Assessment Monitoring Report
June 24-25, 2013
Swift Creek Project
Highway 301

Nash County
Rocky Mount, North Carolina

Prepared for:
REUSE TECHNOLOGY, INC.

July 2013

Prepared by:
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SHERRILL
ENVIRONMENTAL, INC
environmental & geologic services

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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):

Sherrill Environmental, Inc.

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

Name: John (Jack) Sherrill Phone: 919-493-6555

E-mail: sherrill@nc.rr.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Swift Creek Coal Combustion By-Products Structural Fill	Highway 301 Battleboro, NC Nash County			June 24,25, 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.

Sherrill Environmental, Inc., John Sherrill, LG President 919-493-6555

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

John Sherrill 7/22/2013

Signature Date

Affix NC Licensed Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1459 GEOLOGIST JOHN F. SHERRILL, III

Facility Representative Address

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

Revised 6/2009

NOTIFICATION OF EXCEEDANCE OF A REPORTING LIMIT
SWIFT CREEK CCB STRUCTURAL FILL
June 25, 2013

Summary of Environmental Samples with Detections above SWSLs			
	Concentration	SWLS	
MW-1S	ug/L	ug/L	
Barium	174	100	
MW-2S			
Barium	210	100	
MW-3			
Arsenic	<100d	10	
Barium	201	100	
Lead	<100d	10	
Sulfate	950,000	250,000	
MW-4			
Barium	109	100	
Cadmium	4	1	
Lead	21	10	
Mercury	0.78	0	
MW-6			
Barium	152	100	
Sulfate	270,000	250,000	
MW-7			
Arsenic	<100d	10	
Barium	114	100	
Lead	190	10	
Sulfate	600,000	250,000	
MW-8			
Arsenic	140	10	
Barium	172	100	
Lead	169	10	
Sulfate	620,000	250,000	
SW-1	None		
SW-2	None		
SW-3	None		

NOTIFICATION OF EXCEEDANCE OF A STANDARD
SWIFT CREEK CCB STRUCTURAL FILL
June 25, 2013

Summary of Environmental Samples with Exceedances			
	Concentration	Standard	
	ug/L	ug/L	
MW-3			
Sulfate	950,000	250,000	
MW-4			
Cadmium	4	2	
Lead	21	15	
Sulfate	250,000	250,000	
MW-6			
Sulfate	270,000	250,000	
MW-7			
Arsenic	<100d	10	
Lead	190	15	
Sulfate	600,000	250,000	
MW-8			
Arsenic	140	10	
Lead	169	15	
Sulfate	620,000	250,000	
<100d = Due to interferance, Lab diluted sample and constituent not detected. The above listed constituents are believed to be the result of materials in the structural fill. These constituents are not detected in the surface water samples from the creek/swamp that is the receptor of groundwater from the site. These results are consistent with historical data.			

SHERRILL ENVIRONMENTAL, INC

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1.0 INTRODUCTION

Sherrill Environmental, Inc. (Sherrill) was contracted by ReUse Technology, Inc. (ReUse) to perform Semi-Annual Groundwater and Surface Water Monitoring at the Swift Creek Project. The Swift Creek Project is a "Beneficial Use" fill utilizing coal combustion by-products (CCBs) in the development of a commercial property. The Project is located on the east side on US Highway 301 at Swift Creek near Battleboro, North Carolina (Figure 1). As determined by a review of historical DOT aerial photographs the property was previously developed as a motel with a restaurant (1961). A 1981 aerial photograph shows the project area to consist of the motel and restaurant with the remaining portion of the project area in agricultural use.

On November 11, 1991, ReUse Technology, Inc. submitted a letter to the Solid Waste Management Section seeking approval to use coal ash as structural fill material in the development of 25 acres of commercial property along Highway 301 at Swift Creek. On December 3, 1991, the Solid Waste Section issued a letter to ReUse that stated "Based upon the information received, the project appears to meet the guidelines previously agreed to for such reuse." In September 1992, ReUse began placement of coal ash at the site. In January 2003, the last shipment of coal ash was accepted at the site. According to records of Full Circle Solutions, Inc., a total of approximately 134,000 tons of CCBs were placed at the project. On March 23, 2003, the site had been graded, compacted, covered with an 18 inch soil cap and planted with grass seed. On November 4, 2004, the Closure Notice was forwarded to the Solid Waste Section. In March 2006, a Comprehensive Site Assessment (CSA) for the Swift Creek Project was submitted to the Solid Waste Section. In December 2006, an Assessment Monitoring Plan was submitted to the Solid Waste Section. On February 22, 2007, the Assessment Monitoring Plan was approved by the Solid Waste Section.

Eight sampling events have indicated that groundwater associated with the deeper monitoring wells (MW-1D, MW-2D, MW-5D) have not shown any impact from the CCB structural fill. The deeper wells were not sampled for this sampling event.

2.0 CORRECTIVE MEASURES

A corrective measure designed by Appian Consulting Engineers, P.A. consisting of a longitudinal subsurface drain along the western portion of the site was completed in January 2008. The purpose of the measure is to intercept groundwater flowing from west to east and therefore reduce the groundwater level in the area of the site. To monitor the effectiveness of the corrective measure, two piezometers (P-23 and P-24) were installed at 20 feet east and west of the cut-off drain. These piezometers monitor the effect of the cut-off drain in reducing the groundwater level at the project. The location of the cut-off drain (6" Lateral Subsurface Drain) and the piezometers are shown on the site map (Figure 2).

3.0 SITE GEOLOGY

The site surficial geology consists of an alluvial terrace constructed by the fluvial deposition of silts, sands and gravels. The sequence coarsens downward with some coarse sand with gravel present near the base. The terrace deposit overlies the massive and extensive Yorktown Formation. The Yorktown Formation is Pliocene in age and was deposited in the Pliocene Yorktown Sea that covered the entire coastal plain and the eastern most portions of the Piedmont. Depositional environments were back barrier lagoons, shallow inner-bay and estuarine environments and on the open shallow shelf (The Geology of the Carolinas, Horton and Zullo, 1991). The Yorktown in the region of the site is generally described as blueish-gray fine to very fine, silty sands, sandy silt or silty clay, well-sorted and very shelly.

3.1 SOIL SURVEY

Figure 1-2 shows the location of the site on Sheet 1 of the Soil Survey of Nash County produced by the US Department of Agriculture, Soil Conservation Service. The soils underlying the coal ash fill project are largely Altavista with a smaller portion of Norfolk in the area of higher topography on the southern end of the site.

Altavista soils are alluvial deposits that formed on flood plains. These old flood plains were erosionally dissected and the remaining terrace areas are now topographically higher than the surrounding stream and swamps. The seasonal high water table for Altavista is 1.5 to 2.5 feet below the top of the soil surface and occurs during December through March.

The Soil Survey describes Altavista sandy loam (AaA) as moderately well drained and nearly level to gently sloping. It is on low terraces along large streams. Typically, the surface layer is grayish brown sandy loam 12 inches thick. The next layer, to a depth of

14 inches is olive yellow sandy loam that has yellow mottles. The subsoil extends to a depth of 44 inches. It is yellow sandy clay loam in the upper part. The middle part is yellowish brown clay loam that has mottles of light gray, red, and yellowish red. The lower part of the subsoil is light yellowish brown clay loam that has mottles of red, yellowish red, strong brown and light gray. The underlying material to a depth of 60 inches is mottled brownish yellow, light gray, strong brown and yellowish red sandy clay loam.

Permeability tests on site samples of the Altavista subsoil were performed by Geotechnologies, Inc. in April 2003. Permeability values for the three samples ranged from 1E-7 cm/sec to 7E-8 cm/sec. This information was presented in Sherrill's "Site Investigation" report prepared in May 2003.

The Norfolk soils underlie the site along the western and southern sides in the topographically higher portions of the site. The percentage of Norfolk soil underlying the coal ash fill is relatively small compared to the Altavista. The seasonal high water table for Norfolk is 4 to 6 feet below ground surface and occurs during January through March.

The Soil Survey describes Norfolk loamy sand (NoB) as well drained and gently sloping. It is on convex ridges and side slopes of the Coastal Plain uplands. Typically the surface layer is grayish brown loamy sand about 10 inches thick. The subsurface layer is very pale brown sandy loam to a depth of about 19 inches. The subsoil extends to a depth of at least 79 inches. It is brownish yellow sandy clay loam in the upper part. The middle part is brownish yellow sandy clay loam that has red and very pale brown mottles, and the lower part is a mottled brownish yellow, yellow, red and gray sandy loam.

3.2 MONITORING WELLS

A total of 11 monitoring wells are located around the perimeter of the Swift Creek Project (Figure 2). Monitoring wells MW-1S (shallow) and MW-1D (deep) are paired monitoring wells located near the center of the project approximately 25 feet east from the edge of the CCB fill. The MW-1S is completed in alluvial sediments and MW-1D is completed in the deeper marine sediments of the Yorktown Formation.

The paired monitoring wells MW-2S (shallow) and MW-2D (deep) are constructed similar to the MW-1 pair. The MW-2 pair is located on a roadway constructed into the swamp and is approximately 160 feet downgradient from the edge of the CCB fill and 135 feet downgradient of MW-1S and MW-1D.

Another paired monitoring well set, MW-5S (shallow) and MW-5D (deep), is located upgradient of the Swift Creek Project on the west side of US Highway 301. Again, the

construction of this monitoring well set is similar with the shallow well screened in alluvial sandy sediments and the deeper well screened in the massive marine sediments.

Monitoring wells MW-3, MW-4, MW-6, MW-7 and MW-8 are shallow wells located at the southeast, southwest, northwest and northeast corners of the project. The borings were advanced through the alluvial material until the underlying marine unit was encountered as determined by split-spoon sampling. The alluvial material varied from a silty fine sand and clayey silty fine sand in the upper portion that generally coarsened downward. Borings at MW-5S, MW-6, MW-7 and MW-8 encountered medium to coarse quartz sand above the contact with the underlying marine unit.

All of the eleven borings were completed using 2-inch schedule 40 PVC with 10-foot slotted screens. The monitoring wells were completed with stick-up casing and 4-inch schedule 40 PVC protective casings with lockable caps.

3.3 SLUG-TEST ANALYSIS (From March 2006 CSA)

On January 8, 2006, Sherrill performed single-well slug-tests at the site on the shallow monitoring wells MW-2S, MW-5S and MW-7 and the deep monitoring wells MW-2D and MW-5D. The tests were performed by pumping water from the monitoring well and then recording the rate of recovery (rising head). The data was analyzed using the US Geological Survey, Open-File Report 02-197 *Documentation of Spreadsheets for the Analysis of Aquifer-Test and Slug-Test Data*. The Bouwer and Rice method was chosen for analysis of the data.

The analysis of the data revealed a large contrast in the hydraulic conductivity of the two geologic units. The overlying alluvial terrace deposit consisted of layers and mixtures of silt, clay, fine sand, medium sand, coarse sand and gravel. The terrace deposit at the site ranged in thickness from approximately 16 feet at the southwest (MW-4) and thinned towards the swamp to a thickness of approximately 8 feet (MW-2S). The percentage of sand and the grain size appeared to increase at lower elevations to the north and northeast (MW-6 and MW-7). The bottoms of the shallow monitoring well were placed at the contact with the top of the marine sediments and screen the lower 10 feet of the alluvial material. Hydraulic conductivities (K) of the tests conducted for MW-1S and MW-5S were very similar and ranged from 0.34 to 0.43 feet per day (1.2E-4 to 1.5E-4 cm/sec). Hydraulic conductivity of the test conducted for MW-7, which has 6 feet of clean sand, was 1.40 feet per day (4.8 E-04 cm/sec).

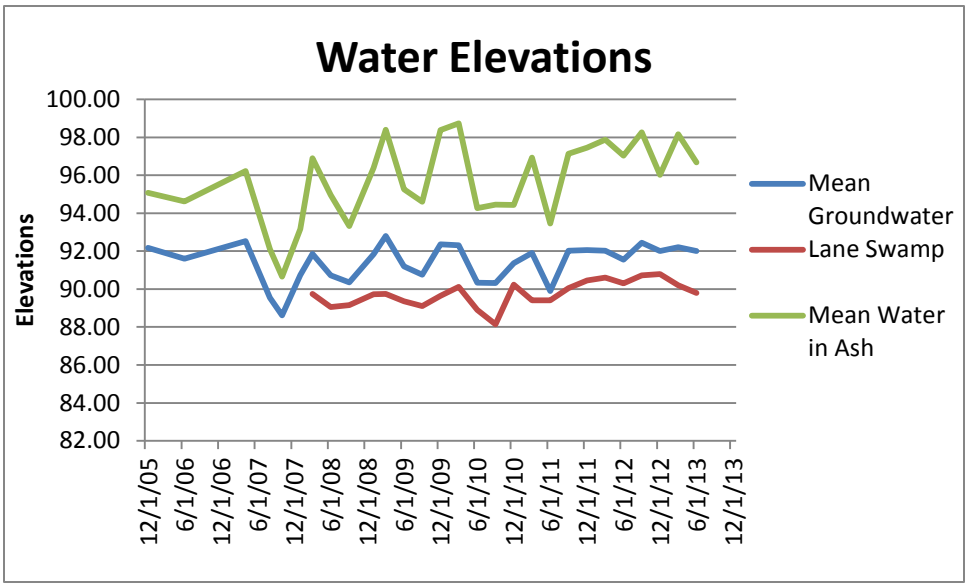
The deep monitoring wells, MW-1D and MW-5D are screened approximately 10 to 20 feet below the top of the marine sediments. The marine sediments are part of the Yorktown Formation and consist of a massive and uniformed, very shelly, greenish-gray silty very fine sand. Hydraulic conductivities for the deep wells were similar and ranged

from 0.0017 to 0.0026 feet per day (6.1E-7 to 9.0E-7 cm/sec) and averaged 0.0022 feet per day (7.6E-7 cm/sec).

