

September 10, 2009

Ms. Elizabeth S. Werner
Hydrogeologist
North Carolina Department of Environment and Natural Resources
Division of Waste Management – Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646



**RE: Preliminary Site Assessment Work Plan
Central Carolina Monofill Landfill Phases I/II
Cameron, Harnett County, North Carolina
Permit # 43-04**

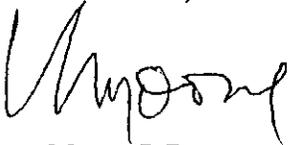
Dear Ms. Werner:

Enclosed are two copies of a Preliminary Site Assessment Work Plan for the landfill site referenced above. The document presents a work plan to conduct a preliminary environmental site assessment at the Central Carolina Tires Phases I/II Monofill landfill facility in Harnett County, North Carolina. The elements of the work plan are based on items discussed during our meeting at the Solid Waste Section office in Raleigh on June 23, 2009.

Tetrachloroethene (PCE) has been detected in groundwater samples collected from monitoring well MW-8 at the Phase I/II landfill during semi-annual sampling conducted over the last several years. The concentrations of PCE have shown an increasing trend and are now in excess of the North Carolina 15A NCAC 2L .0202 groundwater quality standard. Current site data indicate that the source of PCE in groundwater is located hydraulically upgradient of the landfill. Consequently, a preliminary site assessment will be conducted in an attempt to identify the source of PCE in groundwater. The site assessment will include sampling and analysis of soil and groundwater samples collected from multiple locations at the site.

Please review the enclosed work plan and provide your approval to proceed. We look forward to your response. In the meantime, if you have any questions or require further assistance regarding this matter, please call me at 919-792-1901.

Sincerely,
Garrett & Moore, Inc.



Vance Moore, P.E.
President

Cc: Tim McNeil, Central Carolina Holdings, LLC
Brian S. Boutin, PG



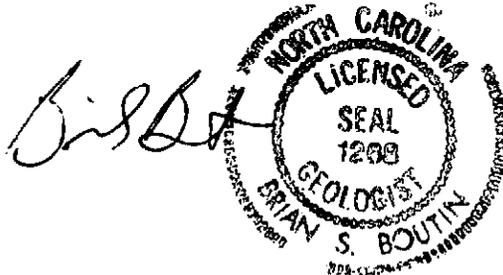
Brian S. Boutin, PG
Consulting Geologist



**Preliminary Site Assessment Work Plan
Central Carolina Tire Monofill Landfill Phases I/II
Harnett County, North Carolina
Permit # 43-04**

August 2009

Prepared by:



Brian S. Boutin, PG
11112 Branding Iron Place
Wendell, NC 27591

Prepared for:

Central Carolina Holdings, LLC
1616 McKoy Town Road
Cameron, NC 28326

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1.0 INTRODUCTION

This document presents a work plan to conduct a preliminary environmental site assessment at the Central Carolina Tires Phase I/II Monofill landfill facility in Harnett County, North Carolina (**Figure 1**). Tetrachloroethene (PCE) has been detected in groundwater samples collected from monitoring well MW-8 at the Phase I/II landfill during semi-annual sampling conducted over the last several years (**Figure 2**). The concentrations of PCE have shown an increasing trend and are now in excess of the North Carolina 15A NCAC 2L .0202 groundwater quality standard. Current site data indicate that the source of PCE in groundwater is located hydraulically upgradient of the landfill. Consequently, a preliminary site assessment will be conducted in an attempt to identify the source of PCE in groundwater. The site assessment will include sampling and analysis of soil and groundwater samples collected from multiple locations at the site.

2.0 BACKGROUND

2.1 History of Site and Operations

The Phase I/II of the Central Carolina Tire Monofill is operated in accordance with Solid Waste Permit 43-04. The Phase I Area of the Central Carolina Tire Monofill began operation in 1992 and the Phase II Area of the Central Carolina Tire Monofill began operation in 1997. The combined footprint of the Phase I/II Monofill is a total of 37-acres. The Phase I/II Area reached capacity in the Fall of 2008. Closure activities have been completed and approved for 19.5-acres of the Phase I/II Area. A soil closure cap has been installed on the remaining areas and certification is currently under way.

2.2 Current Conditions

2.2.1 Groundwater Flow

Groundwater levels were gauged in the site groundwater monitoring wells on April 22, 2009 as part of semi-annual site monitoring. The depth to groundwater across the site relative to ground surface, as measured in the Type II groundwater-monitoring wells on April 22, 2009, generally ranged from approximately 2 feet below grade at MW-2 (located adjacent to a low-lying wetland area) to approximately 15 feet below grade at MW-9, which is consistent with the surface topography.

