.98	<0.005	2.72	<0.00020	0.030	<0.010	<0.020	1.10	1,040	3,320	9.25	--	--	--	--	--	--
	3/31/99	1.82	<0.010	<0.250	<0.002	<0.020	<0.020	4.69	0.010	2.45	<0.00020	0.015	<0.010	<0.020	0.75	1,830	3,230	8.82	5.6	17.0	1,610	--	--	--
duplicate	3/31/99	1.17	<0.010	<0.250	<0.002	<0.020	<0.020	4.20	<0.005	2.56	<0.00020	0.018	<0.010	<0.020	0.45	1,920	3,230	3.73	--	--	--	--	--	--
	9/29/99	1.65	<0.010	<0.250	<0.002	<0.020	<0.020	4.78	0.008	2.79	<0.00020	0.031	<0.010	<0.020	0.44	2.06	3,440	3.73	5.7	19.0	1,980	--	--	--
	9/15/00	0.979	<0.010	<0.250	<0.002	<0.020	<0.020	3.20	0.008	2.93	<0.00020	0.022	<0.010	<0.020	0.80	1,540	3,480	13.3	5.8	18.0	1,040	--	--	--
	3/16/00	1.82	<0.010	<0.250	<0.002	<0.020	<0.020	3.36	0.006	2.84	<0.00020	<0.010	<0.010	0.031	0.402	1,390	3,330	3.93	--	--	--	--	--	--
	3/23/01	0.226	<0.010	<0.250	<0.002	<0.020	<0.020	1.86	0.010	3.18	<0.00020	<0.010	<0.010	<0.020	0.37	1,260	3,320	6.13	6.2	17.0	1,090	--	--	--
	10/4/01	0.728	<0.010	<0.250	0.002	<0.020	<0.020	3.14	0.009	2.89	<0.00020	<0.010	<0.010	0.037	0.43	1,420	3,380	31.0	8.0	21.0	3,300	--	--	--
	3/28/02	1.01	<0.010	<0.250	<0.002	<0.020	0.020	3.60	0.008	3.27	--	<0.010	<0.010	0.048	0.35	1,220	3,310	3.43	6.0	15.0	1,090	--	--	--
duplicate	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	5.45	<0.005	3.58	--	<0.010	<0.010	<0.020	0.35	1,050	2,920	3.43	6.0	15.0	1,090	--	--	--
	10/3/02	8.96	<0.010	<0.250	0.002	<0.020	<0.020	14.0	0.008	3.91	<0.00020	<0.010	<0.010	0.051	0.74	1,330	3,210	3.19	6.3	18.0	1,280	--	--	--
	3/25/03	1.42	<0.010	<0.250	<0.002	<0.020	<0.020	2.77	0.007	3.54	<0.00020	<0.010	<0.010	0.025	1.21	1,130	3,310	3.21	6.4	19.0	910	--	--	--
	10/2/03	0.402	<0.010	0.414	<0.002	<0.020	<0.020	2.33	0.005	3.84	<0.00020	<0.010	<0.010	<0.020	1.97	1,350	3,470	3.52	5.9	20.0	3,210	--	--	--
	4/28/04	1.44	<0.010	<0.250	<0.002	<0.020	<0.020	6.89	0.012	3.92	<0.00020	<0.010	<0.010	<0.020	1.13	1,350	3,580	5.13	--	15.1	3,670	--	--	--
	10/26/04	7.45	<0.010	<0.250	<0.002	<0.020	0.021	20.1	0.010	4.80	<0.00020	<0.010	<0.010	<0.020	0.438	1,310	3,630	3.10	--	--	3,510	--	--	--
	4/27/05	0.697	<0.010	<0.250	0.002	<0.020	<0.020	3.99	0.010	4.08	<0.00020	<0.010	<0.010	<0.020	0.408	1,820	3,601	3.45	--	--	3,610	--	--	--
	10/20/05	9.03	<0.010	<0.250	<0.002	<0.020	0.283	18.4	0.015	3.92	<0.00020	<0.010	<0.010	0.104	0.449	790	3,520	52.0	--	--	2,370	--	--	--
	10/19/06	0.214	<0.010	<0.250	<0.002	<0.020	<0.020	0.926	0.006	4.16	<0.00020	<0.010	<0.010	0.056	0.383	1,790	3,310	3.74	--	--	2,120	--	--	--
	4/27/07	0.787	<0.010	<0.250	<0.002	<0.020	<0.020	1.25	<0.005	3.55	<0.00020	<0.010	<0.010	<0.020	0.484	1,300	3,390	6.35	--	--	4,510	--	--	--
	11/19/07	0.186	<0.010	<0.250	<0.002	<0.020	<0.020	0.778	<0.005	4.08	<0.00020	<0.010	<0.010	<0.020	0.178	1,950	3,430	3.95	--	--	3,460	--	--	--
	4/30/08	0.291	<0.010	<0.250	<0.002	<0.020	<0.020	0.536	<0.005	3.87	<0.00020	<0.010	<0.010	<0.020	0.158	1,920	3,410	2.99	--	--	3,590	--	--	--
duplicate	4/30/08	0.349	<0.010	<0.250	<0.002	<0.020	<0.020	0.698	<0.005	3.91	<0.00020	<0.010	<0.010	<0.020	0.149	1,860	3,380	2.85	--	--	3,600	--	--	--

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-1 (continued)	10/29/08	<0.100	<0.010	0.026	0.00032	<0.010	<0.010	0.427	0.0049	3.99	<0.0002	<0.010	<0.010	<0.010	0.24	1,640	3,310	4.95	--	--	3,840	--	--	--
	4/30/09	<0.100	<0.010	0.031	0.00344	<0.010	0.0049	0.599	0.0131	4.56	<0.0002	<0.010	0.00144	<0.010	0.101	1,890	3,370	6.06	--	--	3,860	--	--	--
	10/12/09	0.098	0.0029	0.022	<0.001	0.002	0.0011	0.410	<0.005	4.00	<0.0002	<0.020	0.0005	<0.30	0.28	1,500	3,100	77.9	6.1	14.9	4,620	14	87	3.32
	4/20/10	3.50	<0.010	0.130	<0.001	0.012	<0.010	6.0	<0.005	4.20	<0.0002	<0.020	<0.005	<0.030	0.67	1,500	3,100	56.5	6.1	16.5	11,800	58	119	<0.01
	10/11/10	0.063	0.0067	0.027	<0.001	0.0009	<0.025	0.300	0.0013	5.00	<0.0002	0.033	0.0013	0.012	0.78	1,400	3,100	26.6	6.1	20.4	2,990	110	147	<0.01
	4/22/11	0.470	0.0068	0.043	<0.0001	<0.005	0.015	2.90	<0.001	4.80	<0.0001	0.030	<0.001	<0.010	0.53	1,300	3,000	3.40	6.2	13.1	2,780	406	150	0.58
	10/17/11	1.55	<0.005	0.066	<0.001	<0.005	0.0517	2.64	<0.005	4.40	<0.00020	<0.010	<0.005	<0.010	<0.20	1,150	2,620	25.7	6.7	20.1	3,740	73	130	0.64
	3/16/12	<0.10	<0.005	0.024	<0.001	<0.005	0.005	2.64	<0.005	4.48	<0.0002	<0.010	0.0068	<0.010	0.27	1,190	3,860	21.7	6.2	18.2	3,547	1	44	0.48
	9/24/12	0.279	<0.0027	0.0322	<0.050	<0.0020	<0.0020	0.494	<0.0040	4.58	<0.00010	<0.005	<0.0025	<0.0050	0.45	1,500	2,890	--	6.5	19.6	3,750	9.6	312	<0.01
	4/18/13	0.501	<0.01	0.0352	<0.001	<0.005	<0.005	0.692	<0.005	4.59	<0.0002	<0.01	<0.005	<0.01	0.36	1,380	2,610	23.50	6.3	17.5	3,354	8.0	-442	0.32
W-2 (RHMW-002, MW-1A)	1/16/90	--	<0.010	0.210	<0.002	<0.020	--	--	<0.005	--	0.0002	<0.010	<0.010	--	--	--	--	--	6.1	--	--	--	--	--
	9/24/90	0.850	<0.010	0.219	0.0083	<0.020	<0.020	1.40	<0.005	9.90	<0.00020	<0.010	<0.010	--	--	41	533	14.0	6.2	16.7	717	--	--	--
	10/24/91	0.169	<0.010	0.082	<0.002	<0.020	<0.020	9.30	0.0074	16.5	<0.00020	<0.010	<0.010	--	1.67	1,150	1,937	15.0	6.0	18.7	2,080	--	--	--
	3/26/92	2.79	<0.010	<0.250	0.0034	<0.020	<0.020	38.4	0.016	--	<0.00020	<0.010	<0.010	--		1,860	2,611	12.0	5.8	13.8	2,880	--	--	--
	9/30/92	--	<0.010	<0.250	<0.002	<0.020	<0.020	--	<0.005	21.3	<0.00020	<0.010	<0.010	--	1.03	1,320	2,525	6.00	6.1	17.9	2,670	--	--	--
	3/31/93	0.417	<0.010	0.177	<0.002	<0.020	<0.020	1.28	0.0076	0.053	<0.00020	<0.010	<0.010	0.040	0.05	600	948	2.00	5.6	15.2	167	--	--	--
	9/17/93	5.65	<0.010	0.508	0.0038	<0.020	0.079	34.7	0.012	22.3	<0.00020	<0.010	<0.010	0.062	0.166	1,570	3,350	12.0	6.4	20.8	4,030	--	--	--
	3/30/94	18.7	<0.010	2.77	0.003	0.076	<0.020	50.9	0.034	2.40	<0.00020	<0.010	<0.010	0.025	6.00	200	555	--	5.7	16.0	1,640	--	--	--
	9/30/94	21.4	<0.010	0.942	<0.002	0.037	0.058	0.362	0.013	3.71	<0.00020	<0.010	<0.010	0.088	0.45	415	969	15.9	6.2	18.3	1,440	--	--	--
	3/31/95	45.0	<0.010	1.71	<0.002	0.078	0.058	5.05	0.028	3.66	<0.00020	<0.010	<0.010	0.172	0.85	155	460	--	6.2	13.7	930	--	--	--
	9/29/95	109	<0.010	3.95	0.030	0.209	0.142	206	0.068	3.75	<0.00020	0.005	<0.010	0.292	0.313	379	944	7.37	5.6	16.4	1,345	--	--	--
	3/30/96	66.5	<0.010	1.25	0.012	0.105	0.078	96.6	0.044	3.61	<0.00020	<0.010	<0.010	0.183	--	13	127	4.68	5.6	14.0	316	--	--	--
	9/27/96	89.1	<0.010	1.51	<0.002	<0.020	0.0088	150	0.015	3.06	<0.00020	<0.010	<0.010	0.098	0.11	--	373	9.22	7.0	21.0	840	--	--	--
	3/29/97	64.4	<0.010	1.10	0.020	0.102	0.072	98.0	0.047	2.50	<0.00020	<0.010	<0.010	0.150	0.09	1,010	2,020	10.8	6.4	14.0	1,300	--	--	--
	9/17/97	56.5	<0.010	1.62	0.013	0.087	0.088	99.9	0.035	20.2	<0.00020	<0.005	<0.010	0.201	1.13	1,410	3,600	11.3	6.6	17.0	3,780	--	--	--
	3/27/98	10.9	<0.010	0.584	<0.002	<0.020	<0.020	26.0	<0.005	6.16	<0.00020	<0.010	<0.010	<0.020	<0.050	116	1,130	6.34	6.8	19.9	743	--	--	--
	9/30/98	15.4	<0.010	0.518	<0.002	0.039	0.034	28.8	0.022	15.0	<0.00020	<0.010	<0.010	0.060	0.78	762	3,380	15.7	6.4	21.0	753	--	--	--
	3/31/99	2.38	<0.010	0.852	<0.002	0.045	0.035	47.0	0.021	6.92	<0.00020	<0.010	<0.010	0.073	0.32	26	262	1.41	6.2	18.0	126	--	--	--
	9/29/99	9.70	<0.010	0.296	<0.002	0.036	<0.020	26.9	0.009	0.203	<0.00020	<0.010	<0.010	<0.020	0.08	293	458	15.3	6.2	20.0	182	--	--	--
	9/15/00	5.49	<0.010	0.508	<0.002	<0.020	<0.020	1.60	0.007	1.14	<0.00020	<0.010	<0.010	<0.020	0.06	93	374	1.89	6.6	19.0	170	--	--	--
	3/16/00	12.7	<0.010	0.434	<0.002	0.028	0.025	19.4	<0.005	2.16	<0.00020	<0.010	<0.010	0.028	0.136	281	642	7.36	--	--	--	--	--	--
	3/23/01	2.60	<0.010	<0.250	<0.002	<0.020	<0.020	4.74	0.006	0.234	<0.00020	<0.010	<0.010	0.037	0.08	26	173	6.82	6.5	18.0	270	--	--	--
	3/28/02	17.9	<0.010	<0.250	<0.002	0.047	0.046	45.3	0.016	3.03	--	<0.010	<0.010	0.088	<0.050	23	219	11.9	6.7	14.0	140	--	--	--
	10/3/02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/25/03	6.07	<0.010	0.264	<0.002	<0.020	<0.020	8.42	<0.005	0.115	<0.00020	<0.010	<0.010	0.025	0.069	14	118	5.29	6.1	18.0	140	--	--	--
	10/2/03	4.63	<0.010	0.277	<0.002	<0.020	<0.020	10.9	0.008	11.1	<0.00020	<0.010	<0.010	<0.020	0.122	1,270	3,380	7.78	6.1	20.0	3,020	--	--	--
	4/28/04	3.60	<0.010	<0.250	<0.002	<0.020	<0.020	11.0	0.006	2.63	<0.00020	<0.010	<0.010	0.036	0.193	233	634	8.13	--	14.4	1,460	--	--	--
	10/26/04	30.2	<0.010	2.14	0.009	0.112	0.083	65.6	0.021	5.08	<0.00020	<0.010	<0.010	0.144	4.17	1,710	3,800	7.22	--	--	3,690	--	--	--
	4/27/05	2.75	<0.010	<0.250	0.006	<0.020	<0.020	9.15	0.008	8.95	<0.00020	<0.010	<0.010	0.026	1.08	1,260	2,868	13.8	--	--	3,170	--	--	--
	10/20/05	9.38	<0.010	0.377	0.002	0.020	0.203	26.2	0.009	6.80	<0.00020	<0.010	<0.010	0.116	0.55	1,510	1,700	22.0	--	--	1,110	--	--	--

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-2 (continued)	10/19/06	3.63	<0.010	<0.250	<0.002	<0.020	<0.020	8.08	0.006	1.90	<0.00020	<0.010	<0.010	0.044	0.133	749	1,210	8.99	--	--	1,050	--	--	--
	4/27/07	46.5	<0.010	0.451	<0.002	0.002		55.9	--	--	<0.00020	<0.010	<0.010	0.046	0.452	1,570	2,800	9.01	--	--	1,880	--	--	--
	11/19/07	5.75	<0.010	<0.250	<0.002	<0.020	<0.020	12.0	0.008	3.03	<0.00020	<0.010	<0.010	<0.020	<0.050	1,330	1,310	9.71	--	--	1,330	--	--	--
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	4.45	0.005	0.334	<0.00020	<0.010	<0.010	0.072	0.071	246	330	7.26	--	--	609	--	--	--
	4/30/09	5.17	<0.010	0.268	<0.001	0.0139	0.0113	12.5	0.0118	0.441	<0.0002	<0.010	<0.010	0.038	0.072	10	157	7.57	--	--	94	--	--	--
	10/15/09	30.0	0.013	1.60	0.0048	0.110	0.067	200	0.036	3.40	<0.0002	0.042	<0.005	0.410	Not sampled - insufficient sample volume				6.4	15.9	900	30	-145	1.21
	4/20/10	0.430	<0.010	0.180	<0.001	<0.005	<0.010	0.49	<0.005	2.40	<0.0002	<0.020	<0.005	<0.030	<0.20	830	1,900	48.8	8.0	13.8	1,880	411	15	5.88
	10/11/10	2.30	0.0024	0.240	0.00068	0.0087	0.011	6.60	0.0017	2.30	<0.0002	0.011	<0.005	0.081	0.21	660	1,400	10.1	6.3	17.0	1,340	712	46	3.99
	4/22/11	1.70	0.0023	0.150	<0.0001	<0.005	0.0018	2.10	<0.001	4.00	<0.0001	0.014	<0.001	<0.010	0.033	760	1,700	8.60	Not measured - insufficient sample volume due to limited recharge					
	10/17/11	2.18	<0.005	0.113	<0.001	<0.005	0.0061	2.71	<0.005	4.02	<0.00020	<0.010	0.0058	<0.005	<0.20	365	842	18.7	Not measured - insufficient sample volume due to limited recharge					
	3/16/12	2.54	<0.005	0.122	<0.001	<0.005	0.0061	3.27	<0.005	0.045	<0.0002	<0.010	<0.005	<0.010	<0.20	30	153	7.70	6.5	16.1	1,144	8	-9	5.75
	9/24/12	2.02	<0.0027	0.119	<0.050	<0.0020	<0.0020	3.91	<0.0040	2.87	<0.00010	<0.005	<0.0025	<0.0050	0.43	276	2,030	--	Not measured - insufficient sample volume due to limited recharge					
	4/18/13	0.19	<0.01	0.339	<0.001	<0.005	<0.005	0.18	<0.005	<0.005	<0.0002	<0.01	<0.005	<0.01	0.43	57	149	5.00	6.5	16.7	261	NM	97	7.37
W-3 (RHMW-003 / 003A, W-2A)	1/16/90	--	<0.010	0.300	<0.002	<0.020	--	--	<0.005	--	<0.00020	<0.010	<0.010	--	--	--	--	--	7.0	--	--	--	--	--
	9/6/90	--	<0.010	8.99	0.020	0.810	--	--	0.330	--	0.0005	0.0059	<0.005	--	--	--	--	--	6.7	--	--	--	--	--
	9/21/90	2.17	<0.010	0.134	0.0081	<0.040	<0.020	2.00	<0.005	0.080	<0.00020	<0.005	<0.010	<0.020	0.67	8.5	174	12.0	6.5	16.2	238	--	--	--
	10/23/91	0.213	<0.010	0.149	<0.002	<0.040	<0.020	0.24	0.330	0.116	<0.00020	<0.005	<0.010	<0.020	<0.050	<10.0	214	12.0	6.7	19.7	207	--	--	--
	3/25/92	<0.200	<0.010	0.119	<0.002	<0.020	<0.020	<0.100	<0.005	<0.020	<0.00020	<0.005	<0.010	<0.020	6.81	23	136	10.0	6.1	13.1	307	--	--	--
	9/29/92	0.670	<0.010	0.120	<0.002	<0.020	<0.020	0.58	<0.005	0.410	0.0003	<0.005	<0.010	<0.020	0.232	20	189	1.0	5.9	17.1	223	--	--	--
	3/31/93	1.17	<0.010	0.180	<0.002	<0.020	<0.020	2.30	<0.005	<0.020	<0.00020	<0.005	<0.010	0.055	<0.050	15	163	2.0	5.5	15.7	207	--	--	--
	9/17/93	9.46	<0.010	0.444	0.0028	<0.020	0.071	20.7	0.010	0.173	<0.00020	<0.005	<0.010	0.106	0.25	12	207	2.0	6.2	18.3	282	--	--	--
	3/30/94	4.42	<0.010	0.259	<0.002	<0.020	0.024	10.7	0.150	0.264	<0.00020	<0.005	<0.010	0.107	1.48	17	180	<5	5.7	15.9	180	--	--	--
	9/30/94	25.4	<0.010	0.485	<0.002	0.026	0.067	32.0	0.017	0.526	<0.00020	<0.005	<0.010	0.086	<0.050	<20	193	26.1	6.3	18.0	202	--	--	--
	3/31/95	31.3	<0.010	0.466	<0.002	0.027	0.055	36.4	0.025	0.430	<0.00020	<0.005	<0.010	0.186	0.280	133	206	<5	6.6	12.7	220	--	--	--
	9/29/95	55.4	<0.010	0.813	0.007	0.051	0.122	70.1	0.042	1.02	<0.00020	<0.005	<0.010	0.183	0.200	139	302	1.32	5.4	15.4	245	--	--	--
	3/30/96	17.1	<0.010	0.436	0.002	0.020	0.046	25.9	0.019	0.409	<0.00020	<0.005	<0.010	0.100	1.25	20	217	3.41	5.6	13.0	285	--	--	--
	9/27/96	11.2	<0.010	0.257	<0.002	<0.020	<0.020	16.4	0.015	0.235	<0.00020	<0.005	<0.010	0.094	0.110	60	215	1.10	7.8	18.0	243	--	--	--
	3/29/97	16.4	<0.010	0.347	0.003	<0.020	0.043	23.0	0.013	0.384	<0.00020	<0.005	<0.010	0.051	0.120	21	223	7.86	6.6	12.0	153	--	--	--
	9/17/97	32.2	<0.010	0.478	0.004	0.027	0.067	40.2	0.024	0.590	<0.00020	<0.005	<0.010	0.280	1.10	89	262	1.29	6.9	16.0	366	--	--	--
	3/27/98	12.2	<0.010	0.491	<0.002	<0.020	<0.020	21.3	<0.005	0.604	<0.00020	<0.010	<0.010	<0.020	0.130	19	248	1.26	6.1	19.9	542	--	--	--
	9/30/98	4.15	<0.010	<0.250	<0.002	<0.020	<0.020	5.69	<0.005	0.151	<0.00020	<0.010	<0.010	0.039	0.300	5.1	238	1.34	6.8	20.0	276	--	--	--
	3/31/99	2.38	<0.010	<0.250	<0.002	<0.020	<0.020	3.93	<0.005	0.126	<0.00020	<0.010	<0.010	0.073	0.320	26	262	1.41	6.2	18.0	126	--	--	--
	9/29/99	2.13	<0.010	<0.250	<0.002	<0.020	<0.020	4.23	<0.005	0.090	<0.00020	<0.010	<0.010	<0.020	0.210	27	272	1.71	6.8	19.0	315	--	--	--
	9/15/00	6.59	<0.010	0.323	<0.002	<0.020	0.026	9.90	0.011	0.309	<0.00020	0.017	<0.010	<0.020	0.120	21	187	1.53	6.7	18.0	390	--	--	--
	3/16/00	11.7	<0.010	0.356	<0.002	<0.020	0.035	15.7	0.007	0.334	<0.00020	0.016	<0.010	0.036	0.208	18	193	2.63	--	--	--	--	--	--
	3/23/01	0.828	<0.010	<0.250	<0.002	<0.020	<0.020	1.02	0.009	0.045	<0.00020	<0.010	<0.010	0.023	0.200	27	175	1.56	6.7	17.0	310	--	--	--
	10/4/01	3.64	<0.010	<0.250	<0.002	<0.020	<0.020	6.02	0.008	0.221	<0.00020	0.013	<0.010	<0.020	0.220	25	186	3.20	6.1	17.0	200	--	--	--
	3/28/02	1.72	<0.010	<0.250	<0.002	<0.020	<0.020	2.82	<0.005	0.100	--	<0.010	<0.010	<0.020	0.400	39	203	1.45	6.7	14.0	470	--	--	--
	3/28/02	2.37	<0.010	<0.250	<0.002	<0.020	<0.020	2.82	<0.005	0.100	<0.00020	0.017	<0.010	<0.020	0.287	26	177	<1.0	--	--	238	--	--	--
duplicate	10/3/02	8.77	<0.010	0.387	<0.002	<0.020	0.022	16.4	<0.005	0.450	<0.00020	<0.010	<0.010	0.035	0.350	58	231	1.02	8.1	19.0	210	--	--	--
	3/25/03	15.3	<0.010	0.362	<0.002	<0.020	0.026	23.8	0.008	0.622	<0.00020	<0.010	<0.010	0.045	0.520	43	194	<1.0	6.2	19.0	210	--	--	--
	10/2/03	2.46	<0.010	0.646	<0.002	<0.020	<0.020	4.08	<0.005	0.212	<0.00020	<0.010	<0.010	<0.020	0.371	28	199	<1.0	6.7	17.0	243	--	--	--
	4/28/04	1.49	<0.010	<0.250	<0.002	<0.020	<0.020	2.82	<0.005	0.080	<0.00020	0.013	<0.010	<0.020	0.259	1,350	171	<1.0	--	14.6	225	--	--	--