Seepage velocities were calculated for groundwater movement in the west to east direction with data from MW-5S and MW-2S for alluvial material and MW-5D and MW-2D for marine sediments (Table 3). Seepage velocities were estimated at 0.0166 feet per day for alluvial material and 0.00009 feet per day for marine sediments.

4.0 GROUNDWATER TABLE

The average groundwater elevation as measured in the shallow site monitoring wells from 2005 to 2013 is 91.45 feet with a standard deviation of 1.02 feet. The average water elevation as measured in piezometers screened in the coal ash fill (P-12 through P-20) from 2005 to 2013 is 95.75 feet with a standard deviation of 2.08 feet. The average surface water level measured at the Lane Swamp Bridge is 89.76 feet with a standard deviation of 0.66 feet. Surface water levels in Lane Swamp have been rising due to increased beaver activity. Beaver dams are visible from the 301 Highway Bridge where the water levels are measured.



The corrective measure of the longitudinal subsurface drain along the western portion of the site was completed in January 2008. The corrective measure did not appear to have a significant effect on lowering the site groundwater table but appears to have reduced the amount of fluctuation. Before the drain the average shallow groundwater elevation was 91.15 feet with a standard deviation of 1.66 feet. After installation of the drain, the

average shallow groundwater elevation was 91.65 feet with a standard deviation of 0.80 feet. The longitudinal subsurface drain did not appear to have an effect on the water elevations in the CCB fill. The difference in the water elevation in the CCB fill and the elevation of the shallow groundwater table suggests that they are not connected. The separation is; however, not complete as evident from the detection of CCB related contaminants in the shallow groundwater table.

A map of the shallow groundwater table is shown on Figure 3. The map shows that the shallow groundwater flow is in an east northeast direction.

5.0 SAMPLE COLLECTION

On June 24, 2013, the site monitoring wells were purged using a new disposable polyethylene bailer for each well. On June 25, 2013, groundwater samples were collected within 24 hours after purging. The resting period allowed for possible particulate in the water to settle prior to sampling. On June 25, 2013, surface water samples were collected at the three sampling stations. Samples were collected into laboratory prepared glassware, placed in an iced cooler and transferred to Enco Laboratories in Cary, North Carolina. Groundwater samples were analyzed for the Division's requested parameters of sulfate and total RCRA metals.

6.0 GROUNDWATER ANALYSIS

The analytical results for this and the previous groundwater sampling event are summarized on Table 3 and the laboratory report is included in the Appendix. Exceedences of the NCAC 2L Groundwater Standard were detected in the groundwater samples from the shallow monitoring wells MW-3, MW-4, MW-6, MW-7 and MW-8 (Figure 4). No exceedance of the 2L Groundwater Standard was detected in the groundwater samples from the shallow upgradient monitoring well MW-5S. The analytical laboratory (Enco) reported that samples for MW-7 and MW-8 were diluted due to matrix interference. This resulted in elevated reporting limits for the RCRA metals.

Arsenic – The 2L Standard for arsenic is 0.010 mg/L. Arsenic was analyzed to be in concentrations of less than 100 mg/L at MW-7 and present in concentrations of 0.140 mg/L at MW-8.

Lead – The 2L Standard for lead is 0.015 mg/L. Lead concentrations that exceeded the 2L Standard have typically been limited to the northeast portion of the site. Lead concentrations were 0.190 mg/L at MW-7 and 0.169 mg/L at MW-8. Lead was detected in a concentration of 0.021 mg/L in the sample from MW-4.

Cadmium – The 2L Standard for cadmium is 0.002 mg/L. Cadmium was detected in a concentration of 0.004 mg/L in the sample from MW-4.

Sulfate – The 2L Standard for sulfate is 250 mg/L. Concentrations of sulfate were detected in the southeastern downgradient monitoring well MW-3 at 950 mg/L. Sulfate concentrations in the northern portion of the site were 270 mg/L at MW-6, 600 mg/L at MW-7 and 620 mg/L at MW-8.

Barium was detected in concentrations less than the 2L Standard and above the NC Solid Waste Section Limit (SWSL). Mercury was detected in concentration of 0.00078 mg/L at MW-4. This mercury concentration is less than the 2L Standard of 0.001 mg/L and above the SWSL of 0.0002 mg/L. Mercury is not a typical contaminant detected at the site. Chromium, silver and selenium were not detected in any concentration above the Solid Waste Section SWSLs.

7.0 SURFACE WATER ANALYSIS

The analytical results for this and the previous surface water sampling events are summarized on Table 4. No RCRA metals were detected in exceedance of the 2B Surface Standard or above the NC Solid Waste Section Limit (SWSL). Sulfate concentrations were less than 5 mg/L at SW-1 and SW-2 and 7.4 mg/L at SW-3. In summary, surface water analysis did not identify any indication of contamination.

8.0 SPECIFIC CONDUCTIVITY

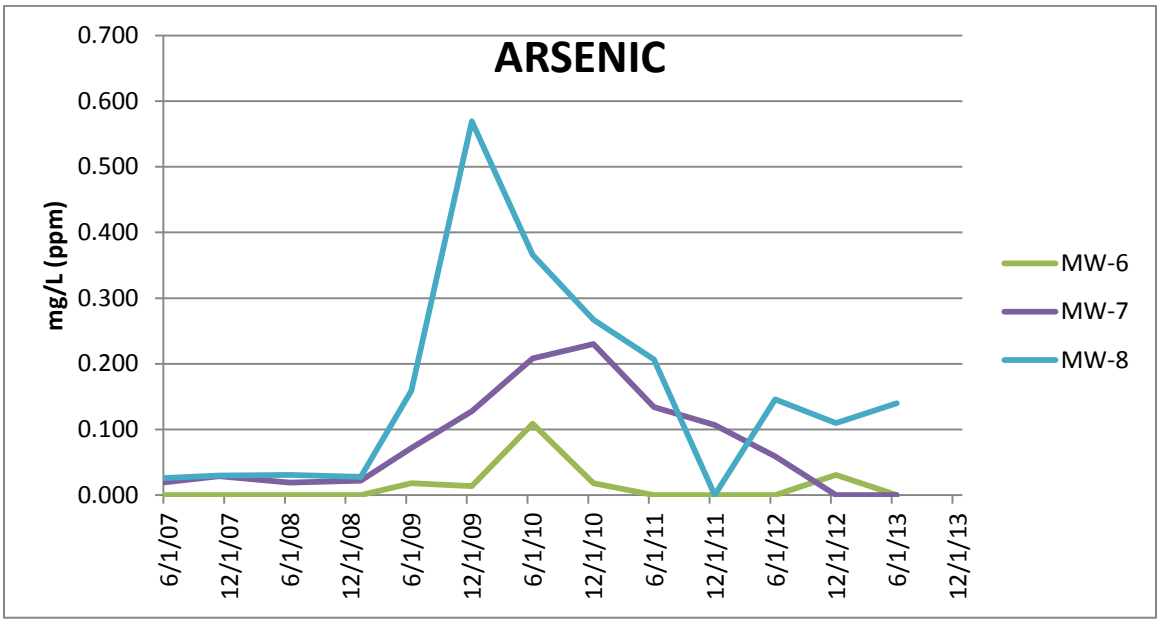
Specific conductivity field measurements were obtained for this event. Values are presented on Tables 3 and 4 and are shown on Figure 5. Surface water specific conductivity measurements were 97 micro siemens per centimeter (uS/cm) at SW-1, 145 uS/cm at SW-2 and 158 uS/cm at SW-3. Specific conductivity was measured at 109 uS/cm at the upgradient well MW-5S. In the southern portion of the site, specific conductivities ranged from 3,260 uS/cm at MW-4 to 6,670 uS/cm at MW-1S. In the northern portion of the site, specific conductivities ranged from 4,370 uS/cm at MW-6 to 15,130 uS/cm at MW-8.

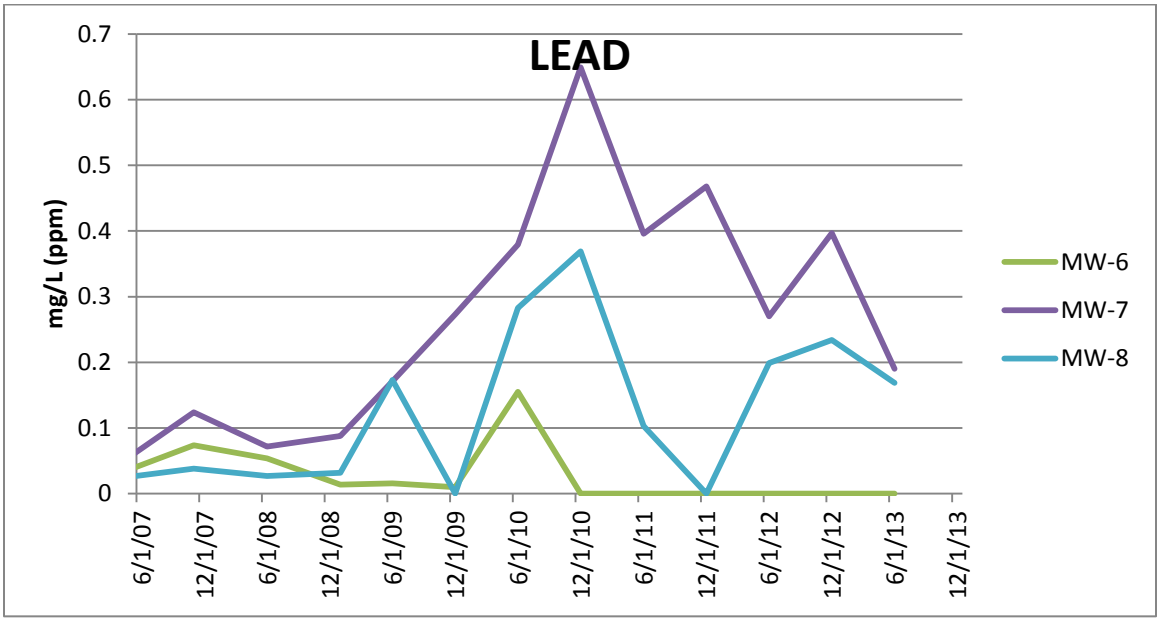
9.0 DISCUSSION AND SUMMARY

Exceedances of the 2L Groundwater Standard were detected in the samples from monitoring wells MW-1S, MW-3, MW-4, MW-6, MW-7 and MW-8. These wells monitor shallow groundwater downgradient of the CCB fill. No exceedance of a 2L Standard was detected in the upgradient monitoring well MW-5S or the downgradient monitoring well MW-2S. The deeper monitoring wells (MW-1D, MW-2D and MW-5D) were not sampled as it has been demonstrated that they are not in connection with the shallow site contamination.

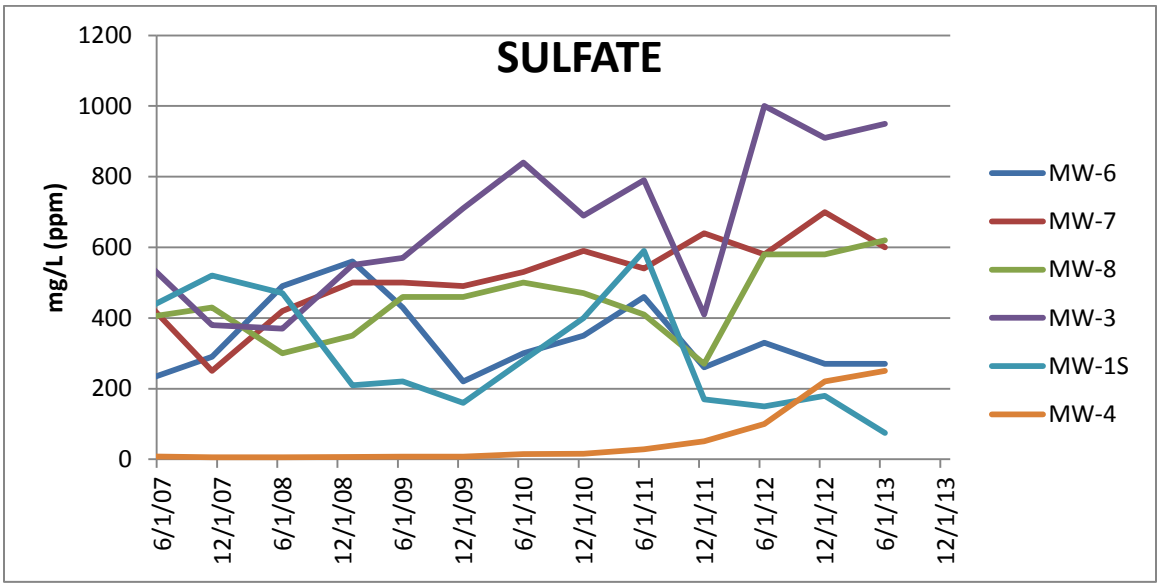
The corrective measure of the longitudinal subsurface drain along the western portion of the site was completed in January 2008. The water elevations in the ash fill appear to have risen since the installation of the corrective measure. The elevation of groundwater appears to be approximately the same with a lower standard deviation suggesting that the subsurface drain has served to reduce site groundwater fluctuation. This data suggests a separation between the CCB fill and the shallow groundwater table. The separation is, however, not complete as evident from the detection of ash related contaminants in the shallow groundwater table. This information also suggests that the source of the water present in the CCB fill is from on site precipitation.

The principal contaminants of interest at the site are arsenic, lead and sulfate. An increasing concentration trend of these contaminants had been identified at the monitoring wells located in the north and northeast. The last five sampling events have shown a general decreasing trend at MW-6, MW-7 and MW-8. These data suggest that the concentrations of arsenic and lead maybe on a pathway of attenuation.