A water-table elevation contour map that was developed based on the April 2009 groundwater-gauging data for the Type II monitoring wells at the site is presented as **Figure 3**. The pattern of the water-table contours indicates that the horizontal component of shallow groundwater flow at the site is generally to the south and southeast toward unnamed streams and associated wetlands that surround the eastern and southern boundaries of the landfill, which is consistent with the surface topography and drainage features at the site. The average hydraulic gradient of the water table, based on the data depicted in **Figure 3**, ranges from approximately 0.037 ft/ft in west-southwest portion of the site to approximately 0.02 ft/ft in the east-northeast portion of the site.

2.2.2 Groundwater Quality

Groundwater samples were collected from the site monitoring wells and surface water samples were collected from two on-site locations on April 22, 2009 for laboratory analysis to monitor the quality of groundwater and surface water at the site. The groundwater and surface water samples were collected and handled in accordance with the sampling protocols included in the site Water Quality Monitoring Plan as well as the SWS Groundwater Monitoring Guidance Document. It is noted that monitoring well MW-9 serves as the upgradient, natural background well for the facility, and monitoring wells MW-2 through MW-7 serve as the downgradient monitoring wells. Monitoring well MW-8 is located immediately north of the landfill. Based on

its location relative to the groundwater elevation contours, MW-8 is located hydraulically cross-gradient to the northern-most area of the landfill and hydraulically upgradient of most of the landfill area.

Prior to groundwater sampling, the monitoring wells were purged of a minimum of three well volumes of water using PVC bottom-loading bailers. During purging, measurements were made in the field of the pH, temperature, specific conductance and turbidity of the groundwater collected from the monitoring wells, in accordance with SWS requirements. The results of the field analyses of these parameters are presented in **Table 1**. The results of the field-measured water-quality parameters indicate that the values measured in groundwater collected from the site monitoring wells were generally within the applicable stabilization criteria (see Groundwater Sampling Forms). Groundwater at the site is acidic based on the pH values measured in the field (4.44 to 5.80). Specific conductance values ranged from 40 (MW-8) to 181 (MW-9) $\mu\text{S}/\text{cm}$ in groundwater at the Type II monitoring wells. Turbidity values ranged from 6.6 (MW-6) to 39.1 (MW-5) NTUs.

All groundwater and surface water samples were analyzed at a North Carolina-certified laboratory for Appendix I volatile organic compounds (VOCs) by SW 846 Method 8260 and the 8 RCRA metals by EPA 6000/7000 series methods. Summarized historical groundwater and surface water quality data for the site are presented in **Table 2**.

The laboratory analytical results for the groundwater samples collected from the site monitoring wells on April 22, 2009 indicate that low levels of acetone, benzene and chlorinated aliphatic hydrocarbons were reported in the groundwater samples collected from the site. The levels of VOCs reported were generally well below the corresponding 15A NCAC 2L .0202 groundwater quality standards. Tetrachloroethene (PCE) was reported at an estimated concentration of 2.40 $\mu\text{g}/\text{L}$ in the sample from MW-8, which exceeds the 15A NCAC 2L .0202 groundwater quality standard of 0.70 $\mu\text{g}/\text{L}$. The levels of PCE reported in groundwater samples collected from MW-8 since April 2007 have shown an increasing trend. It is noted, however, that based on the location of MW-8 relative to the landfill and the hydraulic gradient of the surficial aquifer, it is likely that the PCE detected in groundwater at that location originates from an upgradient source unrelated to the landfill.

3.0 GEOLOGY AND HYDROGEOLOGY

The Central Carolina Tire landfill facility is located in the Atlantic Coastal Plain physiographic province in North Carolina. The area of the site is underlain by sediments of the Late Cretaceous age Middendorf Formation, which are predominantly fluvial-deltaic intercalated, lensing, thick-bedded micaceous quartz sands and clays with local concentrations of clay clast conglomerates.¹ The Middendorf Formation deposits overlie sands and clays of the Late Cretaceous age Cape Fear Formation, which in turn unconformably overlie crystalline basement rocks, the surface of which occurs at a depth of approximately 150 to 200 feet below grade near the site. Thin, discontinuous Neogene and Quaternary age sediments overlie the Cretaceous age deposits at some locations.

Groundwater within the surficial aquifer at the site occurs under unconfined conditions within the Middendorf Formation sediments. Clay beds within the Middendorf Formation form a confining layer separating the surficial aquifer from deeper occurrences of groundwater. As discussed in Section 2.2.1, shallow groundwater flow at the site is generally to the south and southeast toward unnamed streams and associated wetlands that surround the eastern and southern boundaries of the landfill.