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-3 (continued)	10/26/04	2.37	<0.010	<0.250	<0.002	<0.020	<0.020	**3.49**	<0.005	**0.129**	<0.00020	**0.017**	<0.010	<0.020	0.287	26	177	<1.0	--	--	238	--	--	--
	4/27/05	0.874	<0.010	<0.250	<0.002	<0.020	<0.020	**1.58**	<0.005	**0.066**	<0.00020	**0.016**	<0.010	**0.040**	0.254	34	192	0.74	--	--	277	--	--	--
	10/20/05	3.50	<0.010	**0.252**	<0.002	<0.020	**0.107**	**4.23**	<0.005	**0.072**	<0.00020	**0.030**	<0.010	**0.071**	0.356	44	218	18.0	--	--	317	--	--	--
	10/19/06	0.553	<0.010	**0.277**	<0.002	<0.020	<0.020	**1.02**	<0.005	0.037	<0.00020	**0.048**	<0.010	<0.020	0.389	70	237	0.69	--	--	330	--	--	--
	4/27/07	<0.10	<0.010	**0.262**	<0.002	<0.020	<0.020	**0.708**	<0.005	<0.010	<0.00020	--	<0.010	<0.020	0.452	89	251	1.51	--	--	388	--	--	--
	11/19/07	0.124	<0.010	**0.263**	<0.002	<0.020	<0.020	0.156	<0.005	<0.010	<0.00020	**0.065**	<0.010	<0.020	0.190	53	293	0.86	--	--	403	--	--	--
	11/19/07	0.139	<0.010	**0.254**	<0.002	<0.020	<0.020	0.158	<0.005	0.012	<0.00020	**0.065**	<0.010	<0.020	0.203	64	278	0.88	--	--	402	--	--	--
	4/30/08	<0.100	<0.010	**0.261**	<0.002	<0.020	<0.020	0.148	<0.005	<0.010	<0.00020	**0.094**	<0.010	<0.020	0.553	91	331	0.76	--	--	470	--	--	--
	10/29/08	<0.100	<0.010	**0.274**	0.00033	**0.0106**	<0.010	0.216	0.0033	**0.124**	0.0001	**0.096**	0.00515	<0.010	0.474	96	360	1.04	--	--	571	--	--	--
	4/30/09	0.442	<0.010	**0.368**	<0.001	<0.010	<0.010	**0.638**	0.0085	**0.0616**	<0.0002	**0.154**	<0.010	**0.0682**	0.535	199	399	0.94	--	--	603	--	--	--
duplicate	4/30/09	0.571	<0.010	**0.268**	<0.0010	<0.010	0.0025	**0.332**	0.0071	0.0308	<0.0002	**0.153**	<0.010	**0.0324**	0.510	203	389	1.07	--	--	617	--	--	--
	10/12/09	0.026	0.0027	**0.160**	<0.0010	0.0009	<0.010	<0.050	<0.005	0.016	0.00008	**0.150**	<0.005	<0.30	0.740	140	430	15.8	5.9	15.2	>99,000	9	121	2.82
	4/20/10	0.870	<0.010	**0.280**	<0.0010	<0.005	<0.010	**0.940**	<0.005	0.049	<0.0002	**0.100**	<0.005	<0.030	0.710	100	380	9.0	6.0	12.5	644	23	264	3.74
	10/11/10	<0.250	<0.005	**0.110**	<0.001	0.0013	<0.025	0.021	<0.005	0.0016	<0.0002	**0.077**	<0.005	**0.020**	0.790	89	310	4.0	5.9	18.0	497	7	256	1.39
	4/21/11	<0.040	0.0021	**0.140**	<0.0001	<0.005	<0.001	0.210	<0.001	**0.067**	<0.0001	**0.100**	<0.001	<0.010	0.850	120	330	1.0	5.8	13.1	399	<1	299	3.68
	10/18/11	0.380	<0.005	**0.195**	<0.005	<0.005	<0.005	0.262	<0.005	0.0221	<0.00020	**0.102**	<0.005	<0.010	1.10	**360**	413	7.70	6.9	17.5	764	6	128	1.76
	3/16/12	<0.10	<0.005	0.098	<0.001	<0.005	<0.005	0.101	<0.005	0.0102	<0.0002	**0.112**	0.0058	<0.010	1.70	220	**1,070**	7.80	5.5	14.3	755	1	126	2.36
	9/24/12	<0.050	<0.0027	0.087	<0.050	<0.0020	<0.0020	<0.0250	<0.0040	0.0491	<0.00010	**0.0519**	<0.0025	<0.0050	1.00	**418**	**719**	--	5.8	17.8	1,110	1.6	521	<0.01
	4/18/13	<0.1	<0.01	0.056	<0.001	<0.005	<0.005	<0.05	<0.005	**0.0757**	<0.0002	**0.0296**	<0.005	<0.01	0.84	**401**	**852**	10.6	5.7	14.0	1,146	1.1	-443	0.54
W-3B (RHMW-003B)	10/26/04	2.33	<0.010	<0.250	<0.002	<0.020	<0.020	**3.17**	<0.005	**0.157**	<0.00020	<0.010	<0.010	**0.024**	<0.050	174	**545**	2.71	--	--	862	--	--	--
	4/27/05	0.203	<0.010	<0.250	**0.002**	<0.020	<0.020	**1.83**	**0.015**	**0.907**	<0.00020	**0.041**	<0.010	**0.036**	<0.050	**590**	**840**	10.1	--	--	1,180	--	--	--
	10/20/05	**3.63**	<0.010	<0.250	<0.002	<0.020	**0.029**	**4.29**	0.005	**0.068**	<0.00020	<0.010	<0.010	**0.075**	<0.050	146	**627**	30.0	--	--	550	--	--	--
	10/19/06	0.135	<0.010	<0.250	<0.002	<0.020	<0.020	**0.950**	0.005	**0.811**	<0.00020	<0.010	<0.010	**0.042**	<0.050	**318**	**750**	5.24	--	--	739	--	--	--
	4/27/07	0.238	<0.010	<0.250	<0.002	<0.020	<0.020	**0.901**	<0.005	**1.28**	<0.00020	<0.010	<0.010	<0.020	<0.050	**475**	**1,050**	2.57	--	--	1,240	--	--	--
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**1.17**	<0.005	**1.27**	<0.00020	<0.010	<0.010	<0.020	<0.050	**582**	101	22.6	--	--	1,310	--	--	--
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**0.505**	<0.005	**1.01**	<0.00020	<0.010	<0.010	<0.020	<0.050	**570**	**955**	1.18	--	--	1,270	--	--	--
	10/29/08	<0.100	<0.010	0.048	<0.001	0.0049	<0.010	**1.95**	<0.010	**0.946**	0.00007	<0.010	<0.010	**0.0105**	<0.05	**305**	**760**	0.83	--	--	1,080	--	--	--
	4/30/09	<0.100	<0.010	0.0426	<0.001	<0.010	<0.010	**0.490**	**0.0105**	**0.999**	<0.0002	0.0097	0.0015	0.0087	<0.050	185	**827**	5.56	--	--	1,150	--	--	--
	10/12/09	0.039	0.0036	0.043	<0.001	0.0009	<0.010	**0.330**	<0.005	**0.880**	<0.0002	<0.020	<0.0050	<0.30	<0.20	250	**780**	16.1	7.2	14.6	>99,000	14	-42	3.40
	4/20/10	<0.10	<0.010	0.049	<0.0010	<0.0050	<0.010	**0.500**	<0.005	**0.970**	<0.0002	<0.020	<0.0050	<0.30	<0.20	**280**	**770**	11.2	6.8	17.5	2,320	108	-51	0.23
	10/11/10	<0.250	0.005	0.045	<0.005	<0.005	<0.025	**0.500**	<0.005	**0.980**	<0.0002	0.0099	<0.005	<0.050	0.140	**300**	**830**	<0.20	6.7	17.5	1,010	41	-25	<0.01
	4/21/11	<0.040	0.0025	0.051	<0.0001	<0.005	<0.001	**0.970**	<0.001	**1.20**	<0.0001	**0.012**	<0.001	<0.010	0.085	**370**	**890**	1.10	6.6	15.4	956	<1	-72	0.48
	10/18/11	<0.050	<0.005	0.052	<0.001	<0.005	<0.005	**0.606**	<0.005	**1.32**	<0.00020	<0.010	<0.005	<0.010	<0.20	**460**	**1,090**	9.70	9.5	15.0	1,750	9.4	-86	<0.01
duplicate	10/18/11	<0.100	<0.005	0.0509	<0.001	<0.005	<0.005	**0.587**	<0.005	**1.28**	<0.00020	<0.010	<0.005	<0.010	<0.20	**408**	**1,050**	8.00	9.5	15.0	1,750	9.4	-86	<0.01
	3/16/12	<0.10	<0.005	0.0485	<0.001	<0.005	<0.005	**0.472**	<0.005	**1.56**	<0.0002	<0.010	<0.005	**0.0476**	<0.20	**559**	**533**	9.80	6.7	14.5	1,474	2.9	-35	0.79
	9/24/12	<0.050	<0.0027	0.0451	<0.050	<0.0020	<0.0020	**0.537**	<0.0040	**1.34**	<0.00010	<0.005	<0.0025	**0.0271**	<0.02	**422**	**1,050**	--	7.1	16.0	1,650	3.6	-26	<0.01
	4/18/13	<0.1	<0.01	0.0403	<0.001	<0.005	<0.005	**0.397**	<0.005	**0.74**	<0.0002	<0.01	<0.005	<0.01	<0.02	248	**623**	16.8	6.6	14.9	961	0.0	-71	0.47

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-4 (Background) (damaged & replaced 2003 with W-6)	4/4/95	**9.72**	<0.010	<0.250	<0.002	<0.020	<0.020	**15.6**	0.007	**0.564**	<0.00020	<0.010	<0.010	**0.058**	1.0	7.9	231	136	6.1	19.0	234	--	--	--
	9/17/97	**4.42**	<0.010	<0.250	**0.002**	<0.020	<0.020	**10.0**	0.006	**0.406**	<0.00020	<0.010	<0.010	**0.190**	0.550	8.9	212	3.19	7.5	18.0	366	--	--	--
	3/27/98	3.41	<0.010	<0.250	<0.002	<0.020	<0.020	**6.25**	<0.005	--	<0.00020	<0.010	<0.010	**0.044**	<0.050	7.1	226	2.69	6.7	19.2	390	--	--	--
	9/30/98	0.219	<0.010	<0.250	<0.002	<0.020	<0.020	**1.61**	<0.005	**0.299**	<0.00020	<0.010	<0.010	<0.020	<0.050	6.4	200	7.26	5.9	21.0	322	--	--	--
	3/31/99	0.637	<0.010	<0.250	<0.002	<0.020	<0.020	**2.15**	<0.005	**0.285**	<0.00020	<0.010	<0.010	<0.020	<0.050	5.7	202	8.53	6.5	16.0	279	--	--	--
	9/29/99	0.127	<0.010	<0.250	<0.002	<0.020	<0.020	**1.44**	0.005	**0.271**	<0.00020	<0.010	<0.010	**0.024**	<0.050	<5.0	207	2.85	6.4	18.0	315	--	--	--
	3/16/00	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**1.47**	<0.005	**0.298**	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.0	191	6.05				--	--	--
	9/15/00	0.165	<0.010	<0.250	<0.002	<0.020	<0.020	**1.09**	<0.005	**0.252**	<0.00020	<0.010	<0.010	<0.020	0.080	5.3	241	15.5	6.2	17.0	310	--	--	--
	3/23/01	2.75	<0.010	<0.250	**0.004**	<0.020	<0.020	**9.91**	**0.016**	**0.447**	<0.00020	<0.010	<0.010	**0.028**	<0.050	6.5	219	5.99	6.4	16.0	240	--	--	--
	10/4/01	0.204	<0.010	<0.250	<0.002	<0.020	<0.020	**0.915**	0.007	**0.229**	<0.00020	<0.010	<0.010	<0.020	<0.05	<5.0	186	7.80	6.3	20.0	300	--	--	--
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**1.46**	<0.005	**0.212**	--	<0.010	<0.010	<0.020	<0.050	5.2	196	1.68	6.2	14.0	190	--	--	--
	10/3/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**1.13**	<0.005	**0.237**	<0.00020	<0.010	<0.010	**0.029**	<0.050	5.1	202	4.07	6.1	19.0	280	--	--	--
	3/25/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**0.976**	<0.005	**0.212**	<0.00020	<0.010	<0.010	<0.020	<0.050	6.1	185	1.61	6.2	16.0	260	--	--	--
W-6 (Background) Replaced W-4 9/2003	10/2/03	1.92	<0.010	<0.250	<0.002	**0.268**	**0.024**	**3.22**	<0.005	**0.154**	<0.00020	<0.010	<0.010	**0.440**	0.207	95	466	34.0	7.3	19.0	661	--	--	--
	4/28/04	1.16	<0.010	<0.250	<0.002	**0.030**	**0.026**	**0.917**	0.007	0.037	<0.00020	<0.010	<0.010	**0.149**	0.137	**370**	**692**	139	--	14.7	937	--	--	--
	10/26/04	0.790	<0.010	<0.250	<0.002	**0.089**	**0.032**	0.259	<0.005	0.012	<0.00020	<0.010	<0.010	**0.087**	0.096	116	**630**	79.2	--	--	917	--	--	--
	4/27/05	0.389	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	0.005	<0.010	<0.00020	<0.010	<0.010	**0.056**	<0.050	88	**565**	13.2	--	--	932	--	--	--
	10/20/05	<0.100	<0.010	<0.250	<0.002	<0.020	**0.040**	**0.356**	<0.005	<0.010	<0.00020	<0.010	<0.010	**0.060**	0.064	35	**553**	27.0	--	--	939	--	--	--
	10/19/06	0.529	<0.010	<0.250	<0.002	<0.020	<0.020	0.077	<0.005	0.012	<0.00020	<0.010	<0.010	**0.066**	<0.050	46	471	29.3	--	--	655	--	--	--
	4/27/07	2.66	<0.010	<0.250	<0.002	**0.029**	<0.020	**2.79**	<0.005	**0.106**	<0.00020	<0.010	<0.010	**0.168**	<0.050	30	442	8.84	--	--	776	--	--	--
	11/19/07	0.627	<0.010	<0.250	<0.002	<0.020	<0.020	**0.711**	<0.005	0.024	<0.00020	<0.010	<0.010	**0.038**	<0.050	11	431	8.98	--	--	694	--	--	--
W-6 (continued)	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	**0.037**	<0.050	<10.0	392	5.61	--	--	615	--	--	--
	10/29/08	0.235	<0.010	0.0358	0.00041	0.0068	<0.010	0.268	<0.010	0.0093	<0.00020	<0.010	<0.010	**0.067**	<0.050	<10.0	393	4.13	--	--	724	--	--	--
duplicate	10/29/08	0.222	<0.010	**0.293**	0.001	<0.010	0.0027	**0.460**	0.0049	**0.0846**	0.00016	**0.101**	<0.010	<0.010	0.488	99	384	0.86	--	--	574	--	--	--
	4/30/09	0.139	<0.010	0.037	<0.001	0.007	<0.010	0.0331	0.0029	0.0015	<0.0002	0.0081	<0.010	**0.0332**	<0.050	11	463	10.3	--	--	807	--	--	--
	10/12/09	0.140	0.0023	0.028	<0.001	0.0055	0.0043	0.044	<0.0050	0.0017	<0.0002	**0.046**	<0.005	<0.300	<0.200	17	380	11.1	10.6	18.9	1,020	33	-243	0.16
	4/20/10	1.70	<0.010	0.059	<0.001	**0.400**	**0.014**	**3.20**	<0.005	**0.087**	<0.0002	<0.020	<0.005	**0.069**	<0.20	16	450	9.1	10.7	18.9	930	209	-227	0.03
	10/11/10	0.320	<0.005	0.037	<0.001	**0.420**	**0.019**	**2.80**	<0.005	**0.056**	<0.0002	<0.005	<0.005	**0.063**	0.120	13	410	3.9	10.6	17.7	816	36	-250	<0.01
	4/22/11	0.260	0.0012	0.033	<0.001	**0.190**	0.007	**1.00**	0.0013	0.028	<0.0001	0.0011	<0.001	**0.017**	0.021	16	410	3.8	11.1	13.9	562	10	-189	1.01
	10/18/11	0.421	<0.005	0.027	<0.001	**0.0609**	**0.089**	**0.311**	<0.005	0.0068	<0.0002	<0.010	<0.005	**0.0601**	<0.20	11	414	6.1	12.2	18.1	1,040	9	-313	0.37
	3/16/12	0.221	<0.005	0.045	<0.001	0.0085	<0.005	0.083	<0.005	<0.005	<0.0002	<0.010	<0.005	**0.0101**	<0.20	11	499	5.2	11.2	17.3	845	2	-234	0.38
	9/26/12	0.202	<0.0027	0.037	<0.050	**0.0236**	<0.0020	0.162	<0.0040	<0.0025	<0.00010	<0.005	<0.0025	**0.0141**	<0.02	12	317	--	11.4	16.3	667	8.9	-21	<0.01
	4/19/13	0.517	<0.01	0.041	<0.001	**0.0183**	<0.005	0.277	<0.005	0.0064	<0.0002	<0.01	<0.005	**0.0212**	<0.02	12	334	4.90	10.4	15.8	620	8.6	-451	0.40
W-7 Open borehole 42'-341'	1/6/11	--	--	**0.110**	<0.0001	<0.0050	--	0.200	<0.010	**0.120**	--	<0.010	--	--	--	9.3	200	--	7.1	15.4	298	5	83	2.00
	4/21/11	0.092	<0.001	0.080	<0.0001	<0.005	<0.001	**0.520**	<0.001	**0.160**	<0.0001	<0.001	<0.001	<0.010	0.044	6.6	190	<0.001	7.3	15.2	301	<1	12	0.62
	9/25/12	0.318	<0.0027	0.077	<0.050	<0.0020	<0.0020	**0.628**	<0.0040	**0.173**	<0.00010	<0.005	<0.0025	<0.0050	<0.02	6.2	206	--	8.1	15.1	403	18.2	46	<0.01
	4/18/13	0.403	<0.01	**0.140**	<0.001	<0.005	0.006	**1.460**	<0.005	**0.146**	<0.0002	<0.01	<0.005	<0.01	<0.02	10	173	29.00	6.9	15.7	271	17.1	-448	1.70
W-8	1/6/11	--	--	**0.330**	0.00012	<.0050	--	**2.90**	<0.010	**0.065**	--	<0.010	--	--	--	73	210	--	7.5	14.8	300	50	182	7.88
	4/20/11	0.390	0.0012	**0.180**	<0.0001	<0.005	<0.001	**0.940**	<0.001	0.020	<0.0001	0.0089	<0.001	<0.010	0.240	68	240	1.1	5.7	15.1	391	133	203	7.06
	9/26/12	0.643	<0.0027	**0.166**	<0.050	**0.0252**	0.0077	**0.777**	<0.0040	**0.064**	<0.00010	<0.005	<0.0025	**0.151**	0.250	87	242	--	6.1	20.5	382	6.2	158	5.9
	4/18/13	**5.940**	<0.01	**0.465**	<0.001	**0.0864**	**0.0856**	**9.760**	<0.005	**0.220**	<0.0002	<0.01	<0.005	**0.122**	0.290	95	247	5.20	5.8	19.5	330	9.6	-428	5.3