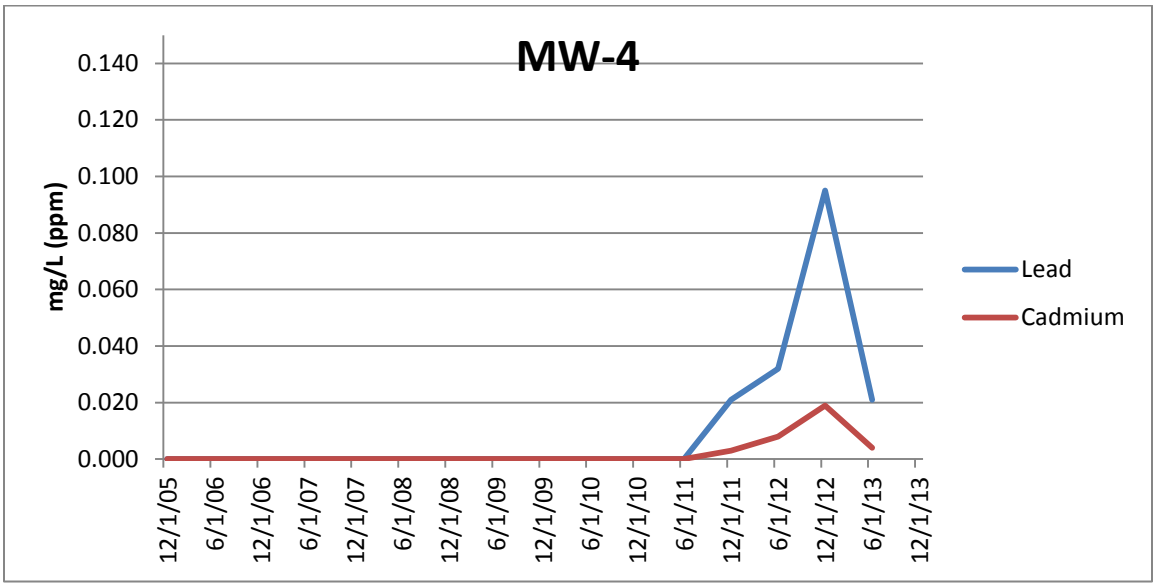




Attenuation of the site contaminants has been observed. When monitoring was initiated at the site in 2004, groundwater samples from MW-1S contained exceedances for arsenic, lead and sulfate. Sampling data has shown that the concentrations of arsenic and lead at MW-1S have attenuated. Sulfate concentrations at MW-1S have attenuated from a high of 740 mg/L to a present concentration of 75 mg/L. The overall concentration of sulfate in the site groundwater appears to be increasing in some wells and decreasing in others, as well as showing up and down fluctuation.



The three previous sampling events showed an increasing trend of lead, cadmium and sulfate concentrations at the southwest monitoring well MW-4. Since June 2011, concentrations of cadmium had gone from less than detection to 0.003 mg/L to 0.008 mg/L to 0.019 mg/L. Lead concentrations had increased from less than detection to 0.021 mg/L to 0.032 mg/L to 0.095 mg/L. Sulfate concentrations had increased from 28 mg/L to 51 mg/L to 100 mg/L to 220 mg/L. This event saw an improvement with concentrations of cadmium and lead reducing to 0.004 mg/L and 0.021 mg/L, respectively. Sulfate concentrations saw a small increase to 250 mg/L.



The hydrogeology of the site is characterized by three materials. The site surficial geology consists of an alluvial terrace constructed by the fluvial deposition of silts, sands and gravels. The top portion of the alluvial terrace has developed into an Altavista soil. The Altavista is described as a sandy loam from 0 to 14 inches and a sandy clay loam from 14 to 60 inches. Permeability values for the subsoil samples ranged from 1E-7 cm/sec to 7E-8 cm/sec. The alluvial terrace deposit at the site ranges from 8 to 16 feet thick and coarsens downward with some sand with gravel near the base. Slug test analysis of the terrace deposit showed a range of hydraulic conductivity of 1.2 E-4 cm/sec to 4.8 E-4 cm/sec. The terrace deposit overlies the massive and extensive Yorktown Formation. Slug test analysis of the upper Yorktown showed a range of hydraulic conductivity of 6.1 E-7 cm/sec to 9.0 E-7 cm/sec.

In summary, some shallow groundwater contamination is present adjacent and downgradient of the CCB fill. The contamination appears limited vertically as has been shown by no contaminants detected in the deeper monitoring wells. The contamination appears limited to the east side of Highway 301 as no contaminants have been detected in the upgradient shallow and deep pair of monitoring wells MW-5S and MW-5D on the west side of Highway 301. The direction of groundwater flow is to the east and northeast. No contamination has been detected at MW-2S or MW-2D which are located on a roadway constructed into the swamp and is approximately 160 feet downgradient from the edge of the CCB fill. The shallow groundwater associated with the site is likely to discharge to the surface water of Lane Creek Swamp and the Swift Creek Swamp. Analysis of surface water samples has not indicated any contamination. No receptors are identifiable for this site and the low level of contamination attenuates as it migrates from the project area into the adjacent swamp.

10.0 RECOMMENDATIONS

Sherrill recommends continuing with the Assessment Monitoring. The next quarterly event for measuring water levels is scheduled for September 2013. The next semiannual event for measuring water levels and collecting groundwater and surface water samples is scheduled for December 2013.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
SWIFT CREEK PROJECT

Sherrill Environmental, Inc.

	MW-1S	MW-3	MW-4	MW-6	MW-7	Average	MW-2S	MW-5S	MW-8	MW-1D	MW-2D	MW-5D	Lane Swamp
TOC ELV.	99.54	102.15	106.06	98.41	98.63		94.87	102.68	95.42	99.90	95.22	102.67	92.25
12/1/2005	8.21	9.65	11.24	7.17	7.63		4.72	6.01		8.57	4.70	6.40	
GW ELV.	91.33	92.50	94.82	91.24	91.00	92.18	90.15	96.67		91.33	90.52	96.27	
1/8/2006	8.11	9.48	10.15	7.18	7.74		NM	5.86		8.28	NM	5.68	
GW ELV.	91.43	92.67	95.91	91.23	90.89	92.43		96.82		91.62		96.99	
6/9/2006	8.69	10.32	11.41	7.74	8.66		4.83	6.94		9.05	4.87	6.84	
GW ELV.	90.85	91.83	94.65	90.67	89.97	91.59	90.04	95.74		90.85	90.35	95.83	
4/4/2007	7.80	9.31	9.96	7.28	7.80		4.40	6.12	4.84	8.18	4.75	5.96	
GW ELV.	91.74	92.84	96.10	91.13	90.83	92.53	90.47	96.56	90.58	91.72	90.47	96.71	
8/21/2007	10.89	11.40	13.28	10.80	10.71		6.77	9.57	7.67	11.30	6.82	9.42	
GW ELV.	88.65	90.75	92.78	87.61	87.92	89.54	88.10	93.11	87.75	88.60	88.40	93.25	
10/21/2007	11.40	12.98	14.06	11.90	11.41		7.31	10.62	8.30	11.76	7.43	10.63	
GW ELV.	88.14	89.17	92.00	86.51	87.22	88.61	87.56	92.06	87.12	88.14	87.79	92.04	
1/31/2008	9.13	10.70	14.11	8.44	8.71		4.86	7.65	5.57	9.42	5.02	8.11	
GW ELV.	90.41	91.45	91.95	89.97	89.92	90.74	90.01	95.03	89.85	90.48	90.20	94.56	
3/22/2008	8.10	9.18	13.28	7.18	7.79		4.40	6.98	4.78	8.44	4.54	7.34	2.51
GW ELV.	91.44	92.97	92.78	91.23	90.84	91.85	90.47	95.70	90.64	91.46	90.68	95.33	89.74
6/17/2008	9.12	10.54	14.05	8.36	9.06		5.03	8.93	6.09	9.42	5.23	8.92	3.20
GW ELV.	90.42	91.61	92.01	90.05	89.57	90.73	89.84	93.75	89.33	90.48	89.99	93.75	89.05
9/4/2008	9.26	10.98	14.82	8.92	9.06		4.58	10.87	5.97	9.47	5.02	10.72	3.10
GW ELV.	90.28	91.17	91.24	89.49	89.57	90.35	90.29	91.81	89.45	90.43	90.20	91.95	89.15
1/13/2009	8.22	9.35	13.41	7.02	7.60		4.26	7.16	4.58	8.55	4.46	7.54	2.52
GW ELV.	91.32	92.80	92.65	91.39	91.03	91.84	90.61	95.52	90.84	91.35	90.76	95.13	89.73
3/31/2009	7.60	6.74	12.43	6.81	7.20		4.36	5.98	4.21	7.96	4.38	6.22	2.50
GW ELV.	91.94	95.41	93.63	91.60	91.43	92.80	90.51	96.70	91.21	91.94	90.84	96.45	89.75
6/23/2009	8.62	10.06	13.86	7.72	8.52		4.41	9.83	5.56	8.92	4.77	9.63	2.90
GW ELV.	90.92	92.09	92.20	90.69	90.11	91.20	90.46	92.85	89.86	90.98	90.45	93.04	89.35
9/30/2009	8.86	10.82	14.70	8.08	8.51		4.64	10.40	5.50	9.18	5.00	10.26	3.15
GW ELV.	90.68	91.33	91.36	90.33	90.12	90.76	90.23	92.28	89.92	90.72	90.22	92.41	89.10
12/15/2009	7.54	8.68	12.85	6.78	7.13		4.22	6.30	4.21	NM	NM	NM	2.60
GW ELV.	92.00	93.47	93.21	91.63	91.50	92.36	90.65	96.38	91.21				89.65
3/31/2010	7.37	8.64	12.52	6.77	7.93		2.42	5.80	3.96	7.74	4.46	6.19	2.14
GW ELV.	92.17	93.51	93.54	91.64	90.70	92.31	92.45	96.88	91.46	92.16	90.76	96.48	90.11
6/29/2010	9.35	10.66	14.62	9.21	9.25		4.94	9.97	6.31	NM	NM	NM	3.35
GW ELV.	90.19	91.49	91.44	89.20	89.38	90.34	89.93	92.71	89.11				88.90
9/28/2010	9.23	11.55	14.80	9.11	8.52		4.80	10.85	5.48	10.05	5.50	11.10	4.10
GW ELV.	90.31	90.60	91.26	89.30	90.11	90.32	90.07	91.83	89.94	89.85	89.72	91.57	88.15
12/13/2010	8.54	10.12	14.02	7.37	7.93		4.36	8.72	4.81	NM	NM	NM	2.02
GW ELV.	91.00	92.03	92.04	91.04	90.70	91.36	90.51	93.96	90.61				90.23
3/28/2011	8.03	9.17	13.32	7.25	7.53		4.35	7.45	4.42	8.42	4.67	7.84	2.85
GW ELV.	91.51	92.98	92.74	91.16	91.10	91.90	90.52	95.23	91.00	91.48	90.55	94.83	89.40
6/26/2011	10.05	11.23	14.82	9.20	9.98		6.02	10.59	7.04	10.35	6.32	10.43	2.85
GW ELV.	89.49	90.92	91.24	89.21	88.65	89.90	88.85	92.09	88.38	89.55	88.90	92.24	89.40
9/28/2011	7.84	8.90	13.09	7.13	7.71		4.24	7.62	4.83	NM	NM	NM	2.20
GW ELV.	91.70	93.25	92.97	91.28	90.92	92.02	90.63	95.06	90.59				90.05
12/18/2011	8.00	8.88	13.10	6.98	7.53		4.32	7.35	4.47	8.35	4.65	7.70	1.80
GW ELV.	91.54	93.27	92.96	91.43	91.10	92.06	90.55	95.33	90.95	91.55	90.57	94.97	90.45
3/23/2012	8.01	8.89	13.01	7.03	7.75		4.31	7.35	4.80	8.35	4.56	7.66	1.65
GW ELV.	91.53	93.26	93.05	91.38	90.88	92.02	90.56	95.33	90.62	91.55	90.66	95.01	90.60
6/28/2012	8.39	9.40	13.38	7.42	8.45		4.65	8.52	5.63	8.72	4.92	8.54	1.95
GW ELV.	91.15	92.75	92.68	90.99	90.18	91.55	90.22	94.16	89.79	91.18	90.30	94.13	90.30
9/18/2012	7.41	8.21	12.73	6.82	7.37		4.16	7.21	4.51	7.86	4.50	7.45	1.52
GW ELV.	92.13	93.94	93.33	91.59	91.26	92.45	90.71	95.47	90.91	92.04	90.37	95.22	90.73
12/17/2012	8.04	9.19	13.36	6.82	7.37		NM	8.55	4.51	8.44	NM	8.76	1.45
GW ELV.	91.50	92.96	92.70	91.59	91.26	92.00		94.13	90.91	91.46		93.91	90.80
3/26/2013	7.87	8.71	12.84	7.08	7.26		4.23	7.03	4.22	8.13	4.46	7.38	2.05
GW ELV.	91.67	93.44	93.22	91.33	91.37	92.21	90.64	95.65	91.20	91.77	90.41	95.29	90.20
6/25/2013	8.00	9.05	12.97	7.05	7.70		4.18	6.92	4.69	8.34	4.57	7.44	2.45
GW ELV.	91.54	93.10	93.09	91.36	90.93	92.00	90.69	95.76	90.73	91.56	90.30	95.23	89.80
		Average Groundwater Elevation				91.45		94.64	Average GW Elv. At MW-5S (upgradient)				
		Standard Deviation		(12/1/05-6/25/13)		1.02		1.67	Standard Deviation				
		Average Groundwater Elevation				91.15			Average SW Elv at Lane Swamp				89.76
		Standard Deviation		(12/1/05-10/21/07)		1.66			Standard Deviation				0.66
		Average Groundwater Elevation				91.65							
		Standard Deviation		(1/13/09-6/25/13)		0.80							