¹ Sohl, Norman F. and James P. Owens, 1991; Cretaceous stratigraphy of the Carolina coastal plain, in *The Geology of the Carolinas*, J. W. Horton, Jr. and V. A. Zullo, eds., The University of Tennessee Press, pp. 191-220.

4.0 ASSESSMENT WORK PLAN

The preliminary assessment will consist of a rapid assessment effort using direct-push technology to sample soil and groundwater at multiple locations hydraulically upgradient (i.e., north and west) of the location of MW-8, including the pole barn area formerly used for equipment maintenance and repair. The objective of the preliminary site assessment is to identify the source(s) of PCE detected in groundwater at MW-8 during semi-annual water-quality sampling. The results of the preliminary assessment may require a second phase of assessment activities to thoroughly characterize the magnitude and extent of PCE and its environmental breakdown products in soil and groundwater.

A Geoprobe™ 5410 direct-push unit will be used to collect the soil and groundwater samples from up to 16 locations at the site over a two day period. The Geoprobe™ uses push probe technology to rapidly access the subsurface, thereby allowing sampling at multiple locations in a short period of time without installing permanent sampling points such as monitoring wells. Probing locations will be to the north and west of monitoring well MW-8 and will range in depth from approximately 10 to 20 feet in total depth. Up to six soil and groundwater samples will be retained for laboratory analysis of volatile organic compounds. Locations from which samples will be retained for laboratory analysis will be selected based on screening of soil samples with a portable photoionization detector (PID), an instrument capable of detecting volatile organic compound vapors in the field.

All soil and groundwater samples will be analyzed at a North Carolina-approved laboratory for volatile organic compounds by SW 846 Method 8260. This analytical method allows for the detection of PCE and its primary environmental breakdown products.