APPENDIX A1
GROUND WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.010	0.010	10.0	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.0 [2]	0.002	0.050	0.007	1.0	0.025	0.200 [2]	0.000012	0.005	0.00006	0.05	10.0 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
W-9	1/5/11	--	--	0.027	<0.0001	<0.0050	--	**0.440**	<0.010	0.032	--	<0.010	--	--	--	16	150	--	8.4	15.9	274	119	22	<0.01
	4/20/11	0.083	<0.001	0.039	<0.0001	<0.005	<0.001	0.170	<0.001	0.023	<0.0001	<0.001	<0.001	<0.010	0.042	10	130	<1.0	8.8	16.8	286	121	-10	0.45
	9/26/12	0.116	<0.0027	**0.102**	<0.050	0.010	<0.0020	0.108	<0.0040	0.010	<0.00010	<0.005	<0.0025	<0.0050	<0.02	8.8	149	--	11.0	16.3	350	7.9	12	<0.01
	4/19/13	0.281	<0.01	**0.115**	<0.001	0.009	<0.005	0.157	<0.005	0.008	<0.0002	<0.01	<0.005	<0.01	<0.02	9.3	155	2.40	9.6	16.5	286	9.7	-455	0.22
PW-1 Open Borehole	4/29/88	0.152	<0.011	0.059	**0.008**	<0.016	**0.057**	0.057	<0.024	**0.314**	<0.00020	<0.005	<0.014	**0.576**	1.52	37	500	1.28	6.9	--	--	--	--	--
	7/13/89	--	<0.010	0.100	<0.008	--	<0.020	--	<0.100	--	<0.00020	<0.005	<0.006	--	--	--	--	--	--	--	--	--	--	--
	9/6/90	--	<0.010	0.090	<0.0010	<0.010	--	--	0.0099	--	<0.00020	<0.005	<0.005	--	--	--	--	--	6.8	--	--	--	--	--
	10/23/91	0.130	<0.010	<0.080	<0.002		<0.020	**0.620**	<0.005	**1.23**	<0.00020	<0.005	<0.010	**3.31**	0.050	**460**	**850**	8.0	6.4	15.1	1,247	--	--	--
	8/10/09	--	--	0.035	<0.0010	<0.005	--	**4.80**	<0.005	**1.80**	--	<0.020	--	--	--	**680**	--	--	7.0	15.3	2,860	32	13	<0.01
Packer interval - 95'-115'	5/14/10	<0.100	<0.010	0.034	<0.0010	<0.005	<0.010	**2.90**	<0.005	**2.00**	<0.00020	<0.020	<0.005	**0.560**	--	**800**	**1,900**	--	6.8	15.0	2,430	217	-20	14.9
Packer interval - 180'-200'	5/14/10	<0.100	<0.010	0.044	<0.0010	<0.005	<0.010	**6.30**	0.0094	**2.40**	<0.00020	<0.020	<0.005	**21.0**	--	**940**	**2,100**	--	6.8	16.1	2,570	166	-50	13.2
Packer interval - 250'-270'	5/13/10	<0.100	<0.010	0.046	<0.0010	<0.005	<0.010	**6.80**	<0.005	**2.50**	<0.00020	<0.020	<0.005	**5.10**	--	**1,000**	**2,100**	--	6.7	16.5	2,580	215	-54	13.5
Packer interval - 300'-326'	5/13/10	Dry, no sample collected			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Open borehole - 21'-326'	4/21/11	0.280	**0.011**	0.046	<0.0001	<0.005	<0.001	**4.40**	<0.001	**3.00**	<0.0001	**0.054**	<0.001	<0.010	<0.020	**920**	**2,000**	2.1	6.2	16.6	2,250	<1	24	0.60
	9/26/12	1.06	<0.0027	0.052	<0.050	<0.0020	<0.0020	**4.28**	<0.0040	**2.78**	<0.00010	<0.005	<0.0025	**0.0135**	0.450	**1,190**	**2,980**	--	6.8	15.9	2,890	8.7	2.0	<0.01
PZ-1	1/4/11	--	--	0.081	<0.0001	<0.0050	--	**1.60**	<0.010	**0.078**	--	<0.010	--	--	--	98	180	--	Not measured - insufficient sample volume due to limited recharge					
	4/20/11	0.040	<0.001	0.063	<0.0001	<0.005	0.0019	**2.70**	0.0016	**0.110**	<0.0001	<0.001	<0.001	<0.010	0.110	30	100	4.2	Not measured - insufficient sample volume due to limited recharge					
	9/25/12	<0.050	<0.0027	0.0997	<0.050	<0.0020	<0.0020	0.138	<0.0040	**0.119**	<0.00010	<0.005	<0.0025	<0.0050	1.90	**319**	**806**	--	Not measured - insufficient sample volume due to limited recharge					
	4/17/13	0.182	<0.01	0.0643	<0.001	<0.005	<0.005	0.200	<0.005	**0.056**	<0.0002	<0.01	<0.005	<0.01	0.24	96	217	5.0	Not measured - insufficient sample volume due to limited recharge					
PZ-2	1/4/11	--	--	**0.120**	<0.0001	<0.0050	--	**0.770**	<0.010	**0.410**	--	<0.010	--	--	--	180	360	--	Not measured - insufficient sample volume due to limited recharge					
	4/20/11	**4.20**	<0.001	0.0099	<0.0001	0.0069	0.0027	**7.40**	0.0034	**0.410**	0.00014	<0.001	<0.001	<0.010	0.100	82	250	6.7	Not measured - insufficient sample volume due to limited recharge					
	9/25/12	<0.050	<0.0027	**0.113**	<0.050	<0.0020	<0.0020	0.106	<0.0040	0.0389	<0.00010	<0.005	<0.0025	<0.0050	2.0	**306**	**767**	--	Not measured - insufficient sample volume due to limited recharge					
	4/17/13	0.222	<0.01	0.064	<0.001	<0.005	<0.005	0.247	<0.005	0.0284	<0.0002	<0.01	<0.005	<0.01	0.2	98	197	4.6	Not measured - insufficient sample volume due to limited recharge					
PZ-3	1/5/11	--	--	**0.140**	<0.0001	0.0094	--	**14.0**	<0.010	**1.70**	--	<0.010	--	--	--	24	140	--	Not measured - insufficient sample volume due to limited recharge					
	4/21/11	<0.04	<0.001	0.055	<0.0001	<0.005	<0.001	**6.70**	<0.001	**0.560**	<0.0001	<0.001	<0.001	<0.010	0.049	25	100	3.0	Not measured - insufficient sample volume due to limited recharge					
	9/25/12	Could not be located, no sample collected				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/17/13	0.914	<0.01	0.056	<0.001	<0.005	<0.005	**1.09**	<0.005	0.010	<0.0002	<0.01	<0.005	<0.01	<0.02	31	87	3.2	Not measured - insufficient sample volume due to limited recharge					
PZ-4	1/5/11	--	--	**0.170**	<0.0001	**0.012**	--	**10.0**	<0.010	**0.089**	--	<0.010	--	--	--	46	190	--	Not measured - insufficient sample volume due to limited recharge					
	4/21/11	0.170	<0.001	0.058	<0.0001	<0.005	<0.001	**0.450**	<0.001	0.015	<0.0001	<0.001	<0.001	<0.010	0.052	24	<10	2.3	Not measured - insufficient sample volume due to limited recharge					
	9/25/12	0.168	<0.0027	0.082	<0.050	<0.0020	<0.0020	0.285	<0.0040	0.0405	<0.00010	<0.005	<0.0025	<0.0050	<0.02	58	181	--	Not measured - insufficient sample volume due to limited recharge					
	4/17/13	0.889	<0.01	0.054	<0.001	<0.005	<0.005	**1.050**	<0.005	0.0124	<0.0002	<0.01	<0.005	<0.01	<0.02	30	89	3.3	Not measured - insufficient sample volume due to limited recharge					
PZ-5	1/5/11	--	--	0.092	<0.0001	<0.0050	--	**1.30**	<0.010	**1.30**	--	<0.010	--	--	--	130	**510**	--	Not measured - insufficient sample volume due to limited recharge					
	4/21/11	**5.30**	<0.001	0.081	<0.0001	0.010	**0.014**	**13.0**	0.0029	**0.710**	<0.0001	0.0022	<0.001	**0.020**	0.060	85	230	11.0	Not measured - insufficient sample volume due to limited recharge					
	9/25/12	Dry, no sample collected			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4/17/13	Dry, no sample collected			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

All concentrations in milligrams per liter

NE - Not established

-- - Not sampled

[1] - No 2L standard established. NCDWM SWS Groundwater Protection presented

[2] - No freshwater aquatic life standard established. Water Supply criteria presented

Bold indicates exceedance of Solid Waste Section Limits (SWSL)

Gray background indicates exceedance of NC Ground Water Standard

APPENDIX A2
SURFACE WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.70	0.0020	0.010	1.00	0.300	0.015	0.050	0.00100	0.020	0.020	1.00	10	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.10	0.0010	0.010	0.010	0.300	0.010	0.050	0.00020	0.010	0.010	0.010	10	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.00 [2]	0.0020	0.050	0.007	1.000	0.025	0.200 [2]	0.000012	0.005	0.00006	0.050	10 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
SS-01 (RHSS-001) Surface Water - Upstream	4/29/88	<0.152	<0.010	**0.118**	**0.0080**	<0.016	<0.019	0.086	<0.024	<0.014	<0.00020	<0.005	<0.014	**0.015**	0.22	64.0	220	2.81	6.8	--	--	--	--	--
	7/13/89	--	<0.010	0.100	<0.002	<0.020	--	--	<0.005	--	<0.00020	<0.010	<0.010	--	--	--	--	--	--	--	--	--	--	--
	9/6/90	--	<0.010	0.064	<0.001	--	--	--	<0.0025	--	<0.00020	<0.005	<0.005	--	--	--	--	--	7.9	--	--	--	--	--
	9/21/90	**0.140**	<0.010	<0.080	**0.0048**	<0.040	<0.020	0.200	<0.005	<0.020	<0.00020	<0.005	<0.010	<0.020	0.52	40.0	352	12.0	7.2	11.6	490	--	--	--
	10/23/91	**0.109**	<0.010	<0.080	<0.002	<0.020	<0.020	<0.100	<0.005	<0.020	<0.00020	<0.005	<0.010	<0.020	0.15	108	248	12.0	7.9	17.2	381	--	--	--
	3/25/92	**4.15**	<0.010	<0.080	**0.0034**	<0.020	<0.020	**5.00**	**0.0158**	**0.064**	<0.00020	<0.005	<0.010	<0.020	0.25	9.4	185	14.0	5.8	11.3	126	--	--	--
	9/29/92	<0.100	<0.010	<0.100	<0.002	<0.040	<0.020	0.160	<0.005	**0.085**	<0.00020	<0.005	<0.010	<0.020	0.19	84.0	241	2.0	5.7	13.8	356	--	--	--
	3/31/93	<0.200	<0.010	<0.100	<0.002	<0.020	<0.020	**0.400**	<0.005	**0.077**	<0.00020	<0.005	<0.010	**0.029**	1.34	70.4	127	2.0	5.9	13.0	207	--	--	--
	9/17/93	**0.240**	<0.010	<0.125	<0.002	<0.020	<0.020	**0.598**	<0.005	0.028	<0.00020	<0.005	<0.010	<0.020	0.45	77.4	251	3.0	7.1	20.9	360	--	--	--
	3/30/94	**0.220**	<0.010	<0.120	<0.002	<0.020	<0.020	**0.873**	<0.005	0.030	<0.00020	<0.005	<0.010	<0.020	0.25	30.6	108	5.0	5.9	14.0	380	--	--	--
	9/30/94	**1.30**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.69**	0.006	**0.084**	<0.00020	<0.005	<0.010	<0.020	0.43	64.8	255	30.0	7.1	19.1	332	--	--	--
	3/31/95	**3.58**	<0.010	<0.250	<0.002	<0.020	<0.020	**2.44**	<0.005	**0.106**	<0.00020	<0.005	<0.010	**0.246**	0.19	48.9	211	<5.0	7.8	13.9	290	--	--	--
	9/29/95	**0.200**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.358**	0.007	0.038	<0.00020	<0.005	<0.010	<0.020	0.50	70.0	264	3.74	5.2	13.9	458	--	--	--
	3/30/96	**0.279**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.547**	<0.005	0.014	<0.00020	<0.005	<0.010	<0.020	0.19	31.3	129	1.79	6.7	11.0	193	--	--	--
	9/27/96	**0.125**	<0.010	<0.250	<0.002	<0.020	<0.020	0.300	0.005	0.021	<0.00020	<0.005	<0.010	**0.095**	0.29	56.1	225	2.36	7.7	19.0	336	--	--	--
	3/29/97	**0.307**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.552**	<0.005	0.016	<0.00020	<0.005	<0.010	**0.013**	0.225	30.0	138	3.04	7.6	16.0	94	--	--	--
	9/17/97	**0.476**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.835**	<0.005	0.040	<0.00020	<0.005	<0.010	**0.169**	0.625	47.4	224	1.67	7.9	19.0	319	--	--	--
	3/27/98	**0.190**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.685**	<0.005	0.012	<0.00020	<0.010	<0.010	**0.061**	0.68	38.7	163	5.23	7.6	18.6	473	--	--	--
	9/30/98	**0.126**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.540**	0.006	0.033	<0.00020	<0.010	<0.010	<0.020	0.30	28.0	177	4.09	7.2	18.0	322	--	--	--
	3/31/99	**0.239**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.332**	<0.005	0.044	<0.00020	<0.010	<0.010	<0.020	0.12	63.2	191	2.49	7.1	16.0	247	--	--	--
	9/29/99	**1.53**	<0.010	<0.250	<0.002	<0.020	<0.020	**3.33**	0.005	**0.088**	<0.00020	<0.010	<0.010	<0.020	0.09	23.2	143	8.81	7.8	16.0	308	--	--	--
	9/15/00	**0.327**	<0.010	<0.250	<0.002	<0.020	<0.020	0.166	<0.005	0.038	<0.00020	<0.010	<0.010	<0.020	0.16	26.1	157	5.08	7.3	19.0	410	--	--	--
	3/16/00	**0.117**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.94**	<0.005	**0.922**	<0.00020	<0.010	<0.010	<0.020	0.199	50.9	202	3.78	--	--	--	--	--	--
	3/23/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.158	<0.005	0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	26.1	113	2.81	6.9	16.0	150	--	--	--
	10/4/01	**0.116**	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	0.029	<0.00020	<0.010	<0.010	<0.020	0.30	99.0	343	5.30	7.4	19.0	440	--	--	--
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.201	<0.005	0.010	--	<0.010	<0.010	**0.027**	0.32	41.9	177	3.18	7.0	11.0	400	--	--	--
	10/3/02	**0.317**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.767**	<0.005	**0.052**	<0.00020	<0.010	<0.010	<0.020	0.75	73.3	300	3.07		19.0	330	--	--	--
	3/25/03	**0.673**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.607**	<0.005	0.024	<0.00020	<0.010	<0.010	<0.020	0.115	31.6	119	2.08	6.9	18.0	440	--	--	--
	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**0.705**	<0.005	**0.072**	<0.00020	<0.010	<0.010	<0.020	0.446	29.4	181	2.38	6.3	15.0	249	--	--	--
	4/28/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.179	<0.005	**0.080**	<0.00020	<0.010	<0.010	<0.020	0.374	70.4	176	2.06	--	11.7	281	--	--	--
	10/26/04	**0.145**	<0.010	<0.250	<0.002	<0.020	<0.020	0.132	<0.005	0.036	<0.00020	<0.010	<0.010	<0.020	0.209	58.8	217	2.62	--	--	397	--	--	--
	4/27/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.105	<0.005	0.011	<0.00020	<0.010	<0.010	<0.020	0.149	41.4	174	2.15	--	--	294	--	--	--
	10/20/05	**0.347**	<0.010	<0.250	<0.002	<0.020	**0.08**	**0.453**	<0.005	0.015	<0.00020	<0.010	<0.010	**0.055**	0.288	47.6	213	9.50	--	--	232	--	--	--
	10/19/06	**0.937**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.63**	<0.005	**0.130**	<0.00020	<0.010	<0.010	**0.022**	0.226	59.2	168	2.97	--	--	423	--	--	--
	4/27/07	**0.446**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.24**	<0.005	0.018	<0.00020	<0.010	<0.010	<0.020	0.188	27.4	128	3.60	--	--	209	--	--	--
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.104	<0.005	0.011	<0.00020	<0.010	<0.010	<0.020	0.117	61.5	243	3.54	--	--	371	--	--	--
	4/30/08	**0.170**	<0.010	<0.250	<0.002	<0.020	<0.020	0.242	<0.005	0.021	<0.00020	<0.010	<0.010	<0.020	0.238	56.3	171	2.69	--	--	260	--	--	--
	10/29/08	<0.100	<0.010	0.0564	0.0003	<0.010	0.003	0.0206	<0.010	0.006	**0.00005**	<0.010	<0.010	**0.0509**	0.229	76.3	254	2.87	--	--	392	--	--	--
	4/30/09	<0.100	<0.010	0.0648	<0.001	<0.010	<0.010	0.0778	0.0054	0.008	<0.0002	**0.0099**	<0.010	**0.0159**	0.302	52.3	211	4.47	--	--	325	--	--	--
	8/26/09	--	--	0.072	<0.001	<0.005	--	0.160	<0.005	0.014	--	<0.020	--	--	--	45.0	--	--	8.1	22.0	1,490	10.0	94	9.1