TABLE 2
PIEZOMETER WATER ELEVATIONS
SWIFT CREEK PROJECT

	P-12	P-13	P-14	P-15	P-16	P-17	P-18	P-19	P-20	Average	St. Dev.
12/1/05	96.00	96.71	93.08	93.83	93.64	94.23	95.12	98.41	94.61	95.07	1.70
6/10/06	95.93	97.23	91.60	92.19	92.89	93.80	95.51	97.82	94.66	94.63	2.19
9/25/06	97.92	98.89	93.43	94.75	94.16	95.11	97.04	99.56	95.24	96.23	2.19
8/21/07	93.11	95.09	88.16	90.18		88.59	93.67	94.80	93.20	92.10	2.74
10/22/07	91.60	93.45	87.67	87.09		87.69	93.07	93.11	91.54	90.65	2.72
1/31/08	94.47	94.43	89.93	92.15	91.13	93.96	93.33	94.93	94.20	93.17	1.72
3/22/08	97.84	98.56	95.17	96.47	95.00	94.93	95.64	102.24	96.27	96.90	2.37
6/17/08	96.04	97.04	92.68	91.66	93.58	94.14	94.99	99.23	95.25	94.96	2.30
9/4/08	94.89	95.19	90.66	90.96	NM	90.47	93.49	96.38	94.50	93.32	2.31
1/13/09	98.13	97.35	95.16	97.08	94.60	95.03	94.62	99.50	96.11	96.40	1.73
3/31/2009	100.94	101.09	96.72	98.12	95.58	95.29	96.51	104.45	96.98	98.41	3.09
6/23/2009	97.57	96.99	92.92	94.13	93.38	94.56	94.73	98.09	95.06	95.27	1.85
9/30/09	95.89	95.45	92.54	94.91	NM	94.43	93.35	95.56	94.73	94.61	1.15
12/15/09	100.42	100.53	96.16	98.51	NM	95.26	96.07	103.01	97.10	98.38	2.72
3/31/10	101.67	101.87	97.14	98.42	95.50	95.21	97.56	104.41	96.94	98.75	3.18
6/29/10	95.92	96.69	91.76	91.22	92.45	93.08	94.61	97.84	94.80	94.26	2.29
9/28/10	94.10	97.85	95.30	93.09	93.70	93.14	94.71	94.32	93.90	94.46	1.45
12/14/10	95.64	95.89	92.48	93.34	92.80	93.81	94.26	97.08	94.70	94.44	1.53
3/28/11	98.46	99.46	94.73	96.70	94.20	95.00	96.63	101.26	96.03	96.94	2.36
6/26/11	95.38	96.21	91.10	90.56	91.80	89.86	94.38	97.27	94.57	93.46	2.68
9/28/11	98.74	99.34	94.32	96.40		95.03	96.78	100.43	96.12	97.15	2.15
12/18/11	99.29	100.49	94.23	96.41		95.01	97.14	101.12	96.00	97.46	2.56
3/23/12	99.66	100.86	94.74	96.59		95.09	97.65	102.03	96.47	97.89	2.69
6/29/12	98.84	99.58	94.07	95.69		94.93	96.70	100.51	96.03	97.04	2.33
9/18/12	100.19	101.15	94.86	96.88		95.19	98.01	103.01	96.79	98.26	2.92
12/18/12	97.83	98.04	93.09	94.22		94.61	95.85	99.29	95.20	96.02	2.16
3/26/13	100.04	101.97	94.93	97.13		95.06	97.73	102.13	96.35	98.17	2.89
6/25/13	98.90	98.33	94.20	96.21		95.02	95.61	99.51	95.68	96.68	1.96
Average										95.75	2.08
	Average Water Elevation in Ashfill (12/05 to 10/07)					93.74					
	Standard Deviation					2.29					
		Average Water Elevation in Ashfill (3/08 to 6/25/13)					96.33				
		Standard Deviation					1.72				

TABLE 3
SUMMARY OF GROUNDWATER ANALYSES
SWIFT CREEK PROJECT

		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	Sulfate	Conductivity
NCAC	**2L Std.**	0.01	0.7	0.002	0.01	0.015	0.02	0.02	0.001	250	
NCDWM	**SWSL**	0.01	0.1	0.001	0.01	0.01	0.01	0.01	0.0002	250	
MW-1S	6/7/04	**0.028**	0.190	<0.001	<0.01	**0.068**	<0.01	<0.01	<0.0002	**490**	
	12/1/05	**0.020**	0.170	<0.001	<0.01	**0.042**	<0.01	<0.01	<0.0002	**608**	
	6/10/06	**0.012**	0.472	<0.001	<0.01	**0.052**	<0.01	<0.01	0.00064	**740**	
	4/5/07	<0.01	0.458	<0.001	<0.01	<0.010	<0.01	<0.01	0.00047	**420**	
	11/15/07	<0.01	0.529	<0.001	<0.01	**0.031**	<0.01	<0.01	0.00089	**520**	
	6/18/08	<0.01	0.619	<0.001	<0.01	0.011	<0.01	<0.01	0.00051	**470**	
	1/14/09	<0.01	0.416	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	210	
	6/24/09	<0.01	0.412	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	220	
	12/16/09	<0.01	0.256	0.001	<0.01	<0.010	**0.022**	<0.01	<0.0002	160	
	6/30/10	**0.012**	0.691	0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**280**	
	12/14/10	<0.01	0.599	**0.003**	<0.01	<0.010	<0.01	<0.01	<0.0002	**400**	
	6/27/11	<0.10	0.475	<0.01	<0.10	<0.10	<0.10	<0.10	<0.00028	**590**	
	12/19/11	<0.050	0.422	<0.005	<0.050	<0.050	<0.050	<0.050	<0.0002	170	
	6/29/12	<0.01	0.419	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	150	
	12/18/12	**0.018**	0.567	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	180	
	6/25/13	<0.01	0.174	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	75	6.670
MW-1D	6/7/04	<0.01	0.540	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	13	
	12/1/05	<0.01	0.360	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	7.7	
	6/10/06	<0.01	0.341	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	20	
	4/5/07	<0.01	0.343	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	12	
	10/22/07	<0.01	0.365	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	11	
	6/18/08	<0.01	0.334	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	14	
	1/14/08	<0.01	0.356	NR	NR	<0.010	NR	NR	<0.0002	14	
	6/24/09	<0.01	0.403	NR	NR	<0.010	NR	NR	<0.0002	20	
MW-2S	6/22/04	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	32	
	12/1/05	<0.01	0.180	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	10.1	
	6/10/06	<0.01	0.198	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	4/5/07	<0.01	0.232	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	4.4	
	10/22/07	<0.01	0.256	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	3.6	
	6/18/08	<0.01	0.103	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	4.4	
	1/14/09	<0.01	0.164	NR	NR	<0.010	NR	NR	<0.0002	<5	
	6/24/09	<0.01	0.173	NR	NR	<0.010	NR	NR	<0.0002	<5	
	12/16/09	<0.01	0.218	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	6/30/10	<0.01	0.229	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	12/14/10	<0.01	0.235	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	6/27/11	<0.01	0.182	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	12/19/11	<0.01	0.216	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	6/29/12	<0.01	0.178	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	<5	
	6/25/13	<0.01	0.210	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	0.632
MW-2D	6/22/04	<0.01	0.170	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	5.6	
	12/1/05	<0.01	0.300	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	3.1	
	6/10/06	<0.01	0.290	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	11	
	4/5/07	<0.01	0.254	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	2.9	
	10/22/07	<0.01	0.273	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	4.8	
	6/18/08	<0.01	0.265	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	22	
	1/14/09	<0.01	0.253	NR	NR	<0.010	NR	NR	<0.0002	16	
	6/24/09	<0.01	0.289	NR	NR	<0.010	NR	NR	<0.0002	6.3	

TABLE 3
SUMMARY OF GROUNDWATER ANALYSES
SWIFT CREEK PROJECT

		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	Sulfate	Conductivity
NCAC	**2L Std.**	0.01	0.7	0.002	0.01	0.015	0.02	0.02	0.001	250	
NCDWM	**SWSL**	0.01	0.1	0.001	0.01	0.01	0.01	0.01	0.0002	250	
MW-5S	12/1/05	<0.01	0.450	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6.1	
	6/10/06	<0.01	0.121	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	7	
	4/5/07	<0.01	0.218	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	4.7	
	10/22/07	<0.01	0.278	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	4.9	
	6/18/08	<0.01	0.046	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	8.7	
	1/14/09	<0.01	0.051	NR	NR	<0.010	NR	NR	<0.0002	10	
	6/24/09	<0.01	0.058	NR	NR	<0.010	NR	NR	<0.0002	13	
	12/16/09	<0.01	0.056	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	17	
	6/30/10	<0.01	0.057	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	12	
	12/14/10	<0.01	0.102	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	14	
	6/27/11	<0.01	0.064	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	17	
	12/19/11	<0.01	0.087	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	21	
	6/29/12	<0.01	0.095	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	22	
	12/18/12	<0.01	0.131	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	25	
	6/25/13	<0.01	0.025	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	22	0.109
MW-5D	12/1/05	<0.01	0.170	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	8.1	
	6/10/06	<0.01	0.236	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6	
	4/5/07	<0.01	0.227	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	5.8	
	10/22/07	<0.01	0.258	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	6.6	
	6/18/08	<0.01	0.254	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	10	
	1/14/09	<0.01	0.255	NR	NR	<0.010	NR	NR	<0.0002	10	
	6/24/09	<0.01	0.261	NR	NR	<0.010	NR	NR	<0.0002	17	
MW-3	12/1/05	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	**334**	
	6/10/06	<0.01	0.192	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	**580**	
	4/5/07	<0.01	0.342	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**570**	
	11/15/07	<0.01	0.133	<0.001	<0.01	**0.036**	<0.01	<0.01	<0.0002	**380**	
	6/18/08	<0.01	0.145	<0.001	<0.01	**0.022**	<0.01	<0.01	<0.0002	**370**	
	1/14/09	<0.01	0.144	<0.001	<0.01	0.013	<0.01	<0.01	<0.0002	**550**	
	6/24/09	<0.01	0.202	<0.001	<0.01	**0.081**	<0.01	<0.01	<0.0002	**570**	
	12/16/09	**0.012**	0.192	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**710**	
	6/30/10	**0.011**	0.094	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**840**	
	12/14/10	<0.01	0.125	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**690**	
	6/27/11	<0.10	0.119	<0.01	<0.10	<0.10	<0.10	<0.10	<0.0002	**790**	
	12/19/11	<0.01	0.234	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	**410**	
	6/29/12	<0.01	0.125	<0.001	<0.01	<0.01	<0.05	<0.01	<0.0002	**1,000**	
	12/18/12	**0.013**	0.136	<0.001	<0.01	<0.01	0.011	<0.01	<0.0002	**910**	
	6/25/13	<0.10d	0.201	<0.01d	<0.1d	<0.1d	<0.1d	<0.1d	<0.0002	**950**	4.200

TABLE 3
SUMMARY OF GROUNDWATER ANALYSES
SWIFT CREEK PROJECT

		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	Sulfate	Conductivity
NCAC	**2L Std.**	0.01	0.7	0.002	0.01	0.015	0.02	0.02	0.001	250	
NCDWM	**SWSL**	0.01	0.1	0.001	0.01	0.01	0.01	0.01	0.0002	250	
MW-4	12/1/05	<0.01	0.460	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	5.7	
	6/10/06	<0.01	0.171	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	4/5/07	<0.01	<0.100	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	8.6	
	10/22/07	<0.01	0.147	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	5.9	
	6/18/08	<0.01	0.198	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	5.4	
	1/14/09	<0.01	0.083	NR	NR	<0.010	NR	NR	<0.0002	6.4	
	6/24/09	<0.01	0.349	NR	NR	<0.010	NR	NR	<0.0002	7.7	
	12/16/09	<0.01	0.121	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	7.5	
	6/30/10	<0.01	0.181	<0.001	0.018	<0.010	<0.01	<0.01	0.0006	15	
	12/14/10	**0.016**	0.195	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	16	
	6/27/11	<0.01	0.227	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	28	
	12/19/11	<0.01	0.516	**0.003**	<0.01	**0.021**	<0.01	<0.01	<0.0002	51	
	6/29/12	<0.01	0.356	**0.008**	<0.01	**0.032**	<0.01	<0.01	<0.0002	100	
	12/18/12	<0.01	0.262	**0.019**	<0.01	**0.095**	<0.01	<0.01	<0.0002	220	
	6/25/13	<0.01	0.109	**0.004**	<0.01	**0.021**	<0.01	<0.01	0.00078	**250**	3.260
MW-6	12/1/05	<0.01	1.300	<0.001	<0.01	0.01	<0.01	<0.01	<0.0002	174	
	6/10/06	<0.01	0.816	<0.001	<0.01	0.013	<0.01	<0.01	<0.0002	**510**	
	4/5/07	<0.01	0.312	<0.001	<0.01	**0.032**	<0.01	<0.01	<0.0002	220	
	11/15/07	<0.01	0.120	<0.001	<0.01	**0.074**	<0.01	<0.01	0.00026	**290**	
	6/18/08	<0.01	0.080	<0.001	<0.01	**0.054**	<0.01	<0.01	0.00091	**490**	
	1/14/09	<0.01	0.066	NR	NR	0.014	NR	NR	<0.0002	**560**	
	6/24/09	0.018	0.155	NR	NR	**0.016**	NR	NR	0.00026	**430**	
	12/16/09	**0.014**	0.126	<0.001	<0.01	0.010	<0.01	<0.01	<0.0002	220	
	6/30/10	**0.109**	0.313	<0.001	<0.01	**0.155**	<0.01	<0.01	0.0003	**300**	
	12/14/10	**0.018**	0.138	<0.001	<0.01	<0.010	<0.01	<0.01	<0.0002	**350**	
	6/27/11	<0.10	0.717	<0.01	<0.10	<0.10	<0.10	<0.10	0.00095	**460**	
	12/19/11	<0.01	0.148	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	**260**	
	6/29/12	<0.05	0.156	<0.001	<0.01	<0.01	<0.05	<0.01	<0.0002	**330**	
	12/18/12	**0.031**	0.131	<0.001	<0.01	<0.01	0.012	<0.01	<0.0002	**270**	
	6/25/13	<0.01	0.152	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	**270**	4.370

