



**Groundwater Analysis
Swift Creek Project
Highway 301**

ReUse Technology, Inc.

**Nash County
Rocky Mount, North Carolina**

Prepared for:
REUSE TECHNOLOGY, INC.
Charlotte, North Carolina

July 2004



Prepared by:
Sherrill Environmental, Inc.
Durham, North Carolina

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1.0 INTRODUCTION

Sherrill Environmental, Inc. (Sherrill) was contracted by ReUse Technology, Inc. (ReUse) to investigate groundwater concerns addressed in a letter from the Division of Waste Management dated May 11, 2004. The letter directs ReUse to install and collect groundwater samples at a specified location at the Coal Combustion By-Product (CCB) Structural Fill Site on the Highway 301 Swift Creek Property now owned by Full Circle Solutions, Inc. This report was prepared to provide the Division with the information requested in the May 11, 2004 letter.

A letter dated February 11, 2004 from William A. White, attorney for ReUse, proposed to monitor groundwater quality at distance of approximately 150 feet from the CCB rather than at the location specified in the May 11, 2004 letter. This proposal was not accepted by the Division. However, to better and more completely understand groundwater conditions adjacent to the fill, ReUse performed additional groundwater monitoring to demonstrate lateral and vertical extent.

2.0 MONITORING WELL INSTALLATION

On June 2, 2004, Sherrill directed J&L Drilling, Inc. in the boring and installation of MW-1S (shallow) and MW-1D (deep). As requested by the Division, these paired monitoring wells are located on the south side of the concrete pipe within the fifty-foot buffer in an area free of (CCB) fill material and not subject to flooding. The locations of the monitoring wells are shown on Figure 1. These paired borings are approximately 25 feet from the edge of the CCB fill. The first boring, MW-1S, encountered a soil fill consisting of clayey sand from 0 to 6.5 feet. Alluvial sediments were encountered from 6.5 to 13.0 feet. The alluvial unit transitioned with depth from sandy clay to clayey sand and to sand near the contact with the underlying marine sediments. Marine sediments were encountered from 13.0 feet to the total depth of 33.0 feet. The marine unit was massive and uniformed consisting of a greenish-gray silty fine sand that was very shelly. The upper portion of the unit was more plastic with some clay content. The boring logs and drillers log are included in Appendix A.

On June 18, 2004, Sherrill directed J&L Drilling, Inc. in the boring and installation of MW-2S (shallow) and MW-2D (deep). These paired monitoring wells are located on a roadway constructed into the swamp (Figure 1) and were drilled and constructed to the same standards as specified in the May 11, 2004 letter. These monitoring wells are approximately 160 feet downgradient from the edge of the CCB fill and 135 feet downgradient of MW-1S and MW-1D. The first boring, MW-2S, encountered a clayey sand soil fill from 0 to 4.0 feet. Alluvial sediments were encountered from 4.0 to 13.5 feet. The alluvial unit transitioned with depth from sandy clay to clayey sand to clean, fine to medium grained sand. The sand interval was present from 9.0 to 13.5 feet. Marine sediments were encountered from 13.5 feet to 33.0 feet. The marine unit was massive consisting of a greenish-gray silty fine sand that was very shelly. The upper

portion of the unit was more plastic with some clay content. At a depth of 33.0 feet the marine unit became very dense with little apparent moisture. The total depth of the boring was 36.0 feet. The boring logs and drillers log are included in Appendix A.

The four 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. The monitoring well installation diagrams are included in Appendix A.

A cross-section diagram was constructed using the boring information from piezometer P-7 and the four new monitoring wells (Figure 2). The cross-section shows the approximate position of the CCB fill, soil fill, alluvial material and the contact with the underlying marine sediments. Also shown are the positions of the well screens and water levels measured on June 21, 2004. The direction of groundwater flow is to the east with monitoring wells MW-2S and MW-2D located downgradient of the CCB fill and MW-1S and MW-1D.

3.0 SAMPLING AND ANALYSIS

On June 6, 2004, monitoring wells MW-1S and MW-1D were developed. A total of 44 gallons was bailed from MW-1S to develop and purge the well. Recharge to MW-1S kept up with bailing. A total of 27.5 gallons was bailed from MW-1D to develop and purge the well. Recharge to MW-1D was slow and could be bailed dry. The monitoring wells were allowed to rest approximately 22 hours prior to sampling to allow for the settling of particulates. Groundwater samples were collected on June 7, 2004 and analyzed for the Division's requested parameters of sulfate and total RCRA metals.

On June 21, 2004, monitoring wells MW-2S and MW-2D were developed. A total of 25 gallons was bailed from MW-2S to develop and purge the well. Recharge to MW-1S kept up with bailing. A total of 14 gallons were bailed from MW-2D to develop and purge the well. Recharge to MW-1D was slow and could be bailed dry. The monitoring wells were allowed to rest approximately 22 hours prior to sampling to allow for the settling of particulates. Groundwater samples were collected on June 22, 2004 and analyzed for the Division's requested parameters of sulfate and total RCRA metals.

On June 22, 2004, Sherrill collected two surface water samples. Sample SW-1 was collected at a surface water gauging pole (PVC pipe) set along the roadway into the swamp. Sample SW-2 was collected at the Highway 301 bridge over Swift Creek. The surface water samples were analyzed for the same parameters as the groundwater samples.

4.0 ANALYTICAL RESULTS

The analytical results of the four groundwater samples and two surface water samples are summarized on Table 1 and the analytical reports are included in Appendix B. Exceedences of the NCAC 2L Groundwater Standard were found only at the shallow monitoring well (MW-1S) adjacent to the fill project.

Analysis of the groundwater sample from MW-1S detected the following parameters:

Arsenic was detected in a concentration of 0.028 mg/L (ppm). The 2L Standard for arsenic is listed at 0.01 mg/L.

MCL 0.010

Lead was detected in a concentration of 0.068 mg/L. The 2L Standard for lead is listed at 0.015 mg/L.

0.015 mg/L

Sulfate was detected in a concentration of 490 mg/L. The 2L Standard for sulfate is listed at 250 mg/L.

250 mg/L

Barium was detected in the samples from three of the four monitoring wells in concentrations well below the 2L Standard. The barium detections appear to be representative of background conditions. None of the remaining parameters were found at concentrations above the method detection limits.

Analysis of the surface water samples indicated that none of the tested parameters were present in concentrations above the method detection limits.

5.0 DISCUSSION AND SUMMARY

The contaminants arsenic, lead and sulfate were detected in the groundwater sample from MW-1S which monitors shallow groundwater adjacent to the CCB fill. Arsenic and lead were not detected in the co-located deeper monitoring well (MW-1D). Two similar monitoring wells (MW-2S and MW-2D) are located approximately 135 feet downgradient of the MW-1 pair. Arsenic and lead were not detected in the two downgradient monitoring wells.

Sulfate was detected in a concentration of 490 mg/L in the shallow groundwater adjacent to the CCB fill. Sulfate was detected in a concentration of 13 mg/L in the co-located deeper monitoring well (MW-1D). Sulfate was detected in the downgradient monitoring wells at 32 mg/L in the shallow well (MW-2S) and 5.6 mg/L in the deep well (MW-2D). The sulfate concentrations at MW-1S are likely associated with the CCB fill. The low sulfate concentrations detected in the other wells may be due to the presence of decaying organic material (shallow) or the presence of marine sediments (deep).

In summary, some shallow contamination is present adjacent to the CCB fill; however, the contamination is limited as determined by the deep and downgradient monitoring wells. As we have brought up before, the USEPA does not believe that coal ash fill projects should be evaluated by sampling groundwater either beneath or adjacent to coal ash fill projects.

Federal Register/Vol. 65, No.99, May 22, 2000, 40CFR Part 261 – Regulatory Determination on Waste from the Combustion of Fossil Fuels; Final Rule
Landfills and Surface Impoundments

“We do not believe that it would be appropriate to consider an exceedence directly beneath a waste management unit or very close to the waste boundary to be a documented, proven damage case. State regulations typically use a compliance procedure that relies on measurement at a receptor site or in groundwater at a point beyond the waste boundary.”

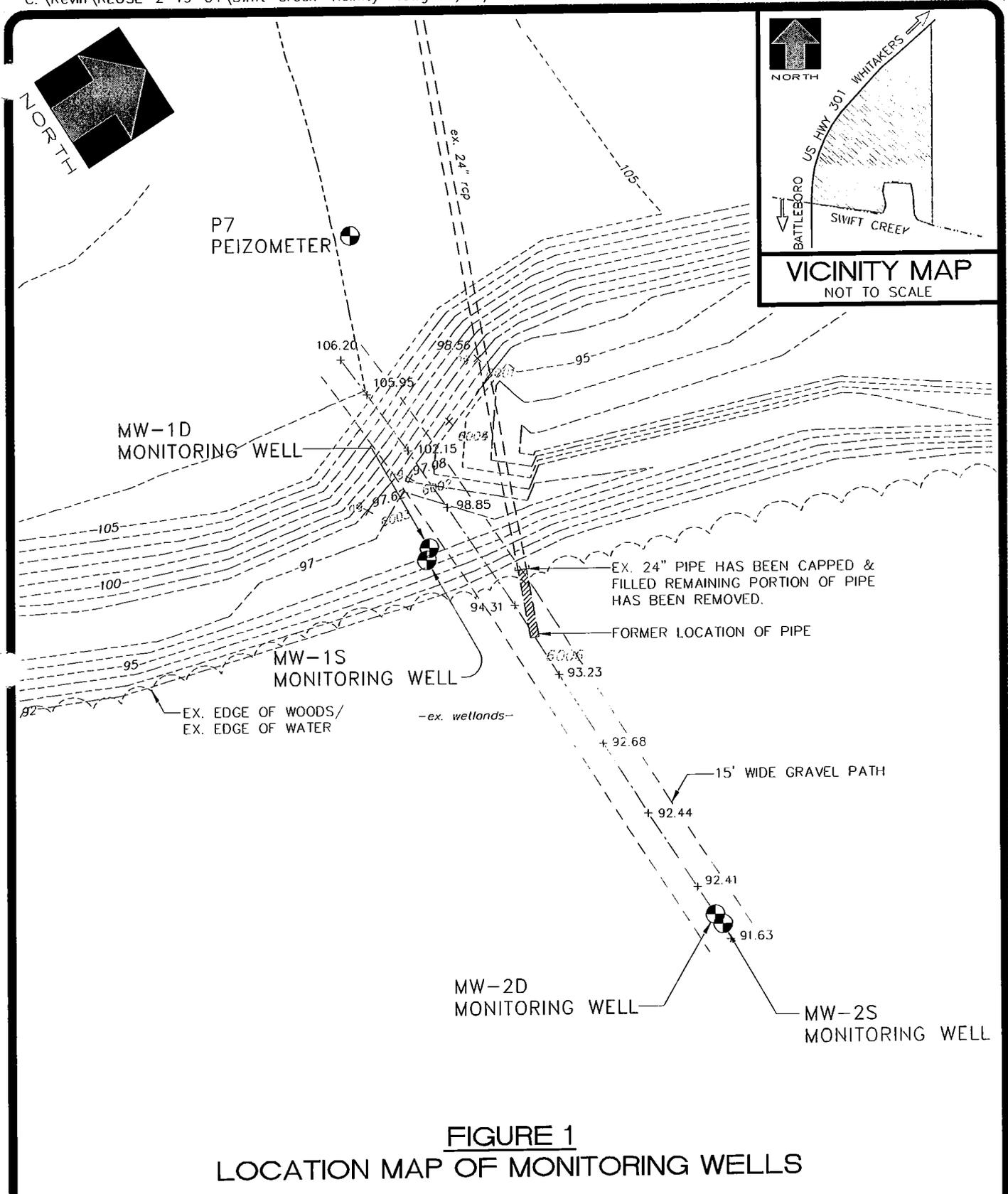
Analysis of surface water samples did not detect any contaminants. This investigation shows that adjacent to this particular project, where water in the CCB fill has been identified, there may be some exceedences of the 2L Standard. However, the contaminants are shallow and limited. Impacts to groundwater or surface water measured at a distance significantly less than a “compliance boundary” would not be predicted.

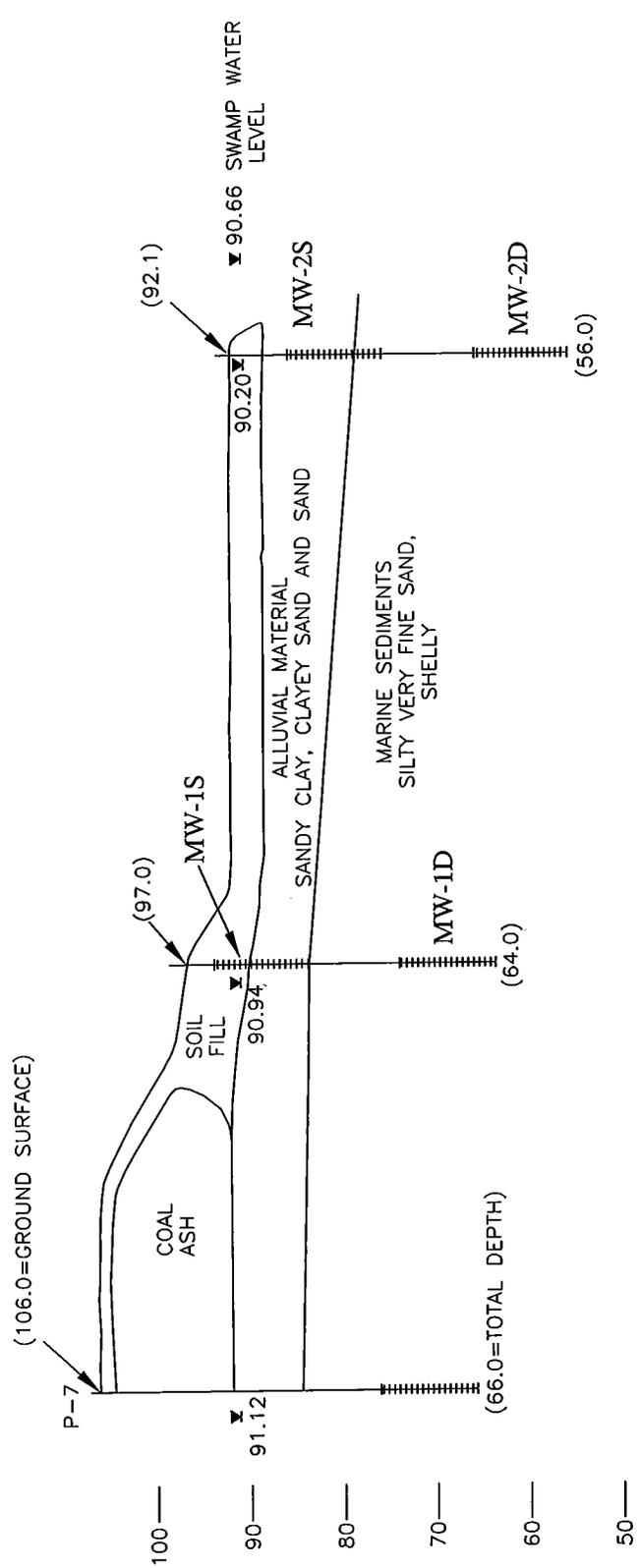
TABLES

**TABLE 1
SUMMARY OF WATER ANALYSIS
SWIFT CREEK PROJECT**

	NCAC 2L Std.	MW-1S 6/7/04	MW-1D 6/7/04	MW-2S 6/22/04	MW-2D 6/22/04	SW-1 6/22/04	SW-2 6/22/04
RCRA Metals							
Arsenic	0.01	0.028	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	2.0	0.19	0.54	<0.10	0.17	<0.10	<0.10
Cadmium	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.015	0.068	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sulfate	250	490	13	32	5.6	<2.0	<2.0
Concentrations in mg/L (ppm)							
Bold values exceed the 2L Groundwater Standard							
MW-1S and MW-2S are screened shallow (approx. 3 to 13 feet).							
MW-1D and MW-2D are screened deep (approx. 23 to 33 feet).							
SW-1 swamp at gauging pole off roadway							
SW-2 Swift Creek at bridge (background).							

FIGURES





HORIZONTAL SCALE 1" = 40'
 VERTICAL SCALE 1" = 20'

SWIFT CREEK-1004

SWIFT CREEK Project, ReUse Technology, Inc.

FIGURE 2
 CROSS-SECTION DIAGRAM
 7/19/04

SHERRILL ENVIRONMENTAL, INC.
 3326 Rugby Road • Durham, NC • 27707
 Tel. (919) 493-6555 Fax (919) 493-6554 E-Mail sherrill@ncrr.com

SCALE:
 DATE: July 19, 2004
 DESIGN by J.S.
 DWG by: lot



APPENDIX A

Boring Logs
Monitoring Well Installation Sketches
Driller's Well Construction Records

FIELD BOREHOLE LOG

PROJECT:	SWIFT CREEK, HWY 301	BORING NO.:	MW-1S & 1D
LOCATION:	BATTLEBORO, NC	STATION: x	x
TYPE OF BORING:	Hollow Stem Auger	DATE STARTED:	6/2/04
DRILLING FIRM:	J&L Drilling, Inc.	DATE FINISHED:	6/2/04
DRILLER:	Lee Charbonneau	GROUND ELEV.:	97.0
DRILL RIG:	CME-75	LOGGED BY:	J Sherrill, L.G.
		TOTAL DEPTH:	33.0 ft

DEPTH (ft)	ELEV. (ft)	BLOWS/6"	N-VALUE	SAMPLE #. CORE RUN #	RECOVERY (%)	RQD (%)	STRATUM	CLASSIFICATION	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
2	96.0	2 3 5	5	SS-1				SC	0.0-6.5 ft: FILL, mottled yellowish gray and yellowish brown clayey SAND	
4	94.0	1 2 3 2	5	SS-2				SC		
6	92.0									
8		3 5 7 13	12	SS-3				CL	6.5-9.7 ft: Mottled yellowish gray and yellowish brown, sandy CLAY	
10	86.0							SC	9.7-13.0 ft: Mottled yellowish-gray and yellowish-brown Clayey SAND	
12	84.0									
14	82.0	1 2 3 2	5	SS-4					13.0-33.0 ft: Greenish-gray clayey, silty very fine SAND, very shelly	
16	80.0									
18	78.0									
20	76.0	3 4 4 5	8	SS-5				SM		
22	74.0									
24	72.0									
26	70.0	2 3 3 5	6	SS-6						
28	68.0									
30										

FIELD BOREHOLE LOG

PROJECT:	SWIFT CREEK, HWY 301	BORING NO.:	MW-1S & 1D
LOCATION:	BATTLEBORO, NC	SHEET:	2 of 2
TYPE OF BORING:	Hollow Stem Auger	DATE STARTED:	6/2/04
DRILLING FIRM:	J&L Drilling, Inc.	DATE FINISHED:	6/2/04
DRILLER:	Lee Charbonneau	GROUND ELEV.:	97.0
DRILL RIG:	CME-75	LOGGED BY:	J Sherrill, L.G.
		COORDINATES:	0
		NORTHING:	0.0 ft
		EASTING:	0.0 ft
		TOTAL DEPTH:	33.0 ft

DEPTH (ft)	ELEV. (ft)	BLOWS/6"	N-VALUE	SAMPLE # CORE RUN	RECOVERY	RQD (%)	STRATUM	CLASSIFI- CATION	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
32	66.0	1	5	SS-7				SM	13.0-33.0 ft: Medium gray Silty very fine Sand, very Shelly	
	64.0									
34									33.0 End of Boring	
	62.0									
36										
	60.0								MW-1S Set screen at 3.0-13.0 ft, sand from 2.5 to 13.0 ft, bentonite from 2.0 to 2.5 ft	
38										
	58.0									
40										
	56.0								MW-1D Set screen at 23.0-33.0 ft, sand from 21.0 to 33.0 ft, bentonite from 19.0 to 21.0 ft	
42										
	54.0									
44										
	52.0									
46										
	50.0									
48										
	48.0									
50										
	46.0									
52										
	44.0									
54										
	42.0									
56										
	40.0									
58										
	38.0									
60										

FIELD BOREHOLE LOG

PROJECT:	SWIFT CREEK, HWY 301	BORING NO.:	MW-2S & 2D
LOCATION:	BATTLEBORO, NC	STATION:	x x
TYPE OF BORING:	Hollow Stem Auger	DATE STARTED:	6/22/04
DRILLING FIRM:	J&L Drilling, Inc.	DATE FINISHED:	6/22/04
DRILLER:	Lee Charbonneau	GROUND ELEV.:	92.0
DRILL RIG:	CME-75	LOGGED BY:	J Sherrill, L.G.
		COORDINATES:	
		NORTHING:	ft
		EASTING:	ft
		TOTAL DEPTH:	36.0 ft

DEPTH (ft)	ELEV. (ft)	BLOWS/6"	N-VALUE	SAMPLE # CORE RUN #	RECOVERY (%)	RQD (%)	STRATUM	CLASSIFI- CATION	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
2	91.0							SC	0.0-4.0 ft: FILL, yellowish brown clayey SAND	
4	89.0	3	2	SS-1				CL	4.0-7.0 ft: Mottled yellowish gray and yellowish brown, sandy CLAY	
6		1								
8								SC	7.0-9.0 ft: Mottled yellowish gray and yellowish brown, clayey SAND	
10	83.0	2								
		3								
		5	8	SS-2				SP	9.0-13.5 ft: Light brownish gray fine to medium SAND	
	81.0	6								
12	79.0									
14		2								
	77.0	3	7	SS-3						
		4								
16	75.0									
18		2								
	73.0	3	6	SS-4						
		3								
20	71.0	4								
22								SM		
24	69.0									
		2								
	67.0	2	4	SS-5						
		2								
26	65.0									
28										
	63.0	2								
		4	9	SS-6						
30		5								
		6								

FIELD BOREHOLE LOG

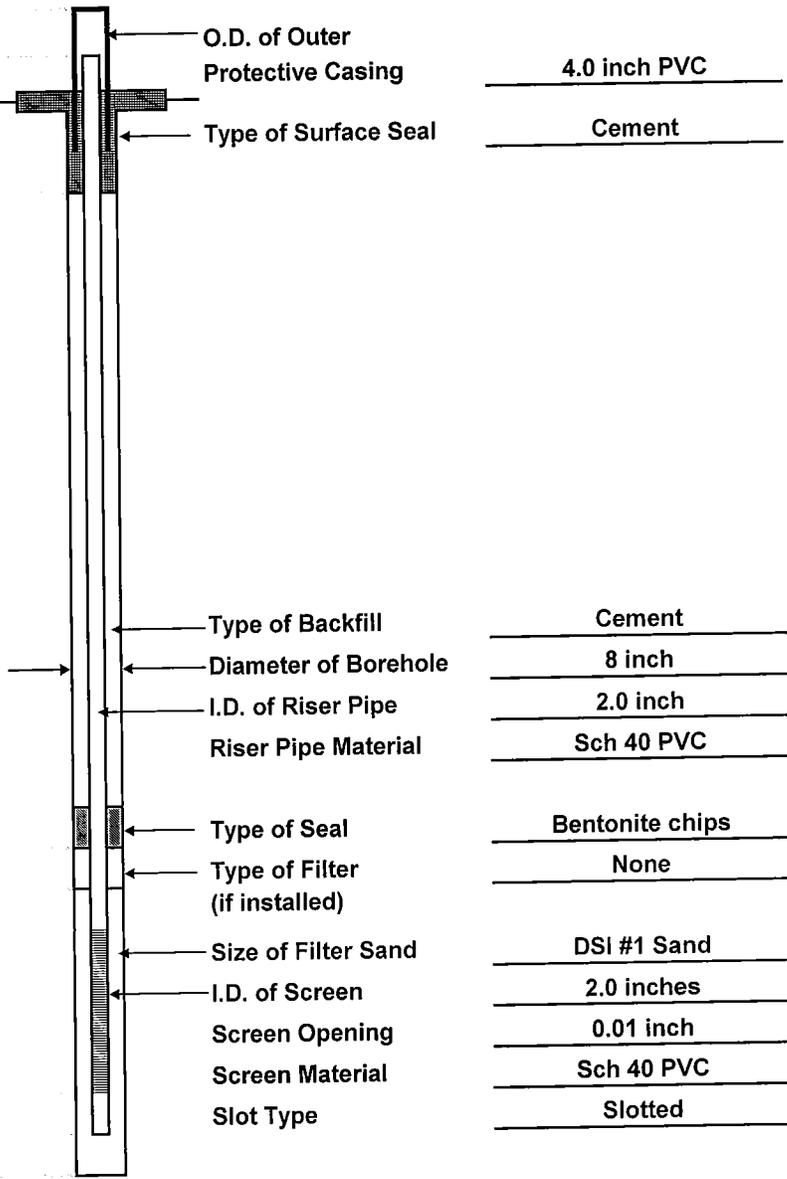
PROJECT:	SWIFT CREEK, HWY 301	BORING NO.:	MW-2S & 2D
LOCATION:	BATTLEBORO, NC	SHEET:	2 of 2
TYPE OF BORING:	Hollow Stem Auger	DATE STARTED:	6/22/04
DRILLING FIRM:	J&L Drilling, Inc.	DATE FINISHED:	6/22/04
DRILLER:	Lee Charbonneau	GROUND ELEV.:	92.0
DRILL RIG:	CME-75	LOGGED BY:	J Sherrill, L.G.
		COORDINATES:	0
		NORTHING:	0.0 ft
		EASTING:	0.0 ft
		TOTAL DEPTH:	36.0 ft

DEPTH (ft)	ELEV. (ft)	BLOWS/6"	N-VALUE	SAMPLE # CORE RUN	RECOVERY	RQD (%)	STRATUM	CLASSIFI- CATION	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
32	61.0									
34	59.0	10 16 24 32	40	SS-7				SM	33.0-36.0 ft: Medium gray Silty very fine Sand, Shelly, dense, little moisture	
36	57.0								36.0 End of Boring	
38	55.0								MW-2S Set screen at 6.0-16.0 ft, sand from 5 to 16.0 ft, bentonite from 3 to 5 ft	
40	53.0								MW-2D Set screen at 26.0-36.0 ft, sand from 25.0 to 36.0 ft, bentonite from 23.0 to 25.0 ft	
42	51.0									
44	49.0									
46	47.0									
48	45.0									
50	43.0									
52	41.0									
54	39.0									
56	37.0									
58	35.0									
60	33.0									

MONITORING WELL INSTALLATION SKETCH

Project: SWIFT CREEK Monitoring Well Number: MW-1S
 Drilling Firm: J & L Drilling, Inc. Date of Well Installation: 6/2/2004
 Elevation of Top of Open Riser Pipe (Reference El. for Water Level Measurements,ft): 99.54
 Depth to Bottom of Well from Top of Open Riser Pipe (ft): -15.70
 Horizontal Location (ft): Northing: _____ Easting: _____

Elevation (ft, M.S.L.)	Distance (ft) from:	
	Top of Open Riser	Ground Surface
-	-	-
99.5	0.0	2.7
96.8	-2.7	0.0
-	-	-



94.8	-4.7	-2.0
94.3	-5.2	-2.5
94.3	-5.2	-2.5
93.8	-5.7	-3.0
83.8	-15.7	-13.0
83.8	-15.7	-13.0
83.8	-15.7	-13.0

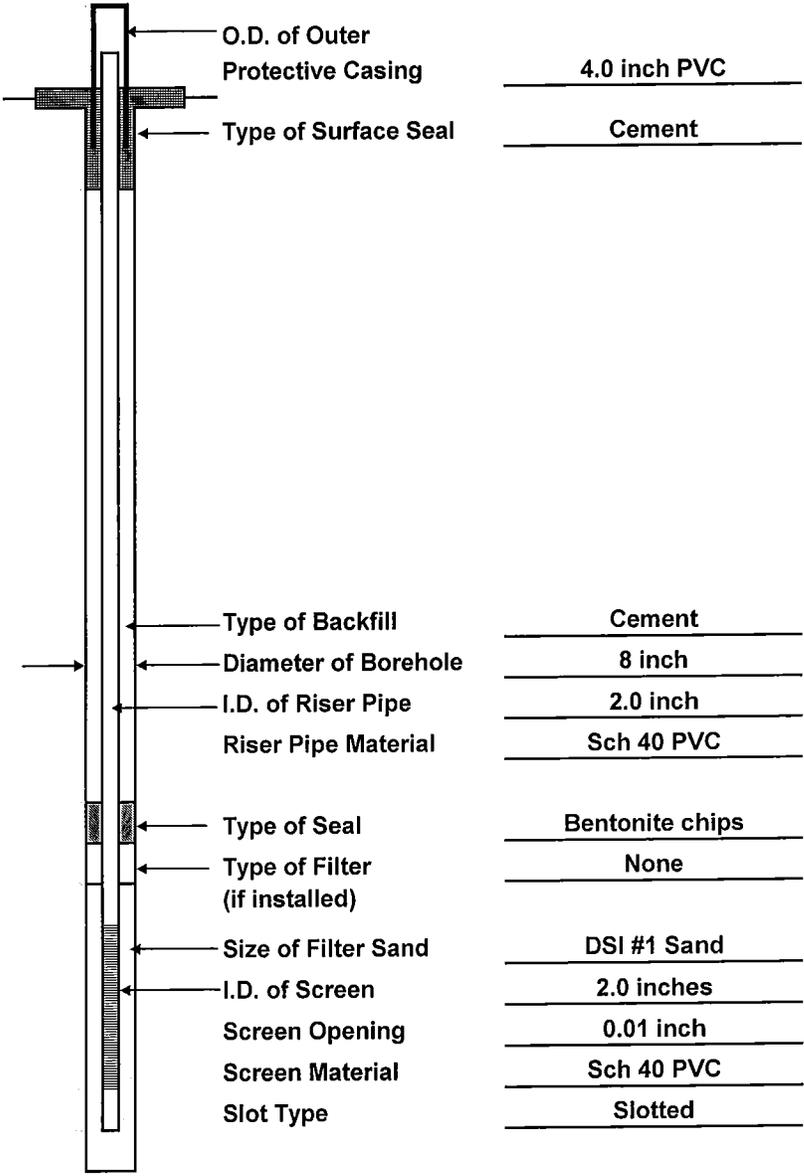
Diagram Not to Scale

NOTES:

MONITORING WELL INSTALLATION SKETCH

Project: SWIFT CREEK **Monitoring Well Number:** MW-1D
Drilling Firm: J & L Drilling, Inc. **Date of Well Installation:** 6/2/2004
Elevation of Top of Open Riser Pipe (Reference El. for Water Level Measurements,ft): 99.90
Depth to Bottom of Well from Top of Open Riser Pipe (ft): -35.70
Horizontal Location (ft): **Northing:** _____ **Easting:** _____

Elevation (ft, M.S.L.)	Distance (ft) from:	
	Top of Open Riser	Ground Surface
-	-	-
99.5	0.0	2.7
96.8	-2.7	0.0
-	-	-



-	-	-
78.2	-21.7	-19.0
76.2	-23.7	-21.0
76.2	-23.7	-21.0
74.2	-25.7	-23.0
64.2	-35.7	-33.0
64.2	-35.7	-33.0
64.2	-35.7	-33.0

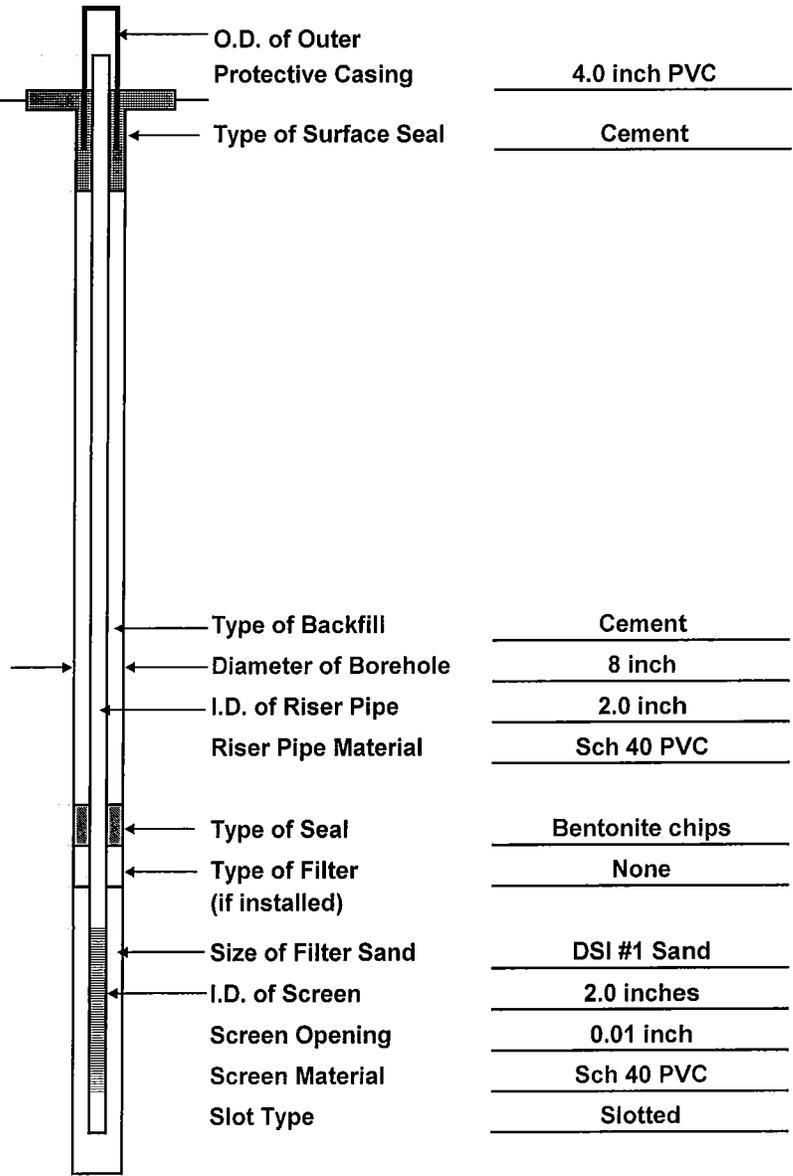
Diagram Not to Scale

NOTES:

MONITORING WELL INSTALLATION SKETCH

Project: SWIFT CREEK **Monitoring Well Number:** MW-2S
Drilling Firm: J & L Drilling, Inc. **Date of Well Installation:** 6/18/2004
Elevation of Top of Open Riser Pipe (Reference El. for Water Level Measurements,ft): 94.87
Depth to Bottom of Well from Top of Open Riser Pipe (ft): -18.70
Horizontal Location (ft): **Northing:** _____ **Easting:** _____

Elevation (ft, M.S.L.)	Distance (ft) from:	
	Top of Open Riser	Ground Surface
-	-	-
99.5	0.0	2.7
96.8	-2.7	0.0
-	-	-



89.1	-5.7	-3.0
87.1	-7.7	-5.0
87.1	-7.7	-5.0
86.1	-8.7	-6.0
-	-	-
76.1	-18.7	-16.0
76.1	-18.7	-16.0

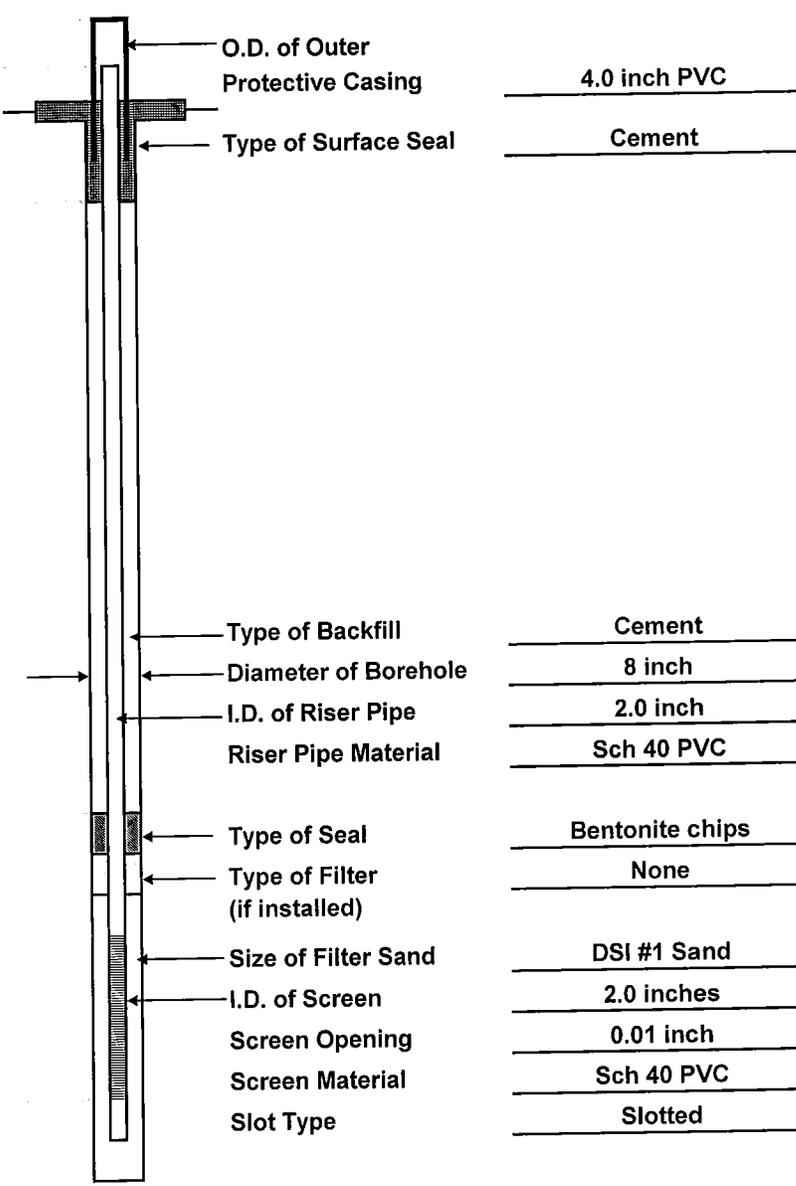
Diagram Not to Scale

NOTES:

MONITORING WELL INSTALLATION SKETCH

Project: SWIFT CREEK Monitoring Well Number: MW-2D
 Drilling Firm: J & L Drilling, Inc. Date of Well Installation: 6/18/2004
 Elevation of Top of Open Riser Pipe (Reference El. for Water Level Measurements,ft): 95.22
 Depth to Bottom of Well from Top of Open Riser Pipe (ft): -39.10
 Horizontal Location (ft): Northing: _____ Easting: _____

Elevation (ft, M.S.L.)	Distance (ft) from:	
	Top of Open Riser	Ground Surface
-	-	-
<u>99.5</u>	<u>0.0</u>	<u>3.1</u>
<u>96.8</u>	<u>-3.1</u>	<u>0.0</u>
-	-	-



		Type of Backfill	<u>Cement</u>
		Diameter of Borehole	<u>8 inch</u>
		I.D. of Riser Pipe	<u>2.0 inch</u>
		Riser Pipe Material	<u>Sch 40 PVC</u>
<u>69.2</u>	<u>-26.1</u>	Type of Seal	<u>Bentonite chips</u>
<u>67.2</u>	<u>-28.1</u>	Type of Filter (if installed)	<u>None</u>
<u>67.2</u>	<u>-28.1</u>	Size of Filter Sand	<u>DSI #1 Sand</u>
<u>66.2</u>	<u>-29.1</u>	I.D. of Screen	<u>2.0 inches</u>
		Screen Opening	<u>0.01 inch</u>
<u>56.2</u>	<u>-39.1</u>	Screen Material	<u>Sch 40 PVC</u>
<u>56.2</u>	<u>-39.1</u>	Slot Type	<u>Slotted</u>
<u>56.2</u>	<u>-39.1</u>		

Diagram Not to Scale

NOTES:

J & L DRILLING, INC.

P.O. Box 583
Four Oaks, NC 27524

Phone (919) 989-8856
Fax (919) 989-8856

TO: Division of Water Quality
Groundwater Section

FROM: Leo H. Charbonneau
J & L Drilling, Inc.

DATE: July 21, 2004

SUBJECT: Well Construction Records
for Swift Creek Project on
Hwy. 301 in Nash County, NC.

Enclosed please find the well construction records for the above referenced project. I have also mailed a copy to the project engineer.

Please feel free to call should you have any questions.

cc: Mr. Jack Sherrill
Sherrill Environmental, Inc.

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEO H. CHARBONNEAU, JR. CERTIFICATION # 2865
 WELL CONTRACTOR COMPANY NAME J & L DRILLING, INC. PHONE # (919) 989-8856
 STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMITS _____
 (if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential Municipal/Public Industrial Agricultural
 Monitoring Recovery Heat Pump Water Injection Other If Other, List Use MW-1D

2. WELL LOCATION:
 Nearest Town: Battleboro County Nash
Highway 301 Nash County, NC
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
 Ridge Slope Valley Flat
(check appropriate box)
 Latitude/longitude of well location

3. OWNER: Rellse Technology, Inc.
 Address 9405 Arapahoe Blvd.
(Street or Route No.)
Charlotte NC 28273-8110
City or Town State Zip Code

(degree/minutes/seconds)
 Latitude/longitude source: GPS Topographic map
(check box)

4. DATE DRILLED 6-2-04
Area code- Phone number

5. TOTAL DEPTH: 33.0'

6. DOES WELL REPLACE EXISTING WELL? YES NO

7. STATIC WATER LEVEL Below Top of Casing: 25.0 FT.
(Use "+" if Above Top of Casing)

8. TOP OF CASING IS +2.5 FT. Above Land Surface*

*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118.

9. YIELD (gpm): _____ METHOD OF TEST _____

10. WATER ZONES (depth): _____

DEPTH		DRILLING LOG
From	To	Formation Description
0. - 9.7'		Mottled yellowish gray + yellowish brown sand clay.
9.7' - 13.0'		Mottled yellowish gray + yellowish brown clay sand.
13.0' - 33.0'		Medium Greenish-Gray clay silty, very fine sand, very shelly.

11. DISINFECTION: Type _____ Amount _____

12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>+2.5</u>	Depth <u>23.0</u>	To <u>23.0</u>	Ft. <u>2"</u>	<u>Sch 40</u>	<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____

13. GROUT:

From	Depth	To	Material	Method
From <u>19.0</u>	Depth <u>21.0</u>	To <u>21.0</u>	<u>Bentonite</u>	<u>Poured</u>
From <u>0</u>	To <u>19</u>	Ft. <u>Cement</u>	<u>Poured</u>	

See Map

14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
From <u>23.0</u>	Depth <u>33.0</u>	To <u>33.0</u>	Ft. <u>2</u> in.	<u>10</u> in.	<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____

15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
From <u>21.0</u>	Depth <u>33.0</u>	To <u>33.0</u>	Ft. <u>#2</u>	<u>Sand</u>
From _____	To _____	Ft. _____	_____	_____

16. REMARKS: _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

[Signature] SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE 7/21/04

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEO H. CHARBONNEAU, JR. CERTIFICATION # 2865
 WELL CONTRACTOR COMPANY NAME J & L DRILLING, INC. PHONE # (919) 989-8856

STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMITS _____
 (if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential Municipal/Public Industrial Agricultural
 Monitoring Recovery Heat Pump Water Injection Other If Other, List Use MW-15

2. WELL LOCATION:
 Nearest Town: Battleboro County Nash
Highway 301, Nash County, NC
 (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
 Ridge Slope Valley Flat
 (check appropriate box)
 Latitude/longitude of well location

3. OWNER: Reuse Technology, Inc.
 Address 9405 Arrowpoint Blvd
 (Street or Route No.)
Charlotte NC 28273-8110
 City or Town State Zip Code

(degree/minutes/seconds)
 Latitude/longitude source: GPS Topographic map
 (check box)

4. DATE DRILLED 6-2-04
 5. TOTAL DEPTH: 13.0'
 6. DOES WELL REPLACE EXISTING WELL? YES NO
 7. STATIC WATER LEVEL Below Top of Casing: 7.2 FT.
 (Use "+" if Above Top of Casing)
 8. TOP OF CASING IS +2.5 FT. Above Land Surface*
 *Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C.0118.
 9. YIELD (gpm): _____ METHOD OF TEST _____
 10. WATER ZONES (depth): _____

DEPTH		DRILLING LOG
From	To	Formation Description
0	6.5'	Fill, mottled yellowish gray & yellowish brown, clayey sand
6.5	13.0	Mottled yellowish gray & yellowish brown, sandy clay

11. DISINFECTION: Type _____ Amount _____
 12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material

 13. GROUT:

From	Depth	To	Material	Method

 14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material

 15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

See map

16. REMARKS: _____
 I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.
 _____ 7/24/04
 SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section
 WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEO H. CHARBONNEAU, JR. CERTIFICATION # 2865
 WELL CONTRACTOR COMPANY NAME J & L DRILLING, INC. PHONE # (919) 989-8856
 STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMITS _____
 (if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential Municipal/Public Industrial Agricultural
 Monitoring Recovery Heat Pump Water Injection Other If Other, List Use: NW-2D

2. WELL LOCATION:
 Nearest Town: Battleboro County Nash
Highway 301, Nash County NC
 (Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
 Ridge Slope Valley Flat
 (check appropriate box)
 Latitude/longitude of well location

3. OWNER: ReUse Technology, Inc.
 Address 9405 Arrowpoint Blvd.
Charlotte NC 28273-8110
 (Street or Route No.)
 City or Town State Zip Code

(degrees/minutes/seconds)
 Latitude/longitude source: GPS Topographic map
 (check box)

DEPTH		DRILLING LOG
From	To	Formation Description
<u>0</u>	<u>4.0</u>	<u>Yellow Brown Clayey Sand</u>
<u>4.0</u>	<u>7.0</u>	<u>Mottled yellow gray & yellowish brown Sandy clay</u>
<u>9.0</u>	<u>13.5</u>	<u>light brown gray fine to medium sand</u>
<u>13.5</u>	<u>36.0</u>	<u>Greenish-gray s. M fine sand, shell</u>

4. DATE DRILLED 6/18/04
 5. TOTAL DEPTH: 36.0
 6. DOES WELL REPLACE EXISTING WELL? YES NO
 7. STATIC WATER LEVEL Below Top of Casing: 12.5 FT.
 (Use "+" if Above Top of Casing)
 8. TOP OF CASING IS +2.5 FT. Above Land Surface*
 *Top of casing terminated at/or below land surface requires a
 variance in accordance with 15A NCAC 2C .0118.
 9. YIELD (gpm): _____ METHOD OF TEST _____
 10. WATER ZONES (depth): _____

LOCATION SKETCH
 Show direction and distance in miles from at least
 two State Roads or County Roads. Include the road
 numbers and common road names.

11. DISINFECTION: Type _____ Amount _____
 12. CASING:

From	Depth	To	Diameter	or Weight/Ft.	Material
<u>+2.5</u>	<u>26.0</u>	<u>26.0</u>	<u>2"</u>	<u>sch 40</u>	<u>PVC</u>
From _____	To _____	Ft. _____	_____	_____	_____
From _____	To _____	Ft. _____	_____	_____	_____

 13. GROUT:

From	Depth	To	Material	Method
<u>23.0</u>	<u>25.0</u>	<u>25.0</u>	<u>Bentonite</u>	<u>Poured</u>
<u>0</u>	<u>23.0</u>	<u>23.0</u>	<u>Cement</u>	<u>Poured</u>

 14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
<u>26.0</u>	<u>36.0</u>	<u>36.0</u>	<u>2 in.</u>	<u>.10 in.</u>	<u>PVC</u>
From _____	To _____	Ft. _____	_____ in.	_____ in.	_____

 15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
<u>25.0</u>	<u>36.0</u>	<u>36.0</u>	<u>#2</u>	<u>Sand</u>
From _____	To _____	Ft. _____	_____	_____

See map

16. REMARKS: _____
 I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL
 CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER

[Signature] SIGNATURE OF PERSON CONSTRUCTING THE WELL
7/26/04 DATE

WELL CONSTRUCTION RECORD

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section
 WELL CONTRACTOR (INDIVIDUAL) NAME (print) LEO H. CHARBONNEAU, JR. CERTIFICATION # 2865
 WELL CONTRACTOR COMPANY NAME J & L DRILLING, INC. PHONE # (919) 989-8856
 STATE WELL CONSTRUCTION PERMIT# _____ ASSOCIATED WQ PERMIT# _____
 (if applicable) (if applicable)

1. WELL USE (Check Applicable Box): Residential Municipal/Public Industrial Agricultural
 Monitoring Recovery Heat Pump Water Injection Other If Other, List Use MW-25

2. WELL LOCATION:
 Nearest Town: Dartleboro County Nash
Highway 301, Nash County, NC
(Street Name, Number, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
 Ridge Slope Valley Flat
(check appropriate box)
 Latitude/longitude of well location

3. OWNER: ReUse Technology, Inc.
 Address 9405 Arrowpoint Blvd.
(Street or Route No.)
Charlotte NC 28273-8110
 City or Town State Zip Code

(degrees/minutes/seconds)
 Latitude/longitude source: GPS Topographic map
(check box)

DEPTH		DRILLING LOG
From	To	Formation Description
<u>0</u>	<u>4.0'</u>	<u>Yellowish brown Clayey Sand</u>
<u>4.0'</u>	<u>9.0'</u>	<u>Mottled yellow gray + yellow brown, Sandy Clay</u>
<u>9.0'</u>	<u>16.0'</u>	<u>Light brownish gray FINE to medium Sand.</u>

4. DATE DRILLED 6-22-04
 5. TOTAL DEPTH: 16.0'
 6. DOES WELL REPLACE EXISTING WELL? YES NO
 7. STATIC WATER LEVEL Below Top of Casing: 7.9 Ft.
(Use "+" if Above Top of Casing)
 8. TOP OF CASING IS 7.5 FT. Above Land Surface*
*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.
 9. YIELD (gpm): _____ METHOD OF TEST _____
 10. WATER ZONES (depth): _____

LOCATION SKETCH
 Show direction and distance in miles from at least two State Roads or County Roads. Include the road numbers and common road names.

see map

11. DISINFECTION: Type _____ Amount _____
 12. CASING: Wall Thickness _____

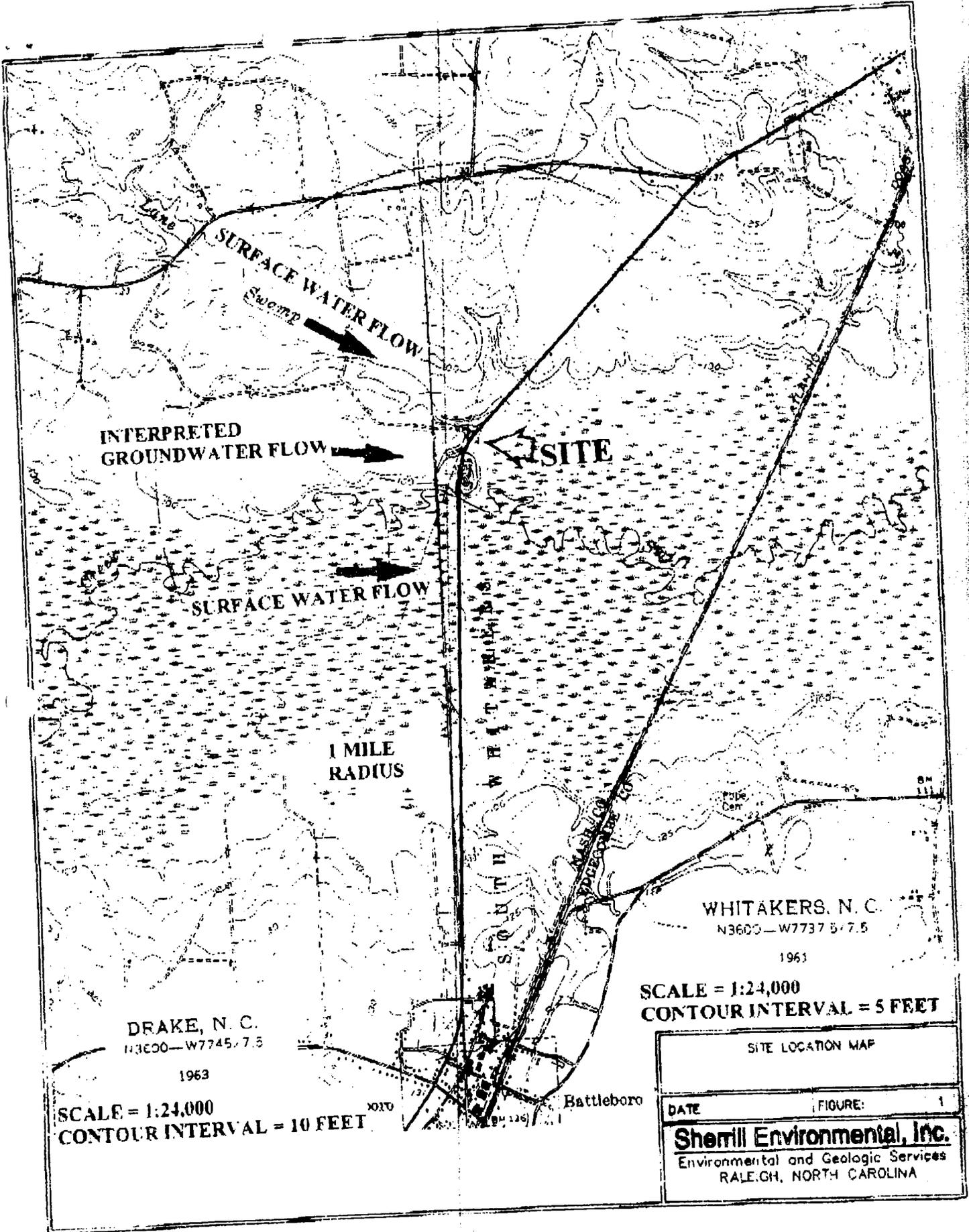
From	To	Depth	Diameter	or Weight/Ft.	Material
<u>From 2.5</u>	<u>To 6.0</u>	<u>Fl.</u>	<u>2"</u>	<u>50#40</u>	<u>PVC</u>
From _____	To _____	Fl. _____	_____	_____	_____
From _____	To _____	Fl. _____	_____	_____	_____

From	To	Depth	Material	Method
<u>From 3.5</u>	<u>To 5.0</u>	<u>Fl.</u>	<u>Bentonite</u>	<u>Poured</u>
<u>From 0</u>	<u>To 3.0</u>	<u>Fl.</u>	<u>Cement</u>	<u>Poured</u>

From	To	Depth	Diameter	Slot Size	Material
<u>From 6.0</u>	<u>To 16.0</u>	<u>Fl.</u>	<u>2 in.</u>	<u>.10 in.</u>	<u>PVC</u>
From _____	To _____	Fl. _____	_____ in.	_____ in.	_____

From	To	Depth	Size	Material
<u>From 5.0</u>	<u>To 16.0</u>	<u>Fl.</u>	<u>#2</u>	<u>Sand</u>
From _____	To _____	Fl. _____	_____	_____

16. REMARKS: _____
 I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER
 _____ DATE 7/26/04
 SIGNATURE OF PERSON CONSTRUCTING THE WELL



INTERPRETED
GROUNDWATER FLOW

SURFACE WATER FLOW
Swamp

SURFACE WATER FLOW

1 MILE
RADIUS

SITE

DRAKE, N. C.
N3600—W7745, 7.5

1963

SCALE = 1:24,000
CONTOUR INTERVAL = 10 FEET

WHITAKERS, N. C.
N3600—W7737.5/7.5

1963

SCALE = 1:24,000
CONTOUR INTERVAL = 5 FEET

SITE LOCATION MAP	
DATE	FIGURE: 1
Sherrill Environmental, Inc. Environmental and Geologic Services RALEIGH, NORTH CAROLINA	

APPENDIX B

Laboratory Reports

Environmental Conservation Laboratories, Inc.
10 Passport Way
Carrboro, North Carolina 27513-2042
919 / 677-1669
Fax 919 / 677-9846
www.encolabs.com



CLIENT : Sherrill Environmental, Inc.
ADDRESS: 7309 Still Pond Road
Raleigh, NC 27613

REPORT # : CRY15941
DATE SUBMITTED: June 7, 2004
DATE REPORTED : June 10, 2004

PAGE 1 OF 5

ATTENTION: Mr. Jack Sherrill

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: SWIFT CREEK

SWIFT CREEK.

06/07/04

CRY15941-1 : MW-1S @ 08:45
CRY15941-2 : MW-1D @ 08:30

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

PROJECT MANAGER

A handwritten signature in black ink that reads "Chuck Smith". The signature is written in a cursive style and is positioned above a horizontal line.

Chuck Smith

ENCO LABORATORIES
 REPORT # : CRY15941
 DATE REPORTED: June 10, 2004
 REFERENCE : SWIFT CREEK
 PROJECT NAME : SWIFT CREEK

PAGE 2 OF 5

RESULTS OF ANALYSIS

EPA METHOD 300 -
Anions by IC

	<u>MW-1S</u>	<u>MW-1D</u>	<u>Units</u>
Sulfate	490	13	mg/L
Date Analyzed	06/10/04 11:58	06/10/04 12:20	

TOTAL METALS

<u>METHOD</u>	<u>MW-1S</u>	<u>MW-1D</u>	<u>Units</u>
Arsenic	0.028	0.010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Barium	0.19	0.54	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Cadmium	0.0010 U	0.0010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Chromium	0.010 U	0.010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Lead	0.068	0.010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Selenium	0.010 U	0.010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	
Silver	0.010 U	0.010 U	mg/L
Date Analyzed	06/09/04 17:42	06/09/04 18:10	

Mercury

<u>METHOD</u>	<u>MW-1S</u>	<u>MW-1D</u>	<u>Units</u>
Mercury	0.00020 U	0.00020 U	mg/L
Date Analyzed	06/09/04 16:23	06/09/04 16:27	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : CRY15941
 DATE REPORTED: June 10, 2004
 REFERENCE : SWIFT CREEK
 PROJECT NAME : SWIFT CREEK

PAGE 3 OF 5

RESULTS OF ANALYSIS

<u>PA METHOD 300 -</u> <u>Anions by IC</u>	<u>LAB BLANK</u>	<u>Units</u>
ulfate	2.0 U	mg/L
Date Analyzed	06/10/04 10:05	

<u>OTAL METALS</u>	<u>METHOD</u>	<u>LAB BLANK</u>	<u>Units</u>
Arsenic	200.7	0.010 U	mg/L
Date Analyzed		06/09/04 17:23	
Barium	200.7	0.10 U	mg/L
Date Analyzed		06/09/04 17:23	
Cadmium	200.7	0.0010 U	mg/L
Date Analyzed		06/09/04 17:23	
Chromium	200.7	0.010 U	mg/L
Date Analyzed		06/09/04 17:23	
Lead	200.7	0.010 U	mg/L
Date Analyzed		06/09/04 17:23	
Selenium	200.7	0.010 U	mg/L
Date Analyzed		06/09/04 17:23	
Silver	200.7	0.010 U	mg/L
Date Analyzed		06/09/04 17:23	
<u>Mercury</u>	<u>METHOD</u>	<u>LAB BLANK</u>	<u>Units</u>
Mercury	7470	0.00020 U	mg/L
Date Analyzed		06/09/04 15:26	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : CRY15941
DATE REPORTED: June 10, 2004
REFERENCE : SWIFT CREEK
PROJECT NAME : SWIFT CREEK

PAGE 4 OF 5

LABORATORY CERTIFICATIONS

Laboratory Certification: NCDENR:591

All analyses reported with this project were analyzed by the facility indicated unless identified below.

PARAMETER
July 1, EPA Method 300

LAB CERT #'s
NCDENR:424

ENCO LABORATORIES
 REPORT # : CRY15941
 DATE REPORTED: June 10, 2004
 REFERENCE : SWIFT CREEK
 PROJECT NAME : SWIFT CREEK

PAGE 5 OF 5

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>LCS/MS/MSD</u>	<u>LCS</u> <u>LIMITS</u>	<u>MS/MSD</u> <u>LIMITS</u>	<u>RPD</u> <u>MS/MSD</u>	<u>RPD</u> <u>LIMITS</u>
<u>PA Method 300</u> Sulfate	101/ 93/ 92	90-110	47-148	1	25
<u>OTAL METALS</u>					
Arsenic, 200.7	99/*45/*45	82-117	64-126	<1	12
Barium, 200.7	100/*37/*36	72-125	74-119	3	11
Cadmium, 200.7	95/*33/*32	72-120	68-121	3	12
Chromium, 200.7	95/*26/*26	78-119	73-120	<1	17
Lead, 200.7	96/*36/*36	72-121	68-126	<1	19
Selenium, 200.7	106/*42/*42	82-119	65-129	<1	10
Silicon, 200.7	108/*40/*40	80-128	69-121	<1	12
<u>Mercury</u> Mercury, 7470	91/ 92/ 93	81-126	70-136	1	12

* = Recoveries outside historical limits due to matrix interference.
 < = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference

Environmental Conservation Laboratories, Inc.
101 Massport Way
Cary, North Carolina 27513-2042
919 / 677-1669
Fax 919 / 677-9846
www.encolabs.com



CLIENT : Sherrill Environmental, Inc.
ADDRESS: 3326 Rugby Road
Durham, NC 27707

REPORT # : CRY16047
DATE SUBMITTED: June 22, 2004
DATE REPORTED : June 30, 2004

PAGE 1 OF 5

ATTENTION: Jack Sherrill

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 0434 (GW)

Swift Creek

06/22/04

CRY16047-1 : MW-2S @ 08:45
CRY16047-2 : MW-2D @ 08:45

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

PROJECT MANAGER

A handwritten signature in black ink that reads "Chuck Smith". The signature is written in a cursive style and is positioned above a horizontal line.

Chuck Smith

ENCO LABORATORIES
 REPORT # : CRY16047
 DATE REPORTED: June 30, 2004
 REFERENCE : 0434 (GW)
 PROJECT NAME : Swift Creek

PAGE 2 OF 5

RESULTS OF ANALYSIS

EPA METHOD 300 -
Anions by IC

	<u>MW-2S</u>	<u>MW-2D</u>	<u>Units</u>
Sulfate	32	5.6	mg/L
Date Analyzed	06/26/04 22:05	06/26/04 22:27	

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>MW-2S</u>	<u>MW-2D</u>	<u>Units</u>
Arsenic	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Barium	200.7	0.10 U	0.17	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Cadmium	200.7	0.0010 U	0.0010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Chromium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Lead	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Selenium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
Silver	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:45	06/24/04 11:54	
<u>Mercury</u>	<u>METHOD</u>	<u>MW-2S</u>	<u>MW-2D</u>	<u>Units</u>
Mercury	7470	0.00020 U	0.00020 U	mg/L
Date Analyzed		06/29/04 11:50	06/29/04 11:57	

U = compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
 REPORT # : CRY16047
 DATE REPORTED: June 30, 2004
 REFERENCE : 0434 (GW)
 PROJECT NAME : Swift Creek

PAGE 3 OF 5

RESULTS OF ANALYSIS

EPA METHOD 300 -
Anions by IC

	<u>LAB BLANK</u>	<u>Units</u>
Sulfate	2.0 U	mg/L
Date Analyzed	06/26/04 06:41	

<u>TOTAL METALS</u>	<u>METHOD</u>	<u>LAB BLANK</u>	<u>Units</u>
Arsenic	200.7	0.010 U	mg/L
Date Analyzed		06/24/04 10:26	
Barium	200.7	0.10 U	mg/L
Date Analyzed		06/24/04 10:26	
Cadmium	200.7	0.0010 U	mg/L
Date Analyzed		06/24/04 10:26	
Chromium	200.7	0.010 U	mg/L
Date Analyzed		06/24/04 10:26	
Lead	200.7	0.010 U	mg/L
Date Analyzed		06/24/04 10:26	
Selenium	200.7	0.010 U	mg/L
Date Analyzed		06/24/04 10:26	
Silver	200.7	0.010 U	mg/L
Date Analyzed		06/24/04 10:26	
<u>Mercury</u>	<u>METHOD</u>	<u>LAB BLANK</u>	<u>Units</u>
Mercury	7470	0.00020 U	mg/L
Date Analyzed		06/29/04 11:30	

J = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : CRY16047
DATE REPORTED: June 30, 2004
REFERENCE : 0434 (GW)
PROJECT NAME : Swift Creek

PAGE 4 OF 5

LABORATORY CERTIFICATIONS

Laboratory Certification: NCDENR:591

All analyses reported with this project were analyzed by the facility indicated unless identified below.

PARAMETER
Sulfate, EPA Method 300

LAB CERT #'s
NCDENR:424

ENCO LABORATORIES
 REPORT # : CRY16047
 DATE REPORTED: June 30, 2004
 REFERENCE : 0434 (GW)
 PROJECT NAME : Swift Creek

PAGE 5 OF 5

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>LCS/MS/MSD</u>	<u>LCS</u> <u>LIMITS</u>	<u>MS/MSD</u> <u>LIMITS</u>	<u>RPD</u> <u>MS/MSD</u>	<u>RPD</u> <u>LIMITS</u>
<u>EPA Method 300</u> Sulfate	97/ 98/ 98	90-110	47-148	<1	25
<u>TOTAL METALS</u>					
Arsenic, 200.7	110/109/108	82-117	64-126	<1	12
Barium, 200.7	105/105/105	72-125	74-119	<1	11
Cadmium, 200.7	106/106/103	72-120	68-121	3	12
Chromium, 200.7	106/106/103	78-119	73-120	3	17
Lead, 200.7	108/107/106	72-121	68-126	<1	19
Selenium, 200.7	115/115/114	82-119	65-129	<1	10
Silver, 200.7	110/110/106	80-128	69-121	4	12
<u>Mercury</u>					
Mercury, 7470	108/109/110	81-126	70-136	<1	12

< = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference

ENVIRONMENTAL CONSERVATION LABORATORIES



4810 Executive Park Court, Suite 211
 Jacksonville, Florida 32216-6069
 Ph. (904) 296-3007 • Fax (904) 296-6210

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CHAIN OF CUSTODY RECORD

ENCO CompQAP No.: 960038G/0

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER	MATRIX TYPE		REQUIRED ANALYSIS		PAGE	OF	
Swift Creek		0434 (GW)		SURFACE WATER						
PROJECT LOC.	SAMPLER(S) NAME	PHONE	FAX	GROUND WATER						
NC	Jack Sherrill	(919) 420-7822	(919) 574-0757	WASTEWATER						
CLIENT NAME	CLIENT PROJECT	CLIENT ADDRESS (CITY, STATE, ZIP)		DRINKING WATER						
Sherrill Environmental, Inc.	Jack Sherrill	3326 Raby Rd Durham NC 27707		SOIL/SOLID/SEDIMENT						
		7300 Swift Point Road Raleigh, NC 27613		NONAQUEOUS LIQUID (oil, solvent, etc.)						
				AIR						
				SLUDGE						
				OTHER						
				PRESERVATIVE						
				NUMBER OF CONTAINERS SUBMITTED						
				SULFATE						
				REMARKS						
				Date Due:						
				<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY <input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)						
STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
1	6/22/04	845			MMW-2S			[Signature]		
2	↓	830			MMW-2D			[Signature]		
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
SAMPLE KIT PREPARED BY:		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	
CLACKSONVILLE		6/19/04	12:15	[Signature]			[Signature]			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	
[Signature]				[Signature]			[Signature]			
RECEIVED BY (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	
[Signature]		6/22/04	11:51	[Signature]	6/22/04	11:30	[Signature]	6/22/04	11:30	
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS				
[Signature]		6/22/04	11:51	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	CR716017	* Send Report to New Address				

Environmental Conservation Laboratories, Inc.
1015 Airport Way
Cary, North Carolina 27513-2042
919 / 677-1669
Fax 919 / 677-9846
www.encolabs.com



CLIENT : Sherrill Environmental, Inc.
ADDRESS: 3326 Rugby Road
Durham, NC 27707

REPORT # : CRY16046
DATE SUBMITTED: June 22, 2004
DATE REPORTED : June 30, 2004

PAGE 1 OF 5

ATTENTION: Jack Sherrill

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 0434 (SW)

Swift Creek

06/22/04

CRY16046-1 : SW-1 @ 10:00
CRY16046-2 : SW-2 @ 09:00

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (May, 2001). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

A handwritten signature in cursive script that reads "Chuck Smith".

PROJECT MANAGER

Chuck Smith

ENCO LABORATORIES
 REPORT # : CRY16046
 DATE REPORTED: June 30, 2004
 REFERENCE : 0434 (SW)
 PROJECT NAME : Swift Creek

PAGE 2 OF 5

RESULTS OF ANALYSIS

EPA METHOD 300 -
Anions by IC

	<u>SW-1</u>	<u>SW-2</u>	<u>Units</u>
Sulfate	2.0 U	2.0 U	mg/L
Date Analyzed	06/29/04 10:06	06/29/04 10:28	

TOTAL METALS METHOD SW-1 SW-2 Units

Arsenic	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Barium	200.7	0.10 U	0.10 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Cadmium	200.7	0.0010 U	0.0010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Chromium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Lead	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Selenium	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	
Silver	200.7	0.010 U	0.010 U	mg/L
Date Analyzed		06/24/04 11:26	06/24/04 11:35	

Mercury METHOD SW-1 SW-2 Units

Mercury	7470	0.00020 U	0.00020 U	mg/L
Date Analyzed		06/25/04 16:38	06/25/04 16:41	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : CRY16046
DATE REPORTED: June 30, 2004
REFERENCE : 0434 (SW)
PROJECT NAME : Swift Creek

PAGE 4 OF 5

LABORATORY CERTIFICATIONS

Laboratory Certification: NCDENR:591

All analyses reported with this project were analyzed by the facility indicated unless identified below.

PARAMETER
Sulfate, EPA Method 300

LAB CERT #'s
NCDENR:424

ENCO LABORATORIES
 REPORT # : CRY16046
 DATE REPORTED: June 30, 2004
 REFERENCE : 0434 (SW)
 PROJECT NAME : Swift Creek

PAGE 5 OF 5

QUALITY CONTROL DATA

<u>Parameter</u>	<u>% RECOVERY</u> <u>LCS/MS/MSD</u>	<u>LCS</u> <u>LIMITS</u>	<u>MS/MSD</u> <u>LIMITS</u>	<u>RPD</u> <u>MS/MSD</u>	<u>RPD</u> <u>LIMITS</u>
<u>EPA Method 300</u> Sulfate	97/ 99/ 98	90-110	47-148	1	25
<u>TOTAL METALS</u>					
Arsenic, 200.7	110/109/108	82-117	64-126	<1	12
Barium, 200.7	105/105/105	72-125	74-119	<1	11
Cadmium, 200.7	106/106/103	72-120	68-121	3	12
Chromium, 200.7	106/106/103	78-119	73-120	3	17
Lead, 200.7	108/107/106	72-121	68-126	<1	19
Selenium, 200.7	115/115/114	82-119	65-129	<1	10
Silver, 200.7	110/110/106	80-128	69-121	4	12
<u>Mercury</u> Mercury, 7470	116/114/111	81-126	70-136	3	12

< = Less Than
 MS = Matrix Spike
 MSD = Matrix Spike Duplicate
 LCS = Laboratory Control Standard
 RPD = Relative Percent Difference



ENVIRONMENTAL CONSERVATION LABORATORIES

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CHAIN OF CUSTODY RECORD

PROJECT REFERENCE		PROJECT NO.		P.O. NUMBER		MATRIX TYPE		REQUIRED ANALYSIS		PAGE	OF
Swift Creek PROJECT LOC. (State) JACKSONVILLE		0434 (SW)		PHONE 420-7822 FAX (919)-420-7822		SURFACE WATER GROUND WATER WASTEWATER DRINKING WATER SOIL/SOLID/SEDIMENT NONAQUEOUS LIQUID (oil, solvent, etc.) AIR SLUDGE OTHER		SULFATE PRESERVATIVE NUMBER OF CONTAINERS SUBMITTED:		<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY <input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge) Date Due:	
CLIENT NAME Jack Sherrill		CLIENT PROJECT NUMBER 3326 Ruyby Rd. Durham NC 27707		CLIENT ADDRESS (City, State, Zip) 7309 Still Pond Sample Raleigh, NC 27613		SAMPLE IDENTIFICATION SW-1 SW-2		PREPARATIVE		REMARKS SW-1 = Swamp Road SW-2 = Bridge	
STATION	DATE	TIME	GRAB	COMP							
1	6/22	9:00									
2	6/22	10:00									
3											
4											
5											
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7											
8											
9											
10											
11											
12											
13											
14											
SAMPLE KIT PREPARED BY: JACKSONVILLE ORLANDO <input checked="" type="checkbox"/> CARY		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		
RELINQUISHED BY: (SIGNATURE)		6/18/04	12:15	<i>[Signature]</i>			<i>[Signature]</i>				
RECEIVED BY: (SIGNATURE)											
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME		
<i>[Signature]</i> <input type="checkbox"/> Jacksonville <input checked="" type="checkbox"/> Orlando		6/22/04	11:47	<i>[Signature]</i>	6/22/04	11:30	<i>[Signature]</i>	6/22/04	11:30		
REMARKS * Send Report to New Address											