APPENDIX A2
SURFACE WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.70	0.0020	0.010	1.00	0.300	0.015	0.050	0.00100	0.020	0.020	1.00	10	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.10	0.0010	0.010	0.010	0.300	0.010	0.050	0.00020	0.010	0.010	0.010	10	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.00 [2]	0.0020	0.050	0.007	1.000	0.025	0.200 [2]	0.000012	0.005	0.00006	0.050	10 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
SS-01 (continued)	10/12/09	**0.089**	0.0027	0.063	<0.001	0.0008	0.0011	0.086	<0.005	0.007	<0.0002	<0.020	<0.005	<0.30	0.370	49.0	240	8.60	7.8	13.1	2,380	8.9	160	12.7
	4/19/10	**0.190**	<0.010	0.064	<0.001	<0.005	<0.010	0.240	<0.005	0.012	<0.0002	<0.020	<0.005	<0.030	0.400	33.0	190	4.90	8.1	12.0	557	63.1	199	10.7
	10/11/10	0.052	0.0011	0.071	<0.001	0.0016	<0.025	0.160	<0.005	0.016	<0.0002	<0.005	<0.005	**0.036**	0.640	40.0	240	3.30	7.8	16.5	455	8.0	107	12.8
	4/20/11	0.062	<0.001	0.066	<0.0001	<0.005	<0.001	0.280	<0.001	0.013	<0.0001	<0.001	<0.001	<0.010	0.300	30.0	140	3.40	7.6	18.0	270	4.0	211	9.7
	10/18/11	**0.153**	<0.005	0.0767	<0.001	<0.005	<0.005	0.190	<0.005	0.0096	<0.00020	<0.010	<0.005	<0.010	0.250	39.2	210	5.70	7.5	16.9	289	8.3	236	9.6
	3/16/12	**0.170**	<0.005	0.0825	<0.001	<0.005	<0.005	0.238	<0.005	0.011	<0.0002	<0.010	<0.005	<0.010	<0.20	37.4	221	4.80	7.8	15.7	359	2.5	-27	11.3
	9/24/12	**0.147**	<0.0027	0.0941	<0.050	<0.0020	<0.0020	0.146	<0.0040	0.0102	<0.00010	<0.005	<0.0025	<0.0050	0.450	47.7	257	--	7.7	15.7	589	21.3	153	8.7
	4/17/13	**0.366**	<0.01	0.0735	<0.001	<0.005	<0.005	**0.492**	<0.005	0.0124	<0.0002	<0.01	<0.005	<0.01	0.140	29.0	131	4.4	8.0	20.9	297	4.9	76	6.9
SS-02	9/21/90	**0.13**	<0.010	0.094	**0.0046**	<0.020	<0.020	0.100	<0.005	--	<0.00020	<0.010	<0.010	<0.020	1.14	47.0	141	15.00	7.5	14.6	607	--	--	--
	10/23/91	--	<0.010	**0.170**	<0.002	<0.020	<0.020	**0.820**	<0.005	**0.711**	<0.00020	<0.010	<0.010	**0.080**	1.02	**490**	**806**	10.00	7.8	18.0	1,280	--	--	--
	3/26/92	**7.65**	<0.010	<0.250	**0.0021**	<0.020	<0.020	**8.07**	**0.0129**	**0.130**	<0.00020	<0.010	<0.010	<0.020	0.25	13.10	149	12.00	6.0	11.5	111	--	--	--
	9/30/92	**0.33**	<0.010	<0.250	<0.002	<0.020	<0.020	--	<0.005	--	<0.00020	**0.0073**	<0.010	<0.020	0.55	183	474	3.00	6.1	15.1	778	--	--	--
RHSS-002	3/31/93	**0.208**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.675**	<0.005	**0.327**	<0.00020	<0.010	<0.010	<0.020	0.35	70.4	185	4.00	5.8	14.1	341	--	--	--
Surface Water - Downstream	9/17/93	**0.47**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.27**	<0.005	**0.722**	<0.00020	<0.010	<0.010	<0.020	2.30	154	**523**	4.00	7.5	22.2	754	--	--	--
	3/30/94	**0.22**	<0.010	<0.250	<0.002	**0.032**	<0.020	**1.12**	<0.005	**0.117**	<0.00020	<0.010	<0.010	**0.165**	0.32	40.0	143	--	6.0	14.4	692	--	--	--
	9/30/94	**0.12**	<0.010	<0.250	<0.002	<0.020	**0.03**	**0.470**	<0.005	**0.356**	<0.00020	<0.010	<0.010	**0.024**	0.325	135	397	37.9	7.4	18.6	573	--	--	--
	3/31/95	**0.165**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.526**	<0.005	**0.332**	<0.00020	<0.010	<0.010	**0.041**	0.75	102	342	--	7.9	14.5	496	--	--	--
	9/29/95	**0.406**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.02**	0.006	**0.598**	<0.00020	<0.010	<0.010	<0.020	1.03	155	**505**	2.68	5.6	13.5	1,095	--	--	--
	3/30/96	**0.426**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.787**	<0.005	**0.250**	<0.00020	<0.010	<0.010	<0.020	0.19	30.6	198	2.99	6.5	12.0	282	--	--	--
	9/27/96	0.061	<0.010	<0.250	<0.002	<0.020	<0.020	0.227	0.010	**0.262**	<0.00020	<0.010	<0.010	**0.047**	0.75	147	409	3.19	7.6	20.0	613	--	--	--
	3/29/97	**0.209**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.644**	<0.005	**0.246**	<0.00020	<0.010	<0.010	0.010	0.45	72.8	255	2.47	7.8	16.0	224	--	--	--
	9/17/97	**0.165**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.428**	0.006	**0.333**	<0.00020	<0.005	<0.010	**0.153**	2.21	160	**562**	2.43	7.8	18.0	826	--	--	--
	3/27/98	**0.220**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.960**	<0.005	**0.363**	<0.00020	<0.010	<0.010	**0.032**	0.55	94.2	324	3.96	7.8	17.5	724	--	--	--
	9/30/98	**0.100**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.595**	<0.005	**0.351**	<0.00020	<0.010	<0.010	<0.020	1.55	89.2	444	6.85	7.4	19.0	368	--	--	--
	3/31/99	**0.129**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.947**	<0.005	**0.587**	<0.00020	<0.010	<0.010	<0.020	1.55	204	420	3.26	7.4	17.0	340	--	--	--
	9/29/99	**1.38**	<0.010	<0.250	<0.002	<0.020	<0.020	**3.03**	<0.005	**0.147**	<0.00020	<0.010	<0.010	**0.021**	0.16	45.7	173	8.10	7.6	17.0	623	--	--	--
	9/15/00	**0.283**	<0.010	<0.250	<0.002	<0.020	<0.020	0.225	<0.005	**0.416**	<0.00020	<0.010	<0.010	<0.020	1.24	170	439	6.58	7.4	20.0	640	--	--	--
	3/16/00	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**0.960**	<0.005	**0.464**	<0.00020	<0.010	<0.010	<0.020	1.18	175	500	3.75	--	--	--	--	--	--
	3/23/01	**0.108**	<0.010	<0.250	<0.002	<0.020	<0.020	0.260	0.007	**0.135**	<0.00020	<0.010	<0.010	**0.034**	0.103	71.9	224	3.08	6.6	16.0	170	--	--	--
	10/4/01	**0.166**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.746**	0.008	**0.910**	<0.00020	<0.010	<0.010	<0.020	6.32	**421**	**1,250**	27.0	7.2	19.0	680	--	--	--
	3/28/02	**0.121**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.502**	<0.005	**0.206**	--	<0.010	<0.010	<0.020	0.32	127	405	2.97	7.4	11.0	510	--	--	--
	10/3/02	**0.220**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.494**	<0.005	**0.549**	<0.00020	<0.010	<0.010	<0.020	1.11	**266**	**517**	4.28	5.8	18.0	130	--	--	--
	3/25/03	**1.57**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.28**	0.006	**0.264**	<0.00020	<0.010	<0.010	**0.024**	0.162	90.3	234	1.91	6.0	18.0	1,260	--	--	--
duplicate	3/25/03	**1.75**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.32**	<0.005	**0.265**	<0.00020	<0.010	<0.010	**0.024**	0.194	94.6	235	2.00	6.0	18.0	1,260	--	--	--
	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**1.01**	<0.005	**0.546**	<0.00020	<0.010	<0.010	<0.020	0.61	115	395	2.50	6.5	14.0	556	--	--	--
	4/28/04	**0.109**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.400**	<0.005	**0.417**	<0.00020	<0.010	<0.010	<0.020	0.608	220	394	2.26	--	12.7	623	--	--	--
	10/26/04	**0.216**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.839**	<0.005	**0.582**	<0.00020	<0.010	<0.010	<0.020	2.00	**276**	**554**	3.06	--	--	807	--	--	--
	4/27/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	**0.356**	<0.005	**0.272**	<0.00020	<0.010	<0.010	<0.020	0.648	37.6	460	2.48	--	--	737	--	--	--
	10/20/05	<0.100	<0.010	<0.250	<0.002	<0.020	**0.07**	**1.12**	<0.005	**0.330**	<0.00020	<0.010	<0.010	**0.048**	0.546	240	**571**	3.40	--	--	419	--	--	--
	10/19/06	**0.530**	<0.010	<0.250	<0.002	<0.020	<0.020	**1.06**	<0.005	**0.534**	<0.00020	<0.010	<0.010	**0.032**	0.299	204	422	3.49	--	--	550	--	--	--
	4/27/07	**0.389**	<0.010	<0.250	<0.002	<0.020	<0.020	**0.811**	<0.005	**0.488**	<0.00020	<0.010	<0.010	<0.020	0.333	**439**	303	4.42	--	--	511	--	--	--
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.136	<0.005	**0.308**	<0.00020	<0.010	<0.010	**0.023**	0.258	**300**	**647**	3.54	--	--	908	--	--	--
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	0.278	<0.005	**0.254**	<0.00020	<0.010	<0.010	**0.046**	0.285	159	371	2.74	--	--	569	--	--	--

APPENDIX A2
SURFACE WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.70	0.0020	0.010	1.00	0.300	0.015	0.050	0.00100	0.020	0.020	1.00	10	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.10	0.0010	0.010	0.010	0.300	0.010	0.050	0.00020	0.010	0.010	0.010	10	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.00 [2]	0.0020	0.050	0.007	1.000	0.025	0.200 [2]	0.000012	0.005	0.00006	0.050	10 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
SS-02 (continued)	10/29/08	<0.100	<0.010	0.0563	0.00024	<0.010	<0.010	0.128	<0.010	**0.318**	<0.00020	<0.010	<0.010	**0.0142**	0.407	**342**	**708**	3.43	--	--	1,070	--	--	--
	4/30/09	<0.100	<0.010	0.0608	<0.001	<0.010	<0.010	0.0894	<0.010	**0.222**	<0.0002	<0.010	<0.010	**0.0192**	0.499	201	**518**	3.39	--	--	821	--	--	--
	8/26/09	--	--	0.071	<0.001	<0.005	--	0.110	<0.005	**0.220**	--	<0.020	--	--	--	**310**	--	--	7.8	21.6	2,120	6.4	101	6.4
	10/12/09	0.043	0.0051	0.060	<0.001	0.0008	<0.010	0.045	<0.005	0.048	<0.0002	<0.020	<0.005	<0.30	0.320	210	**510**	10.3	7.8	13.3	3,360	8.7	123	13.0
	4/19/10	<0.10	<0.010	0.064	<0.001	<0.005	<0.010	0.260	<0.005	**0.260**	<0.0002	<0.020	<0.005	<0.030	0.420	150	390	6.30	7.6	10.6	632	60.1	181	10.2
	10/11/10	<0.250	0.0011	0.069	<0.001	0.0014	<0.025	0.270	<0.005	**0.310**	<0.0002	**0.0089**	<0.005	0.0064	1.20	250	**660**	4.70	7.6	15.2	999	0.0	113	8.3
	4/20/11	<0.040	<0.001	0.063	<0.0001	<0.005	<0.001	0.270	<0.001	**0.150**	<0.0001	0.004	<0.001	<0.010	0.630	120	360	3.00	7.6	18.6	602	4.2	241	9.7
	10/18/11	<0.100	<0.005	0.0749	<0.001	<0.005	<0.005	0.181	<0.005	**0.266**	<0.00020	<0.010	<0.005	<0.010	0.470	202	**582**	7.30	7.4	17.6	536	4.6	248	9.7
	3/16/12	<0.10	<0.005	0.0718	<0.001	<0.005	<0.005	0.171	<0.005	**0.0658**	<0.0002	<0.010	<0.005	<0.010	1.60	152	**614**	6.30	7.6	15.4	781	3.4	15	11.5
	9/25/12	<0.050	<0.0027	0.0976	<0.050	<0.0020	<0.0020	0.236	<0.0040	**0.301**	<0.00010	<0.005	<0.0025	<0.0050	1.60	**400**	**858**	--	8.5	16.2	1,420	9.7	181	9.1
	4/17/13	**0.194**	<0.01	0.0714	<0.001	<0.005	<0.005	0.242	<0.005	**0.110**	<0.0002	<0.01	<0.005	<0.01	0.21	79	207	5.00	8.1	20.8	382	4.7	79.6	8.0
SS-10	8/11/09	--	--	0.065	<0.001	<0.005	--	**12.0**	<0.005	**0.400**	--	<0.020	--	--	--	11.0	--	--	7.1	20.6	1,890	42.9	-40	3.4
SS-15	8/11/09	--	--	0.052	<0.001	<0.005	--	**0.900**	<0.005	0.035	--	<0.020	--	--	--	7.5	--	--	7.8	20.7	1,840	52.5	114	9.7
SS-20	8/11/09	--	--	0.058	<0.001	<0.005	--	**0.800**	<0.005	0.046	--	<0.020	--	--	--	8.2	--	--	8.4	23.9	1,112	27.3	58	7.6
	4/21/11	**0.190**	<0.010	0.054	<0.0001	<0.005	<0.001	**0.550**	<0.001	0.017	<0.0001	<0.001	<0.001	<0.010	0.10	4.8	96	1.90	7.7	14.6	87	14.2	128	9.4
	9/24/12	**0.378**	<0.0027	0.0514	<0.050	<0.0020	<0.0020	**1.58**	<0.0040	**0.0511**	<0.00010	<0.005	<0.0025	<0.0050	<0.02	3.6	89	--	7.3	15.6	146	10.3	159	8.6
	4/17/13	**0.788**	<0.01	0.0560	<0.001	<0.005	<0.005	**1.05**	<0.005	0.0198	<0.0002	<0.01	<0.005	<0.01	<0.02	5.6	55	2.80	7.5	19.8	283	7.2	158	8.7
SS-25	8/11/09	--	--	0.060	<0.001	<0.005	--	**0.590**	<0.005	**0.053**	--	<0.020	--	--	--	28.0	--	--	8.4	22.1	1,830	32.1	75	7.6
	4/21/11	**0.150**	<0.010	0.050	<0.0001	<0.005	<0.001	0.047	<0.001	0.008	<0.0001	<0.001	<0.001	<0.010	0.04	5.0	100	1.90	7.6	14.8	89	15.5	128	9.7
	9/24/12	**0.508**	<0.0027	0.0522	<0.050	<0.0020	<0.0020	**1.58**	<0.0040	**0.103**	<0.00010	<0.005	<0.0025	<0.0050	0.02	39.8	156	--	7.2	15.9	257	13.6	145	8.4
	4/17/13	**0.820**	<0.01	0.0549	<0.001	<0.005	<0.005	**1.17**	<0.005	0.033	<0.0002	<0.01	<0.005	<0.01	<0.02	5.8	62	2.90	7.5	19.6	336	6.8	163	8.9
SS-30	8/11/09	--	--	0.072	<0.001	<0.005	--	0.150	<0.005	0.025	--	<0.020	--	--	--	95.0	--	--	8.5	22.8	5,250	21.7	57	8.1
	1/5/11	--	--	0.077	<0.0001	<0.005	--	**0.330**	<0.010	**0.13**	--	<0.010	--	--	--	63.0	370	--	8.6	3.9	388	6.9	132	10.4
	4/20/11	<0.040	<0.001	0.067	<0.0001	<0.005	<0.001	0.220	<0.001	**0.089**	<0.0001	<0.001	<0.001	<0.010	0.33	27.0	160	2.80	7.4	17.9	283	3.9	238	9.5
	9/24/12	**0.163**	<0.0027	0.088	<0.050	<0.0020	<0.0020	0.175	<0.0040	0.020	<0.00010	<0.005	<0.0025	<0.0050	0.28	84.7	312	--	7.8	15.4	567	14.9	152	8.8
	4/17/13	**0.352**	<0.01	0.076	<0.001	<0.005	<0.005	**0.455**	<0.005	0.013	<0.0002	<0.01	<0.005	<0.01	0.19	31.0	144	18.20	7.8	21.1	268	8.7	62.1	6.2
SS-40	8/26/09	--	--	0.091	<0.001	<0.005	--	0.080	<0.005	0.022	--	<0.020	--	--	--	**300**	--	--	7.8	21.3	2,050	7.1	89	7.9
	4/20/11	0.057	<0.001	0.059	<0.0001	<0.005	<0.001	**0.330**	<0.001	**0.059**	**0.00025**	0.0021	<0.001	<0.010	0.81	110	270	2.90	7.3	17.5	494	4.6	223	10.2
	9/25/12	<0.050	<0.0027	**0.112**	<0.050	<0.0020	<0.0020	0.139	<0.0040	0.039	<0.00010	<0.005	<0.0025	<0.0050	2.0	**297**	**755**	--	8.0	14.8	1,260	9.8	174	9.3
	4/17/13	**0.221**	<0.01	0.061	<0.001	<0.005	<0.005	0.294	<0.005	0.026	<0.0002	<0.01	<0.005	<0.01	0.2	73	195	5.00	8.2	19.9	329	4.9	68.9	6.9
SS-50	8/11/09	--	--	0.029	<0.001	<0.005	--	**2.90**	<0.005	**0.180**	--	<0.020	--	--	--	5.6	--	--	7.8	25.4	1,180	32.0	-21	8.5
	4/21/11	**0.120**	<0.001	0.036	<0.0001	<0.005	<0.001	**1.10**	<0.001	**0.085**	<0.0001	<0.001	<0.001	<0.010	0.13	3.7	71	2.00	6.9	14.7	85	16.3	92	9.9
	9/25/12	**0.410**	<0.0027	0.0419	<0.050	<0.0020	<0.0020	**1.64**	<0.0040	**0.110**	<0.00010	<0.005	<0.0025	<0.0050	0.14	<2.0	72	--	8.7	17.6	161	9.6	16	8.8
	4/17/13	Dry, no sample collected			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SS-60	8/26/09	--	--	**0.140**	<0.001	<0.005	--	0.280	<0.005	**0.980**	--	<0.020	--	--	--	**350**	--	--	7.1	20.3	4,040	65.9	10	6.7
	4/21/11	0.068	<0.001	0.061	<0.0001	<0.005	<0.001	0.240	<0.001	0.011	<0.0001	0.0041	<0.001	<0.010	0.12	130	270	2.70	7.2	15.9	446	14.3	177	8.9
	9/25/12	**0.120**	<0.0027	0.0759	<0.050	<0.0020	<0.0020	**0.312**	<0.0040	**0.085**	<0.00010	<0.005	<0.0025	<0.0050	<0.02	58.1	191	--	8.4	12.5	337	11.7	179	8.8
	4/17/13	**0.534**	<0.01	0.0634	<0.001	<0.005	<0.005	**0.667**	<0.005	0.044	<0.0002	<0.01	<0.005	<0.01	<0.02	164	274	4.20	7.8	20.2	380	8.6	70.6	10.8