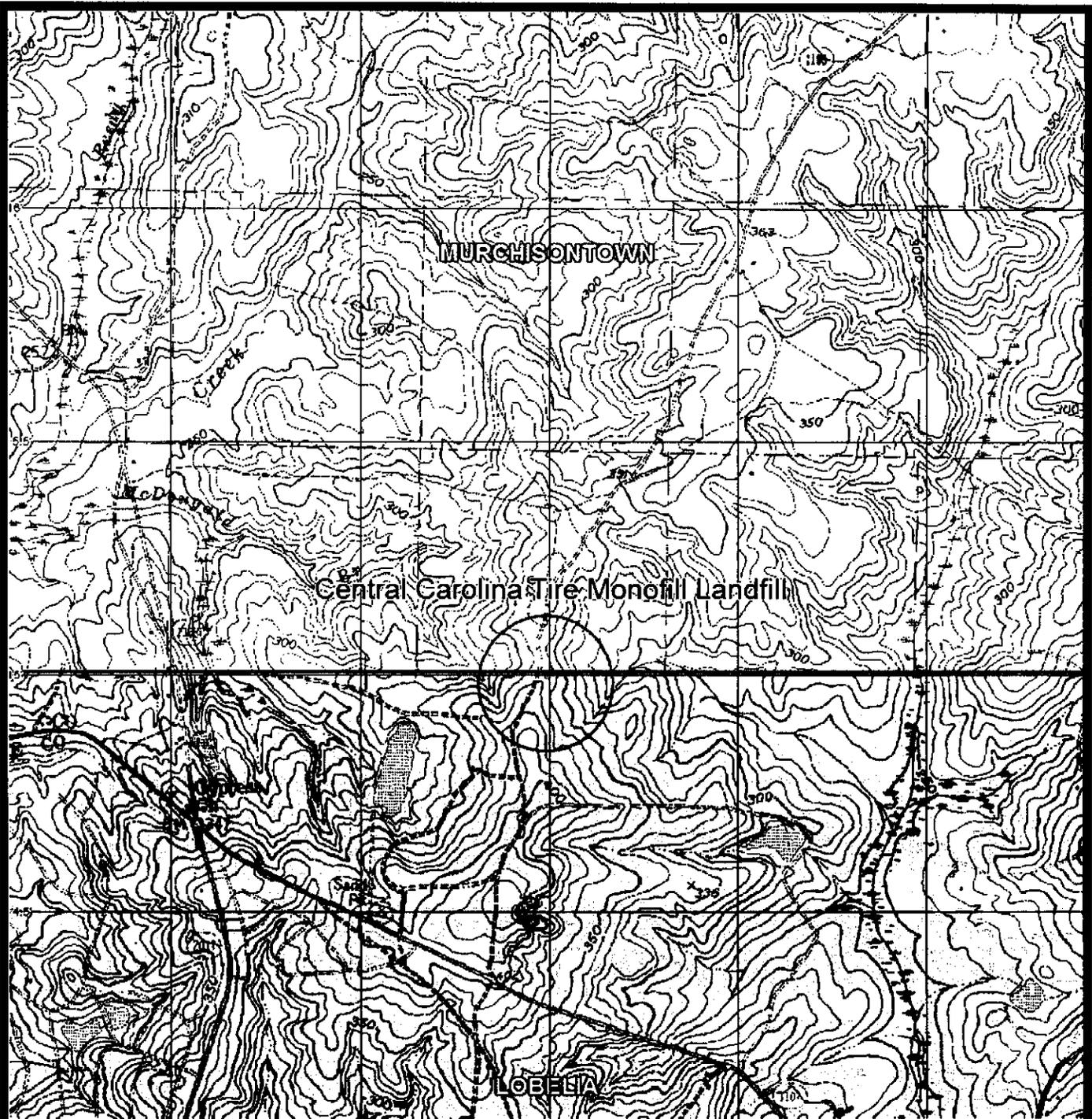
5.0 ASSESSMENT REPORT

A report of results for the preliminary site assessment will be prepared following completion of all field work and receipt of all laboratory analytical data. The report will present details of the field work performed, the results of laboratory analysis of the soil and groundwater samples, interpretations of the results and recommendations for additional work (if deemed necessary). The report will be sealed by a North Carolina Professional Geologist and/or Engineer.

6.0 PROJECT SCHEDULE

Based on the scope of the assessment work plan presented herein, it is estimated that all field work can be completed and an assessment report forwarded to NCDENR within 8 weeks following regulatory approval of this work plan.

FIGURES AND TABLES



Source: USGS 7.5' Topographic Quadrangle Series
 Murchisontown and Lobelia, North Carolina 1981



SCALE

Garrett and Moore, Inc.