TABLE 3
SUMMARY OF GROUNDWATER ANALYSES
SWIFT CREEK PROJECT

		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	Sulfate	Conductivity
NCAC	**2L Std.**	0.01	0.7	0.002	0.01	0.015	0.02	0.02	0.001	250	
NCDWM	**SWSL**	0.01	0.1	0.001	0.01	0.01	0.01	0.01	0.0002	250	
MW-7	12/1/05	0.038	<0.10	<0.001	<0.01	**0.093**	<0.01	<0.01	<0.0002	**379**	
	6/10/06	0.03	0.059	<0.001	<0.01	**0.053**	<0.01	<0.01	<0.0002	**500**	
	4/5/07	0.017	<0.100	<0.001	<0.01	**0.047**	<0.01	<0.01	0.0003	**460**	
	11/15/07	0.029	<0.100	<0.001	<0.01	**0.124**	<0.01	<0.01	0.00072	**250**	
	6/18/08	0.019	0.042	<0.001	<0.01	**0.072**	<0.01	<0.01	<0.0002	**420**	
	1/14/09	0.022	0.052	<0.001	<0.01	**0.088**	<0.01	<0.01	<0.0002	**500**	
	6/24/09	**0.072**	0.080	<0.001	<0.01	**0.171**	<0.01	<0.01	<0.0002	**500**	
	12/16/09	**0.128**	0.123	<0.01	<0.01	**0.273**	<0.10	<0.10	0.0006	**490**	
	6/30/10	**0.208**	0.172	<0.01	<0.01	**0.379**	<0.10	<0.10	0.0002	**530**	
	12/14/10	**0.230**	0.255	<0.01	<0.01	**0.649**	<0.10	<0.10	0.00057	**590**	
	6/27/11	**0.134**	0.159	<0.01	<0.10	**0.396**	<0.10	<0.10	0.00033	**540**	
	12/19/11	**0.107**	0.172	<0.01	<0.10	**0.468**	<0.10	<0.10	<0.0002	**640**	
	6/29/12	**0.059**	0.120	<0.005	<0.05	**0.270**	<0.05	<0.05	<0.0002	**580**	
	12/18/12	**<0.100d**	0.158	<0.01	<0.10	**0.397**	<0.10	<0.10	<0.0002	**700**	
	6/25/13	**<0.100d**	0.114	<0.01d	<0.10d	**0.190**	<0.10d	<0.10d	<0.0002	**600**	10.750
MW-8	4/5/07	0.025	<0.100	<0.001	<0.01	**0.024**	<0.01	<0.01	<0.0002	**400**	
	11/15/07	0.030	<0.100	<0.001	<0.01	**0.038**	<0.01	<0.01	<0.0002	**430**	
	6/18/08	0.031	0.048	<0.001	<0.01	**0.027**	<0.01	<0.01	<0.0002	**300**	
	1/14/09	0.028	0.039	NR	NR	**0.032**	NR	NR	<0.0002	**350**	
	6/24/09	**0.159**	0.114	NR	NR	**0.173**	NR	NR	0.0003	**460**	
	12/16/09	**0.569**	0.286j	<0.016	<0.050	**0.376j**	<0.135	<0.095	0.0002	**460**	
	6/30/10	**0.366**	0.232	<0.016	<0.050	**0.283**	<0.135	<0.095	0.0002	**500**	
	12/14/10	**0.267**	0.243	<0.01	<0.100	**0.369**	<0.100	<0.100	**0.0013**	**470**	
	6/27/11	**0.207**	0.223	<0.01	<0.100	**0.103**	<0.100	<0.100	<0.0002	**410**	
	12/19/11	<0.100	0.321	<0.01	<0.100	<0.100	<0.100	<0.100	<0.0002	**270**	
	6/29/12	**0.146**	0.169	<0.005	<0.05	**0.199**	<0.05	<0.05	<0.0002	**580**	
	12/18/12	**0.110**	0.168	<0.01	<0.100	**0.234**	<0.10	<0.10	<0.0002	**580**	
	6/25/13	**0.140**	0.172	<0.01d	<0.100d	**0.169**	<0.10d	<0.10d	<0.0002	**620**	15.130

Concentrations in mg/L (ppm), "j" = estimated concentration, "d"= diluted, Specific Conductivity = mS/cm

Bold values exceed the 2L Groundwater Standard

MW-1S, MW-2S and MW-5S are screened shallow (approx. 3 to 13 feet).

MW-1D, MW-2D, and MW-5D are screened deep (approx. 23 to 33 feet).

MW-3, MW-4, MW-6 and MW-7 are shallow wells located on the SE, SW, NW and NE corners.

TABLE 4
SUMMARY OF SURFACE WATER ANALYSES
SWIFT CREEK PROJECT

Sherrill Environmental, Inc.

		Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury	Sulfate	
NCAC	**2B Std.**	0.05	1.0	0.002	0.05	0.025	0.005	0.06	0.000012	250	
NCDWM	**SWSL**	0.01	0.1	0.001	0.01	0.01	0.01	0.01	0.0002		
SW-1	3/4/03	<0.01	<0.10	<0.001	<0.01	<0.005	<0.01	<0.01	<0.0002	12	
	6/22/04	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<2.0	
	12/1/05	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6.3	
	6/10/06	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	4/5/07	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6.6	
	10/22/07	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	3.8	
	6/18/08	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	2.5	
	1/14/09	<0.01	<0.10	NR	NR	<0.01	NR	NR	<0.0002	5.6	
	6/24/09	<0.01	0.03	NR	NR	<0.01	NR	NR	<0.0002	<5	
	12/16/09	<0.01	0.048	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6.2	
	6/30/10	<0.01	0.032	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	12/14/10	<0.01	0.025	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	6/27/11	<0.01	0.041	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	12/19/11	<0.01	0.025	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	12/18/12	<0.01	0.028	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	6/25/13	<0.01	0.04	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	0.097
SW-2	3/4/03	<0.01	<0.10	<0.001	<0.01	<0.005	<0.01	<0.01	<0.0002	13	
	6/22/04	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<2.0	
	12/1/05	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	10.2	
	6/10/06	<0.01	0.090	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	4/5/07	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	3.5	
	10/22/07	DRY									
	7/8/08	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	13	
	1/14/09	<0.01	<0.10	NR	NR	<0.01	NR	NR	<0.0002	6.1	
	6/24/09	<0.01	0.088	NR	NR	<0.01	NR	NR	<0.0002	<5	
	12/16/09	<0.01	0.025	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	7.5	
	6/30/10	DRY									
	12/14/10	<0.01	0.034	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	5.3	
	6/27/11	DRY									
	12/19/11	<0.01	0.027	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	12/18/12	<0.01	0.031	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	
	6/25/13	<0.01	0.037	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	<5	0.145
SW-3	4/5/07	<0.01	<0.10	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	2.4	
	10/22/07	DRY									
	6/18/08	<0.01	0.089	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	3.3	
	1/14/09	<0.01	<0.10	NR	NR	<0.01	NR	NR	<0.0002	20	
	6/24/09	<0.01	0.087	NR	NR	<0.01	NR	NR	<0.0002	<5	
	12/16/09	<0.01	0.075	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	14	
	6/30/10	<0.01	0.328	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	47	
	12/14/10	<0.01	0.074	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	16	
	6/27/11	DRY									
	12/19/11	<0.01	0.065	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	8	
	12/18/12	<0.01	0.067	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	6.5	
	6/25/13	<0.01	0.087	<0.001	<0.01	<0.01	<0.01	<0.01	<0.0002	7.4	0.158
Concentrations in mg/L (ppm)											
Bold values exceed the 2B Surface Water Standard											
SW-1 Swift Creek at bridge (background).											
SW-2 in swamp near MW-2S and MW-2D											
SW-3 in Lane Swamp north of MW-8											

TABLE 5
MONITORING WELL AND PIEZOMETER SUMMARY
SWIFT CREEK PROJECT

Piezometer	Top of Casing Elev.	Ground Surface Elev.	Casing Stick Up	Screen Interval	Total Depth (TOC)	Measured Total Depth 8/2007	Ash/Soil Contact	Ash/Soil Contact Elv.	Alluvial/ Marine contact Elv.	Comments
P-1	108.19	105.6	2.6	20-30	32.6		14.4	91.2		Missing
P-2	109.53	106.7	2.8	20-30	32.8	33.90	16.1	90.6		
P-3	106.18	104.4	1.8	18-28	30.0		12.5	91.9		
P-4	106.57	104.0	2.6	20-30	32.6		14.0	90.0		Damaged
P-5	108.39	105.9	2.5	20-30	32.5	32.57	13	92.9		
P-6	109.79	107.5	2.3	20-30	32.3	32.35	13.5	94.0		
P-7	107.77	105.9	1.9	30-40	41.9	42.30	14.3	91.6	82.9	Damaged
P-8	106.53	103.9	2.6	30-40	42.6	42.15	13.3	90.7	82.9	
P-9	103.32	100.9	2.4	20-30	32.4	32.87	Soil		87.0	Damaged
P-10	108.17	106.1	2.1	20-30	32.1		Soil		89.1	Removed
P-11	101.88	99.2	2.7	13-23	25.7		Soil		82.0	Removed
P-12	107.04	104.0	3.0	6-16	19.0	19.44	13.8	90.2		
P-13	108.99	105.9	3.1	6-16	19.1	19.16	13.3	92.7		
P-14	105.38	101.9	3.5	4-14	17.5	17.95	11.5	90.4		
P-15	103.76	101.0	2.8	4-14	16.8	16.85	11.1	89.9		
P-16	105.28	102.1	3.2	4-14	17.2		11.5	90.6		Damaged
P-17	105.31	101.8	3.5	4-14	17.5	17.93	11.5	90.3		
P-18	111.21	107.5	3.7	5-15	18.7	18.30	13.5	94.0		
P-19	111.86	108.3	3.6	7-17	20.6	20.00	15.2	93.1		
P-20	107.00	104.2	2.8	7-17	19.8	19.94	15.0	89.2		
P-21	104.99	99.5	5.5	4.5-11.5	16.5	16.60	9.5	90.0		
P-22	103.60	101.8	1.8	17-27	28.8		Soil		87.0	
P-23	109.75	107.1	2.7	9-19	21.8		12.0	95.0	90.0	
P-24	103.17	101.1	2.1	3-13	15.3		Soil		90.0	
B-1	107.66	105.7	2.0	14-19	21.0	19.40	13.5	92.2	88.9	1" casing
Monitoring Wells										
MW-1S	99.54	96.8	2.7	3-13	15.7				84.0	
MW-1D	99.90	97.1	2.8	23-33	35.7				84.0	
MW-2S	94.87	92.1	2.8	6-16	18.7				78.5	
MW-2D	95.22	92.2	3.0	26-36	39.1				78.5	
MW-3	102.15	99.2	3.0	7-17	20.0				82.2	
MW-4	106.06	104.1	2.0	8-18	20.0				89.1	
MW-5S	102.68	99.7	3.0	6-16	17.0				88.2	
MW-5D	102.67	99.8	2.9	25-35	37.9				88.2	
MW-6	98.41	95.0	3.4	6-16	19.4				79.0	
MW-7	98.63	95.1	3.5	6-16	19.5				79.0	
MW-8	95.42	92.4	3.0	6-16	19.0				76.4	

FIGURES

REUSE TECHNOLOGY, INC.
SWIFT CREEK PROJECT

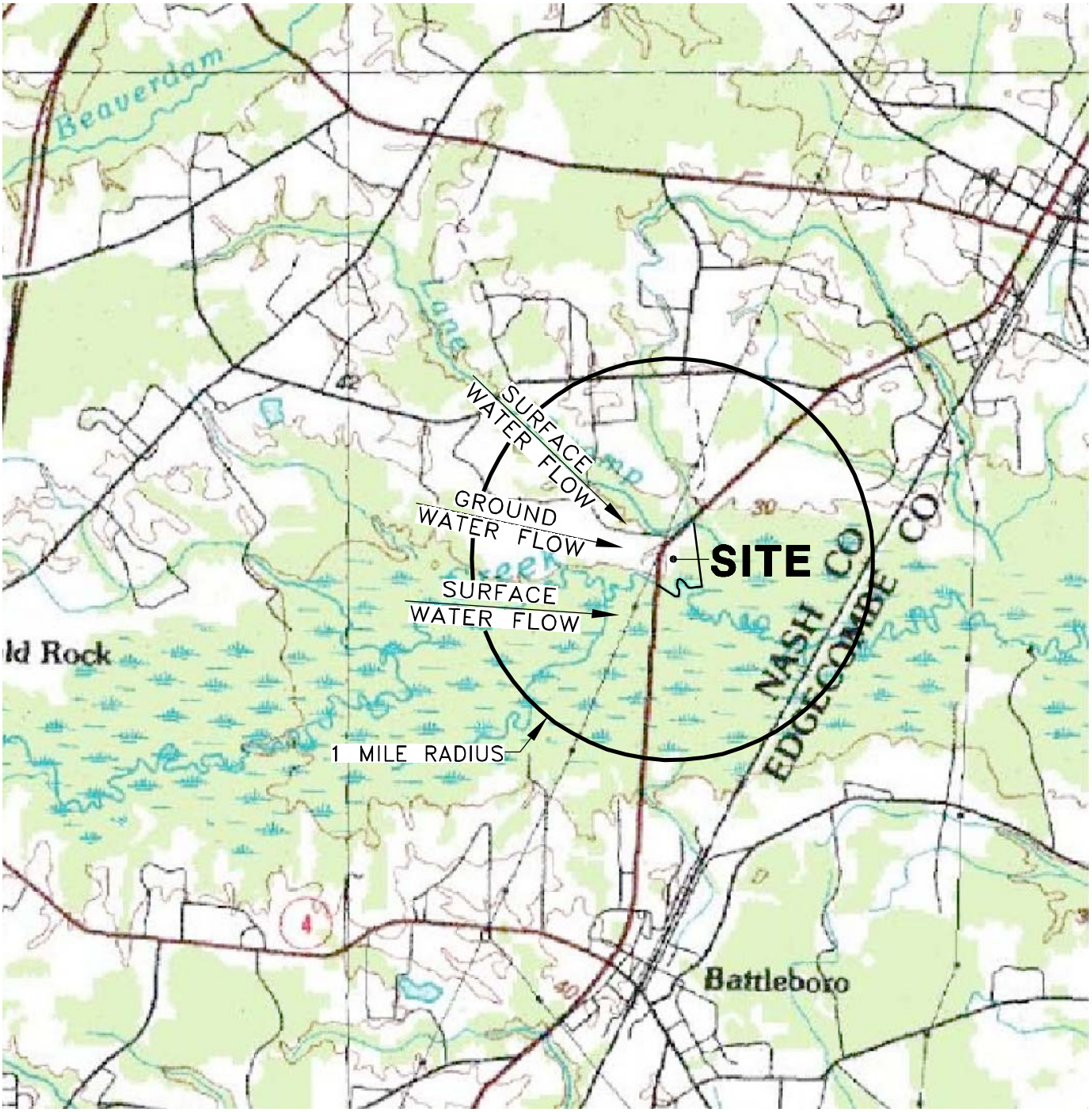


FIGURE 1
SITE LOCATON MAP

SHERRILL ENVIRONMENTAL, INC
environmental & geologic services
3326 Rugby Rd.
Durham N.C. 27707
Phone (919) 493-6555
sherrill@nc.rr.com