APPENDIX A2
SURFACE WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.70	0.0020	0.010	1.00	0.300	0.015	0.050	0.00100	0.020	0.020	1.00	10	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.10	0.0010	0.010	0.010	0.300	0.010	0.050	0.00020	0.010	0.010	0.010	10	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.00 [2]	0.0020	0.050	0.007	1.000	0.025	0.200 [2]	0.000012	0.005	0.00006	0.050	10 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
SS-70	8/26/09	--	--	**0.120**	<0.001	<0.005	--	**1.10**	<0.005	**0.250**	--	<0.020	--	--	--	65.0	--	--	6.9	20.6	2,520	6.8	91	6.4
	4/21/11	**0.160**	<0.001	0.050	<0.0001	<0.005	<0.001	**0.380**	<0.001	0.0058	**0.00012**	<0.001	<0.001	<0.010	0.053	23.0	92	2.30	7.0	16.4	138	8.3	189	10.3
	9/25/12	**0.120**	<0.0027	0.082	<0.050	<0.0020	<0.0020	**0.303**	<0.0040	**0.0587**	<0.00010	<0.005	<0.0025	<0.0050	<0.02	61.3	203	--	8.2	12.6	367	10.1	143	8.3
	4/17/13	**0.694**	<0.01	0.051	<0.001	<0.005	<0.005	**0.986**	<0.005	0.0134	<0.0002	<0.01	<0.005	<0.01	<0.02	24.1	89	3.30	8.0	19.3	129	7.3	60.9	7.7
SS-80	8/26/09	--	--	**0.120**	<0.001	<0.005	--	0.250	<0.005	0.025	--	<0.020	--	--	--	82.0	--	--	7.1	20.6	5,190	5.8	100	8.3
	4/21/11	**0.110**	<0.001	0.056	<0.0001	<0.005	<0.001	**0.310**	<0.001	<0.005	<0.0001	<0.001	<0.001	<0.010	0.099	27.0	120	2.10	6.8	15.5	161	6.8	92	10.6
	9/25/12	**0.192**	<0.0027	0.087	<0.050	<0.0020	<0.0020	0.263	<0.0040	0.0159	<0.00010	<0.005	<0.0025	<0.0050	<0.02	74.6	270	--	8.5	11.7	399	4.8	205	9.1
	4/17/13	**0.643**	<0.01	0.053	<0.001	<0.005	<0.005	**0.921**	<0.005	0.0075	<0.0002	<0.01	<0.005	<0.01	<0.02	27.6	88	3.20	7.4	20.1	139	7.6	70.8	7.1
SS-90	1/4/11	--	--	0.044	<0.0001	<0.005	--	**1.20**	<0.010	0.016	--	<0.010	--	--	--	26.0	97	--	8.4	3.0	390	4.2	152	10.6
	4/20/11	0.083	<0.001	0.057	<0.0001	<0.005	<0.001	**0.330**	<0.001	0.021	<0.0001	0.0021	<0.001	<0.010	0.33	56.0	130	2.60	6.7	16.9	292	4.6	293	11.7
	9/25/12	**0.121**	<0.0027	**0.115**	<0.050	<0.0020	<0.0020	0.212	<0.0040	0.0304	<0.00010	<0.005	<0.0025	<0.0050	0.98	202	**511**	--	8.1	11.9	840	12.1	207	9.0
	4/17/13	**0.491**	<0.01	0.056	<0.001	<0.005	<0.005	**0.709**	<0.005	0.0174	<0.0002	<0.01	<0.005	<0.01	0.04	39	127	3.70	7.9	19.7	203	6.9	66	7.6
RETENTION POND MW-001	9/30/94	2.58	0.016	<0.250	<0.002	<0.020	0.044	23.2	<0.005	6.49	<0.00020	<0.010	<0.010	0.035	2.95	787	2,230	258	7.4	22.5	3,140	--	--	--
	3/31/95	0.660	<0.010	<0.250	<0.002	<0.020	<0.020	5.15	<0.005	2.36	<0.00020	<0.010	<0.010	0.155	8.88	794	2,540	459	7.8	17.5	3,680	--	--	--
	9/29/95	0.156	<0.010	<0.250	<0.002	<0.020	<0.020	5.24	0.008	4.88	<0.00020	<0.010	<0.010	<0.020	1.03	801	2,660	4.95	5.4	14.8	4,220	--	--	--
	3/30/96	0.112	<0.010	<0.250	0.002	<0.020	<0.020	5.02	<0.005	5.40	<0.00020	<0.010	<0.010	<0.020	2.08	--	2,340	6.65	7.2	15.0	3,050	--	--	--
	9/27/96	0.167	<0.010	<0.250	<0.002	<0.020	<0.020	--	0.009	4.53	<0.00020	<0.010	<0.010	0.066	1.70	1,010	2,700	4.04	7.3	23.0	1,510	--	--	--
Water from Sediment Basin at W-1	3/29/97	0.097	<0.010	<0.250	<0.002	<0.020	<0.020	6.18	<0.005	5.46	<0.00020	<0.010	<0.010	0.010	1.29	1,050	2,460	4.31	7.5	22.0	1,770	--	--	--
	3/17/97	0.164	<0.010	<0.250	<0.002	<0.020	<0.020	3.66	<0.005	5.40	<0.00020	<0.010	<0.010	0.055	0.61	1,160	3,000	6.43	7.2	22.0	3,660	--	--	--
duplicate	3/27/98	<0.100	0.010	<0.250	<0.002	<0.020	<0.020	11.4	<0.005	5.90	<0.00020	<0.010	<0.010	0.021	0.29	942	2,780	4.43	7.2	23.4	1,419	--	--	--
	9/30/98	0.274	<0.010	<0.250	<0.002	<0.020	<0.020	--	<0.005	4.94	<0.00020	<0.010	<0.010	<0.020	--	666	2,700	15.40	7.6	20.0	1,200	--	--	--
	3/31/99	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	7.55	0.006	4.45	<0.00020	<0.010	<0.010	<0.020	0.60	1,560	2,930	7.92	7.3	18.0	1,021	--	--	--
	9/29/99	0.877	<0.010	<0.250	<0.002	<0.020	<0.020	6.77	<0.005	0.86	<0.00020	<0.010	<0.010	0.080	3.36	330	715	13.3	7.1	18.0	2,930	--	--	--
	3/16/00	0.410	<0.010	<0.250	<0.002	<0.020	<0.020	72.0	<0.005	4.54	<0.00020	<0.010	<0.010	<0.020	1.09	948	2,610	10.6	--	--	--	--	--	--
	9/15/00	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	2.02	<0.005	3.48	<0.00020	<0.010	<0.010	<0.020	6.27	894	2,470	5.21	6.6	19.0	980	--	--	--
	3/23/01	0.144	<0.010	<0.250	0.004	<0.020	<0.020	35.9	0.012	4.07	<0.00020	<0.010	<0.010	<0.020	0.48	926	2,630	5.85	6.5	17.0	480	--	--	--
duplicate	3/23/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	6.90	0.007	4.19	<0.00020	<0.010	<0.010	<0.020	0.35	939	2,640	7.52	6.5	17.0	480	--	--	--
	10/4/01	0.204	<0.010	<0.250	<0.002	<0.020	<0.020	0.915	0.007	0.23	<0.00020	<0.010	<0.010	<0.020	<0.05	<5.00	186	7.80	6.3	20.0	300	--	--	--
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	5.10	<0.005	3.66	--	<0.010	<0.010	<0.020	0.28	1,000	3,010	3.77	6.4	12.0	1,080	--	--	--
	10/3/02	<0.100	<0.010	<0.250	0.002	<0.020	0.027	1.52	<0.005	3.34	<0.00020	<0.010	<0.010	<0.020	1.82	1,030	2,940	4.94	6.7	18.0	370	--	--	--
duplicate	10/3/02	<0.100	<0.010	<0.250	0.002	<0.020	0.024	1.58	<0.005	3.33	<0.00020	<0.010	<0.010	<0.020	1.78	1,040	2,860	5.12	5.7	18.0	370	--	--	--
	3/25/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	6.69	0.006	3.56	<0.00020	<0.010	<0.010	0.025	0.41	846	2,530	3.72	6.6	17.0	330	--	--	--
	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	11.3	0.007	3.88	<0.00020	<0.010	<0.010	0.042	0.17	916	2,710	3.92	5.6	15.0	3,050	--	--	--
duplicate	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	11.4	0.006	3.88	<0.00020	<0.010	<0.010	<0.020	<0.050	958	2,690	3.90	5.6	15.0	3,170	--	--	--
	4/28/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	11.1	0.006	6.08	<0.00020	<0.010	<0.010	<0.020	<0.050	1,460	2,550	5.36	--	17.3	2,860	--	--	--
	10/26/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	5.25	<0.005	4.55	<0.00020	<0.010	<0.010	<0.020	0.29	1,190	2,950	3.64	--	--	3,480	--	--	--
	4/27/05	<0.100	<0.010	<0.250	0.002	<0.020	<0.020	7.63	0.007	5.73	<0.00020	<0.010	<0.010	<0.020	<0.050	1,100	2,550	4.71	--	--	2,870	--	--	--

APPENDIX A2
SURFACE WATER ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen
NC 2L Ground Water Standard		3.5 [1]	0.010	0.70	0.0020	0.010	1.00	0.300	0.015	0.050	0.00100	0.020	0.020	1.00	10	250	500	NE	6.5 - 8.5	NE	NE	NE	NE	NE
Solid Waste Section Limit		NE	0.010	0.10	0.0010	0.010	0.010	0.300	0.010	0.050	0.00020	0.010	0.010	0.010	10	250	NE	NE	NE	NE	NE	NE	NE	NE
NC 2B Surface Water Standard		0.087	0.050	1.00 [2]	0.0020	0.050	0.007	1.000	0.025	0.200 [2]	0.000012	0.005	0.00006	0.050	10 [2]	250 [2]	500 [2]	NE	6.0 - 9.0	NE	NE	50	NE	>5.0
RETENTION POND MW-001 (continued)	10/20/05	1.63	<0.010	<0.250	0.004	<0.020	0.028	103	0.006	4.88	<0.00020	<0.010	<0.010	0.057	0.43	403	3,010	89.0	--	--	529	--	--	--
	10/19/06	0.172	<0.010	<0.250	0.002	<0.020	0.347	27.4	<0.005	3.60	<0.00020	<0.010	<0.010	0.027	0.14	1,320	2,850	4.37	--	--	2,000	--	--	--
	4/27/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	5.36	<0.005	2.38	<0.00020	<0.010	<0.010	<0.020	0.29	1,380	2,750	4.01	--	--	4,830	--	--	--
	11/19/07	<0.100	0.042	<0.250	0.002	<0.020	<0.020	48.2	<0.005	3.28	<0.00020	<0.010	<0.010	0.025	<0.050	1,560	3,060	3.82	--	--	3,300	--	--	--
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	9.68	<0.005	2.99	<0.00020	<0.010	<0.010	0.022	0.16	1,100	2,910	3.38	--	--	4,880	--	--	--
	10/29/08	<0.100	<0.010	0.0687	<0.001	<0.010	<0.010	4.84	0.0035	2.88	<0.00020	<0.010	<0.010	<0.010	<0.050	188	3,060	3.51	--	--	4,200	--	--	--
	4/30/09	<0.100	<0.010	0.0774	0.0018	<0.010	0.0036	4.08	0.0044	3.10	<0.0002	<0.010	<0.010	<0.010	0.26	38	2,904	3.94	--	--	4,070	--	--	--
RETENTION POND MW-003	9/30/94	1.77	<0.010	<0.250	<0.002	<0.020	0.113	3.37	<0.005	2.20	<0.00020	<0.010	<0.010	0.096	0.20	159	415	20.1	6.9	19.6	519	--	--	--
	3/31/95	--	<0.010	<0.250	<0.002	<0.020	<0.020	4.86	<0.005	5.98	<0.00020	<0.010	<0.010	0.032	0.10	294	625	--	7.6	13.6	896	--	--	--
	9/29/95	1.64	<0.010	<0.250	<0.002	<0.020	<0.020	3.42	0.007	2.94	<0.00020	<0.010	<0.010	0.104	0.46	314	740	3.74	4.9	14.0	1,040	--	--	--
	3/30/96	11.4	<0.010	<0.250	0.002	<0.020	<0.020	23.3	0.009	3.16	<0.00020	<0.010	<0.010	0.126	0.13	222	552	3.83	7.2	12.0	750	--	--	--
	9/27/96	0.110	<0.010	<0.250	<0.002	<0.020	<0.020	1.01	0.007	2.36	<0.00020	<0.010	<0.010	0.030	0.16	283	737	6.73	7.6	20.0	974	--	--	--
Water from Sediment Basin at W-3	3/29/97	0.238	<0.010	<0.250	<0.002	<0.020	<0.020	1.93	<0.005	3.05	<0.00020	0.013	<0.010	0.020	0.18	809	807	4.17	7.8	16.0	590	--	--	--
	9/17/97	0.169	<0.010	<0.250	<0.002	<0.020	<0.020	0.72	0.005	3.06	<0.00020	0.006	<0.010	0.212	0.33	562	1,290	5.29	7.7	19.0	1,650	--	--	--
	3/27/98	0.270	<0.010	<0.250	<0.002	<0.020	<0.020	2.50	<0.005	3.37	<0.00020	0.013	<0.010	0.041	0.25	--	929	6.98	7.2	20.0	1,214	--	--	--
	9/30/98	0.353	<0.010	<0.250	<0.002	<0.020	<0.020	1.38	<0.005	--	<0.00020	0.017	<0.010	<0.020	0.78	367	1,280	10.1	6.9	19.0	920	--	--	--
	3/31/99	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	4.83	<0.005	5.55	<0.00020	<0.010	<0.010	<0.020	0.19	482	842	7.58	7.1	16.0	592	--	--	--
	9/29/99	0.677	<0.010	<0.250	<0.002	<0.020	<0.020	1.94	<0.005	0.89	<0.00020	<0.010	<0.010	<0.020	0.10	258	413	8.14	7.7	19.0	741	--	--	--
	9/15/00	0.224	<0.010	<0.250	<0.002	<0.020	<0.020	2.38	<0.005	2.80	<0.00020	<0.010	<0.010	<0.020	0.16	550	1,260	8.58	7.1	21.0	680	--	--	--
	3/23/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	3.69	0.010	2.25	<0.00020	<0.010	<0.010	0.030	0.23	530	1,230	5.72	6.6	17.0	640	--	--	--
	10/4/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	4.24	0.006	3.65	<0.00020	<0.010	<0.010	<0.020	0.08	592	1,440	30.0	7.0	20.0	600	--	--	--
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	5.62	<0.005	2.18	--	<0.010	<0.010	<0.020	0.11	682	1,590	5.36	6.4	13.0	680	--	--	--
	10/3/02	<0.100	<0.010	<0.250	0.002	<0.020	<0.020	6.51	<0.005	5.29	<0.00020	<0.010	<0.010	<0.020	<0.050	932	1,900	8.51	6.2	19.0	150	--	--	--
	3/25/03	3.28	<0.010	<0.250	<0.002	<0.020	<0.020	6.17	0.008	4.29	<0.00020	<0.010	<0.010	0.078	0.09	784	1,520	1.34	6.4	18.0	110	--	--	--
	10/2/03	0.634	<0.010	<0.250	<0.002	<0.020	<0.020	5.95	0.008	6.75	<0.00020	<0.010	<0.010	0.050	0.17	765	1,420	3.97	6.1	14.0	1,460	--	--	--
	4/28/04	0.152	<0.010	<0.250	<0.002	<0.020	<0.020	8.37	<0.005	6.72	<0.00020	<0.010	<0.010	<0.020	0.22	1,040	1,810	3.89	--	12.1	2,030	--	--	--
	10/26/04	0.554	<0.010	<0.250	0.005	<0.020	<0.020	16.3	<0.005	4.22	<0.00020	<0.010	<0.010	0.036	0.29	1,070	2,140	5.16	--	--	2,150	--	--	--
	4/27/05	<0.100	<0.010	<0.250	0.002	<0.020	<0.020	4.47	<0.005	6.11	<0.00020	<0.010	<0.010	<0.020	0.25	1,075	2,090	4.05	--	--	2,320	--	--	--
	10/20/05	<0.100	<0.010	<0.250	0.005	<0.020	0.027	7.90	<0.005	5.87	<0.00020	<0.010	<0.010	0.044	0.28	1,300	2,090	30.0	--	--	1,060	--	--	--
	10/19/06	<0.100	<0.010	1.46	<0.002	<0.020	<0.020	6.04	<0.005	4.55	<0.00020	<0.010	<0.010	0.021	0.28	1,170	1,920	4.20	--	--	1,370	--	--	--
	4/27/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	8.33	<0.005	4.19	<0.00020	<0.010	<0.010	<0.020	0.29	1,130	2,130	3.83	--	--	2,230	--	--	--
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	8.20	<0.005	6.00	<0.00020	<0.010	<0.010	<0.020	0.06	1,680	2,550	4.59	--	--	2,710	--	--	--
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	3.36	<0.005	3.80	<0.00020	<0.010	<0.010	0.037	0.30	2,090	2,110	3.56	--	--	2,290	--	--	--
	10/29/08	<0.100	<0.010	0.0593	<0.001	<0.010	<0.010	2.88	0.0023	4.36	<0.00020	<0.010	<0.010	<0.010	0.17	988	2,360	3.48	--	--	2,740	--	--	--
	4/30/09	<0.100	<0.010	0.0532	<0.001	<0.010	<0.010	4.62	0.0072	4.96	<0.00020	<0.010	<0.010	0.0146	0.34	261	2,460	4.11	--	--	2,930	--	--	--

All concentrations in milligrams per liter

NE - Not established
-- - Not sampled

[1] - No 2L standard established. NCDWM SWS Groundwater Protection presented
[2] - No freshwater aquatic life standard established. Water Supply criteria presented

Bold indicates exceedance of Solid Waste Section Limits (SWSL)
Gray background indicates exceedance of NC Ground Water Standard

TABLE A3
QUALITY CONTROL ANALYTICAL RESULTS SUMMARY
ASH LANDFILL - PERMIT 34-05
RURAL HALL, NORTH CAROLINA

Sample Location / ID	Date	Aluminum	Arsenic	Barium	Cadmium	Chromium (Total)	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc	Nitrate-nitrogen	Sulfate	Dissolved Solids	Total Organic Carbon	pH	Temperature (degrees Celsius)	Conductivity (µmhos/cm)
NC 2L Ground Water Standard		3.5 [1]	0.010	0.700	0.002	0.010	1.0	0.300	0.015	0.050	0.001	0.020	0.020	1.00	10.0	250	500	NE	6.5 - 8.5	NE	NE
Solid Waste Section Limit		NE	0.010	0.100	0.001	0.010	0.010	0.300	0.010	0.050	0.0002	0.010	0.01	0.01	10.0	250	NE	NE	NE	NE	NE
Field Blank	9/30/98	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<1.0	NS	NS	NS
	3/31/99	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.19	<5.00	<5.00	2.18	NS	NS	NS
	9/15/00	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.0	<1.0	NS	NS	NS
	3/23/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	0.006	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	14	<1.0	NS	NS	NS
	10/4/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	0.006	<0.010	<0.00020	<0.010	<0.010	<0.020	0.3	<5.00	15	<2.0	NS	NS	NS
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	NS	<0.010	<0.010	<0.020	<0.050	<5.00	14	<1.0	NS	NS	NS
	10/3/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	6	<1.0	NS	NS	NS
	3/25/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.198	<5.00	<5.00	<1.0	NS	NS	NS
	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<1.0	NS	NS	NS
	4/28/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	6	<1.0	NS	NS	NS
	10/26/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.151	<5.00	10	2.18	NS	NS	NS
	4/27/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	12	1.79	NS	NS	<30
	10/20/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.101	<5.00	<5.00	<0.50	NS	NS	<30
	10/19/06	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	4/27/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.336	<5.00	<5.00	<0.50	NS	NS	<30
	10/29/08	<0.100	<0.010	0.0031	<0.001	<0.010	<0.010	<0.050	<0.010	<0.010	0.00002	<0.010	0.0022	0.010	<0.050	<10	<5.00	<0.50	NS	NS	<30
	4/30/09	<0.100	<0.010	0.0077	<0.001	<0.010	<0.010	<0.050	0.0045	0.008	<0.0002	<0.010	<0.010	<0.010	<0.050	<10	90	<0.50	NS	NS	109
Travel Blank (Trip)	9/30/98	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<1.0	NS	NS	NS
	3/31/99	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.22	<5.00	15	<1.00	NS	NS	NS
	9/15/00	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.0	<1.0	NS	NS	NS
	3/23/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	14	1.03	NS	NS	NS
	10/4/01	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.4	<5.00	12	2.0	NS	NS	NS
	3/28/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	NS	<0.010	<0.010	<0.020	<0.050	<5.00	14	1.03	NS	NS	NS
	10/3/02	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	NS
	3/25/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	0.197	<5.00	7	<1.0	NS	NS	NS
	10/2/03	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	7	<1.0	NS	NS	NS
	4/28/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	16	<1.0	NS	NS	NS
	10/26/04	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	8	1.29	NS	NS	NS
	4/27/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	14	1.76	NS	NS	<30
	10/20/05	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	6	<0.50	NS	NS	<30
	10/19/06	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	4/27/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	11/19/07	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	4/30/08	<0.100	<0.010	<0.250	<0.002	<0.020	<0.020	<0.100	<0.005	<0.010	<0.00020	<0.010	<0.010	<0.020	<0.050	<5.00	<5.00	<0.50	NS	NS	<30
	10/29/08	<0.100	<0.010	0.0046	<0.001	<0.010	<0.010	<0.050	<0.010	<0.010	0.00001	<0.010	<0.010	<0.010	<0.050	<10	<5.00	<0.50	NS	NS	<30
	4/30/09	<0.100	<0.010	0.0086	0.0003	<0.010	<0.010	<0.050	<0.010	0.0071	<0.0002	<0.010	<0.010	<0.010	<0.050	<10	85	<0.50	NS	NS	115