Engineering Consulting Services

1428 Aversboro Rd., Suite D, Garner, NC 27529

Tel: (919) 926-7906 Fax: (866) 311-7206

SITE LOCATION MAP

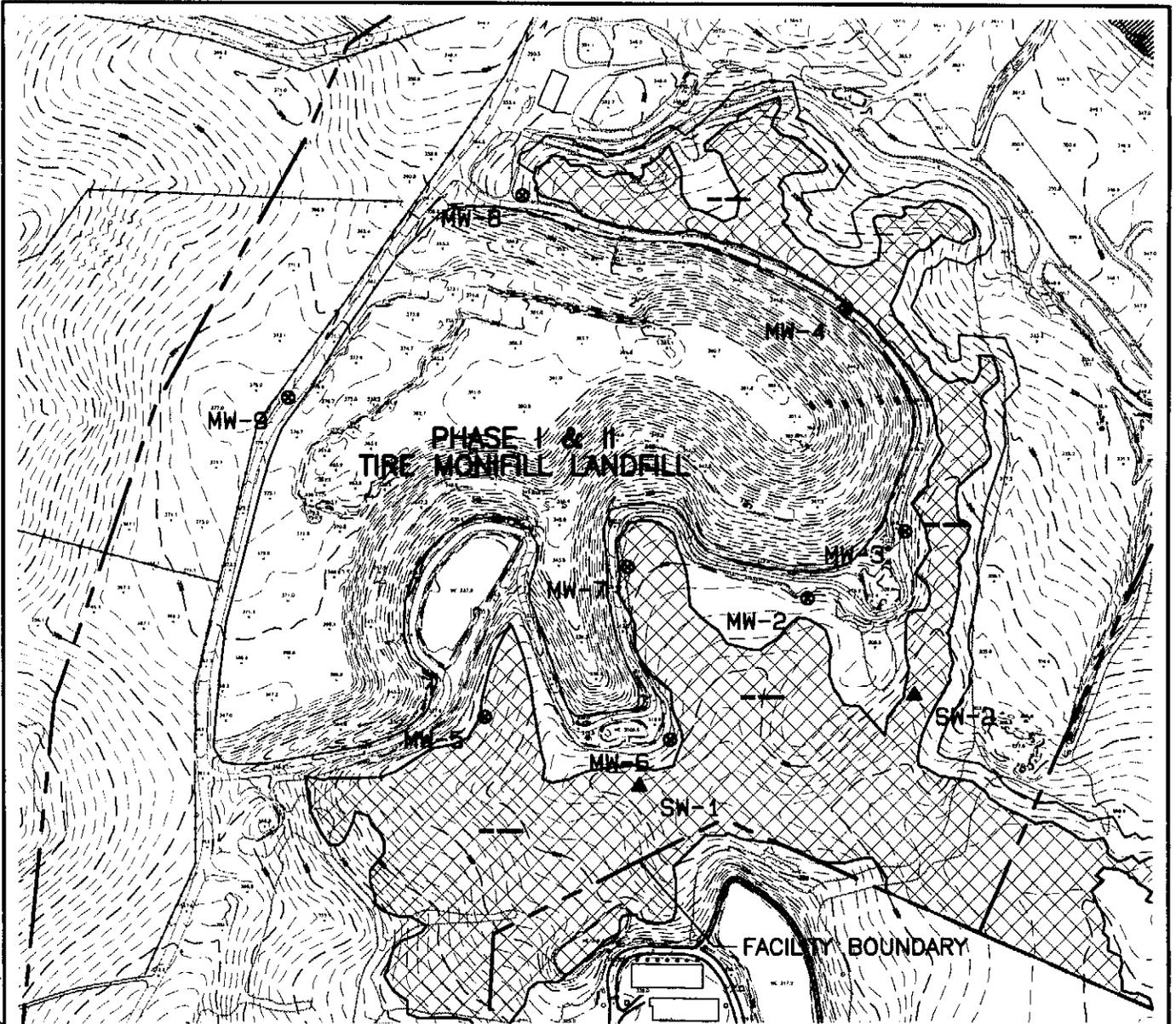
Central Carolina Tire Monofill Landfill

1616 McKoy Town Road

Cameron, Harnett County, North Carolina

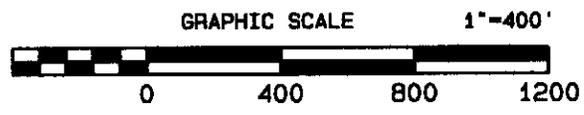
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USGS	USGS		CCT0607-1	
		Scale:	Drawing Date:	1
		1:24,000	6/20/07	

C:\PHS 1-2 GW MONITORING EVENT 4-09.pro Mon May 18, 2009 4:26:53PM



LEGEND

- ⊙ MW-9 GROUNDWATER MONITORING WELL
- ▲ SW-1 SURFACE WATER MONITORING LOCATION
- ▨ WETLANDS



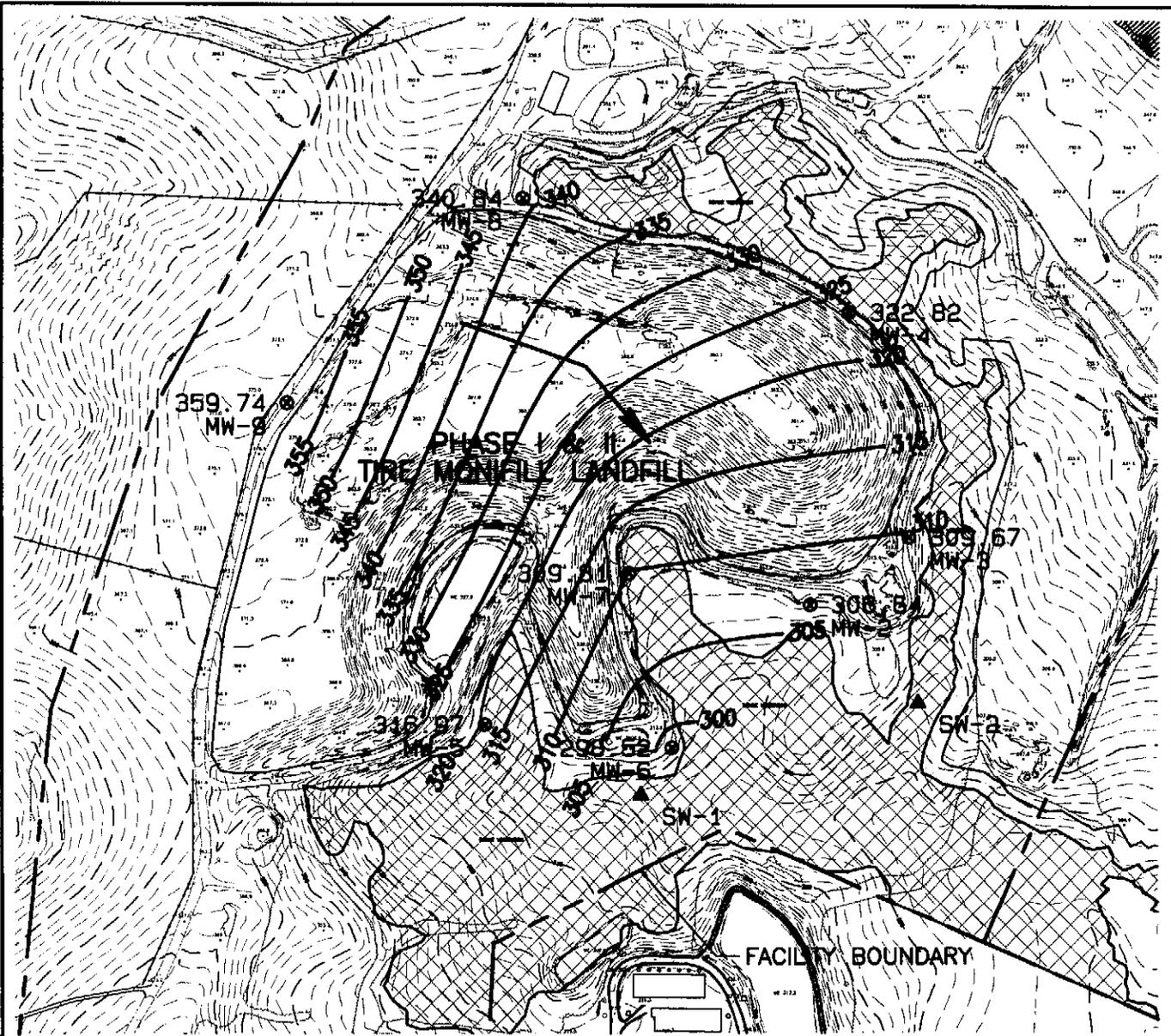
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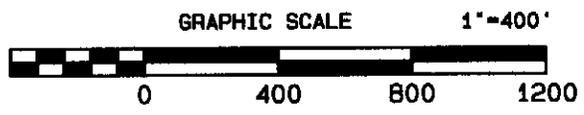
**CENTRAL CAROLINA TIRE
PHASE I & II SITE MAP**