ACE JOB #: 01-060
SCALE: 1"=4,000'
DATE: 6-27-11
SHEET #: 1 OF 4

Appian
APPIAN CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
P.O. Box 7966 / Rocky Mount, N.C. 27804
Phone: (252) 972-7703 / Fax: (252) 972-7638
www.appianengineers.com

GENESIS 1:1

TRIANGLE ENVIRONMENTAL INC.
P.O. Box 41087
Raleigh, N.C. 27629
(919) 876-5115
(800) 849-5115
(919) 790-8273 fax

PROJECT : ReUse- Swift Creek Project

Soil Survey Map of Nash County, NC

PROJ. # 461-0109

DRWN BY :

SCALE : 1" = 2000'

FIGURE : FIGURE 1-2

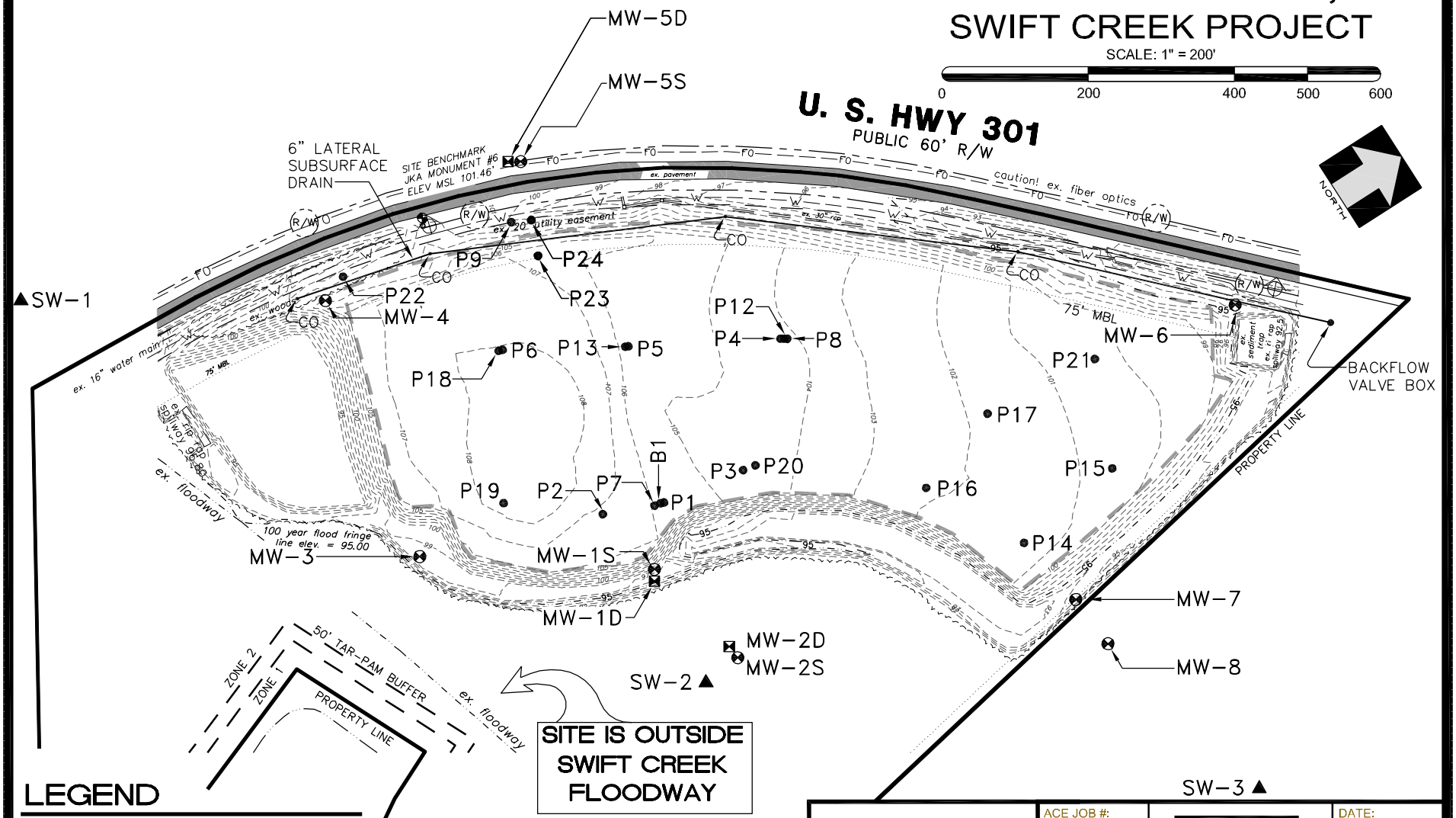
F:\Appian Projects – Shared Folders\01060-swiftcreek\01060-08-11.dwg <FIG-2 (6-27-11)> 08/04/2011 – 3:53:41 PM

REUSE TECHNOLOGY, INC.

SWIFT CREEK PROJECT

SCALE: 1" = 200'

0 200 400 500 600



LEGEND

- SHALLOW MONITORING WELL (ALLUVIAL TERRACE)
- DEEP MONITORING WELL (MARINE SEDIMENTS)
- PIEZOMETER
- SURFACE WATER LOCATION
- LIMITS OF ASH FILL PER PAUL ODEN WITH REUSE TECHNOLOGIES FEB. 21, 2003

FIGURE 2

SITE MAP

SHERRILL ENVIRONMENTAL, INC
environmental & geologic services
3326 Rugby Rd.
Durham N.C. 27707
Phone (919) 493-6555
sherrill@nc.rr.com

ACE JOB #:	DATE:
01-060	6-27-11
SCALE: 1"=200'	SHEET #: 2 OF 4

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APPIAN CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
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Phone: (252) 972-7703 / Fax: (252) 972-7638
www.appianengineers.com
GENESIS 1:1

C:\Documents and Settings\Administrator\My Documents\mike\10060-REUSE-SWIFT\01060-6-13.dwg <FIG-3 (7-13)> 07/18/2013 - 5:35:19 PM

REUSE TECHNOLOGY, INC.

SWIFT CREEK PROJECT

SCALE: 1" = 200'

0 200 400 500 600

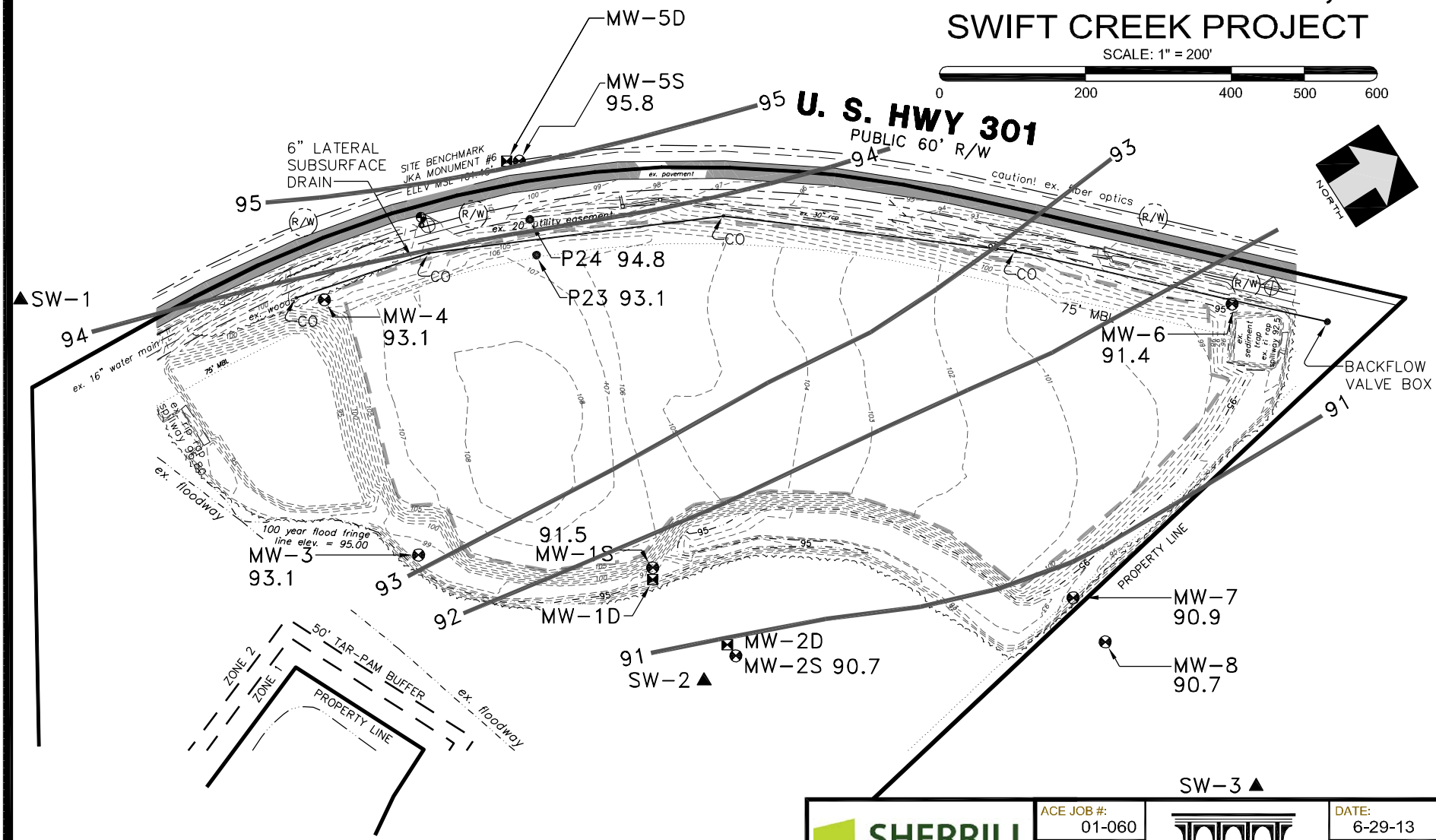

FIGURE 3

MAP OF GROUNDWATER TABLE

6/25/13

SHERRILL ENVIRONMENTAL, INC
environmental & geologic services

3326 Rugby Rd.
Durham N.C. 27707
Phone (919) 493-6555
sherrill@nc.rr.com

ACE JOB #:	DATE:
01-060	6-29-13
SCALE: 1"=200'	SHEET #: 3 OF 4

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CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
P.O. Box 7966 / Rocky Mount, N.C. 27804
Phone: (252) 972-7703 / Fax: (252) 972-7638
www.appianengineers.com

GENESIS 1:1

C:\Documents and Settings\Administrator\My Documents\mike\10060-REUSE-SWIFT\01060-6-13.dwg <FIG-4 (7-13)> 07/22/2013 - 1:24:57 PM