All concentrations in milligrams per liter. NE - Not established NS - Not sampled [1] - No 2L standard established. NCDWM SWS Groundwater Protection presented

APPENDIX B
ANALYTICAL LABORATORY DATA SHEETS – GROUNDWATER AND SURFACE WATER

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
Eden, NC 27288
(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

May 10, 2013

Mr. Alan Martin
ERM
8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226

RE: Project: RJRT RH
Pace Project No.: 92154977

Dear Mr. Martin:
Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

cc: Amanda Freeman, ERM

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

Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
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CERTIFICATIONS

Project: RJRT RH
Pace Project No.: 92154977

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92154977001	**3405 SS01**	Water	04/17/13 14:00	04/18/13 09:30
92154977002	**3405 SS02**	Water	04/17/13 17:50	04/18/13 09:30
92154977003	**3405 SS20**	Water	04/17/13 11:30	04/18/13 09:30
92154977004	**3405 SS25**	Water	04/17/13 11:55	04/18/13 09:30
92154977005	**3405 SS30**	Water	04/17/13 14:15	04/18/13 09:30
92154977006	**3405 SS40**	Water	04/17/13 17:30	04/18/13 09:30
92154977007	**3405 SS60**	Water	04/17/13 16:05	04/18/13 09:30
92154977008	**3405 SS70**	Water	04/17/13 16:15	04/18/13 09:30
92154977009	**3405 SS80**	Water	04/17/13 16:50	04/18/13 09:30
92154977010	**3405 SS90**	Water	04/17/13 17:10	04/18/13 09:30
92154977011	**3405 PZ1**	Water	04/17/13 17:40	04/18/13 09:30
92154977012	**3405 PZ2**	Water	04/17/13 17:20	04/18/13 09:30
92154977013	**3405 PZ3**	Water	04/17/13 16:40	04/18/13 09:30
92154977014	**3405 PZ4**	Water	04/17/13 16:25	04/18/13 09:30

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SAMPLE ANALYTE COUNT

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92154977001	**3405 SS01**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977002	**3405 SS02**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977003	**3405 SS20**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977004	**3405 SS25**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977005	**3405 SS30**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977006	**3405 SS40**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977007	**3405 SS60**	EPA 6010	JDA	12	PASI-A

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SAMPLE ANALYTE COUNT

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977008	**3405 SS70**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977009	**3405 SS80**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977010	**3405 SS90**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977011	**3405 PZ1**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977012	**3405 PZ2**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977013	**3405 PZ3**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92154977014	**3405 PZ4**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	LMD	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS01 **Lab ID: 92154977001** Collected: 04/17/13 14:00 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**366**	ug/L	100	1	05/01/13 20:00	05/03/13 18:15	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:15	7440-38-2	
Barium	**73.5**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:15	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7440-50-8	
Iron	**492**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:15	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7439-92-1	
Manganese	**12.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:15	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:15	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:15	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**131**	mg/L	25.0	1		04/19/13 15:30		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**29.0**	mg/L	2.0	1		04/22/13 19:30	14808-79-8	M1
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.14**	mg/L	0.020	1		04/18/13 23:39		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**4.4**	mg/L	1.0	1		04/20/13 05:51	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS02 **Lab ID: 92154977002** Collected: 04/17/13 17:50 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**194**	ug/L	100	1	05/01/13 20:00	05/03/13 18:23	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:23	7440-38-2	
Barium	**71.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:23	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7440-50-8	
Iron	**242**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:23	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7439-92-1	
Manganese	**110**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:23	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:23	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:23	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**207**	mg/L	25.0	1		04/19/13 15:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**79.1**	mg/L	20.0	10		04/22/13 20:11	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.21**	mg/L	0.020	1		04/18/13 23:58		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**5.0**	mg/L	1.0	1		04/20/13 06:02	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS20 **Lab ID: 92154977003** Collected: 04/17/13 11:30 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**788**	ug/L	100	1	05/01/13 20:00	05/03/13 18:45	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:45	7440-38-2	
Barium	**56.0**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:45	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7440-50-8	
Iron	**1050**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:45	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7439-92-1	
Manganese	**19.8**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:45	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:45	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:45	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**55.0**	mg/L	25.0	1		04/19/13 15:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**5.6**	mg/L	2.0	1		04/22/13 20:25	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:31		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**2.8**	mg/L	1.0	1		04/20/13 06:12	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS25 **Lab ID: 92154977004** Collected: 04/17/13 11:55 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**820**	ug/L	100	1	05/01/13 20:00	05/03/13 18:48	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:48	7440-38-2	
Barium	**54.9**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:48	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7440-50-8	
Iron	**1170**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:48	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7439-92-1	
Manganese	**32.6**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:48	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:48	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:48	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:18	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**62.0**	mg/L	25.0	1		04/19/13 15:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**5.8**	mg/L	2.0	1		04/22/13 20:38	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:32		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**2.9**	mg/L	1.0	1		04/20/13 06:22	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS30 **Lab ID: 92154977005** Collected: 04/17/13 14:15 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**352**	ug/L	100	1	05/01/13 20:00	05/03/13 18:51	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:51	7440-38-2	
Barium	**76.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:51	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7440-50-8	
Iron	**455**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:51	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7439-92-1	
Manganese	**13.2**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:51	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:51	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:51	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**144**	mg/L	25.0	1		04/19/13 15:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**31.0**	mg/L	2.0	1		04/22/13 21:19	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.19**	mg/L	0.020	1		04/18/13 23:40		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**18.2**	mg/L	1.0	1		04/20/13 19:12	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS40 **Lab ID: 92154977006** Collected: 04/17/13 17:30 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**221**	ug/L	100	1	05/01/13 20:00	05/03/13 18:54	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:54	7440-38-2	
Barium	**60.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:54	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7440-50-8	
Iron	**294**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:54	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7439-92-1	
Manganese	**25.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:54	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:54	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:54	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**195**	mg/L	25.0	1		04/19/13 15:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**73.2**	mg/L	10.0	5		04/23/13 10:45	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.18**	mg/L	0.020	1		04/18/13 23:55		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**5.0**	mg/L	1.0	1		04/20/13 19:22	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS60 **Lab ID: 92154977007** Collected: 04/17/13 16:05 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**534**	ug/L	100	1	05/01/13 20:00	05/03/13 18:59	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:59	7440-38-2	
Barium	**63.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 18:59	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7440-50-8	
Iron	**667**	ug/L	50.0	1	05/01/13 20:00	05/03/13 18:59	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7439-92-1	
Manganese	**43.8**	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:59	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 18:59	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 18:59	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**274**	mg/L	25.0	1		04/19/13 15:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**164**	mg/L	20.0	10		04/23/13 10:58	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:44		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**4.2**	mg/L	1.0	1		04/20/13 19:32	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS70 **Lab ID: 92154977008** Collected: 04/17/13 16:15 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**694**	ug/L	100	1	05/01/13 20:00	05/03/13 19:06	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:06	7440-38-2	
Barium	**51.3**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:06	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7440-50-8	
Iron	**986**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:06	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7439-92-1	
Manganese	**13.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:06	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:06	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:06	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:34	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**89.0**	mg/L	25.0	1		04/19/13 15:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**24.1**	mg/L	2.0	1		04/22/13 22:00	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:45		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**3.3**	mg/L	1.0	1		04/20/13 19:42	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS80 **Lab ID: 92154977009** Collected: 04/17/13 16:50 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**643**	ug/L	100	1	05/01/13 20:00	05/03/13 19:10	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:10	7440-38-2	
Barium	**52.5**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:10	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7440-50-8	
Iron	**921**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:10	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7439-92-1	
Manganese	**7.5**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:10	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:10	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:10	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**88.0**	mg/L	25.0	1		04/19/13 15:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**27.6**	mg/L	2.0	1		04/23/13 11:12	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:52		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**3.2**	mg/L	1.0	1		04/20/13 20:16	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 SS90 **Lab ID: 92154977010** Collected: 04/17/13 17:10 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**491**	ug/L	100	1	05/01/13 20:00	05/03/13 19:13	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:13	7440-38-2	
Barium	**56.0**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:13	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7440-50-8	
Iron	**709**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:13	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7439-92-1	
Manganese	**17.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:13	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:13	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:13	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:39	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**127**	mg/L	25.0	1		04/19/13 15:33		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**38.9**	mg/L	2.0	1		04/22/13 22:27	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.035**	mg/L	0.020	1		04/18/13 23:53		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**3.7**	mg/L	1.0	1		04/20/13 20:26	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 PZ1 **Lab ID: 92154977011** Collected: 04/17/13 17:40 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**182**	ug/L	100	1	05/01/13 20:00	05/03/13 19:17	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:17	7440-38-2	
Barium	**64.3**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:17	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7440-50-8	
Iron	**200**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:17	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7439-92-1	
Manganese	**55.6**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:17	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:17	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:17	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**217**	mg/L	25.0	1		04/19/13 15:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**95.5**	mg/L	10.0	5		04/24/13 10:34	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.24**	mg/L	0.020	1		04/18/13 23:56		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**5.0**	mg/L	1.0	1		04/20/13 20:36	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 PZ2 **Lab ID: 92154977012** Collected: 04/17/13 17:20 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**222**	ug/L	100	1	05/01/13 20:00	05/03/13 19:33	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:33	7440-38-2	
Barium	**63.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:33	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7440-50-8	
Iron	**247**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:33	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7439-92-1	
Manganese	**28.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:33	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:33	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:33	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**197**	mg/L	25.0	1		04/19/13 15:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**98.2**	mg/L	10.0	5		04/24/13 10:48	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.18**	mg/L	0.020	1		04/18/13 23:54		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**4.6**	mg/L	1.0	1		04/20/13 20:46	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 PZ3 **Lab ID: 92154977013** Collected: 04/17/13 16:40 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**914**	ug/L	100	1	05/01/13 20:00	05/03/13 19:38	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:38	7440-38-2	
Barium	**55.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:38	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7440-50-8	
Iron	**1090**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:38	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7439-92-1	
Manganese	**10.2**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:38	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:38	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:38	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**87.0**	mg/L	25.0	1		04/19/13 15:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**30.5**	mg/L	2.0	1		04/24/13 11:02	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:47		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**3.2**	mg/L	1.0	1		04/20/13 20:56	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92154977

Sample: 3405 PZ4 **Lab ID: 92154977014** Collected: 04/17/13 16:25 Received: 04/18/13 09:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**889**	ug/L	100	1	05/01/13 20:00	05/03/13 19:42	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:42	7440-38-2	
Barium	**53.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:42	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7440-50-8	
Iron	**1050**	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:42	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7439-92-1	
Manganese	**12.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:42	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:42	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:42	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**89.0**	mg/L	25.0	1		04/19/13 15:35		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**30.0**	mg/L	2.0	1		04/24/13 11:15	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/18/13 23:46		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**3.3**	mg/L	1.0	1		04/20/13 21:18	7440-44-0	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: MERP/5144 — Analysis Method: EPA 7470
QC Batch Method: EPA 7470 — Analysis Description: 7470 Mercury
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 966984 — Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/03/13 11:59	

LABORATORY CONTROL SAMPLE: 966985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 966986 966987

Parameter	Units	92154977001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.6	100	103	75-125	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: MPRP/13201 — Analysis Method: EPA 6010
QC Batch Method: EPA 3010 — Analysis Description: 6010 MET
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 966863 — Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	05/03/13 18:09	
Arsenic	ug/L	ND	10.0	05/03/13 18:09	
Barium	ug/L	ND	5.0	05/03/13 18:09	
Cadmium	ug/L	ND	1.0	05/03/13 18:09	
Chromium	ug/L	ND	5.0	05/03/13 18:09	
Copper	ug/L	ND	5.0	05/03/13 18:09	
Iron	ug/L	ND	50.0	05/03/13 18:09	
Lead	ug/L	ND	5.0	05/03/13 18:09	
Manganese	ug/L	ND	5.0	05/03/13 18:09	
Selenium	ug/L	ND	10.0	05/03/13 18:09	
Silver	ug/L	ND	5.0	05/03/13 18:09	
Zinc	ug/L	ND	10.0	05/03/13 18:09	

LABORATORY CONTROL SAMPLE: 966864

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4820	96	80-120	
Arsenic	ug/L	500	479	96	80-120	
Barium	ug/L	500	490	98	80-120	
Cadmium	ug/L	500	483	97	80-120	
Chromium	ug/L	500	488	98	80-120	
Copper	ug/L	500	479	96	80-120	
Iron	ug/L	5000	4920	98	80-120	
Lead	ug/L	500	485	97	80-120	
Manganese	ug/L	500	491	98	80-120	
Selenium	ug/L	500	472	94	80-120	
Silver	ug/L	250	246	98	80-120	
Zinc	ug/L	500	490	98	80-120	

MATRIX SPIKE SAMPLE: 966865

Parameter	Units	92154977001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	366	5000	5430	101	75-125	
Arsenic	ug/L	ND	500	480	96	75-125	
Barium	ug/L	73.5	500	545	94	75-125	
Cadmium	ug/L	ND	500	475	95	75-125	
Chromium	ug/L	ND	500	486	97	75-125	
Copper	ug/L	ND	500	475	95	75-125	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

MATRIX SPIKE SAMPLE: 966865

Parameter	Units	92154977001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	492	5000	5320	97	75-125	
Lead	ug/L	ND	500	463	93	75-125	
Manganese	ug/L	12.4	500	491	96	75-125	
Selenium	ug/L	ND	500	474	95	75-125	
Silver	ug/L	ND	250	246	98	75-125	
Zinc	ug/L	ND	500	489	98	75-125	

SAMPLE DUPLICATE: 966866

Parameter	Units	92154977002 Result	Dup Result	RPD	Max RPD	Qualifiers
Aluminum	ug/L	194	194	0	20	
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	71.4	69.6	3	20	
Cadmium	ug/L	ND	ND		20	
Chromium	ug/L	ND	ND		20	
Copper	ug/L	ND	ND		20	
Iron	ug/L	242	241	0	20	
Lead	ug/L	ND	ND		20	
Manganese	ug/L	110	108	2	20	
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	
Zinc	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WET/25042 — Analysis Method: SM 2540C
QC Batch Method: SM 2540C — Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 960069 — Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	04/19/13 15:30	

LABORATORY CONTROL SAMPLE: 960070

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	244	98	80-120	

SAMPLE DUPLICATE: 960071

Parameter	Units	92154977001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	131	134	2	20	

SAMPLE DUPLICATE: 960072

Parameter	Units	92154977011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	217	215	1	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WETA/15080 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010

METHOD BLANK: 959610 — Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/22/13 15:53	

LABORATORY CONTROL SAMPLE: 959611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	18.9	94	90-110	

MATRIX SPIKE SAMPLE: 959612

Parameter	Units	92154233001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	80.4	20	106	126	90-110	M1

MATRIX SPIKE SAMPLE: 959614

Parameter	Units	92154977001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	29.0	20	59.4	152	90-110	M1

SAMPLE DUPLICATE: 959613

Parameter	Units	92154233001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	80.4	98.0	20	20	

SAMPLE DUPLICATE: 959615

Parameter	Units	92154977001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	29.0	25.5	13	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WETA/15124 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 961321 — Matrix: Water
Associated Lab Samples: 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/24/13 09:13	

LABORATORY CONTROL SAMPLE: 961322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	19.2	96	90-110	

MATRIX SPIKE SAMPLE: 961323

Parameter	Units	92154297002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	43.3	20	74.3	155	90-110	M1

MATRIX SPIKE SAMPLE: 961325

Parameter	Units	92154940001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	61.0	20	78.2	86	90-110	M1

SAMPLE DUPLICATE: 961324

Parameter	Units	92154297002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	43.3	65.0	40	20	D6

SAMPLE DUPLICATE: 961326

Parameter	Units	92154940001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	61.0	59.0	3	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WETA/15075 — Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 — Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 959511 — Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004, 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	04/18/13 23:15	

LABORATORY CONTROL SAMPLE: 959512

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE SAMPLE: 959513

Parameter	Units	92154996004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	2.5	2.0	81	90-110	M1

MATRIX SPIKE SAMPLE: 959515

Parameter	Units	92154996001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.036J	2.5	2.4	94	90-110	

SAMPLE DUPLICATE: 959514

Parameter	Units	92154996004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	

SAMPLE DUPLICATE: 959516

Parameter	Units	92154996001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.036J	0.035	3	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WETA/15079 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004

METHOD BLANK: 959585 Matrix: Water
Associated Lab Samples: 92154977001, 92154977002, 92154977003, 92154977004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/20/13 00:34	

LABORATORY CONTROL SAMPLE: 959586

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.0	96	90-110	

MATRIX SPIKE SAMPLE: 959587

Parameter	Units	92154484004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	7.2	25	30.2	92	75-125	

MATRIX SPIKE SAMPLE: 959761

Parameter	Units	92154237001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	2.1	25	28.0	104	75-125	

SAMPLE DUPLICATE: 959588

Parameter	Units	92154484005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	26.9	26.5	1	20	

SAMPLE DUPLICATE: 959762

Parameter	Units	92154237002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	6.3	6.1	3	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92154977

QC Batch: WETA/15099 — Analysis Method: SM 5310B
QC Batch Method: SM 5310B — Analysis Description: 5310B TOC
Associated Lab Samples: 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

METHOD BLANK: 960496 — Matrix: Water
Associated Lab Samples: 92154977005, 92154977006, 92154977007, 92154977008, 92154977009, 92154977010, 92154977011, 92154977012, 92154977013, 92154977014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/20/13 17:59	

LABORATORY CONTROL SAMPLE: 960497

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	23.7	95	90-110	

MATRIX SPIKE SAMPLE: 960498

Parameter	Units	92154195017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	11.3	25	32.6	85	75-125	

MATRIX SPIKE SAMPLE: 960500

Parameter	Units	92154977013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	3.2	25	28.8	102	75-125	

SAMPLE DUPLICATE: 960499

Parameter	Units	92154195018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	3.7	3.6	1	20	

SAMPLE DUPLICATE: 960501

Parameter	Units	92154977014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	3.3	3.2	2	20	

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(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: RJRT RH
Pace Project No.: 92154977

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92154977001	**3405 SS01**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977002	**3405 SS02**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977003	**3405 SS20**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977004	**3405 SS25**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977005	**3405 SS30**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977006	**3405 SS40**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977007	**3405 SS60**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977008	**3405 SS70**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977009	**3405 SS80**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977010	**3405 SS90**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977011	**3405 PZ1**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977012	**3405 PZ2**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977013	**3405 PZ3**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977014	**3405 PZ4**	EPA 3010	MPRP/13201	EPA 6010	ICP/12026
92154977001	**3405 SS01**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977002	**3405 SS02**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977003	**3405 SS20**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977004	**3405 SS25**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977005	**3405 SS30**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977006	**3405 SS40**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977007	**3405 SS60**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977008	**3405 SS70**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977009	**3405 SS80**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977010	**3405 SS90**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977011	**3405 PZ1**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977012	**3405 PZ2**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977013	**3405 PZ3**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977014	**3405 PZ4**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92154977001	**3405 SS01**	SM 2540C	WET/25042		
92154977002	**3405 SS02**	SM 2540C	WET/25042		
92154977003	**3405 SS20**	SM 2540C	WET/25042		
92154977004	**3405 SS25**	SM 2540C	WET/25042		
92154977005	**3405 SS30**	SM 2540C	WET/25042		
92154977006	**3405 SS40**	SM 2540C	WET/25042		
92154977007	**3405 SS60**	SM 2540C	WET/25042		
92154977008	**3405 SS70**	SM 2540C	WET/25042		
92154977009	**3405 SS80**	SM 2540C	WET/25042		
92154977010	**3405 SS90**	SM 2540C	WET/25042		
92154977011	**3405 PZ1**	SM 2540C	WET/25042		
92154977012	**3405 PZ2**	SM 2540C	WET/25042		
92154977013	**3405 PZ3**	SM 2540C	WET/25042		
92154977014	**3405 PZ4**	SM 2540C	WET/25042		
92154977001	**3405 SS01**	EPA 300.0	WETA/15080		
92154977002	**3405 SS02**	EPA 300.0	WETA/15080		
92154977003	**3405 SS20**	EPA 300.0	WETA/15080		
92154977004	**3405 SS25**	EPA 300.0	WETA/15080		
92154977005	**3405 SS30**	EPA 300.0	WETA/15080		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RJRT RH
Pace Project No.: 92154977