JOB
FIG
2

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- ⊙ 355.91
MW-9 GROUNDWATER MONITORING WELL
 W/ APPROXIMATE GROUNDWATER ELEVATION
 AS OF APRIL 22, 2009
- ▲ SW-1 SURFACE WATER MONITORING LOCATION
- ← APPARENT DIRECTION OF
 GROUNDWATER FLOW
- ▨ WETLANDS



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**CENTRAL CAROLINA TIRE
PHASE I & II WATER-TABLE
ELEVATION MAP APRIL 22, 2009**

JOB
FIG 3

Table 1

Monitoring Well and Groundwater Data
 April 2009 Sampling Event

April 22, 2009

Central Carolina Tire Monofill Landfill (Existing) Phase III
 Harnett County, North Carolina
 Permit # 43-04

Well Identity	Well Depth (Feet BGS)	Well Diameter (Inches)	Approximate Ground Surface Elevation (Feet MSL)	Depth to Groundwater (Feet BTOC)	Approximate Depth to GW (Feet BGS)	Approximate Groundwater Elevation (Feet MSL)	Field Parameters			
							Temp. C°	pH	S.C. umhos/cm	Turbidity (ntu)
MW-2	20.0	2.0	308.95	4.81	2.31	306.64	13.1	4.88	63	10
MW-3	20.0	2.0	316.35	9.18	6.68	309.67	13.8	4.44	59	9.5
MW-4	20.0	2.0	324.68	4.36	1.86	322.82	13.7	5.69	76	28.6
MW-5	20.0	2.0	318.92	4.45	1.95	316.97	14.2	4.75	72	39.1
MW-6	25.0	2.0	302.84	6.82	4.32	298.52	13.6	5.02	71	6.6
MW-7	20.0	2.0	313.30	5.99	3.49	309.81	13.9	4.69	52	9.7
MW-8	20.0	2.0	344.38	6.04	3.54	340.84	14.2	5.80	40	23
MW-9	30.0	2.0	374.69	17.45	14.95	359.74	14.4	4.44	181	32.6

Notes: BGS = Below Ground Surface

MSL = Mean Sea Level

BTOC = Below Top of Casing

GW = Groundwater

S.C. = Specific Conductance

ntu = Nephelometric Turbidity Units

Approximate depths to groundwater relative to ground surface were calculated by assuming a casing stickup height of 2.5 ft and subtracting from the depth to water measured below the top of the PVC casing.

Monitoring well construction data taken from October-December 2008 Sampling Event Monitoring Report prepared by Withers & Ravenel.