NOTE:
CONCENTRATIONS IN mg/L (ppm)
NS = NOT SAMPLED

REUSE TECHNOLOGY, INC.
SWIFT CREEK PROJECT

SCALE: 1" = 200'
0 200 400 500 600

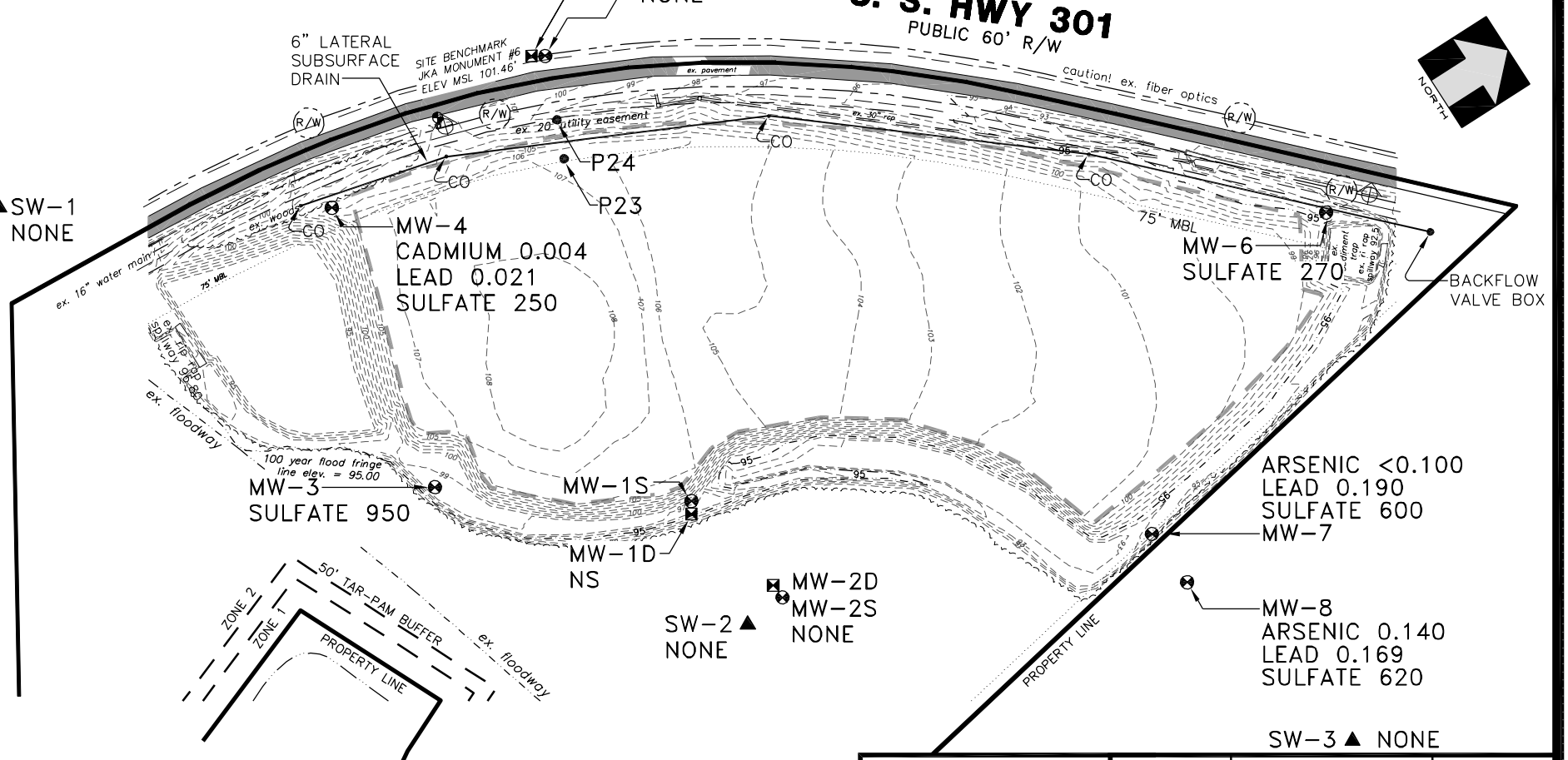

FIGURE 4
CONSTITUENTS EXCEEDING 2L GROUNDWATER STANDARDS 6/25/13

SHERRILL ENVIRONMENTAL, INC
environmental & geologic services
3326 Rugby Rd.
Durham N.C. 27707
Phone (919) 493-6555
sherrill@nc.rr.com

ACE JOB #:	DATE:
01-060	6-29-12
SCALE: 1"=200'	SHEET #: 4 OF 4

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APPIAN CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
P.O. Box 7966 / Rocky Mount, N.C. 27804
Phone: (252) 972-7703 / Fax: (252) 972-7638
www.appianengineers.com

GENESIS 1:1

C:\Documents and Settings\Administrator\My Documents\mike\10060-REUSE-SWIFT\01060-6-13.dwg <FIG-5 (7-13)> 07/18/2013 - 5:39:42 PM

NOTE:
NS = NOT SAMPLED

REUSE TECHNOLOGY, INC.
SWIFT CREEK PROJECT

SCALE: 1" = 200'
0 200 400 500 600

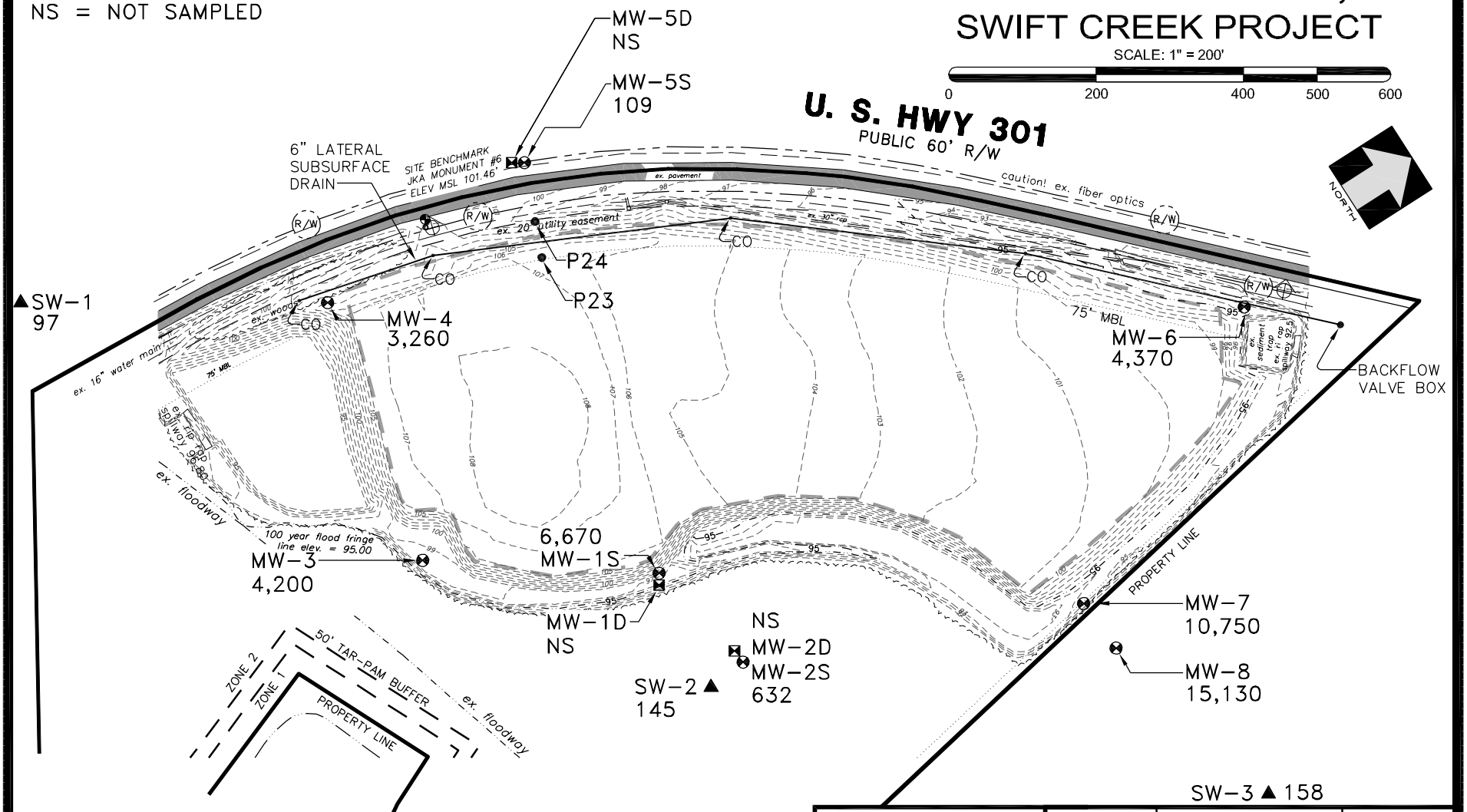

FIGURE 5
SPECIFIC CONDUCTIVITY
6/25/13

SHERRILL ENVIRONMENTAL, INC
environmental & geologic services
3326 Rugby Rd.
Durham N.C. 27707
Phone (919) 493-6555
sherrill@nc.rr.com

ACE JOB #:	DATE:
01-060	6-29-12
SCALE: 1"=200'	SHEET #: 4 OF 4

Appian
APPIAN CONSULTING ENGINEERS, P.A.
CIVIL, MUNICIPAL & STRUCTURAL ENGINEERS
COMPREHENSIVE ENVIRONMENTAL SERVICES
P.O. Box 7966 / Rocky Mount, N.C. 27804
Phone: (252) 972-7703 / Fax: (252) 972-7638
www.appianengineers.com
GENESIS 1:1

APPENDIX

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515
www.encolabs.com

Tuesday, July 9, 2013

Sherrill Environmental, Inc. (SH004)

Attn: Jack Sherrill

3326 Rugby Road

Durham, NC 27707

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: Swift Creek
ENCO Workorder(s): C307038

Dear Jack Sherrill,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, June 26, 2013.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith For Stephanie Franz

Project Manager

Enclosure(s)

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: MW-1S | **Lab ID: C307038-01** | **Sampled: 06/25/13 10:12** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 10:01
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 11:18
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:23

Client ID: MW-2S | **Lab ID: C307038-02** | **Sampled: 06/25/13 10:00** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 10:20
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 11:35
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:25

Client ID: MW-3 | **Lab ID: C307038-03** | **Sampled: 06/25/13 09:57** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:12

Client ID: MW-3 | **Lab ID: C307038-03RE1** | **Sampled: 06/25/13 09:57** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 16:12
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 14:54

Client ID: MW-4 | **Lab ID: C307038-04** | **Sampled: 06/25/13 09:47** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 11:15
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 12:28
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:28

Client ID: MW-5S | **Lab ID: C307038-05** | **Sampled: 06/25/13 09:25** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 11:34
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 12:30
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:35

Client ID: MW-6 | **Lab ID: C307038-06** | **Sampled: 06/25/13 10:40** | **Received: 06/26/13 09:30**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13	08:21	6/27/2013 11:52
EPA 6010C	12/22/13	06/27/13	10:24	7/1/2013 12:36
EPA 7470A	07/23/13	07/01/13	11:06	7/1/2013 16:38

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Client ID: MW-7	Lab ID: C307038-07	Sampled: 06/25/13 10:20	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13 08:21	6/27/2013 12:11
EPA 7470A	07/23/13	07/01/13 11:06	7/1/2013 16:40

Client ID: MW-7	Lab ID: C307038-07RE1	Sampled: 06/25/13 10:20	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	12/22/13	06/27/13 10:24	7/1/2013 14:56

Client ID: MW-8	Lab ID: C307038-08	Sampled: 06/25/13 10:25	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13 08:21	6/27/2013 12:29
EPA 7470A	07/23/13	07/01/13 11:06	7/1/2013 16:42

Client ID: MW-8	Lab ID: C307038-08RE1	Sampled: 06/25/13 10:25	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	12/22/13	06/27/13 10:24	7/1/2013 14:58

Client ID: SW-1	Lab ID: C307038-09	Sampled: 06/25/13 11:26	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13 08:21	6/27/2013 12:48
EPA 6010C	12/22/13	06/27/13 10:24	7/1/2013 12:46
EPA 7470A	07/23/13	07/01/13 11:06	7/1/2013 16:44

Client ID: SW-2	Lab ID: C307038-10	Sampled: 06/25/13 10:03	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13 08:21	6/27/2013 13:43
EPA 6010C	12/22/13	06/27/13 10:24	7/1/2013 12:49
EPA 7470A	07/23/13	07/01/13 11:06	7/1/2013 16:47

Client ID: SW-3	Lab ID: C307038-11	Sampled: 06/25/13 10:30	Received: 06/26/13 09:30

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	07/23/13	06/27/13 08:21	6/27/2013 14:02
EPA 6010C	12/22/13	06/27/13 10:24	7/1/2013 12:51
EPA 7470A	07/23/13	07/01/13 11:06	7/1/2013 16:49

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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SAMPLE DETECTION SUMMARY

Client ID: MW-1S **Lab ID: C307038-01**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	174		1.00	10.0	ug/L	EPA 6010C	
Sulfate as SO4	75000	D	200	25000	ug/L	EPA 300.0	

Client ID: MW-2S **Lab ID: C307038-02**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	210		1.00	10.0	ug/L	EPA 6010C	

Client ID: MW-3 **Lab ID: C307038-03RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	201	D	10.0	100	ug/L	EPA 6010C	R-05
Sulfate as SO4	950000	D	780	100000	ug/L	EPA 300.0	

Client ID: MW-4 **Lab ID: C307038-04**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	109		1.00	10.0	ug/L	EPA 6010C	
Cadmium - Total	4.16		0.360	1.00	ug/L	EPA 6010C	
Lead - Total	21.6		2.10	10.0	ug/L	EPA 6010C	
Mercury - Total	0.780		0.170	0.200	ug/L	EPA 7470A	
Sulfate as SO4	250000	D	200	25000	ug/L	EPA 300.0	

Client ID: MW-5S **Lab ID: C307038-05**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	25.5		1.00	10.0	ug/L	EPA 6010C	
Sulfate as SO4	22000		40	5000	ug/L	EPA 300.0	

Client ID: MW-6 **Lab ID: C307038-06**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	152		1.00	10.0	ug/L	EPA 6010C	
Sulfate as SO4	270000	D	200	25000	ug/L	EPA 300.0	

Client ID: MW-7 **Lab ID: C307038-07**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Sulfate as SO4	600000	D	390	50000	ug/L	EPA 300.0	

Client ID: MW-7 **Lab ID: C307038-07RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	114	D	10.0	100	ug/L	EPA 6010C	R-05
Lead - Total	190	D	21.0	100	ug/L	EPA 6010C	R-05

Client ID: MW-8 **Lab ID: C307038-08**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Sulfate as SO4	620000	D	390	50000	ug/L	EPA 300.0	

Client ID: MW-8 **Lab ID: C307038-08RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Arsenic - Total	140	D	54.0	100	ug/L	EPA 6010C	R-01
Barium - Total	172	D	10.0	100	ug/L	EPA 6010C	R-01
Lead - Total	169	D	21.0	100	ug/L	EPA 6010C	R-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Client ID: SW-1 **Lab ID: C307038-09**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	40.3		1.00	10.0	ug/L	EPA 6010C	

Client ID: SW-2 **Lab ID: C307038-10**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	37.7		1.00	10.0	ug/L	EPA 6010C	

Client ID: SW-3 **Lab ID: C307038-11**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Barium - Total	87.2		1.00	10.0	ug/L	EPA 6010C	
Sulfate as SO4	7400		40	5000	ug/L	EPA 300.0	