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92154977006	**3405 SS40**	EPA 300.0	WETA/15080		
92154977007	**3405 SS60**	EPA 300.0	WETA/15080		
92154977008	**3405 SS70**	EPA 300.0	WETA/15080		
92154977009	**3405 SS80**	EPA 300.0	WETA/15080		
92154977010	**3405 SS90**	EPA 300.0	WETA/15080		
92154977011	**3405 PZ1**	EPA 300.0	WETA/15124		
92154977012	**3405 PZ2**	EPA 300.0	WETA/15124		
92154977013	**3405 PZ3**	EPA 300.0	WETA/15124		
92154977014	**3405 PZ4**	EPA 300.0	WETA/15124		
92154977001	**3405 SS01**	EPA 353.2	WETA/15075		
92154977002	**3405 SS02**	EPA 353.2	WETA/15075		
92154977003	**3405 SS20**	EPA 353.2	WETA/15075		
92154977004	**3405 SS25**	EPA 353.2	WETA/15075		
92154977005	**3405 SS30**	EPA 353.2	WETA/15075		
92154977006	**3405 SS40**	EPA 353.2	WETA/15075		
92154977007	**3405 SS60**	EPA 353.2	WETA/15075		
92154977008	**3405 SS70**	EPA 353.2	WETA/15075		
92154977009	**3405 SS80**	EPA 353.2	WETA/15075		
92154977010	**3405 SS90**	EPA 353.2	WETA/15075		
92154977011	**3405 PZ1**	EPA 353.2	WETA/15075		
92154977012	**3405 PZ2**	EPA 353.2	WETA/15075		
92154977013	**3405 PZ3**	EPA 353.2	WETA/15075		
92154977014	**3405 PZ4**	EPA 353.2	WETA/15075		
92154977001	**3405 SS01**	SM 5310B	WETA/15079		
92154977002	**3405 SS02**	SM 5310B	WETA/15079		
92154977003	**3405 SS20**	SM 5310B	WETA/15079		
92154977004	**3405 SS25**	SM 5310B	WETA/15079		
92154977005	**3405 SS30**	SM 5310B	WETA/15099		
92154977006	**3405 SS40**	SM 5310B	WETA/15099		
92154977007	**3405 SS60**	SM 5310B	WETA/15099		
92154977008	**3405 SS70**	SM 5310B	WETA/15099		
92154977009	**3405 SS80**	SM 5310B	WETA/15099		
92154977010	**3405 SS90**	SM 5310B	WETA/15099		
92154977011	**3405 PZ1**	SM 5310B	WETA/15099		
92154977012	**3405 PZ2**	SM 5310B	WETA/15099		
92154977013	**3405 PZ3**	SM 5310B	WETA/15099		
92154977014	**3405 PZ4**	SM 5310B	WETA/15099		

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Pace Analytical	Sample Condition Upon Receipt (SCUR)	Page 1 of 2
	Document Number: F-CHR-CS-03-rev.10	Issuing Authority: Pace Huntersville Quality Office

Client Name: ERM

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1101 (T1102) **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1101**: No Correction **T1102**: No Correction

Corrected Cooler Temp.: 2.1 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: TMH 8

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☑No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: Kett **Date:** 4/18/13

SRF Review: Kett **Date:** 4/19/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92154977

92154977

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1668649

Section A Required Client Information:
Company: ERM NC Inc.
Address: 8000 Corporate Center Dr #100, Charlotte NC 28226
Email To: alan.martin@erm.com
Phone: 704-541-8345 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:
Report To: Alan Martin
Copy To:
Purchase Order No.:
Project Name: RJRT RH
Project Number:

Section C Invoice Information:
Attention:
Company Name:
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1940-3

REGULATORY AGENCY: ☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER
Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Metals 2001, TOC, TDS, Nitrate, Sulfate

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Metals 2001	TOC	TDS	Nitrate	Sulfate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SS-01	WT	G			4/17/13	1400		7	3		1					3	X	X	X	X	X		92154977
2	SS-02						1750																	A48h-hold time* 001
3	SS-20						1130																	002
4	SS-25						1155																	003
5	SS-30						1415																	004
6	SS-40						1730																	005
7	SS-60						1605																	006
8	SS-70						1615																	007
9	SS-80						1650																	008
10	SS-90						1710																	009
11	PZ-1						1740																	010
12	PZ-2						1700																	011
																								012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
48hr hold	ERM	4-17-13	1900	Fed Ex Imone Pace	4/18	930	21	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Chris Meyers / Ryan Martin
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY): 4-17-13

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1668648

Section A Required Client Information:

Company: ERM
Address: 8000 Corporate Center Dr #200, Charlotte NC 28226
Email To: alan.martin@erm.com
Phone: (704)541-8345 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Alan Martin
Copy To:
Purchase Order No.:
Project Name: RJRT RH
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): Metals 200.7	TOC	TDS	N. nitrate	Sulfate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92454977
1	PZ-3	WT	G			4-17-13	1640											X	X	X	X	X		☆ 48 hr hold time ☆ 03
2	PZ-4	↓	↓			4-17-13	1625											X	X	X	X	X		04
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
48 hr hold	[illegible] ERM	4-17-13	1900	Simone Pace	4/18	930	2.1	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Ryan Mayer
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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(704)875-9092

May 10, 2013

Mr. Alan Martin
ERM
8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226

RE: Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Dear Mr. Martin:
Enclosed are the analytical results for sample(s) received by the laboratory on April 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

cc: Amanda Freeman, ERM

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CERTIFICATIONS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92155173001	**3405 W3**	Water	04/18/13 08:25	04/19/13 10:15
92155173002	**3405 W3B**	Water	04/18/13 08:30	04/19/13 10:15
92155173003	**3405 W1**	Water	04/18/13 09:30	04/19/13 10:15
92155173004	**3405 W2**	Water	04/18/13 14:10	04/19/13 10:15
92155173005	**3405 W7**	Water	04/18/13 16:45	04/19/13 10:15
92155173006	**3405 W8**	Water	04/18/13 13:25	04/19/13 10:15
92155173007	**3405 PW1**	Water	04/18/13 14:00	04/19/13 10:15

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SAMPLE ANALYTE COUNT

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92155173001	**3405 W3**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173002	**3405 W3B**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173003	**3405 W1**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173004	**3405 W2**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173005	**3405 W7**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173006	**3405 W8**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A
92155173007	**3405 PW1**	EPA 6010	JDA	12	PASI-A

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SAMPLE ANALYTE COUNT

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W3 **Lab ID: 92155173001** Collected: 04/18/13 08:25 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	ND	ug/L	100	1	05/01/13 20:00	05/03/13 19:54	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:54	7440-38-2	
Barium	**56.2**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 19:54	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7440-50-8	
Iron	ND	ug/L	50.0	1	05/01/13 20:00	05/03/13 19:54	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7439-92-1	
Manganese	**75.7**	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7439-96-5	
Selenium	**29.6**	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:54	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 19:54	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 19:54	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**852**	mg/L	25.0	1		04/20/13 12:39		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**401**	mg/L	40.0	20		04/24/13 14:39	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.84**	mg/L	0.020	1		04/19/13 21:41		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**10.6**	mg/L	1.0	1		04/25/13 16:18	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W3B **Lab ID: 92155173002** Collected: 04/18/13 08:30 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	ND	ug/L	100	1	05/01/13 20:00	05/03/13 20:10	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:10	7440-38-2	
Barium	**40.3**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:10	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7440-50-8	
Iron	**397**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:10	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7439-92-1	
Manganese	**743**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:10	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:10	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:10	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 12:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**623**	mg/L	25.0	1		04/20/13 12:39		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**248**	mg/L	100	50		04/24/13 01:10	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/19/13 21:45		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**16.8**	mg/L	1.0	1		04/25/13 16:28	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W1 **Lab ID: 92155173003** Collected: 04/18/13 09:30 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**501**	ug/L	100	1	05/01/13 20:00	05/03/13 20:26	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:26	7440-38-2	
Barium	**35.2**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:26	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7440-50-8	
Iron	**692**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:26	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7439-92-1	
Manganese	**4590**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:26	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:26	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:26	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**2610**	mg/L	250	1		04/20/13 12:40		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**1380**	mg/L	200	100		04/24/13 01:24	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.36**	mg/L	0.020	1		04/19/13 21:53		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**23.5**	mg/L	1.0	1		04/25/13 16:37	7440-44-0	M1

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W2 **Lab ID: 92155173004** Collected: 04/18/13 14:10 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**192**	ug/L	100	1	05/01/13 20:00	05/03/13 20:34	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:34	7440-38-2	
Barium	**339**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:34	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7440-50-8	
Iron	**182**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:34	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7439-92-1	
Manganese	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:34	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:34	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:34	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**149**	mg/L	25.0	1		04/20/13 12:40		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**56.8**	mg/L	4.0	2		04/24/13 14:53	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.43**	mg/L	0.020	1		04/19/13 21:59		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**5.0**	mg/L	1.0	1		04/25/13 17:02	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W7 **Lab ID: 92155173005** Collected: 04/18/13 16:45 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**403**	ug/L	100	1	05/01/13 20:00	05/03/13 20:38	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:38	7440-38-2	
Barium	**140**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:38	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7440-47-3	
Copper	**6.0**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7440-50-8	
Iron	**1460**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:38	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7439-92-1	
Manganese	**146**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:38	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:38	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:38	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:08	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**173**	mg/L	25.0	1		04/20/13 12:40		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**10.2**	mg/L	2.0	1		04/24/13 02:45	14808-79-8	M1
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/19/13 22:07		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**29.0**	mg/L	1.0	1		04/25/13 17:18	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 W8 **Lab ID: 92155173006** Collected: 04/18/13 13:25 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**5940**	ug/L	100	1	05/01/13 20:00	05/03/13 20:41	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:41	7440-38-2	
Barium	**465**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:41	7440-43-9	
Chromium	**86.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7440-47-3	
Copper	**85.6**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7440-50-8	
Iron	**9760**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:41	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7439-92-1	
Manganese	**220**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:41	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:41	7440-22-4	
Zinc	**122**	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:41	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:11	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**247**	mg/L	25.0	1		04/20/13 12:40		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**95.0**	mg/L	10.0	5		04/24/13 15:06	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.29**	mg/L	0.020	1		04/19/13 21:56		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**5.2**	mg/L	1.0	1		04/25/13 17:28	7440-44-0	

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ANALYTICAL RESULTS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Sample: 3405 PW1 **Lab ID: 92155173007** Collected: 04/18/13 14:00 Received: 04/19/13 10:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**1080**	ug/L	100	1	05/01/13 20:00	05/03/13 20:44	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:44	7440-38-2	
Barium	**55.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:44	7440-43-9	
Chromium	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7440-50-8	
Iron	**3830**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:44	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7439-92-1	
Manganese	**2700**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:44	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:44	7440-22-4	
Zinc	**10.1**	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:44	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:19	7439-97-6	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**1940**	mg/L	250	1		04/20/13 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**1080**	mg/L	100	50		04/24/13 15:20	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**0.63**	mg/L	0.020	1		04/19/13 21:58		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**14.2**	mg/L	1.0	1		04/25/13 18:18	7440-44-0	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: MERP/5144 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006

METHOD BLANK: 966984 Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/03/13 11:59	

LABORATORY CONTROL SAMPLE: 966985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.6	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 966986 966987

Parameter	Units	92154977001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.6	100	103	75-125	2	25	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: MERP/5145
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 92155173007

METHOD BLANK: 966988
Matrix: Water
Associated Lab Samples: 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/03/13 13:13	

LABORATORY CONTROL SAMPLE: 966989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.7	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 966990 966991

Parameter	Units	92155173007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	0.94	0.80	37	32	75-125	15	25	M1

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: MPRP/13202 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

METHOD BLANK: 966867 Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	05/03/13 19:48	
Arsenic	ug/L	ND	10.0	05/03/13 19:48	
Barium	ug/L	ND	5.0	05/03/13 19:48	
Cadmium	ug/L	ND	1.0	05/03/13 19:48	
Chromium	ug/L	ND	5.0	05/03/13 19:48	
Copper	ug/L	ND	5.0	05/03/13 19:48	
Iron	ug/L	ND	50.0	05/03/13 19:48	
Lead	ug/L	ND	5.0	05/03/13 19:48	
Manganese	ug/L	ND	5.0	05/03/13 19:48	
Selenium	ug/L	ND	10.0	05/03/13 19:48	
Silver	ug/L	ND	5.0	05/03/13 19:48	
Zinc	ug/L	ND	10.0	05/03/13 19:48	

LABORATORY CONTROL SAMPLE: 966868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4850	97	80-120	
Arsenic	ug/L	500	479	96	80-120	
Barium	ug/L	500	493	99	80-120	
Cadmium	ug/L	500	484	97	80-120	
Chromium	ug/L	500	491	98	80-120	
Copper	ug/L	500	482	96	80-120	
Iron	ug/L	5000	4940	99	80-120	
Lead	ug/L	500	488	98	80-120	
Manganese	ug/L	500	493	99	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	247	99	80-120	
Zinc	ug/L	500	492	98	80-120	

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	5000	5440	107	75-125	
Arsenic	ug/L	ND	500	519	104	75-125	
Barium	ug/L	56.2	500	540	97	75-125	
Cadmium	ug/L	ND	500	468	94	75-125	
Chromium	ug/L	ND	500	475	95	75-125	
Copper	ug/L	ND	500	511	102	75-125	
Iron	ug/L	ND	5000	4790	96	75-125	
Lead	ug/L	ND	500	451	90	75-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Manganese	ug/L	75.7	500	543	93	75-125	
Selenium	ug/L	29.6	500	566	107	75-125	
Silver	ug/L	ND	250	253	101	75-125	
Zinc	ug/L	ND	500	499	99	75-125	

SAMPLE DUPLICATE: 966870

Parameter	Units	92155173002 Result	Dup Result	RPD	Max RPD	Qualifiers
Aluminum	ug/L	ND	ND		20	
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	40.3	39.7	2	20	
Cadmium	ug/L	ND	ND		20	
Chromium	ug/L	ND	ND		20	
Copper	ug/L	ND	ND		20	
Iron	ug/L	397	397	0	20	
Lead	ug/L	ND	ND		20	
Manganese	ug/L	743	738	1	20	
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	
Zinc	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: WET/25056 — Analysis Method: SM 2540C
QC Batch Method: SM 2540C — Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

METHOD BLANK: 960600 — Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	04/20/13 12:35	

LABORATORY CONTROL SAMPLE: 960601

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	244	98	80-120	

SAMPLE DUPLICATE: 960602

Parameter	Units	92155211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	834	838	0	20	

SAMPLE DUPLICATE: 960603

Parameter	Units	92155173006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	247	257	4	20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: WETA/15124 — Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 — Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004

METHOD BLANK: 961321 — Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/24/13 09:13	

LABORATORY CONTROL SAMPLE: 961322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	19.2	96	90-110	

MATRIX SPIKE SAMPLE: 961323

Parameter	Units	92154297002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	43.3	20	74.3	155	90-110	M1

MATRIX SPIKE SAMPLE: 961325

Parameter	Units	92154940001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	61.0	20	78.2	86	90-110	M1

SAMPLE DUPLICATE: 961324

Parameter	Units	92154297002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	43.3	65.0	40	20	D6

SAMPLE DUPLICATE: 961326

Parameter	Units	92154940001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	61.0	59.0	3	20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: WETA/15125 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92155173005, 92155173006, 92155173007

METHOD BLANK: 961335 Matrix: Water
Associated Lab Samples: 92155173005, 92155173006, 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/24/13 02:18	

LABORATORY CONTROL SAMPLE: 961336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	18.0	90	90-110	

MATRIX SPIKE SAMPLE: 961337

Parameter	Units	92155173005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	10.2	20	24.9	74	90-110	M1

SAMPLE DUPLICATE: 961338

Parameter	Units	92155173005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	10.2	10	2	20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: WETA/15093 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

METHOD BLANK: 960443 | Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	04/19/13 21:37	

LABORATORY CONTROL SAMPLE: 960444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.6	102	90-110	

MATRIX SPIKE SAMPLE: 960445

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.84	2.5	3.4	103	90-110	

MATRIX SPIKE SAMPLE: 960447

Parameter	Units	92155173002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	2.5	2.6	103	90-110	

SAMPLE DUPLICATE: 960446

Parameter	Units	92155173001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.84	0.84	0	20	

SAMPLE DUPLICATE: 960448

Parameter	Units	92155173002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

QC Batch: WETA/15143 — Analysis Method: SM 5310B
QC Batch Method: SM 5310B — Analysis Description: 5310B TOC
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

METHOD BLANK: 962612 — Matrix: Water
Associated Lab Samples: 92155173001, 92155173002, 92155173003, 92155173004, 92155173005, 92155173006, 92155173007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/25/13 13:42	

LABORATORY CONTROL SAMPLE: 962613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.0	96	90-110	

MATRIX SPIKE SAMPLE: 962614

Parameter	Units	92154513010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	3.6	25	27.4	95	75-125	

MATRIX SPIKE SAMPLE: 962616

Parameter	Units	92155173003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	23.5	25	39.2	63	75-125	M1

SAMPLE DUPLICATE: 962615

Parameter	Units	92154513011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	7.9	7.6	3	20	

SAMPLE DUPLICATE: 962617

Parameter	Units	92155173004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	5.0	4.9	1	20	

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QUALIFIERS

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

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TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RJRT RH 4/18/13
Pace Project No.: 92155173

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92155173001	**3405 W3**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173002	**3405 W3B**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173003	**3405 W1**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173004	**3405 W2**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173005	**3405 W7**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173006	**3405 W8**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173007	**3405 PW1**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155173001	**3405 W3**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173002	**3405 W3B**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173003	**3405 W1**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173004	**3405 W2**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173005	**3405 W7**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173006	**3405 W8**	EPA 7470	MERP/5144	EPA 7470	MERC/5002
92155173007	**3405 PW1**	EPA 7470	MERP/5145	EPA 7470	MERC/5001
92155173001	**3405 W3**	SM 2540C	WET/25056		
92155173002	**3405 W3B**	SM 2540C	WET/25056		
92155173003	**3405 W1**	SM 2540C	WET/25056		
92155173004	**3405 W2**	SM 2540C	WET/25056		
92155173005	**3405 W7**	SM 2540C	WET/25056		
92155173006	**3405 W8**	SM 2540C	WET/25056		
92155173007	**3405 PW1**	SM 2540C	WET/25056		
92155173001	**3405 W3**	EPA 300.0	WETA/15124		
92155173002	**3405 W3B**	EPA 300.0	WETA/15124		
92155173003	**3405 W1**	EPA 300.0	WETA/15124		
92155173004	**3405 W2**	EPA 300.0	WETA/15124		
92155173005	**3405 W7**	EPA 300.0	WETA/15125		
92155173006	**3405 W8**	EPA 300.0	WETA/15125		
92155173007	**3405 PW1**	EPA 300.0	WETA/15125		
92155173001	**3405 W3**	EPA 353.2	WETA/15093		
92155173002	**3405 W3B**	EPA 353.2	WETA/15093		
92155173003	**3405 W1**	EPA 353.2	WETA/15093		
92155173004	**3405 W2**	EPA 353.2	WETA/15093		
92155173005	**3405 W7**	EPA 353.2	WETA/15093		
92155173006	**3405 W8**	EPA 353.2	WETA/15093		
92155173007	**3405 PW1**	EPA 353.2	WETA/15093		
92155173001	**3405 W3**	SM 5310B	WETA/15143		
92155173002	**3405 W3B**	SM 5310B	WETA/15143		
92155173003	**3405 W1**	SM 5310B	WETA/15143		
92155173004	**3405 W2**	SM 5310B	WETA/15143		
92155173005	**3405 W7**	SM 5310B	WETA/15143		
92155173006	**3405 W8**	SM 5310B	WETA/15143		
92155173007	**3405 PW1**	SM 5310B	WETA/15143		

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Pace Analytical	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: March 15, 2010 Page 1 of 2
	Document Number: F-CHR-CS-03-rev.10	Issuing Authority: Pace Huntersville Quality Office

Client Name: ERM

Where Received: ☐ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1101 T1102 **Type of Ice:** Wet Blue None ☑ ☐ Samples on ice, cooling process has begun

Temp Correction Factor **T1101**: No Correction **T1102**: No Correction

Corrected Cooler Temp.: 2.6 C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/19

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☐Yes ☑No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:_____	☐Yes ☑No ☐N/A	12. #1/#3 did not receive received MW-1 4-18-13 @ 1010 MW3 4-18-13 @ 900
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☐Yes ☑No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: Kth **Date:** 4/19/13

SRF Review: Kth **Date:** 4/22/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92155173

92155173

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1668646

Section A Required Client Information:

Company: ERM NC Inc.
Address: 5000 Corporate Center Dr #200 Charlotte NC 28226
Email To: alan.martin@erm.com
Phone: (336)406-7625 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Alan Martin
Copy To:
Purchase Order No.:
Project Name: RJRT RH
Project Number:

Section C Invoice Information:

Attention: Alan Martin
Company Name: ERM
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1940-3

REGULATORY AGENCY: ☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NC

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Metals 200.7; TOC; TDS; Nitrate; Sulfate

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Metals 200.7	TOC	TDS	Nitrate	Sulfate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92155173
1	W-3	WT	G			4-18	0825		7	3		1					3	X	X	X	X	X		W1
2	W-3B					4-18	0830		7	3		1					3	X	X	X	X	X		W2
3	W-1					4-18	0930		7	3		1					3	X	X	X	X	X		W3
4	W-2					4-18	1410		7	3		1					3	X	X	X	X	X		W4
5	W-7					4-18	1645		7	3		1					3	X	X	X	X	X		W5
6	W-8					4-18	1525		7	3		1					3	X	X	X	X	X		W6
7	PW-1					4-18	1400		7	3		1					3	X	X	X	X	X		W7
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Short 48 hr hold on Analysis	[signature]	4-18-13	1745	Fed Ex						
				Jmae Pace	4-19-13	0915	2.5	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Chris Means / Ryan Mayette
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 4-18-13

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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May 10, 2013

Mr. Alan Martin
ERM
8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226

RE: Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Dear Mr. Martin:
Enclosed are the analytical results for sample(s) received by the laboratory on April 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

cc: Amanda Freeman, ERM

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92155229001	**3405 W9**	Water	04/19/13 09:35	04/19/13 13:40

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SAMPLE ANALYTE COUNT

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92155229001	**3405 W9**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A

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ANALYTICAL RESULTS

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Sample: 3405 W9 **Lab ID: 92155229001** Collected: 04/19/13 09:35 Received: 04/19/13 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**281**	ug/L	100	1	05/01/13 20:00	05/03/13 20:52	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:52	7440-38-2	
Barium	**115**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:52	7440-43-9	
Chromium	**8.5**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7440-50-8	
Iron	**157**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:52	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7439-92-1	
Manganese	**8.0**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:52	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:52	7440-22-4	
Zinc	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:52	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:27	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**155**	mg/L	25.0	1		04/20/13 12:41		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**9.3**	mg/L	2.0	1		04/24/13 03:53	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/19/13 22:14		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**2.4**	mg/L	1.0	1		04/25/13 19:02	7440-44-0	

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: MERP/5145
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 92155229001

METHOD BLANK: 966988
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/03/13 13:13	

LABORATORY CONTROL SAMPLE: 966989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.7	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 966990 966991

Parameter	Units	92155173007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	0.94	0.80	37	32	75-125	15	25	M1

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: MPRP/13202
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 92155229001

METHOD BLANK: 966867
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	05/03/13 19:48	
Arsenic	ug/L	ND	10.0	05/03/13 19:48	
Barium	ug/L	ND	5.0	05/03/13 19:48	
Cadmium	ug/L	ND	1.0	05/03/13 19:48	
Chromium	ug/L	ND	5.0	05/03/13 19:48	
Copper	ug/L	ND	5.0	05/03/13 19:48	
Iron	ug/L	ND	50.0	05/03/13 19:48	
Lead	ug/L	ND	5.0	05/03/13 19:48	
Manganese	ug/L	ND	5.0	05/03/13 19:48	
Selenium	ug/L	ND	10.0	05/03/13 19:48	
Silver	ug/L	ND	5.0	05/03/13 19:48	
Zinc	ug/L	ND	10.0	05/03/13 19:48	

LABORATORY CONTROL SAMPLE: 966868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4850	97	80-120	
Arsenic	ug/L	500	479	96	80-120	
Barium	ug/L	500	493	99	80-120	
Cadmium	ug/L	500	484	97	80-120	
Chromium	ug/L	500	491	98	80-120	
Copper	ug/L	500	482	96	80-120	
Iron	ug/L	5000	4940	99	80-120	
Lead	ug/L	500	488	98	80-120	
Manganese	ug/L	500	493	99	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	247	99	80-120	
Zinc	ug/L	500	492	98	80-120	

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	5000	5440	107	75-125	
Arsenic	ug/L	ND	500	519	104	75-125	
Barium	ug/L	56.2	500	540	97	75-125	
Cadmium	ug/L	ND	500	468	94	75-125	
Chromium	ug/L	ND	500	475	95	75-125	
Copper	ug/L	ND	500	511	102	75-125	
Iron	ug/L	ND	5000	4790	96	75-125	
Lead	ug/L	ND	500	451	90	75-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Manganese	ug/L	75.7	500	543	93	75-125	
Selenium	ug/L	29.6	500	566	107	75-125	
Silver	ug/L	ND	250	253	101	75-125	
Zinc	ug/L	ND	500	499	99	75-125	

SAMPLE DUPLICATE: 966870

Parameter	Units	92155173002 Result	Dup Result	RPD	Max RPD	Qualifiers
Aluminum	ug/L	ND	ND		20	
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	40.3	39.7	2	20	
Cadmium	ug/L	ND	ND		20	
Chromium	ug/L	ND	ND		20	
Copper	ug/L	ND	ND		20	
Iron	ug/L	397	397	0	20	
Lead	ug/L	ND	ND		20	
Manganese	ug/L	743	738	1	20	
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	
Zinc	ug/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: WET/25056
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92155229001

METHOD BLANK: 960600
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	04/20/13 12:35	

LABORATORY CONTROL SAMPLE: 960601

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	244	98	80-120	

SAMPLE DUPLICATE: 960602

Parameter	Units	92155211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	834	838	0	20	

SAMPLE DUPLICATE: 960603

Parameter	Units	92155173006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	247	257	4	20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: WETA/15125
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92155229001

METHOD BLANK: 961335
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/24/13 02:18	

LABORATORY CONTROL SAMPLE: 961336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	18.0	90	90-110	

MATRIX SPIKE SAMPLE: 961337

Parameter	Units	92155173005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	10.2	20	24.9	74	90-110	M1

SAMPLE DUPLICATE: 961338

Parameter	Units	92155173005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	10.2	10	2	20	

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QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: WETA/15093
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92155229001

METHOD BLANK: 960443
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	04/19/13 21:37	

LABORATORY CONTROL SAMPLE: 960444

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.6	102	90-110	

MATRIX SPIKE SAMPLE: 960445

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.84	2.5	3.4	103	90-110	

MATRIX SPIKE SAMPLE: 960447

Parameter	Units	92155173002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	2.5	2.6	103	90-110	

SAMPLE DUPLICATE: 960446

Parameter	Units	92155173001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.84	0.84	0	20	

SAMPLE DUPLICATE: 960448

Parameter	Units	92155173002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

QC Batch: WETA/15143
QC Batch Method: SM 5310B
Analysis Method: SM 5310B
Analysis Description: 5310B TOC
Associated Lab Samples: 92155229001

METHOD BLANK: 962612
Matrix: Water
Associated Lab Samples: 92155229001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/25/13 13:42	

LABORATORY CONTROL SAMPLE: 962613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.0	96	90-110	

MATRIX SPIKE SAMPLE: 962614

Parameter	Units	92154513010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	3.6	25	27.4	95	75-125	

MATRIX SPIKE SAMPLE: 962616

Parameter	Units	92155173003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	23.5	25	39.2	63	75-125	M1

SAMPLE DUPLICATE: 962615

Parameter	Units	92154513011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	7.9	7.6	3	20	

SAMPLE DUPLICATE: 962617

Parameter	Units	92155173004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	5.0	4.9	1	20	

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QUALIFIERS

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RJRT RH 4/19/13
Pace Project No.: 92155229

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92155229001	**3405 W9**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155229001	**3405 W9**	EPA 7470	MERP/5145	EPA 7470	MERC/5001
92155229001	**3405 W9**	SM 2540C	WET/25056		
92155229001	**3405 W9**	EPA 300.0	WETA/15125		
92155229001	**3405 W9**	EPA 353.2	WETA/15093		
92155229001	**3405 W9**	SM 5310B	WETA/15143		

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Pace Analytical	Document Name: Sample Condition Upon Receipt (SCUR)	Page 1 of 2
	Document Number: F-CHR-CS-03-rev.10	Issuing Authority: Pace Huntersville Quality Office

Client Name: ERM

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other_____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1101 T1102 **Type of Ice:** Wet Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1101**: No Correction **T1102**: No Correction

Corrected Cooler Temp.: 21 C **Biological Tissue is Frozen:** Yes No N/A

Date and Initials of person examining contents: 4/19

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☑No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:	KHH	**Date:**	4/19/13
SRF Review:	KHH	**Date:**	4/22/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92155229

92155229

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: [ ] of [ ]

1668644

Section A Required Client Information:

Company: ERM NC Inc.
Address: 5000 Corporate Center Dr #200 Charlotte NC 28226
Email To: chris.means@erm.com
Phone: (704)541-8345 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Alan Martin
Copy To:
Purchase Order No.:
Project Name: RSRT RH
Project Number:

Section C Invoice Information:

Attention: Alan Martin
Company Name: ERM NC Inc
Address: SAME
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1940 - 3

REGULATORY AGENCY: ☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER ☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NC

Section D Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N): N N N N N

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: Metals 6007	TOC	TDS	Nitrate	Sulfate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	W-9	WT	G			4-19	0935		7	3		1					3	X	X	X	X	X		001
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Short hold on Nitrates	[signature] / ERM	4-19-13	1340	[signature] / ERM	4/19/13	1340	21	y	n	y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Chris Means / Ryan Mayette

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 4-19-13

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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May 10, 2013

Mr. Alan Martin
ERM
8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226

RE: Project: RJRT RH
Pace Project No.: 92155231

Dear Mr. Martin:
Enclosed are the analytical results for sample(s) received by the laboratory on April 19, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

cc: Amanda Freeman, ERM

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CERTIFICATIONS

Project: RJRT RH
Pace Project No.: 92155231

Asheville Certification IDs
2225 Riverside Dr., Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: RJRT RH
Pace Project No.: 92155231

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92155231001	**3405 W6**	Water	04/19/13 11:05	04/19/13 13:40

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SAMPLE ANALYTE COUNT

Project: RJRT RH
Pace Project No.: 92155231

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92155231001	**3405 W6**	EPA 6010	JDA	12	PASI-A
		EPA 7470	SH1	1	PASI-A
		SM 2540C	JTM	1	PASI-A
		EPA 300.0	AES	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		SM 5310B	AES	1	PASI-A

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ANALYTICAL RESULTS

Project: RJRT RH
Pace Project No.: 92155231

Sample: 3405 W6 **Lab ID: 92155231001** Collected: 04/19/13 11:05 Received: 04/19/13 13:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Aluminum	**517**	ug/L	100	1	05/01/13 20:00	05/03/13 20:55	7429-90-5	
Arsenic	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:55	7440-38-2	
Barium	**41.1**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7440-39-3	
Cadmium	ND	ug/L	1.0	1	05/01/13 20:00	05/03/13 20:55	7440-43-9	
Chromium	**18.3**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7440-47-3	
Copper	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7440-50-8	
Iron	**277**	ug/L	50.0	1	05/01/13 20:00	05/03/13 20:55	7439-89-6	
Lead	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7439-92-1	
Manganese	**6.4**	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7439-96-5	
Selenium	ND	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:55	7782-49-2	
Silver	ND	ug/L	5.0	1	05/01/13 20:00	05/03/13 20:55	7440-22-4	
Zinc	**21.2**	ug/L	10.0	1	05/01/13 20:00	05/03/13 20:55	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	05/02/13 13:55	05/03/13 13:37	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**334**	mg/L	25.0	1		04/20/13 12:42		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	**12.2**	mg/L	2.0	1		04/24/13 04:07	14808-79-8	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	ND	mg/L	0.020	1		04/19/13 22:25		
5310B TOC	Analytical Method: SM 5310B							
Total Organic Carbon	**4.9**	mg/L	1.0	1		04/25/13 19:12	7440-44-0	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: MERP/5145
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 92155231001

METHOD BLANK: 966988
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	05/03/13 13:13	

LABORATORY CONTROL SAMPLE: 966989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.7	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 966990 966991

Parameter	Units	92155173007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	0.94	0.80	37	32	75-125	15	25	M1

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: MPRP/13202
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 92155231001

METHOD BLANK: 966867
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	100	05/03/13 19:48	
Arsenic	ug/L	ND	10.0	05/03/13 19:48	
Barium	ug/L	ND	5.0	05/03/13 19:48	
Cadmium	ug/L	ND	1.0	05/03/13 19:48	
Chromium	ug/L	ND	5.0	05/03/13 19:48	
Copper	ug/L	ND	5.0	05/03/13 19:48	
Iron	ug/L	ND	50.0	05/03/13 19:48	
Lead	ug/L	ND	5.0	05/03/13 19:48	
Manganese	ug/L	ND	5.0	05/03/13 19:48	
Selenium	ug/L	ND	10.0	05/03/13 19:48	
Silver	ug/L	ND	5.0	05/03/13 19:48	
Zinc	ug/L	ND	10.0	05/03/13 19:48	

LABORATORY CONTROL SAMPLE: 966868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	4850	97	80-120	
Arsenic	ug/L	500	479	96	80-120	
Barium	ug/L	500	493	99	80-120	
Cadmium	ug/L	500	484	97	80-120	
Chromium	ug/L	500	491	98	80-120	
Copper	ug/L	500	482	96	80-120	
Iron	ug/L	5000	4940	99	80-120	
Lead	ug/L	500	488	98	80-120	
Manganese	ug/L	500	493	99	80-120	
Selenium	ug/L	500	480	96	80-120	
Silver	ug/L	250	247	99	80-120	
Zinc	ug/L	500	492	98	80-120	

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	ND	5000	5440	107	75-125	
Arsenic	ug/L	ND	500	519	104	75-125	
Barium	ug/L	56.2	500	540	97	75-125	
Cadmium	ug/L	ND	500	468	94	75-125	
Chromium	ug/L	ND	500	475	95	75-125	
Copper	ug/L	ND	500	511	102	75-125	
Iron	ug/L	ND	5000	4790	96	75-125	
Lead	ug/L	ND	500	451	90	75-125	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

MATRIX SPIKE SAMPLE: 966869

Parameter	Units	92155173001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Manganese	ug/L	75.7	500	543	93	75-125	
Selenium	ug/L	29.6	500	566	107	75-125	
Silver	ug/L	ND	250	253	101	75-125	
Zinc	ug/L	ND	500	499	99	75-125	

SAMPLE DUPLICATE: 966870

Parameter	Units	92155173002 Result	Dup Result	RPD	Max RPD	Qualifiers
Aluminum	ug/L	ND	ND		20	
Arsenic	ug/L	ND	ND		20	
Barium	ug/L	40.3	39.7	2	20	
Cadmium	ug/L	ND	ND		20	
Chromium	ug/L	ND	ND		20	
Copper	ug/L	ND	ND		20	
Iron	ug/L	397	397	0	20	
Lead	ug/L	ND	ND		20	
Manganese	ug/L	743	738	1	20	
Selenium	ug/L	ND	ND		20	
Silver	ug/L	ND	ND		20	
Zinc	ug/L	ND	ND		20	

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(336)623-8921

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: WET/25056
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92155231001

METHOD BLANK: 960600
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	04/20/13 12:35	

LABORATORY CONTROL SAMPLE: 960601

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	244	98	80-120	

SAMPLE DUPLICATE: 960602

Parameter	Units	92155211001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	834	838	0	20	

SAMPLE DUPLICATE: 960603

Parameter	Units	92155173006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	247	257	4	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: WETA/15125
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92155231001

METHOD BLANK: 961335
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	04/24/13 02:18	

LABORATORY CONTROL SAMPLE: 961336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	20	18.0	90	90-110	

MATRIX SPIKE SAMPLE: 961337

Parameter	Units	92155173005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	10.2	20	24.9	74	90-110	M1

SAMPLE DUPLICATE: 961338

Parameter	Units	92155173005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	10.2	10	2	20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: WETA/15094
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 92155231001

METHOD BLANK: 960449
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.020	04/19/13 22:18	

LABORATORY CONTROL SAMPLE: 960450

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.5	2.5	101	90-110	

MATRIX SPIKE SAMPLE: 960451

Parameter	Units	92155231001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	ND	2.5	2.6	105	90-110	

SAMPLE DUPLICATE: 960452

Parameter	Units	92155231001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: RJRT RH
Pace Project No.: 92155231

QC Batch: WETA/15143
QC Batch Method: SM 5310B
Analysis Method: SM 5310B
Analysis Description: 5310B TOC
Associated Lab Samples: 92155231001

METHOD BLANK: 962612
Matrix: Water
Associated Lab Samples: 92155231001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	04/25/13 13:42	

LABORATORY CONTROL SAMPLE: 962613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	25	24.0	96	90-110	

MATRIX SPIKE SAMPLE: 962614

Parameter	Units	92154513010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	3.6	25	27.4	95	75-125	

MATRIX SPIKE SAMPLE: 962616

Parameter	Units	92155173003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	23.5	25	39.2	63	75-125	M1

SAMPLE DUPLICATE: 962615

Parameter	Units	92154513011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	7.9	7.6	3	20	

SAMPLE DUPLICATE: 962617

Parameter	Units	92155173004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	5.0	4.9	1	20	

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QUALIFIERS

Project: RJRT RH
Pace Project No.: 92155231

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RJRT RH
Pace Project No.: 92155231

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92155231001	**3405 W6**	EPA 3010	MPRP/13202	EPA 6010	ICP/12027
92155231001	**3405 W6**	EPA 7470	MERP/5145	EPA 7470	MERC/5001
92155231001	**3405 W6**	SM 2540C	WET/25056		
92155231001	**3405 W6**	EPA 300.0	WETA/15125		
92155231001	**3405 W6**	EPA 353.2	WETA/15094		
92155231001	**3405 W6**	SM 5310B	WETA/15143		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: March 15, 2010 Page 1 of 2
	Document Number: **F-CHR-CS-03-rev.10**	Issuing Authority: Pace Huntersville Quality Office

Client Name: ERM

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden ☐ Raleigh

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other_____

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

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1101 (T1102) **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1101**: No Correction **T1102**: No Correction

Corrected Cooler Temp.: 2.1 C **Biological Tissue is Frozen:** Yes No N/A

Date and Initials of person examining contents: JMY 4/19

Temp should be above freezing to 6°C

				Comments:
Chain of Custody Present:	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☑Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No	☐N/A	7.
Sufficient Volume:	☑Yes	☐No	☐N/A	8.
Correct Containers Used:	☑Yes	☐No	☐N/A	9.
-Pace Containers Used:	☑Yes	☐No	☐N/A	
Containers Intact:	☑Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11.
Sample Labels match COC:	☑Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____				
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☑No		
Samples checked for dechlorination:	☐Yes	☑No	☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☐Yes	☐No	☑N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if purchased):_____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: KH Date: 4/19/13

SRF Review: KH Date: 4/22/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92155231

92155231

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1668645

Section A Required Client Information:

Company: ERM NC Inc.
Address: 8000 Corporate Center Dr #100, Charlotte NC 28226
Email To: alan.martin@erm.com
Phone: 704-541-8345 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Alan Martin
Copy To:
Purchase Order No.:
Project Name: RJRT RH
Project Number:

Section C Invoice Information:

Attention: Alan Martin
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #: 1940-3

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: NC

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): Metals 2007 (N), TOC (N), TDS (N), Nitrate (N), Sulfate (N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Metals 2007	TOC	TDS	Nitrate	Sulfate	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	W-6	WT	G			4-19-13	1105		7	3	1						3	X	X	X	X	X		92155231 001
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Short hold Time for Nitrate test 48hr	[signature] / ERM	4-19-13	1340	[signature]	4/19/13	1340	2.1	Y	N	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Chris Means / Ryan Mayotte
SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 4/19/13

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.