Table 2
Historical Summary of Constituent Detections
Central Carolina Tire Monofill Landfill (Existing) Phase III
Hamet County, North Carolina
Permit # 43-04

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/28/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/22/2009
Well No:	MW-2														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.43 JB	ND	ND	ND	ND
Barium	2000	94	130	113	135	170	180	170	152	110	92.1 JB	182.0	97.5 JB	86.7 JB	115 B
Cadmium	1.75	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.58 JB	3.11 J	2.03 JB	1.77 JB	2.91 JB
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.09 J	3.97 J	ND	ND	4.82 J
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.98 J	ND	8.75 J	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.36 JB	3.57 JB	1.16 JB	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.180 JB	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.260 J	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.390 J	ND
Well No:	MW-3														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	3.3 J	3.38 JB	ND	ND	ND	ND
Barium	2000	16	11	17	13	ND	ND	ND	30.5	34.1	20.0 JB	38.4 J	25.5 JB	28.6 JB	29.5 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.06 JB	1.68 J	2.62 JB	2.62 JB	4.28 JB
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.31 J	3.60 J	ND	3.77 J	5.60 J
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.038 J	0.133 J	0.064 J	0.080 J	0.089 J
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.79 J	ND	9.5 J	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.27 JB	3.74 JB	1.60 JB
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.610 J	ND	ND	0.260 J
4-Methyl-2-Pentanone	NA	ND	ND	ND	ND	ND	ND	ND	ND	0.97 J	ND	ND	ND	ND	ND
Vinyl Chloride	0.015	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	8.89 J	ND	ND	ND
1,1-Dichloroethane	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.270 J	0.620 J	ND	ND	0.280 J
C-1,2-Dichloroethane	70	ND	ND	ND	ND	1.5	1	ND	1.5	1.7	0.760 J	2.04 J	ND	0.230 J	0.860 J
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.110 JB	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.270 J	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.140 J	ND	0.330 J	ND
Well No:	MW-4														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	2.9 J	4.16 JB	ND	ND	ND	ND
Barium	2000	34	27	32	14	ND	ND	ND	23.7	20	20.9 JB	24.3 J	33.2 JB	29.6 JB	29.6 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16 J	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.09 JB	3.11 J	2.77 JB	ND	3.40 JB
Lead	15	ND	ND	5	ND	ND	ND	ND	ND	ND	3.12 J	6.11 J	ND	ND	ND
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.73 J	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.17 JB	3.90 JB	1.97 JB
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.730 J	0.540 J	0.490 J	0.220 J	0.460 J
Chloroethane	2000	ND	ND	ND	ND	ND	3.0	ND	4.2	1.8	3.59 J	1.98 J	2.35 J	0.620 J	2.55 J
1,1-Dichloroethane	70	ND	ND	ND	ND	ND	3.0	ND	1.0	ND	0.360 J	0.580 J	0.210 J	ND	0.180 J
1,2-Dichloroethane	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
C-1,2-Dichloroethane	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.210 J	0.580 J	ND	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.310 J	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.110 J	ND	0.540 J	ND
Well No:	MW-5														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.83 JB	1.93 J	ND	ND	ND
Barium	2000	16	23	24	15	ND	ND	ND	ND	19.3	58.2 JB	32.3 J	30.8 JB	30.6 JB	33.6 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	7	ND	ND	ND	ND	ND	ND	ND	8.54 JB	5.97 J	1.56 JB	1.26 JB	4.10 JB
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.5	8.02 J	ND	ND	ND
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.056 J	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.42 J	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.32 JB	3.74 JB	1.72 JB
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.210 J	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.280 J	ND
Well No:	MW-6														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	2.8 J	2.26 JB	ND	ND	ND	3.08 J
Barium	2000	33	47	48	44	ND	ND	ND	37.4	29.9	30.5 JB	26.3 J	36.1 JB	34.1 JB	30.1 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.06 JB	1.31 J	1.88 JB	ND	ND
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.62 J	4.43 J	6.14 J	3.70 J	3.50 J
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.75 J	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.34 JB	3.79 JB	1.47 JB	ND
Acetone	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.74 J
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	1.4	1.21	1.93	0.780 J	0.880 J	0.990 J
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.190 J	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.380 J	ND

Notes:

Results in parts per billion (ppb)
 ND - Not Detected above the laboratory method detection limit or practical quantitation level (results prior to April 2007).
 NA - Not analyzed for or not available
 Values in boldface exceed the corresponding 15A NCAC 2L 0202 groundwater quality standards.
 Results for sampling conducted prior to April 2007 as presented in previous GW reports prepared by Wilbers & Rowland.
 J = Estimated value above laboratory method detection limit and below SWSL or reporting limit.
 B = Analyte found in associated field analyzer laboratory blank.

Table 2 (Continued)
Historical Summary of Constituent Detections
Phase III Tire Monofill Landfill (Active)
Hamett County, North Carolina

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/26/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/23/2009	
Well No:	MW-7															
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.88 JB	ND	ND	ND	ND	
Barium	2000	45	45	119	102	ND	ND	ND	ND	77	73.6	153 JB	64.2 J	70.7 JB	61.8 JB	63.0 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.47 JB	ND	1.58 JB	1.46 JB	3.01 JB	ND
Lead	15	ND	ND	5.3	ND	ND	ND	ND	ND	2.1 J	10.80	6.54 J	5.69 J	4.02 JB	5.74 JB	ND
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.043 J	0.097 J	0.062 J	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.05 J	ND	7.96 J	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.26 JB	3.62 JB	1.89 JB	ND
Benzene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.790 J	0.210 J	0.250 J	0.330 J	ND
1,1-Dichloroethane	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.150 J	ND	ND	ND	ND	ND
Cis 1,2-Dichloroethane	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.240 J	ND	ND	ND	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.250 JB	0.320 J	ND	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.130 J	ND	ND	0.520 J	ND

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/26/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/23/2009	
Well No:	MW-8															
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.03 JB	ND	ND	ND	ND	
Barium	2000	152	112	32	24	ND	ND	ND	41.5	42.5	32.1 JB	41.4 J	43.9 JB	46.1 JB	46.0 JB	
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.03 JB	4.54 J	2.33 JB	1.25 JB	3.20 JB	ND
Lead	15	3	4	ND	ND	ND	ND	ND	ND	1.04 J	7.71 J	7.42 J	ND	6.30 J	ND	ND
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.26 JB	3.90 JB	1.29 JB	ND
Ethylbenzene	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.120 J	ND	ND
Tetrachloroethene	0.7	ND	ND	ND	ND	ND	ND	ND	1.8	0.310 J	0.550 J	0.730 J	0.980 J	2.40	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.450 J	ND	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.700 J	ND	ND

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/26/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/23/2009	
Well No:	MW-9															
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	2.6 J	2.88 JB	5.04 J	ND	ND	ND	
Barium	2000	111	188	455	308	370	270	360	242	310	462 JB	395.0	286 B	50.1 JB	210 B	
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	14	ND	5.3	ND	ND	ND	ND	ND	5.71 JB	1.24 J	1.73 JB	1.35 JB	2.82 JB	ND	ND
Lead	15	5	ND	7.0	ND	ND	ND	ND	ND	7.21 J	6.84 J	5.02 J	ND	ND	ND	ND
Mercury	1.05	ND	ND	0.8	ND	ND	ND	ND	ND	0.83	0.077 J	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	2.2 J	1.35 J	ND	ND	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.95 JB	1.18 JB	ND
Ethylbenzene	29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.210 J	ND	ND
Toluene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.810 J	ND	ND
Total Xylenes	530	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.91 J	ND	ND

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/26/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/23/2009
Well No:	SW-1														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	2.2 J	2.07 JB	2.85 J	ND	2.78 J	ND
Barium	2000	11	19	14	15	ND	100	ND	ND	17.6	18.7 JB	25.5 J	30.4 JB	384 B	36.2 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.370 J
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.78 JB	2.86 J	2.03 JB	2.09 JB	3.70 JB
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.39 J	6.07 J	7.11 J	3.91 JB	ND
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	3.7 J	1.96 J	ND	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.46 JB	2.07 JB	1.38 JB
Acetone	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.51 JB	ND	ND
Benzene	1	ND	ND	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	0.260 J	ND

Sampling Date:	ZL Standard	10/30/2002	4/15/2003	10/23/2003	3/24/2004	11/9/2004	6/23/2005	10/26/2005	3/30/2006	10/19/2006	4/18/2007	10/24/2007	4/29/2008	10/14/2008	4/23/2009
Well No:	SW-2														
Arsenic	50	ND	ND	ND	ND	ND	ND	ND	ND	2.9 J	1.70 JB	2.92 J	ND	ND	ND
Barium	2000	38	26	12	13	ND	ND	ND	ND	21.1	31.1 JB	14.3 J	30.5 JB	56.6 JB	27.5 JB
Cadmium	1.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.09 JB	5.98	2.47 JB	2.82 JB	2.82 JB
Lead	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.356 J	ND	3.79 J	6.25 J	4.42 J
Mercury	1.05	ND	ND	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND	ND	ND
Selenium	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	17.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.24 JB	3.73 JB	1.58 JB

Notes:
 Results in parts per billion (ppb)
 ND - Not Detected above the laboratory method detection limit or practical quantitation limit (results prior to April 2007).
 NA - Not analyzed for or not available
 Values in boldface exceed the corresponding 15A NCAC 2L 0202 groundwater quality standards.
 Results for sampling conducted prior to April 2007 as presented in previous GW reports prepared by Wilhens & Rowland.
 J = Estimated value above laboratory method detection limit and below SWSL or reporting limit.
 B = Analyte found in associated field and/or laboratory blank.