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ANALYTICAL RESULTS

Description: MW-1S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-01
Sampled: 06/25/13 10:12
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:23	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: MW-1S | **Lab Sample ID:** C307038-01 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:12 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Barium [7440-39-3] ^	**174**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:18	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-1S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-01
Sampled: 06/25/13 10:12
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**75000**	D	ug/L	5	25000	3F27005	EPA 300.0	06/27/13 10:01	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-2S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-02
Sampled: 06/25/13 10:00
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:25	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-2S | **Lab Sample ID:** C307038-02 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:00 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Barium [7440-39-3] ^	**210**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 11:35	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-2S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-02
Sampled: 06/25/13 10:00
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	5000	U	ug/L	1	5000	3F27005	EPA 300.0	06/27/13 10:20	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-3 | **Lab Sample ID:** C307038-03 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:57 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:12	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-3 | **Lab Sample ID:** C307038-03 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:57 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Barium [7440-39-3] ^	**201**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Cadmium [7440-43-9] ^	10.0	UD	ug/L	10	10.0	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Chromium [7440-47-3] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Lead [7439-92-1] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Selenium [7782-49-2] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05
Silver [7440-22-4] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:54	JDH	R-05

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-3 | **Lab Sample ID:** C307038-03 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:57 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**950000**	D	ug/L	20	100000	3F27005	EPA 300.0	06/27/13 16:12	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-4 | **Lab Sample ID:** C307038-04 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:47 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	**0.780**		ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:28	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-4 | **Lab Sample ID:** C307038-04 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:47 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Barium [7440-39-3] ^	**109**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Cadmium [7440-43-9] ^	**4.16**		ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Lead [7439-92-1] ^	**21.6**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:28	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-4 | **Lab Sample ID:** C307038-04 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 09:47 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**250000**	D	ug/L	5	25000	3F27005	EPA 300.0	06/27/13 11:15	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-5S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-05
Sampled: 06/25/13 09:25
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:35	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-5S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-05
Sampled: 06/25/13 09:25
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Barium [7440-39-3] ^	**25.5**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:30	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-5S
Matrix: Ground Water
Project: Swift Creek

Lab Sample ID: C307038-05
Sampled: 06/25/13 09:25
Sampled By: Jack Sherrill

Received: 06/26/13 09:30
Work Order: C307038

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**22000**		ug/L	1	5000	3F27005	EPA 300.0	06/27/13 11:34	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-6 | **Lab Sample ID:** C307038-06 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:40 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:38	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-6 | **Lab Sample ID:** C307038-06 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:40 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Barium [7440-39-3] ^	**152**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:36	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-6 | **Lab Sample ID:** C307038-06 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:40 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**270000**	D	ug/L	5	25000	3F27005	EPA 300.0	06/27/13 11:52	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-7 | **Lab Sample ID:** C307038-07 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:20 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:40	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-7 | **Lab Sample ID:** C307038-07 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:20 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Barium [7440-39-3] ^	**114**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Cadmium [7440-43-9] ^	10.0	UD	ug/L	10	10.0	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Chromium [7440-47-3] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Lead [7439-92-1] ^	**190**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Selenium [7782-49-2] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05
Silver [7440-22-4] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:56	JDH	R-05

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-7 | **Lab Sample ID:** C307038-07 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:20 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**600000**	D	ug/L	10	50000	3F27005	EPA 300.0	06/27/13 12:11	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-8 | **Lab Sample ID:** C307038-08 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:25 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:42	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-8 | **Lab Sample ID:** C307038-08 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:25 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	**140**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Barium [7440-39-3] ^	**172**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Cadmium [7440-43-9] ^	10.0	UD	ug/L	10	10.0	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Chromium [7440-47-3] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Lead [7439-92-1] ^	**169**	D	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Selenium [7782-49-2] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01
Silver [7440-22-4] ^	100	UD	ug/L	10	100	3F27015	EPA 6010C	07/01/13 14:58	JDH	R-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: MW-8 | **Lab Sample ID:** C307038-08 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:25 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**620000**	D	ug/L	10	50000	3F27005	EPA 300.0	06/27/13 12:29	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-1 | **Lab Sample ID:** C307038-09 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 11:26 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:44	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-1 | **Lab Sample ID:** C307038-09 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 11:26 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Barium [7440-39-3] ^	**40.3**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:46	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-1 | **Lab Sample ID:** C307038-09 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 11:26 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	5000	U	ug/L	1	5000	3F27005	EPA 300.0	06/27/13 12:48	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-2 | **Lab Sample ID:** C307038-10 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:03 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:47	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-2 | **Lab Sample ID:** C307038-10 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:03 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Barium [7440-39-3] ^	**37.7**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:49	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-2 | **Lab Sample ID:** C307038-10 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:03 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	5000	U	ug/L	1	5000	3F27005	EPA 300.0	06/27/13 13:43	JCS	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

www.encolabs.com

Description: SW-3 | **Lab Sample ID:** C307038-11 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:30 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.200	U	ug/L	1	0.200	3F28014	EPA 7470A	07/01/13 16:49	T1D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: SW-3 | **Lab Sample ID:** C307038-11 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:30 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Arsenic [7440-38-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Barium [7440-39-3] ^	**87.2**		ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Cadmium [7440-43-9] ^	1.00	U	ug/L	1	1.00	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Chromium [7440-47-3] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Lead [7439-92-1] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Selenium [7782-49-2] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	
Silver [7440-22-4] ^	10.0	U	ug/L	1	10.0	3F27015	EPA 6010C	07/01/13 12:51	JDH	

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Description: SW-3 | **Lab Sample ID:** C307038-11 | **Received:** 06/26/13 09:30

Matrix: Ground Water | **Sampled:** 06/25/13 10:30 | **Work Order:** C307038

Project: Swift Creek | **Sampled By:** Jack Sherrill

Classical Chemistry Parameters

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MRL	Batch	Method	Analyzed	By	Notes
Sulfate as SO4 [14808-79-8] ^	**7400**		ug/L	1	5000	3F27005	EPA 300.0	06/27/13 14:02	JCS	

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QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 3F28014 - EPA 7470A

Blank (3F28014-BLK1) Prepared: 07/01/2013 11:06 Analyzed: 07/01/2013 16:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.200	U	0.200	ug/L							

LCS (3F28014-BS1) Prepared: 07/01/2013 11:06 Analyzed: 07/01/2013 16:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.70		0.200	ug/L	5.00		94	80-120			

Matrix Spike (3F28014-MS1) Prepared: 07/01/2013 11:06 Analyzed: 07/01/2013 16:14

Source: C307038-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	2.88		0.200	ug/L	5.00	0.200 U	58	75-125			QM-07

Matrix Spike Dup (3F28014-MSD1) Prepared: 07/01/2013 11:06 Analyzed: 07/01/2013 16:17

Source: C307038-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	2.91		0.200	ug/L	5.00	0.200 U	58	75-125	1	25	QM-07

Post Spike (3F28014-PS1) Prepared: 07/01/2013 11:06 Analyzed: 07/01/2013 16:19

Source: C307038-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	2.48		0.200	ug/L	5.00	0.0250	49	75-125			QM-08

Batch 3G08013 - EPA 7470A

Blank (3G08013-BLK1) Prepared: 07/08/2013 10:20 Analyzed: 07/09/2013 13:39

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	0.225	U	0.225	ug/L							

LCS (3G08013-BS1) Prepared: 07/08/2013 10:20 Analyzed: 07/09/2013 13:41

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.30		0.225	ug/L	5.00		86	80-120			

Matrix Spike (3G08013-MS1) Prepared: 07/08/2013 10:20 Analyzed: 07/09/2013 13:45

Source: C308380-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.58		0.225	ug/L	5.00	0.225 U	92	75-125			

Matrix Spike Dup (3G08013-MSD1) Prepared: 07/08/2013 10:20 Analyzed: 07/09/2013 13:47

Source: C308380-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	4.66		0.225	ug/L	5.00	0.225 U	93	75-125	2	25	

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QUALITY CONTROL

Metals by EPA 6000/7000 Series Methods - Quality Control

Batch 3G08013 - EPA 7470A

Post Spike (3G08013-PS1) Prepared: 07/08/2013 10:20 Analyzed: 07/09/2013 13:50

Source: C308380-03

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Mercury	3.51		0.200	ug/L	4.44	-0.0542	80	75-125			

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 3F27015 - EPA 3005A

Blank (3F27015-BLK1) Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	10.0	U	10.0	ug/L							
Barium	10.0	U	10.0	ug/L							
Cadmium	1.00	U	1.00	ug/L							
Chromium	10.0	U	10.0	ug/L							
Lead	10.0	U	10.0	ug/L							
Selenium	10.0	U	10.0	ug/L							
Silver	10.0	U	10.0	ug/L							

LCS (3F27015-BS1) Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:12

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	215		10.0	ug/L	200		107	80-120			
Barium	221		10.0	ug/L	200		110	80-120			
Cadmium	21.7		1.00	ug/L	20.0		108	80-120			
Chromium	213		10.0	ug/L	200		106	80-120			
Lead	216		10.0	ug/L	200		108	80-120			
Selenium	218		10.0	ug/L	200		109	80-120			
Silver	210		10.0	ug/L	200		105	80-120			

Matrix Spike (3F27015-MS1) Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:21

Source: C307038-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	225		10.0	ug/L	200	5.52	110	75-125			
Barium	378		10.0	ug/L	200	174	102	75-125			
Cadmium	20.8		1.00	ug/L	20.0	1.00 U	104	75-125			
Chromium	204		10.0	ug/L	200	10.0 U	102	75-125			
Lead	208		10.0	ug/L	200	10.0 U	104	75-125			
Selenium	231		10.0	ug/L	200	10.0 U	115	75-125			
Silver	213		10.0	ug/L	200	10.0 U	106	75-125			

Matrix Spike Dup (3F27015-MSD1) Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:23

Source: C307038-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	216		10.0	ug/L	200	5.52	105	75-125	4	20	
Barium	370		10.0	ug/L	200	174	98	75-125	2	20	
Cadmium	20.4		1.00	ug/L	20.0	1.00 U	102	75-125	2	20	
Chromium	201		10.0	ug/L	200	10.0 U	100	75-125	2	20	
Lead	203		10.0	ug/L	200	10.0 U	102	75-125	2	20	
Selenium	219		10.0	ug/L	200	10.0 U	110	75-125	5	20	

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 3F27015 - EPA 3005A

Matrix Spike Dup (3F27015-MSD1) Continued Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:23

Source: C307038-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Silver	210		10.0	ug/L	200	10.0 U	105	75-125	1	20	

Post Spike (3F27015-PS1) Prepared: 06/27/2013 10:24 Analyzed: 07/01/2013 11:26

Source: C307038-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	0.211		0.0100	mg/L	0.200	0.00552	103	80-120			
Barium	0.361		0.0100	mg/L	0.200	0.174	94	80-120			
Cadmium	0.0199		0.00100	mg/L	0.0200	0.000278	98	80-120			
Chromium	0.195		0.0100	mg/L	0.200	0.000392	98	80-120			
Lead	0.200		0.0100	mg/L	0.200	0.000838	99	80-120			
Selenium	0.214		0.0100	mg/L	0.200	0.00306	105	80-120			
Silver	0.203		0.0100	mg/L	0.200	0.00130	101	80-120			

Classical Chemistry Parameters - Quality Control

Batch 3F27005 - NO PREP

Blank (3F27005-BLK1) Prepared: 06/27/2013 08:21 Analyzed: 06/27/2013 09:43

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sulfate as SO4	5000	U	5000	ug/L							

LCS (3F27005-BS1) Prepared: 06/27/2013 08:21 Analyzed: 06/27/2013 09:24

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sulfate as SO4	51000		5000	ug/L	50000		102	90-110			

Matrix Spike (3F27005-MS1) Prepared: 06/27/2013 08:21 Analyzed: 06/27/2013 15:34

Source: C307038-01RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sulfate as SO4	850000		200000	ug/L	800000	140000	88	90-110			QM-05

Matrix Spike Dup (3F27005-MSD1) Prepared: 06/27/2013 08:21 Analyzed: 06/27/2013 15:53

Source: C307038-01RE1

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Sulfate as SO4	830000		200000	ug/L	800000	140000	86	90-110	2	10	QM-05

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FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-08	Post-digestion spike did not meet method requirements due to confirmed matrix effects (dilution test).
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
R-05	The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.

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ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 111
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

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Client Name: Sherrill Environmental, Inc. (SH004)	Project Number: [none]
Address: 3320 Rugby Road	Project Name/Desc: Swift Creek
City/ST/Zip: Durham, NC 27707	PO # / Billing Info:
Tel: (919) 493-3555 / Fax: ~~(919) 493-6554~~	Reporting Contact: Jack Sherrill
Sampler(s) Name, Affiliation (Print): J. Sherrill - Sherrill Environmental	Billing Contact: Accounts Payable
Sampler(s) Signature: John Sherrill	Site Location / Time Zone:

Requested Analyses: Ag,As,Ba,Cd,Cr,Pb,Se; Hg; Sulfate 300

Preservation (See Codes) (Combine as necessary)

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

✓ Standard

___ Expedited

Due ___/___/___

Lab Workorder: C307038

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	Ag,As,Ba,Cd,Cr,Pb,Se	Hg	Sulfate 300	Sample Comments
	MW-1S	6/25/13	1012		GW	2	X	X	X	
	MW-2S	↓	1000		GW	2	X	X	X	
	MW-3		957		GW	2	X	X	X	
	MW-4		947		GW	2	X	X	X	
	MW-5S		925		GW	2	X	X	X	
	MW-6		1040		GW	2	X	X	X	
	MW-7		1020		GW	2	X	X	X	
	MW-8		1025		GW	2	X	X	X	
	SW-1		1126		GW	2	X	X	X	
	SW-2		1003		GW	2	X	X	X	
	SW-3	✓	1030		GW	2	X	X	X	

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By: John Sherrill	Date/Time: 6/26/13 630	Received By: Rachel [illegible]	Date/Time: 6/26/13 930
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: 2. 1c		Condition Upon Receipt: ✓ Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist