FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.22

GCREC Mound Data Summary Report No. 2

Progress Report

June 2011

4423-001

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In association with

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Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.22
PROGRESS REPORT

GCREC Mound
Data Summary Report No. 2

Prepared for:

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GCREC Mound Monitoring
Data Summary Report No. 2

1.0 Background

Task C of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes monitoring at field sites in Florida to evaluate nitrogen reduction in soil and groundwater, to assess groundwater impacts from various onsite wastewater systems, and to provide data for parameter estimation, verification, and validation of models developed in Task D. The existing mound system at the Gulf Coast Research and Education Center (GCREC) is being monitored to serve as a bridge between the controlled GCREC pilot-scale testing conducted within the same type of soils and the uncontrolled monitoring at home sites in different soils throughout the state. The Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the GCREC existing mound system site. The Task C.20 Instrumentation of GCREC Mound System and Plume Progress Reports No. 1 and 2 document the test area design, number and location of monitoring points, and preliminary sample collection and analyses.

2.0 Purpose

This data summary report documents data that was collected from the second GCREC mound monitoring and sampling event which was conducted March 29, 2011 through April 1, 2011 and April 4, 2011. The sample event report was submitted as Sample Event Report No. 2, April 2011, as deliverable under Task C.21. This monitoring event consisted of measurement of flowrates dosed to the system, groundwater elevation measured within the standpipe piezometers, measurement of field parameters, and collection of groundwater samples and their analyses in a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The GCREC mound is located at the University of Florida Gulf Coast Research and Education Center (GCREC) in southeast Hillsborough County, Florida. The facility is situated on 475 acres of land that were donated by Hillsborough County government. Wastewater from the GCREC research offices and onsite dormitories flow to an existing

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OSTDS. Lab waste from Facility laboratories is not directed to the OSTDS. This existing OSTDS consists of a pressure dosed mound system designed for 2,850 gallons per day. Two septic tanks (2,500 and 1,250 gallons) provide primary treatment followed by a dosing tank (3,000 gallons). The mound drainfield has 4,351 ft^2 of infiltrative area (design hydraulic loading rate of 0.65 gpd/ft^2) with each half of the drainfield receiving alternating doses.

3.2 Operational Monitoring

Wastewater flow to the mound system is measured via two (2) flow meters located on the dose lines to the mound. The two flow meters were installed in December 2009. Prior to July 16, 2010, the GCREC air conditioning systems were discharging considerable quantities of A/C condensate to the sewer. The PNRS II test facility programmable logic controller (PLC) records flow data from these meters. Appendix A summarizes the recorded wastewater flow data for the GCREC mound pumps since PNRS II test facility start-up.

In addition, a weather station is located at the GCREC facility with weather conditions recorded every minute and stored on a private website. Table 1 provides the recorded meteorological data daily averages leading up to and during the sample event. Appendix B provides summary tables of the average monthly recorded meteorological data.

Table 1
Meteorological Data Daily Averages Measured March 26, 2011 – April 5, 2011

Date	Temp Avg 60 cm (°F)	Temp Avg 10 m (°F)	Temp Soil Avg -10 cm (°F)	Dewpoint Avg 2m (°F)	Relative Humidity Avg 2m (%)	Rain Total 2m (in)	Wind Speed Avg 10m (mph)	ET (in)
March 26, 2011	69.49	70.52	71.53	59.89	76	0.00	4.77	0.13
March 27, 2011	73.02	73.86	71.73	62.09	74	0.00	7.26	0.15
March 28, 2011	67.36	67.62	71.14	64.41	91	1.82	9.42	0.06
March 29, 2011	70.74	70.66	70.23	64.36	83	0.00	5.99	0.12
March 30, 2011	73.54	73.21	71.81	67.05	83	0.51	11.20	0.14
March 31, 2011	67.68	68.11	69.88	64.39	90	2.95	11.14	0.05
April 1, 2011	67.29	67.53	69.33	55.71	71	0.01	6.36	0.14
April 2, 2011	67.08	68.19	69.22	54.35	69	0.00	4.77	0.15
April 3, 2011	70.09	70.36	69.75	58.16	71	0.00	7.87	0.16
April 4, 2011	75.19	74.87	71.37	65.41	76	0.02	9.41	0.17
April 5, 2011	65.4	65.85	70.88	61.49	88	0.78	7.75	0.09

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3.3 Monitoring and Sampling Locations and Identification

A sampling grid for groundwater screening was developed downgradient of the soil treatment unit as depicted in Figure 1. A 25-ft by 25-ft grid was staked then locations surveyed (x, y, and z). Transect lines AA through R are parallel to the southern edge of the mound and increase (higher letter identification) moving southward from the mound. Transect lines 1 through 15 (from east to west) are perpendicular to the southern edge of the mound. Groundwater monitoring points were installed in May, June, and November 2010. Two types of monitoring points were installed using either hand or drilling methods: drive point samplers and standpipe piezometers. Drive point samplers consist of a stainless steel drive tip and attached 1-in. long screen with a protective "umbrella" (to prevent soil entering and clogging the screen), and flexible tubing that extends to the ground surface (Figure 2). Standpipe piezometers consist of either ¾-in., 1¼-in., or 2-in. diameter PVC with 1-ft, 4-ft, 5-ft, or 10-ft long 0.010 slot PVC screens and PVC riser extending to the ground surface (refer to the Task C QAPP and Task C.20 Progress Reports No. 1 and No. 2 for additional detail).

Each monitoring location has been assigned a unique identification indicating the type of monitoring point (DP = drive point, PZ = standpipe piezometer), grid location (self explanatory), and depth below ground surface (bottom of the drive point or well screen in feet). For example DP-AA9-14 is a drive point sampler located on the grid at AA9 at 14 ft below ground surface. A schematic of the GCREC monitoring network is shown in Figure 1. Figure 3 depicts an installed ¾-in. diameter PVC standpipe piezometer. A complete list of all installed drive points and standpipe piezometers are included in Appendix C.

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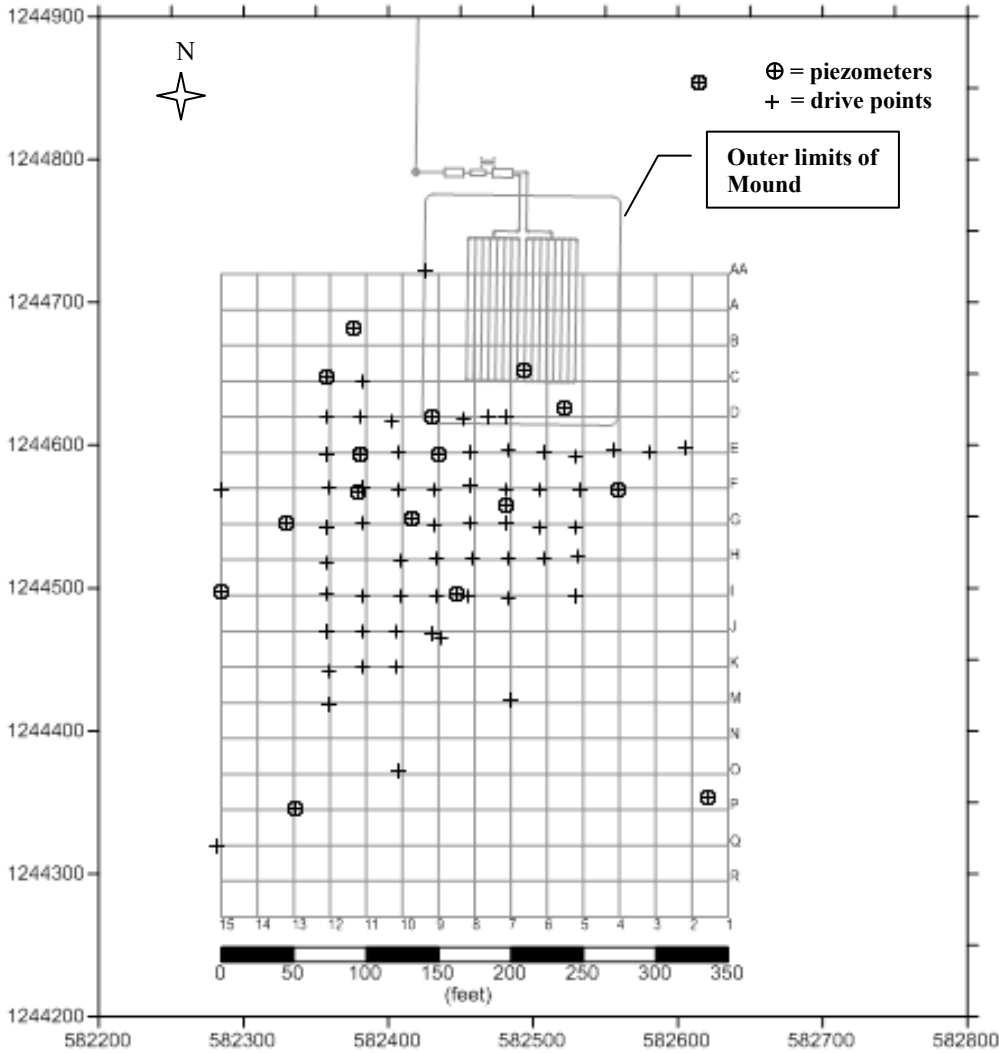

Figure 1
Schematic of GCREC Monitoring Network (UTM coordinates are used)
⊕ denotes piezometers and + denotes drive points

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Figure 2
Stainless Steel Drive Point with Mesh Screen, Umbrella and Tubing

Figure 3
Installed ¾" Diameter PVC Standpipe Piezometer

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3.4 Soil Characteristics

During the instrumentation of the mound, soil cores were collected to the spodic layer at four locations (CD6.5, E9, F4, and west side of the mound [near A9]), and at one location (G10) a continuous soil core was collected to the confining Hawthorn clay layer. The shallow soil cores will provide information on vadose zone properties, and the deep soil core will provide a general idea of the soil properties within the aquifer. The information will be used when determining appropriate parameters to be used in model development. During the installation of monitoring points during the summer of 2010, a prominent spodic layer was discovered at approximately 4-6 feet below the ground surface. At several locations the top elevation of this layer was determined with handheld methods during this time. Attempts were also made to determine the top and the thickness of the spodic layer at the remaining monitoring well locations during the November drilling event. Whenever this proved impossible, estimations were made.

3.5 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients, directions of flow, rates of flow, locations of groundwater recharge and discharge, the amount of water in storage, the change in storage over time, and aquifer hydraulic characteristics. Groundwater levels were measured using a hand-cranked steel tape graduated in feet. Groundwater elevations have been monitored frequently at the site to determine the direction and gradient of flow. Groundwater elevations were monitored daily in March and April, 2011 during a time of heavy precipitation.

3.6 Water Quality Sample Collection and Analyses

Groundwater and septic tank effluent (STE) were collected March 29, 2011 through April 1, 2011 and April 4, 2011 for water quality analysis. A peristaltic pump was used to collect STE directly into the analysis-specific container supplied by the analytical laboratory. Samples were collected from the existing lift station, which supplies STE to the GCREC mound. Groundwater samples were obtained using a peristaltic pump, which was either attached directly to the drive point tubing or to dedicated standpipe piezometer tubing. Samples were collected into the analysis-specific containers after sufficient purging had occurred. The analysis-specific containers were supplied by the analytical laboratory and contained appropriate preservatives. The analysis-specific containers were labeled, placed in coolers and transported on ice to the analytical laboratory. Each sample container was secured in packing material as appropriate to prevent damage and spills, and was recorded on chain-of-custody forms supplied by the laboratory.

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In addition, equipment blank, field blank, and field sample duplicates were taken. The equipment blank was collected by pumping deionized water (provided by the laboratory) through the cleaned pump tubing. These samples were then analyzed for the same parameters as the GW samples. One field blank was collected by filling sample containers with deionized water that had been transported from the laboratory into the field along with other sample containers; a second field blank was collected by filling a sample container with the tap water used for rinsing. The field sample duplicates were collected immediately subsequent to the regular samples.

Field parameters (pH, specific conductance, temperature (Temp), and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed in a flow-cell device as groundwater was being pumped. All samples were analyzed by the laboratory for total alkalinity, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), and nitrate/nitrite nitrogen (NO_X-N). Additionally, at some of the locations with elevated conductivity in previous preliminary sampling, total organic carbon (TOC) and dissolved organic carbon (DOC) were included. All analyses were performed by an independent and fully certified analytical laboratory (Southern Analytical Laboratory). Table 2 lists the analytical parameters, analytical methods, and detection limits for these analyses.

Table 2
Analytical Parameters, Method of Analysis, and Detection Limits

Analytical Parameter	Method of Analysis	Laboratory Detection Limit (mg/L)
Total Alkalinity as $CaCO_3$	SM 2320B	2 mg/L
Total Kjeldahl Nitrogen (TKN-N)	EPA351.2	0.05 mg/L
Ammonia Nitrogen (NH_3-N)	EPA350.1	0.01 mg/L
Nitrate/Nitrite Nitrogen (NO_X-N)	EPA353.2	0.01 mg/L
Total Organic Carbon (TOC)	SM 5310B	0.5 mg/L
Dissolved Organic Carbon (DOC)	SM 5310B	1.0 mg/L

3.7 Data Management and Graphing

To allow for a better visualization of the data collected at the site the mapping program **Surfer** was utilized. **Surfer** is a grid-based mapping program that interpolates irregularly spaced XYZ data into a regularly spaced grid. Although there are several methods used in **Surfer** to fill in areas where data is missing, the Kriging method was used as the output gave the most informative graphs. Of note, it is important to realize that the output is based on the program interpolation between known data points, and thus should not be assumed to illustrate reality, but instead an approximation. Furthermore, because **Surfer** cannot project a 3-dimensional view of concentrations with depth, the concentrations of NOx-N from the different sampling locations were compiled into horizontal “slices” of

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similar depth and then plotted as a planar view, thus allowing the different “slices” to be compared.

4.0 Results

4.1 Soil Characteristics

During the instrumentation of the mound, continuous soil cores were collected to the spodic layer at four locations (CD6.5, E9, F4, and west side of the mound [near A9]), and at one location (G10) a continuous soil core was collected to the confining Hawthorn clay layer. The results of the analysis are presented in Table 3. Although the four shallow soil cores (CD6.5, E9, F4, and near A9) show some variability in soil over the site, a general soil profile trend is present. The top few inches at the site are typically a darker, slightly brown or red fine, silty soil, followed by a light-colored, grey and/or pale yellow fine sand. Mottling is commonly visible 4-5 feet below the ground surface. The continuous soil core from G10 shows the spodic layer (black fine sand with a coffee-like texture). The spodic layer is approximately 3.3 feet thick at that location, and the soil below the spodic layer is a light or yellowish brown, fine to medium sand (Table 3). Similar observations were made during the November drilling event. The Hawthorne clay is considered a confining layer at the site and lies approximately 27 to 30 feet below the ground surface. Of note, in the previous report C22 No.1, a picture was included illustrating the soil profile at G10. It has been removed as an error in the soil profile description was discovered.

During the installation of the shallow drive points in the summer of 2010, the top elevations of the spodic layer was determined at several locations as the installation was done primarily with handheld methods. Efforts were made to determine the elevation and thickness of the spodic layer during the November drilling event; however, this proved to be quite difficult as it was near impossible for the drill operators to “feel” when the auger first hit the hard layer and second when it broke through it; hence the depth and thickness of the spodic layer at the new well locations was estimated at that time to be approximately 6 feet below the ground surface with a thickness of approximately 5.5 to 8.5 feet. After the November drilling event, handheld methods were used to better determine the actual elevation of the spodic layer at several additional sites. Table 4 summarizes the locations at which the top elevation of the spodic layer was determined by handheld methods. At all other locations, this elevation was estimated. Figure 4 illustrates a **Surfer** plot of the top elevation of the spodic layer at the site based on both actual and estimated elevations, while Figure 5 illustrates the same but using only elevations verified by handheld methods. Although variations are present, the general trend follows that of the ground surface and that of the groundwater.

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Table 3
June 2010 Small Direct Push Rig (6620 Geoprobe™)
Soil Core Descriptions

Grid Location	Identifier	Surface Elevation (ft)	Depth bgs (ft)	Description
CD6.5	PZ10-CD6-13	129.51	0-0.4’	Grass/fill
			0.4-0.9’	Gray fine sand with yellow and white mottles
			0.9-6.6’	Uniform yellow fine grain sand
			6.5’	Saturation
			6.6-6.7’	Dark brown (10YR 3/3) fine sand
			6.7-10.7’	Light gray (5Y 7/2) fine sand
			10.7-11.5’	Dark brown (10YR 3/3) fine sand
			11.5-12.3’	Yellow (5Y 7/6) fine sand
			12.3-13.45’	Light gray (5Y 7/2) fine sand
			13.45-16.1’	Spodic horizon, dark brown (7.5YR 3/3) fine sand
			16.1-17.4’	Brown (7.5YR 4/4) fine sand
E9	PZ11-E09-10	124.06	0-2.2’	A Horizon top soil
			2.2-2.7’	Pale yellow (5Y 7/3) fine sand with mottles
			2.7-5.8’	Yellowish brown (10YR 5/4) fine sand
			5.8-6.9’	Very dark brown (7.5YR 2.5/3) fine sand
			6.1’	Saturation
			6.9-10.3’	Medium brown (10YR 5/3) fine sand
			10.3-15’	Spodic horizon, black (10YR 2/1) fine sand
F4	PZ13-F04-8	124.42	0-4.2’	A Horizon top soil
			4.2-4.7’	Pale yellow (5Y 8/4) fine sand with mottles
			4.7-13.5’	Spodic horizon, dark brown sand
			6.3’	Saturation
Westside of Mound Near A9		~129	0-7.4’	Mound sand with some mottles
			7.4-8.4’	Dark oxidized sand
			8.4’	Saturation
			8.4-9.4’	Saturated very pale brown fine sand
			9.4-10’	Spodic horizon, dark brown fine sand
			10-12’	Dark yellowish brown (10YR 4/6) fine sand
			12-15’	Dark brown fine sand

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Table 3 (cont.)
June 2010 Small Direct Push Rig (6620 Geoprobe™)
Soil Core Descriptions

Grid Location	Identifier	Surface Elevation (ft)	Depth bgs (ft)	Description
G10	PZ12 Abandoned	123.55	0-1.2’	A Horizon top soil
			1.2-2.8’	White (10YR 8/2) fine sand
			2.8-6.1’	Spodic horizon, black fine sand
			6.1-9’	Brown (10YR 4/3) fine sand
			9’	Saturation
			9-10.1’	Gray (5Y 5/1) fine sand with black mottles
			10.1-13.9’	Black (5Y 2.5/1) fine sand
			13.9-16.6’	Light yellowish brown (10YR 6/4) uniform fine sand
			16.6-19’	Medium sand poorly sorted, well rounded (3mm diameter) with mottles
			19-23’	Pale brown (10YR 6/3) uniform fine sand
			23-27.5’	Very pale brown (10YR 7/3) very fine sand
			27.5-27.9’	Poorly sorted coarse sand
			27.9-30.0’	Greenish gray (Gley1 6/5GY) clay, Hawthorn confining layer

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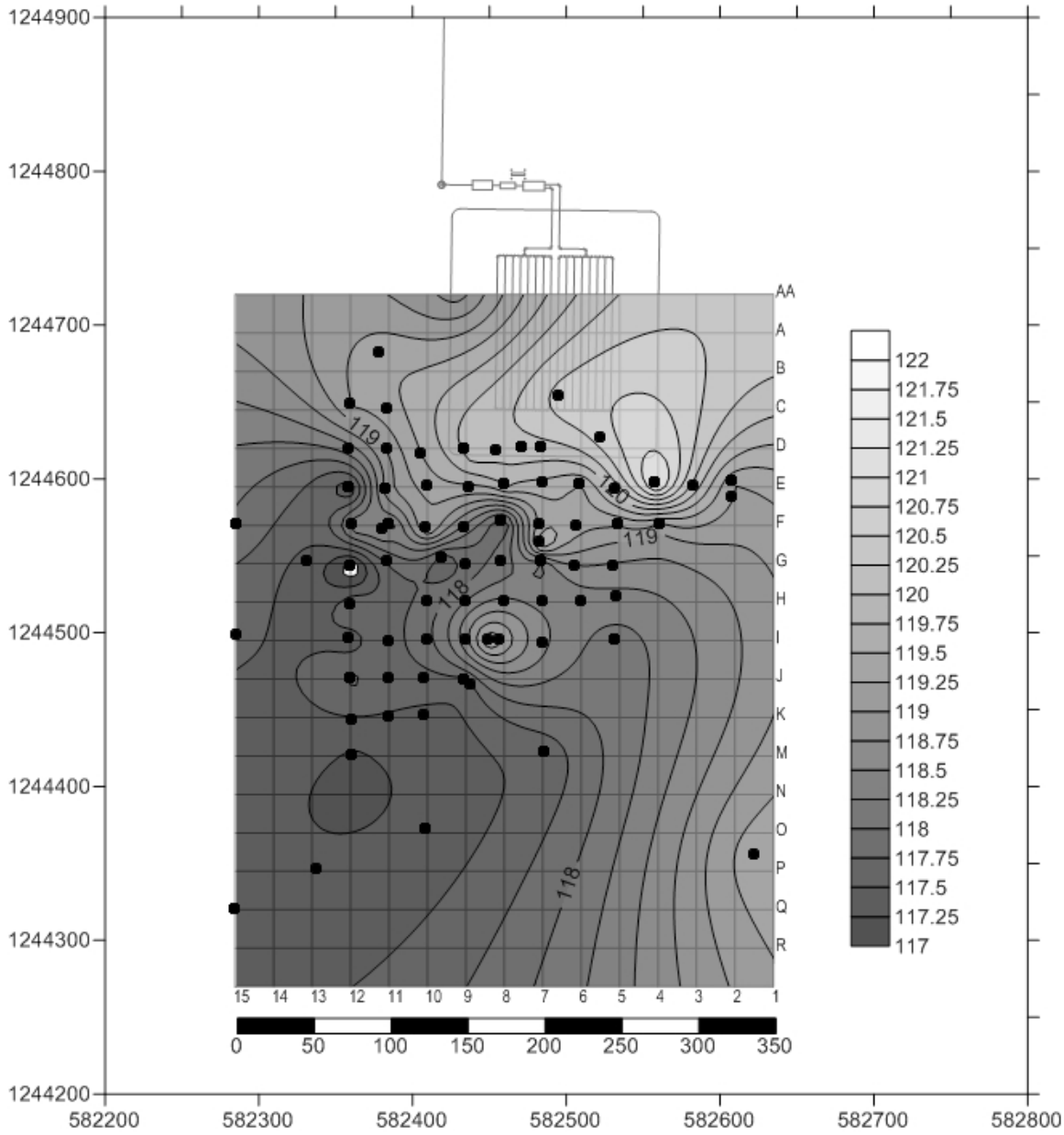

Figure 4

Surfer plot illustrating the top elevation of the spodic layer based on both verified elevations and estimated elevations. The dots represent the locations used for the graph.

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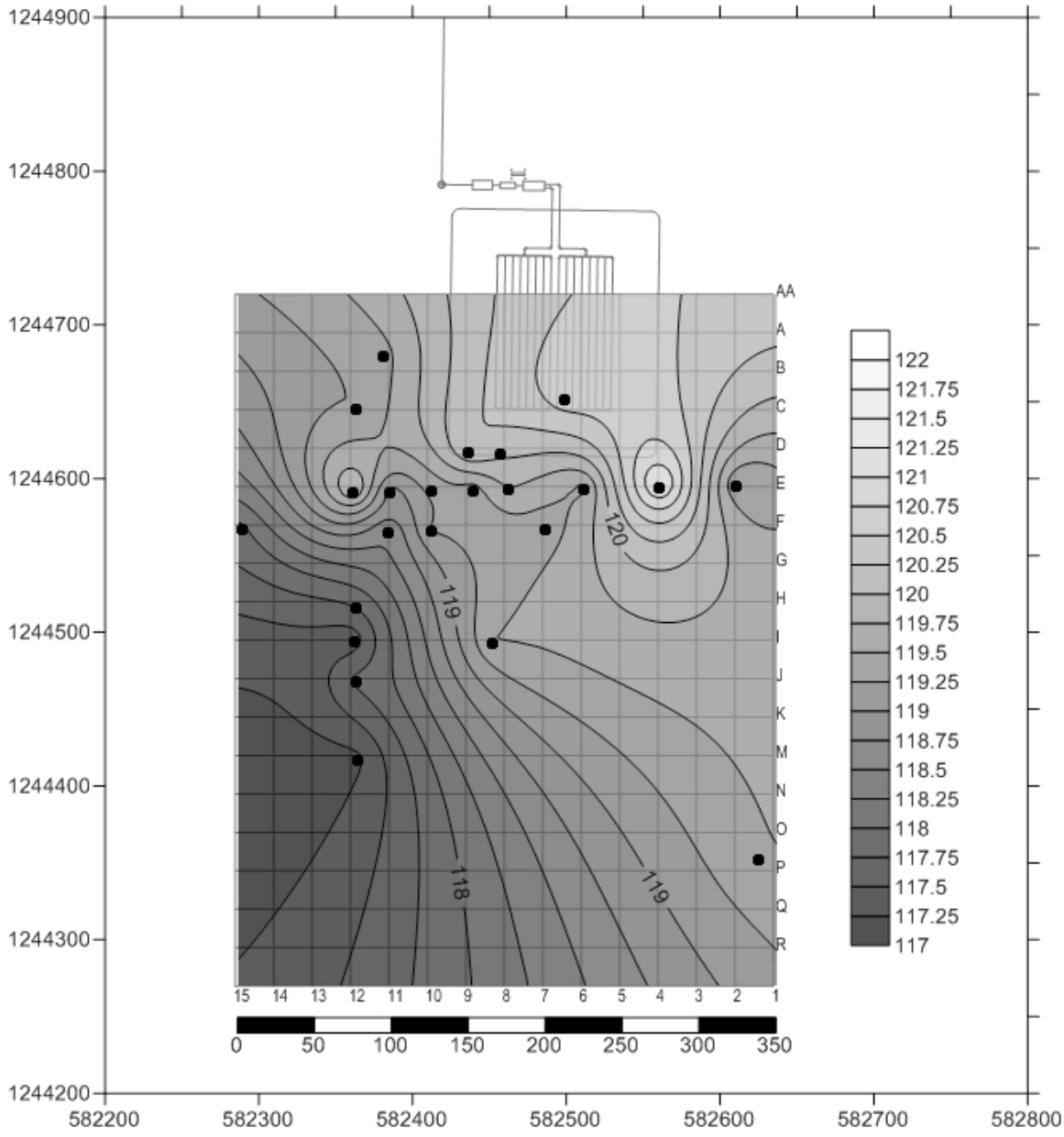

Figure 5

Surfer plot illustrating the top elevation of the spodic layer as verified by hand methods. The dots represent the locations where the elevations were measured.

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Table 4
The Top Elevation of the Spodic Layer as Determined by Hand Methods

Location	Elevation	Location	Elevation
D8	120.06	PZ01-BKG	123.37
D9	120.08	PZ02-PQ1.75	119.46
E2	119.26	PZ03-H11	118.54
E4	121.35	PZ04-BKG	120.62
E6	119.46	PZ05-BKG	121.34
E8	119.77	PZ06-BKG	125.50
E10	119.34	PZ09-I8	119.50
F3	120.06	PZ10-CD6	120.62
F7	119.41	PZ11-E9	119.40
F10	119.27	PZ15-A11	119.42
F15	117.96	PZ16-C12	119.26
H12	117.77	PZ21-E11	118.91
I12	117.38	PZ25-A6.5	120.13
J12	117.80		
N12	117.20		

4.2 Groundwater Flow, Gradient and Velocity

Groundwater level monitoring has been conducted over a larger area since additional piezometers were installed in November 2010. Although the groundwater elevations have been found to fluctuate due to periods of dry weather and/or heavy precipitation, continuous monitoring of the groundwater elevations indicates that the general flow-path does not change. Figures 6 through 9 illustrate the surficial groundwater contours as measured within the standpipe piezometers on four dates (December 9, 2010, February 21, 2011, April 1, 2011 and April 6, 2011). Table 5 shows the actual measured water levels. Based on the output illustrated in these plots the direction of flow is estimated at 220 degrees to true north, and the gradient is estimated to range from 0.0066 to 0.0094. Clearly variations in gradient are apparent in Figure 6 through 9; however it is not clear if those variations are due to an anomaly in measurement or an artifact of using **Surfer**. A summary of all recorded groundwater elevations taken at the standpipe piezometers within the grid is presented in Appendix D.

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Table 5
Standpipe Piezometer Groundwater Level Measured

Identification	Location	Water Table Elevation (ft)			
		Dec 9, 2010	Feb 21, 2011	April 1, 2011	April 6, 2011
PZ01-BKG-9	PZ-1	122.97	123.66	124.62	124.73
PZ02-PQ1.75-9	PZ-2	118.52	119.62	120.37	119.90
PZ03-H11-6	PZ-3	119.21	120.01	121.24	120.79
PZ04-BKG-9	PZ-4	121.76	122.33	120.73	123.67
PZ05-BKG-9	PZ-5	121.53	122.27	123.32	123.17
PZ06-BKG-12	PZ-6	122.09	123.05	125.33	
PZ07-D5-7	PZ-7	120.22	120.98	122.63	122.17
PZ08-FG7-6	PZ-8	119.65	120.45	121.98	121.49
PZ09-I8-5	PZ-9	119.15	120.03	121.39	120.86
PZ10-CD6-13	PZ-10	120.37	121.10	122.92	122.36
PZ11-E9-10	PZ-11	119.57	120.44	121.91	121.48
PZ12-G10	abandoned				
PZ13-F4-8	PZ-13	120.16	120.95	122.45	122.06
PZ14-G13-7	PZ-14	118.72	119.44	120.28	120.08
PZ15-A11-6	PZ-15	119.77	120.40	121.96	121.56
PZ16-C12-28	PZ-16	119.37	120.03	121.36	121.04
PZ17-I15-26	PZ-17	118.26	119.06	120.10	119.78
PZ18-R12-26	PZ-18	118.22	119.44	119.99	119.55
PZ19-G10-26	PZ-19	119.18	119.97	121.35	120.88
PZ20-G10-15	PZ-20	119.17	119.98	121.37	120.89
PZ21-E11-26	PZ-21	119.22	119.96	121.27	120.89
PZ22-E11-15	PZ-22	119.21	119.94	121.28	120.88
PZ23-D9-27	PZ-23	119.64	120.37	121.90	121.46
PZ24-BKG-26	PZ-24	121.46	122.01	126.30	123.36
PZ25-A6.5	PZ-25		121.28	123.08	122.62
PZ26-EF2	PZ-26				123.89

Note: If blank – no data was collected

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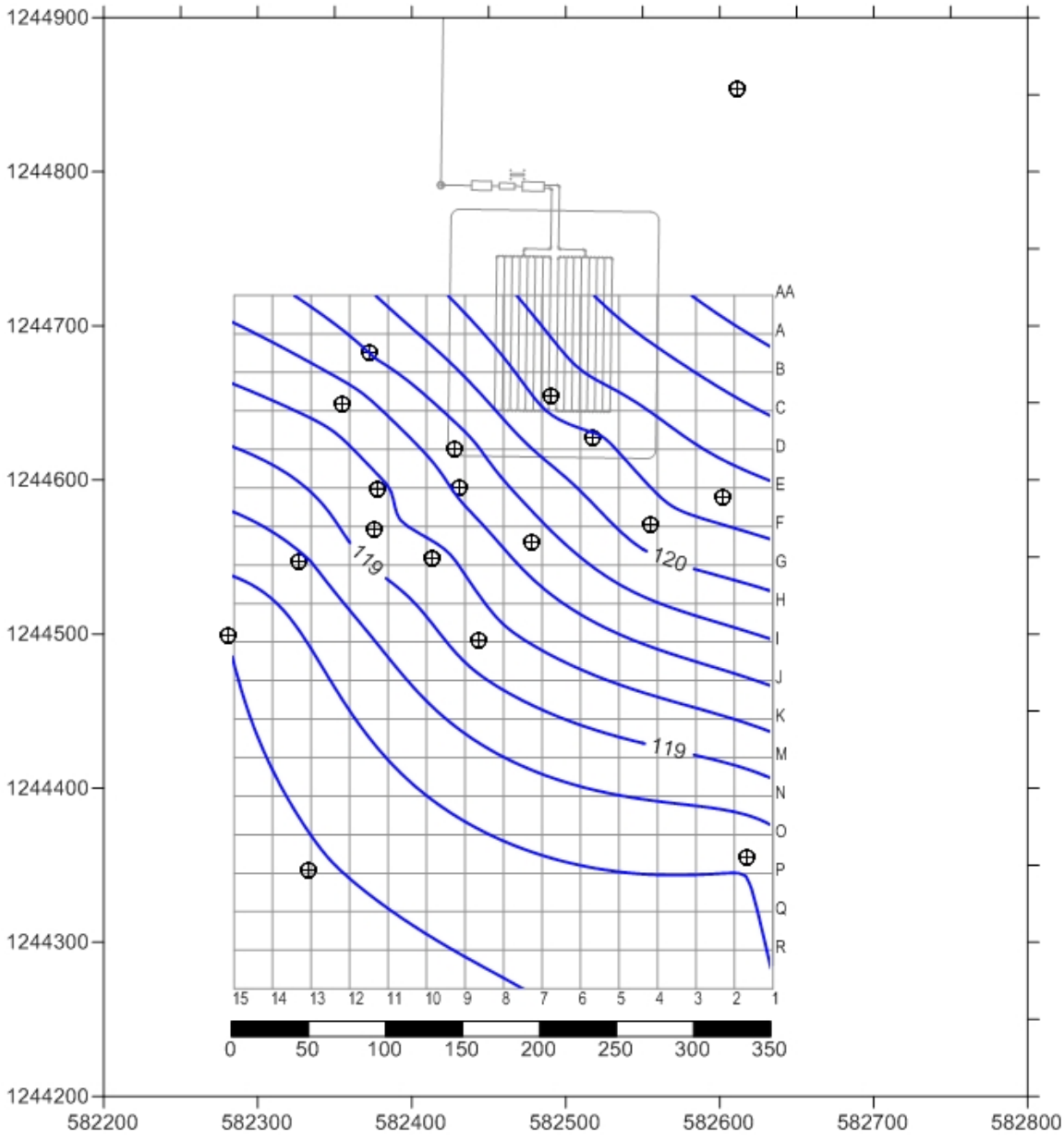

Figure 6
Surficial Groundwater Contours on December 9, 2010

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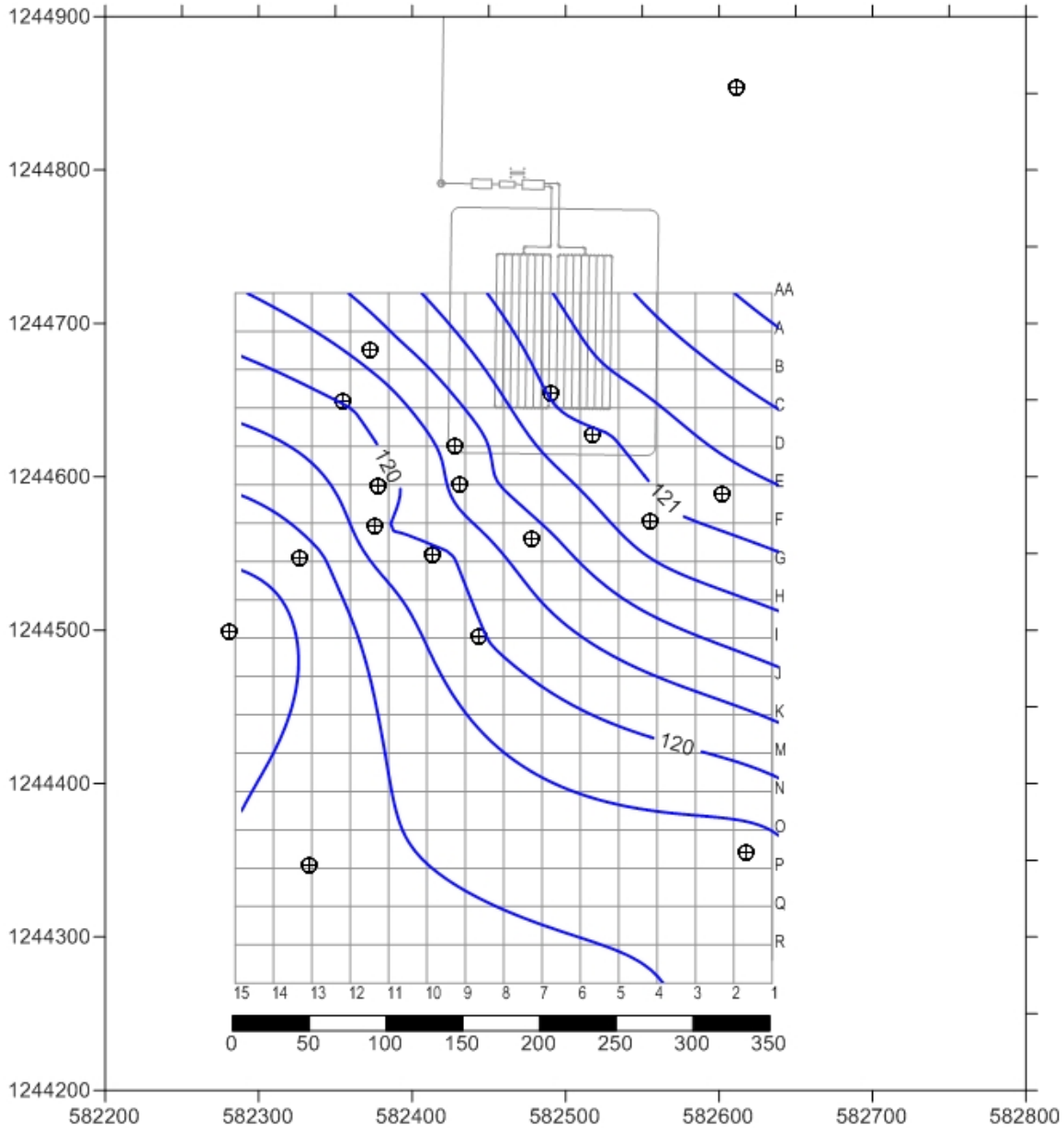

Figure 7
Surficial Groundwater Contours on February 21, 2011

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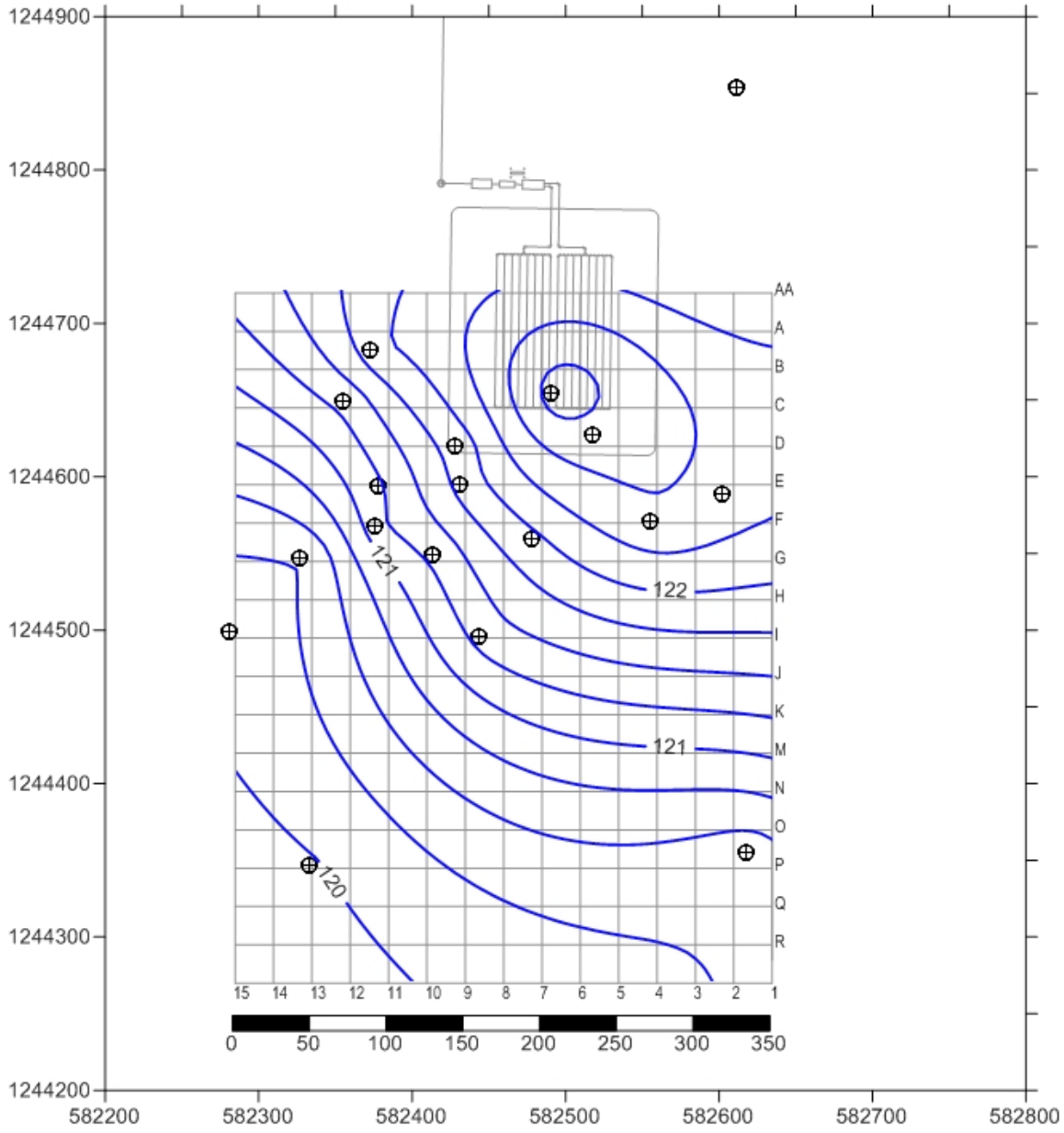

Figure 8
Surficial Groundwater Contours on April 1, 2011

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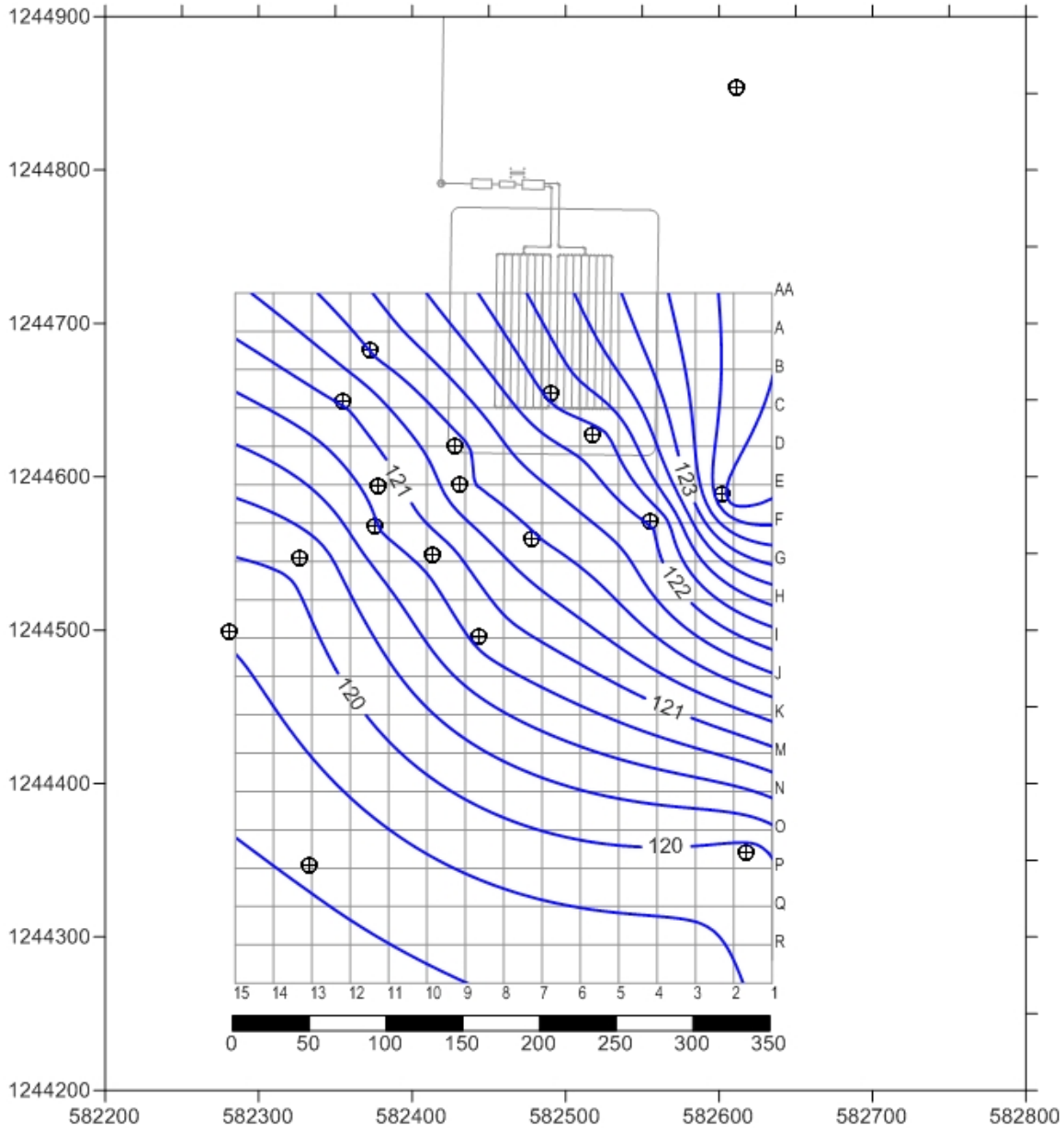

Figure 9
Surficial Groundwater Contours on April 6, 2011

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The linear velocity (v) of the groundwater can be estimated using Darcy's law as follows:

$$v = \frac{K * gradient}{n_e}$$

where K is the hydraulic conductivity, and n_e is the effective porosity. If one assumes that K for fine sand is approximately 33 ft/day and n_e for fine sand is 0.33, then the linear velocity would range from 0.66 to 0.94 ft/day. The results of the tracer test will elucidate this further.

4.3 Water Quality Analyses

4.3.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations during the March 2011 sampling event. Clearly variations were expected as the chemical composition of the groundwater varies due to the discharge of STE. However, similar to the results from the December sampling event, these variations were not large. In fact the temperature was found to range from 19.4 to 28.9 but the inter-quartile range (IQR) was between 21.9 to 23.9, pH varied from 4.3 to 7.6 with an IQR from 5.0 to 5.6, DO varied from 0.2 to 10.9 with an IQR from 0.8 to 2.2, and finally the conductivity varied from 59 to 295 with an IQR from 182 to 351 (Table 6). We don't expect large variations in field parameters at any one monitoring event; however slight seasonal variations may occur. Temperature does play a role in both the magnitude of nitrification and denitrification; however, the potential seasonal variations at the site are not expected to be significant enough for measurable rate changes. Furthermore, although slight variation in pH may occur, the bacteria responsible for denitrification are not highly sensitive to pH fluctuations, and while near neutral pH may be optimal for denitrification; research has shown that low pH levels have little to no impact on the process. Although high levels of DO may inhibit denitrification, the concentrations of DO seen at the site are only slightly above the limiting level of 1 mg/L, and thus little effect is expected. Instead, further analysis of the field parameters may provide additional information regarding plume extent. The complete field parameter data set is included in Appendix E.

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Table 6
Field Parameters

	Dec 9, 2010		March 29 - April 4, 2011	
Field Parameters	**Range**	**IQR**	**Range**	**IQR**
Temperature (°C)	20.7 - 27.6	21.8 - 22.7	19.4 - 28.9	21.9 - 23.9
pH	4.2 - 5.7	4.8 - 5.0	4.3 - 7.6	5.0 - 5.6
DO (mg/L)	0.4 - 3.3	0.8 - 1.4	0.2 - 10.9	0.8 - 2.2
Specific conductance (µS)	163 - 649	292 - 342	59 - 295	182 - 351

4.3.2 Correlations

Correlations between various field parameters and nitrogen concentration were conducted to determine if for example the NOX concentration could be estimated in the absence of actual field data. Such estimates can then provide insight into expected nitrogen removal or can be used to approximate a difficult to obtain parameter values. Based on the data collected to date, no strong correlations have been observed between different parameters with the exception of the relationship between specific conductance and the concentration of NOX. Figure 10 illustrates the correlation between specific conductance and the concentration of NOX based on the March data. Of note, the relationship is similar to that observed in December.

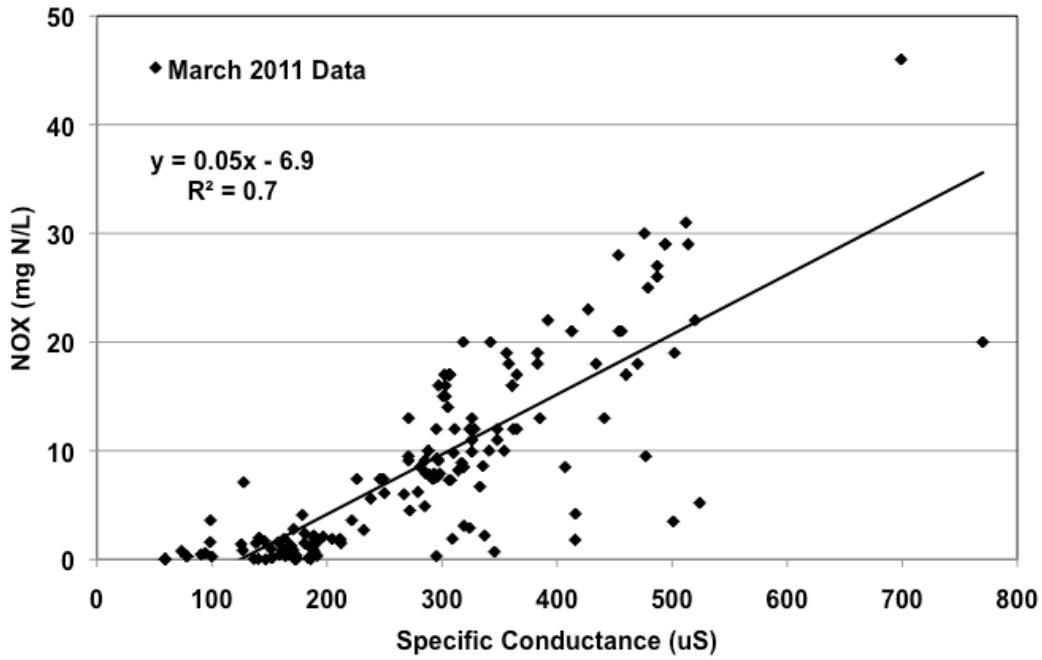

Figure 10
Correlation Between the Specific Conductance (uS) and Concentrations of Nitrate/Nitrite (mg-N/L)

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4.3.3 Analytical Parameters

In addition to measuring field parameters, all samples were analyzed for total alkalinity (as $CaCO_3$), total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH3-N), and nitrate/nitrite nitrogen (NOX-N), and at some of the locations total organic carbon (TOC), dissolved organic carbon (DOC) and chemical oxygen demand (COD) were included. Initial analyses of these parameters suggest that low COD and low DOC concentrations correlate to higher levels of NOX. Additional analysis of the different nitrogen species and carbon content may elucidate nitrogen transformation within the plume. Although the March sampling event did give further insight into the existing nitrogen plume, it did not provide enough information to make any conclusive interpretations. Of note, elevated concentrations of NOX (12 mg-N/L in December and 9.1 mg-N/L in March) have been observed in PZ24-BKG-26, one of the background wells. We are still evaluating if this may lead to any potential interferences in plume delineation. The complete water quality analytical results for Sample Event No. 2 are listed in Table 1, Appendix E, and the statistical summary of the water quality is presented in Table 1, Appendix F. The laboratory report containing the raw analytical data is included in Appendix G.

4.3.4 Nitrate/Nitrite Concentrations with Depth

Although great care was taken to install the drive points at specific depths (e.g. 5, 7 and 9 feet below ground surface [bgs] in June of 2010, and 14, 21 and 27 feet bgs during the November drilling event), the reality is that the points are located at all different elevations from 92.85 feet to 120.82 feet. **Surfer** is an excellent tool for contour mapping; however, as it cannot project a 3-dimensional view of concentrations with depth it was deemed necessary to “lump” the concentrations of NOX from the different sampling locations into “slices” of similar depth and then graph allowing the different “slices” to be compared. With 121 drive points installed at different depths below the ground surface at 63 different locations outside of the mound, deciding on a logical way to separate the drive points into a few select “slices” that would represent a selection of elevation depths provided a challenge.

Samples were collected at 62 locations during the December sampling event. Based on the distribution of points with depth, four “slices” were chosen for the December data. The bottom three slices were separated into five-foot intervals, and the top group was divided into a ten-foot interval as that group comprises primarily drive points within the spodic layer. A **Surfer** schematic illustrating the “slices” of NOX concentration with depth from December 9, 2010 is presented in Figure 11. During the comprehensive sampling event in March 2011, samples were collected at all drive point locations. As a result of

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the additional data points, the data could be divided into five “slices” separated into five-foot intervals, as shown in Figure 12.

Similar to the results in December, the results from the March sampling event show that the NOX plume appears to be confined in a southwesterly direction from the center of the mound. The lowest concentrations are at the shallow depths, which coincide with the top of the spodic layer (or possibly above), although slightly elevated concentrations were present near the mound between D7 and D9 (Figure 12). The highest concentrations were found at 110-115 feet above sea level close to the mound from approximately D9 and north along the 9-transect, and at 105-110 feet above sea level further away from the mound near F11 (Figure 12). Similar results were observed during the December sampling event as well (Figure 11). Of note, one data point at AA9 was omitted when graphing as the extremely high concentration of NOX (46 mg-N/L) highly skewed the output in the **Surfer** plot.

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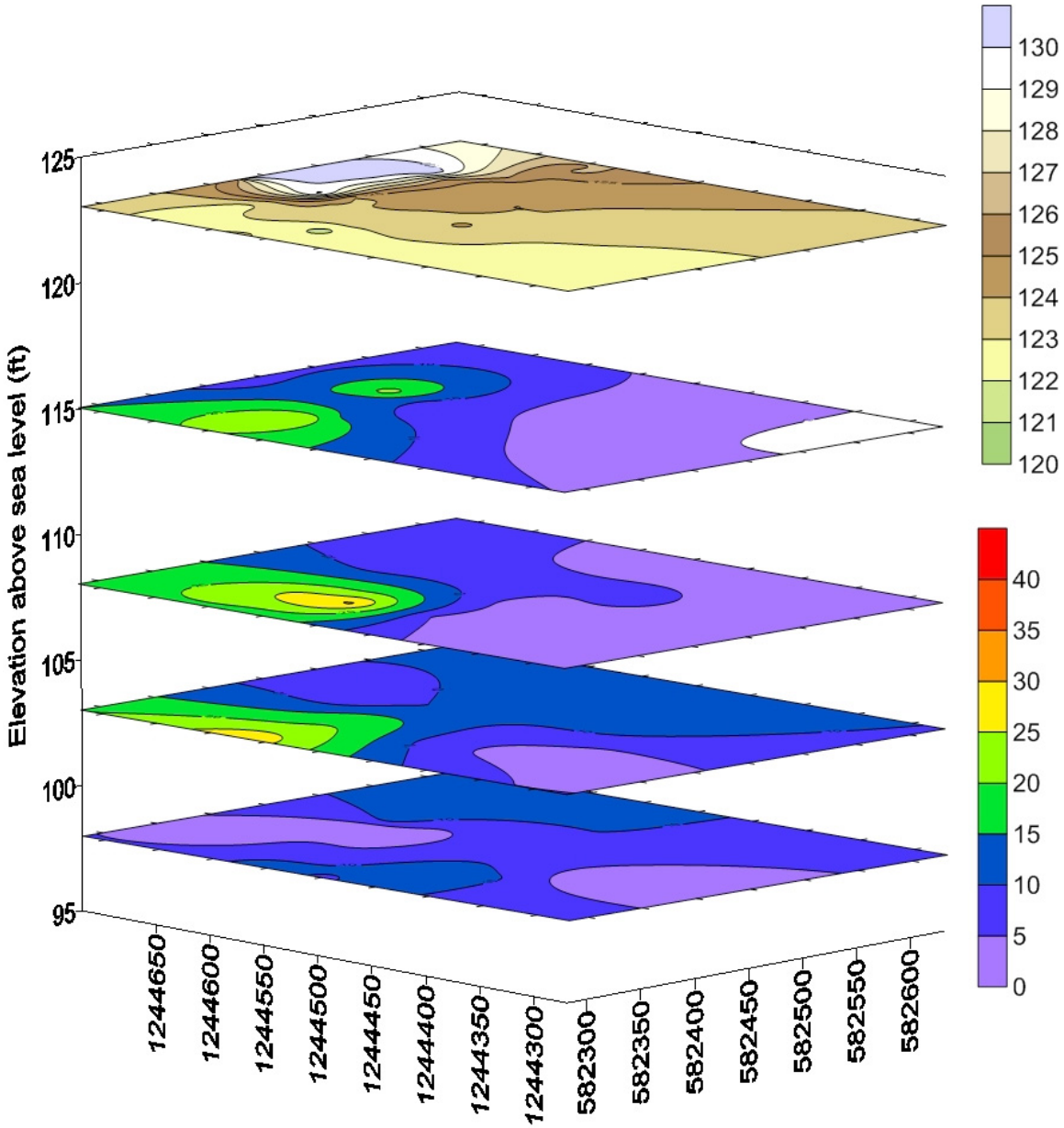

Figure 11

A layered schematic (using Surfer) illustrating NOX concentrations in the subsurface at four different elevation intervals (based on the December 2010 sampling event). The top slice provides a contour map of the surface elevation. UTM coordinates are provided to correlate the schematic to Figure 1.

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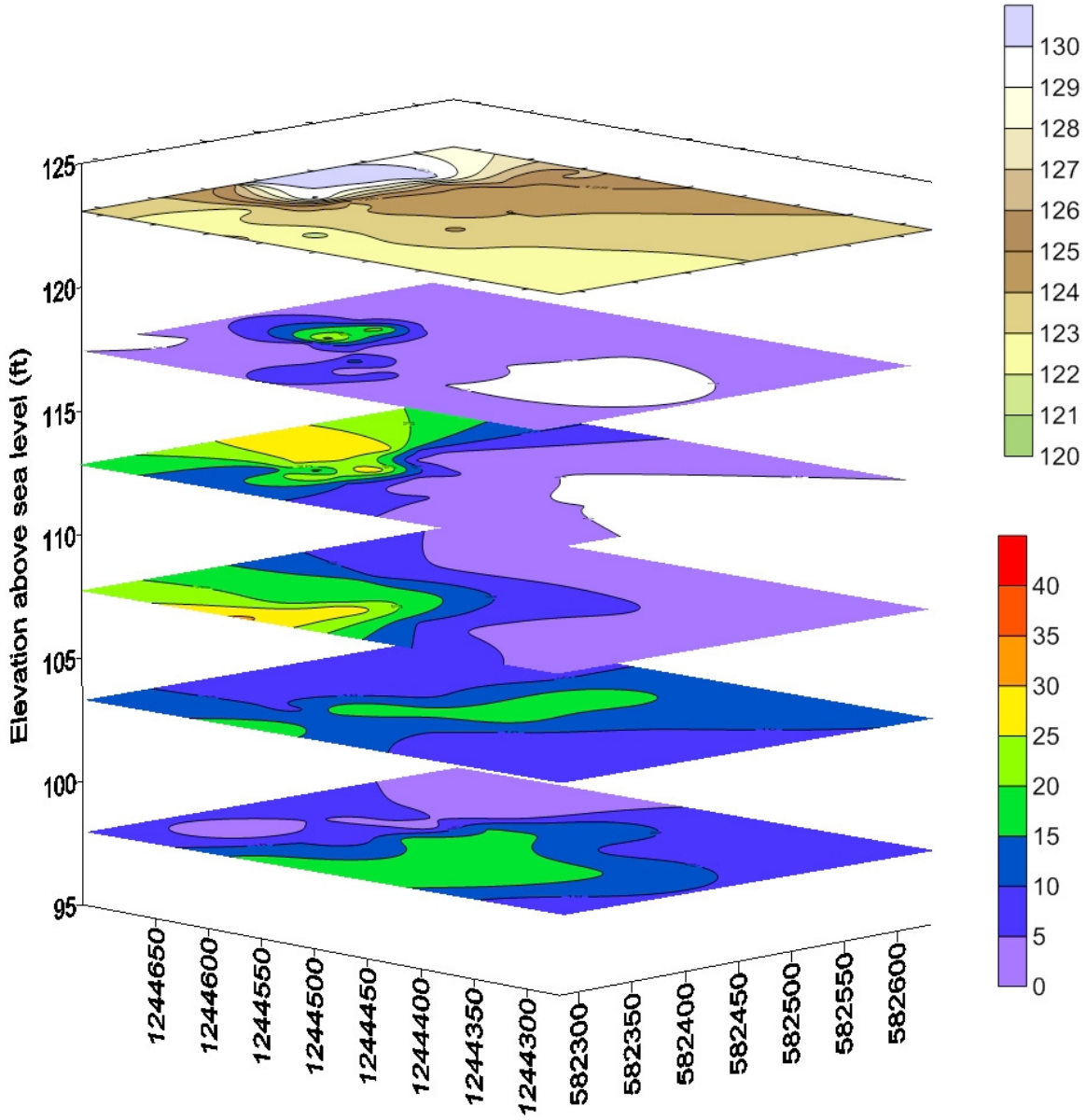

Figure 12

A layered schematic (using Surfer) illustrating NOX concentrations in the subsurface at four different elevation intervals (based on the March 2011 sampling event). The top slice provides a contour map of the surface elevation. UTM coordinates are provided to correlate the schematic to Figure 1.

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5.0 GCREC Data Summary Report No. 2: Summary and Recommendations

5.1 Summary

The results of the data collected to date has provided additional understanding of the extent of the spodic layer, has provided additional information to allow for estimations of groundwater flow, gradient and velocity, and provided additional insights into the general trend of the NOX plume. Results of Sample Event No. 2 indicate that:

- Although the groundwater levels fluctuates, the direction of flow remains constant at 220 degrees to true north.
- The groundwater gradient has been found to range from 0.0066 to 0.0094.
- Initial analysis suggests that the groundwater velocity range is from 0.66 to 0.94 ft/day.
- Additional verification of the elevation of the top of the spodic layer show that it follows the same trend as that of the groundwater.
- A good correlation has been established between specific conductance and concentrations of NOX (R^2=0.7).
- The nitrogen plume appears to be in a southwesterly direction with elevated concentrations in the spodic layer closer to the mound and higher elevations just below the spodic layer further away from the mound. The concentration is lowest just above the confining layer.
- Any potential interference from the elevated concentrations of NOX observed in PZ24 is still being evaluated.

5.2 Recommendations

The results of Sample Event No. 2 will be used to gain additional insights into the NOX plume and provide additional information needed for the development of the simple groundwater model in Task D. The project team will continuously evaluate all results including those that particularly result from implementation of the recommendations and make further adaptations as needed.

Following is a list with select recommendations:

- Additional analyses of field parameters will give a better understanding of if and how they may correlate to nitrogen reduction.
- Continuous groundwater level monitoring in combination with tracer tests, will provide information needed to determine the necessary parameters for model development.
- Comprehensive sampling at the site will provide additional information that is needed for plume identification and for nitrogen fate and transport determination.

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Appendix A: GCREC Mound Wastewater Flow Data

Table A.1
GCREC Mound Metered Wastewater Flow Data

Date Range	Flow Meter Totalized Pump 1 to GCREC Mound (avg. gpd)	Flow Meter Totalized Pump 2 to GCREC Mound (avg. gpd)	Total Recorded Flow (avg. gpd)
Before A/C Condensate Diversion			
12/21/10 – 7/16/10	1,650	591	2,241
After A/C Condensate Diversion			
7/19/10 – 4/6/11	929	1,072	2,001

Table A.2
Summary of Daily Wastewater Flows (PLC Recorded)

	Date Range	Average Recorded Flow (gpd)	Std. Dev.	MIN (gpd)	MAX (gpd)
Before A/C Condensate Diversion					
Pump 1 to Mound	6/14/10 – 7/16/10	5,422	1,565	3,013	9,117
Pump 2 to Mound		-	-	-	-
Sum of Both Pumps		5,422	1,565	3,013	9,117
After A/C Condensate Diversion					
Pump 1 to Mound	7/16/10 – 4/6/11	927	491	146	3,216
Pump 2 to Mound		1,076	516	0	3,090
Sum of Both Pumps		2,003	924	584	5,730

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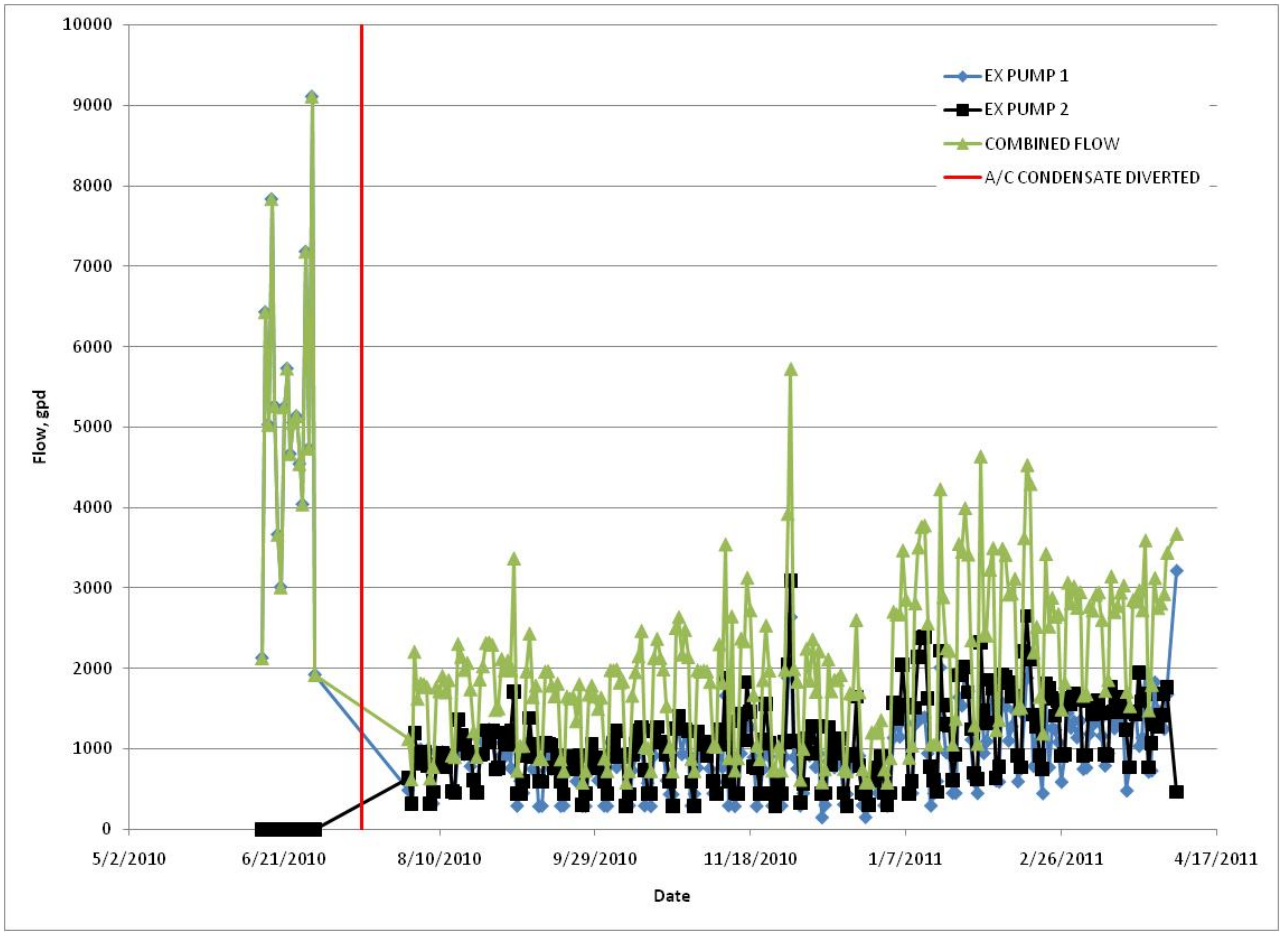

Figure A.1
PLC Recorded Daily Wastewater Flows
(6/14/10 – 4/6/11)

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Appendix B: GCREC Weather Station Data

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Table B.1
Monthly Recorded Meteorological Data

Period	60cm T avg (F)	60cm T min (F)	60cm T max (F)	Tsoil avg -10cm (F)	Tsoil min(avg) -10cm (F)	Tsoil max(avg) -10cm (F)	2m DewPt avg (F)	RelHum avg 2m (pct)	2m Rain tot (in)	2m Rain max over 15min(in)	10m Wind avg (mph)	10m Wind max (mph)	WDir avg 10m (deg)	ET avg (in)
Jan-10	53.10	23.97	82.38	59.67	51.13	66.63	44.57	76	3.19	0.57	7.60	32.80	348	0.05
Feb-10	53.75	30.84	78.96	59.86	54.32	65.75	43.97	74	2.22	0.47	7.85	36.13	348	0.07
Mar-10	59.24	32.89	82.26	62.09	55.31	68.11	48.75	73	6.15	0.44	8.25	38.27	289	0.10
Apr-10	69.78	44.74	88.54	70.78	63.00	75.72	59.50	74	2.79	0.52	7.46	44.17	94	0.15
May-10	77.78	62.37	93.63	79.11	73.17	83.97	68.62	77	0.89	0.13	6.75	31.10	126	0.18
Jun-10	80.91	65.84	99.09	82.32	76.69	88.63	72.87	80	8.25	1.30	5.85	50.47	116	0.19
Jul-10	80.67	68.00	96.21	82.58	77.49	87.03	74.05	82	7.30	0.48	5.95	35.37	103	0.18
Aug-10	80.54	70.59	96.87	82.63	79.11	87.85	75.03	85	13.51	1.74	5.78	43.53	154	0.16
Sep-10	78.91	63.43	95.88	80.83	78.17	83.39	72.11	82	3.42	0.55	6.33	41.60	84	0.16
Oct-10	71.98	51.24	93.00	74.97	71.83	78.62	61.55	73	0.01	0.01	5.56	32.00	31	0.11
Nov-10	65.75	39.95	86.77	69.47	64.33	75.34	56.97	76	1.24	0.16	6.52	30.53	55	0.07
Dec-10	50.64	22.86	78.37	60.71	54.61	71.33	39.83	71	0.50	0.05	7.33	36.77	354	0.04
Jan-11	57.65	29.23	79.54	61.34	56.86	65.07	49.01	77	4.13	0.49	7.08	44.07	319	0.06
Feb-11	62.95	34.76	85.21	63.94	57.76	69.58	54.40	78	0.47	0.07	6.38	35.57	75	0.09
Mar-11	66.56	39.12	88.66	68.35	61.45	73.83	56.59	75	6.89	0.47	7.41	44.13	82	0.12

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Appendix C: Sample Identification

Table C.1
GCREC Mound Sample Identification

	Grid Location	Sample Identification	Notes	Bottom Elevation (ft)
1	Lift Station	STE PumpTank	Wastewater Sample	N/A
2	Bkgd, North	PZ01-BKG-9	1 1/4” Standpipe Piezometer, 4’ screen	120.33
3	Bkgd, North	PZ04-BKG-9	1 1/4” Standpipe Piezometer, 4’ screen	118.66
4	Bkgd, North	PZ24-BKG-26	2" Standpipe Piezometer, 5' screen	101.41
5	Bkgd, East	PZ05-BKG-9	1 1/4" Standpipe Piezometer, 4' screen	117.39
6	Bkgd, NW	PZ06-BKG-12	1 1/4" Standpipe Piezometer, 4' screen	118.10
7	AA9	DP-AA9-14	SST Drive Point	110.68
8	AA9	DP-AA9-22	SST Drive Point	103.08
9	AA9	DP-AA9-27	SST Drive Point	98.28
10	A6.5	PZ25-A6.5-10	3/4" Standpipe Piezometer, 3.5' screen	119.62
11	A11	PZ15-A11-6	3/4" Standpipe Piezometer, 5' screen	118.84
12	CD6.5	PZ10-CD6-13	3/4" Standpipe Piezometer, 5' screen	116.03
13	C11	DP-C11-8	SST Drive Point	116.18
14	C12	PZ16-C12-28	3/4" Standpipe Piezometer, 1' screen	94.75
15	D5.5	PZ07-D05-7	1 1/4" Standpipe Piezometer, 4' screen	118.89
16	D7	DP-D07-5	SST Drive Point	120.82
17	D7	DP-D07-7	SST Drive Point	118.86
18	D7	DP-D07-9	SST Drive Point	116.79
19	D7.5	DP-D7.5-14	SST Drive Point	111.24
20	D7.5	DP-D7.5-20	SST Drive Point	105.31
21	D7.5	DP-D7.5-26	SST Drive Point	99.24
22	D8	DP-D08-9	SST Drive Point	116.31
23	D9	DP-D09-6	SST Drive Point	118.35
24	D9	DP-D09-8	SST Drive Point	116.45
25	D9	DP-D09-15	SST Drive Point, taped to PZ riser	109.45
26	D9	DP-D09-21	SST Drive Point, taped to PZ riser	103.45
27	D9	DP-D09-27	SST Drive Point, taped to PZ riser	97.45
28	D9	PZ23-D09-27	2" Standpipe Piezometer, 5' screen	97.41

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Table C.1
GCREC Mound Sample Identification

	Grid Location	Sample Identification	Notes	Bottom Elevation (ft)
29	D10	DP-D10-8	SST Drive Point	116.31
30	D11	DP-D11-11	SST Drive Point	113.29
31	D12	DP-D12-11	SST Drive Point	112.46
32	E2	DP-E02-6	SST Drive Point	119.55
33	E2	DP-E02-8	SST Drive Point	117.55
34	E3	DP-E03-10	SST Drive Point	115.26
35	E4	DP-E04-6	SST Drive Point	119.71
36	E4	DP-E04-8	SST Drive Point	117.71
37	E5	DP-E05-6	SST Drive Point	118.58
38	E6	DP-E06-6	SST Drive Point	118.86
39	E6	DP-E06-8	SST Drive Point	116.86
40	E7	DP-E07-10	SST Drive Point	114.74
41	E8	DP-E08-6	SST Drive Point	118.41
42	E8	DP-E08-8	SST Drive Point	116.41
43	E9	PZ11-E09-10	3/4" Standpipe Piezometer, 5' screen	114.56
44	E10	DP-E10-6	SST Drive Point	118.21
45	E11	DP-E11-12	SST Drive Point	111.98
46	E11	PZ21-E11-26	2" Standpipe Piezometer, 5' screen	111.98
47	E11	PZ22-E11-15	3/4" Standpipe Piezometer, 10' screen	111.98
48	E12	DP-E12-10	SST Drive Point	113.22
49	E12	DP-E12-15	SST Drive Point	107.75
50	E12	DP-E12-22	SST Drive Point	101.65
51	E12	DP-E12-28	SST Drive Point	95.80
52	F3	DP-F03-8	SST Drive Point	116.44
53	F4	PZ13-F04-8	3/4" Standpipe Piezometer, 5' screen	116.31
54	F4	DP-F04-17	SST Drive Point	108.06
55	F4	DP-F04-22	SST Drive Point	102.95
56	F4	DP-F04-32	SST Drive Point	92.85
57	F5	DP-F05-5	SST Drive Point	119.94
58	F5	DP-F05-31	SST Drive Point	93.89
59	F6	DP-F06-10	SST Drive Point	115.03
60	F7	DP-F07-6	SST Drive Point	118.25

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Table C.1
GCREC Mound Sample Identification

	Grid Location	Sample Identification	Notes	Bottom Elevation (ft)
61	FG7	PZ08-FG7-6	1 1/4" Standpipe Piezometer, 4' screen	118.25
62	F8	DP-F08-14	SST Drive Point	110.43
63	F8	DP-F08-20	SST Drive Point	103.96
64	F8	DP-F08-28	SST Drive Point	96.18
65	F9	DP-F09-5	SST Drive Point	118.98
66	F10	DP-F10-11	SST Drive Point	112.93
67	F11	DP-F11-11	SST Drive Point	112.68
68	F11	DP-F11-15	SST Drive Point	108.88
69	F11	DP-F11-18	SST Drive Point	105.73
70	F11	DP-F11-21	SST Drive Point	102.93
71	F11	DP-F11-24	SST Drive Point	99.88
72	F11	DP-F11-27	SST Drive Point	96.73
73	F12	DP-F12-10	SST Drive Point	112.77
74	F15	DP-F15-14	SST Drive Point	108.81
75	F15	DP-F15-20	SST Drive Point	102.84
76	F15	DP-F15-26	SST Drive Point	97.00
77	G5	DP-G05-6	SST Drive Point	118.51
78	G6	DP-G06-7	SST Drive Point	116.95
79	G7	DP-G07-13	SST Drive Point	111.63
80	G7	DP-G07-15	SST Drive Point	109.56
81	G7	DP-G07-17	SST Drive Point	106.76
82	G7	DP-G07-21	SST Drive Point	103.31
83	G7	DP-G07-24	SST Drive Point	100.51
84	G7	DP-G07-27	SST Drive Point	97.61
85	G8	DP-G08-5	SST Drive Point	119.54
86	G9	DP-G09-11	SST Drive Point	112.99
87	G9.75	PZ19-G10-26	2" Standpipe Piezometer, 5' screen	97.55
88	G9.75	PZ20-G10-15	3/4" Standpipe Piezometer, 10' screen	108.50
89	G11	DP-G11-8	SST Drive Point	115.27
90	G12	DP-G12-9	SST Drive Point	114.44
91	G12	DP-G12-15	SST Drive Point	108.37
92	G12	DP-G12-18	SST Drive Point	105.27

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Table C.1
GCREC Mound Sample Identification

	Grid Location	Sample Identification	Notes	Bottom Elevation (ft)
93	G12	DP-G12-21	SST Drive Point	102.32
94	G12	DP-G12-24	SST Drive Point	99.72
95	G12	DP-G12-27	SST Drive Point	96.37
96	G13	PZ14-G13-7	1 1/4" Standpipe Piezometer, 4' screen	115.11
97	H5	DP-H05-7	SST Drive Point	117.13
98	H6	DP-H06-7	SST Drive Point	117.33
99	H7	DP-H07-8	SST Drive Point	116.32
100	H8	DP-H08-10	SST Drive Point	113.84
101	H9	DP-H09-12	SST Drive Point	111.74
102	H10	DP-H10-11	SST Drive Point	112.68
103	H11	PZ03-H11-6	1 1/4" Standpipe Piezometer, 4' screen	121.47
104	H12	DP-H12-5	SST Drive Point	118.01
105	I6	DP-I06-14	SST Drive Point	110.24
106	I6	DP-I06-20	SST Drive Point	103.99
107	I6	DP-I06-26	SST Drive Point	97.94
108	I7	DP-I07-8	SST Drive Point	115.67
109	I8	DP-I08-5	SST Drive Point	118.56
110	I8.5	PZ09-I08-5	1 1/4" Standpipe Piezometer, 4' screen	118.93
111	I9	DP-I09-11	SST Drive Point	112.96
112	I10	DP-I10-6	SST Drive Point	117.72
113	I11	DP-I11-10	SST Drive Point	113.50
114	I12	DP-I12-6	SST Drive Point	117.54
115	I15	PZ17-I15-26	3/4" Standpipe Piezometer,1' screen	97.09
116	J8	DP-J08-6	SST Drive Point	118.02
117	J9	DP-J09-12	SST Drive Point	112.05
118	J9	DP-J09-14	SST Drive Point	109.61
119	J9	DP-J09-20	SST Drive Point	103.36
120	J9	DP-J09-26	SST Drive Point	97.11
121	J10	DP-J10-6	SST Drive Point	117.32
122	J11	DP-J11-12	SST Drive Point	111.99
123	J12	DP-J12-13	SST Drive Point	110.44
124	J12	DP-J12-15	SST Drive Point	108.26

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Table C.1
GCREC Mound Sample Identification

	Grid Location	Sample Identification	Notes	Bottom Elevation (ft)
125	J12	DP-J12-20	SST Drive Point	102.61
126	J12	DP-J12-27	SST Drive Point	96.36
127	K10	DP-K10-7	SST Drive Point	116.41
128	K11	DP-K11-13	SST Drive Point	110.43
129	K12	DP-K12-5	SST Drive Point	117.68
130	M7	DP-M07-15	SST Drive Point	108.98
131	M7	DP-M07-21	SST Drive Point	102.65
132	M7	DP-M07-27	SST Drive Point	96.95
133	M12	DP-M12-10	SST Drive Point	112.79
134	N12	DP-N12-14	SST Drive Point	108.40
135	N12	DP-N12-18	SST Drive Point	104.75
136	N12	DP-N12-21	SST Drive Point	101.73
137	N12	DP-N12-24	SST Drive Point	98.75
138	N12	DP-N12-27	SST Drive Point	95.63
139	O10	DP-O10-12	SST Drive Point	110.71
140	O10	DP-O10-18	SST Drive Point	104.56
141	O10	DP-O10-24	SST Drive Point	98.56
142	PQ1.75	PZ02-P02-9	1 1/4" Standpipe Piezometer, 4' screen	115.24
143	Q15	DP-Q15-15	SST Drive Point	108.20
144	Q15	DP-Q15-21	SST Drive Point	102.29
145	Q15	DP-Q15-26	SST Drive Point	96.40
146	R12	PZ18-R12-26	3/4" Standpipe Piezometer, 1' screen	96.56

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Appendix D: Groundwater Elevations

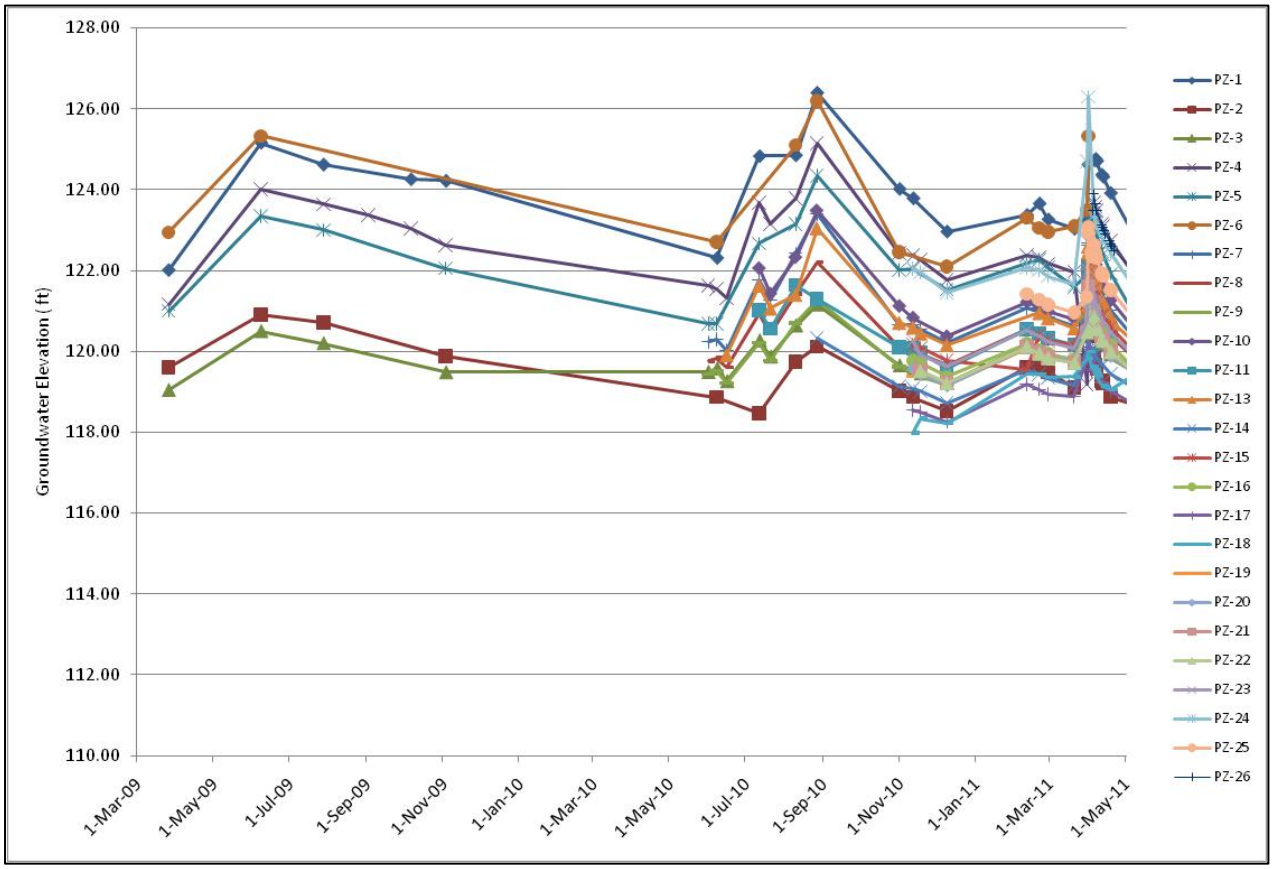

Figure D.1
Groundwater Elevations

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Table D.1
Groundwater Elevations

ID	PZ-1	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	PZ-8	PZ-9	PZ-10	PZ-11	PZ-13	PZ-14	PZ-15	PZ-16	PZ-17	PZ-18	PZ-19	PZ-20	PZ-21	PZ-22	PZ-23	PZ-24	PZ-25	PZ-26
Location	BKG, N	PG1.75	H11	BKG, N	BKG, E	BKG, NW	D5.5	FG7	I8.5	CD6.5	E9	F4	G13	A11	C12	I15	R12	G9.75	G9.75	E11	E11	D9	BKG, N	C-Mound	EF2
26-Mar-09	122.02	119.61	119.04	121.17	121.00	122.95																			
8-Jun-09	125.16	120.92	120.50	124.01	123.34	125.33																			
28-Jul-09	124.62	120.72	120.20	123.64	123.00																				
2-Sep-09				123.37																					
6-Oct-09	124.26			123.04																					
3-Nov-09	124.22	119.88	119.48	122.63	122.06																				
1-Jun-10			119.49	121.63	120.69		120.23	119.76	119.44																
8-Jun-10	122.32	118.87	119.58	121.55	120.68	122.70	120.29	119.84	119.52																
16-Jun-10			119.26	121.31			120.03	119.61	119.22			119.91													
12-Jul-10	124.83	118.47	120.27	123.68	122.67		121.77	120.94	120.22	122.06	121.01	121.63													
21-Jul-10			119.87	123.16			121.28	120.44	119.77	121.43	120.56	121.06													
10-Aug-10	124.85	119.74	120.64	123.79	123.15	125.10	122.42	121.42	120.70	122.33	121.64	121.40													
27-Aug-10	126.39	120.12	121.16	125.14	124.35	126.19	123.39	122.21	121.28	123.49	121.29	123.05	120.32												
1-Nov-10	124.02	119.03	119.65	122.43	122.01	122.46	120.67	120.10	119.62	121.12	120.10	120.71	119.13												
12-Nov-10	123.79	118.87	119.54	122.37	122.05		120.67	120.04	119.49	120.83	120.07	120.59	119.07	120.16	119.78	118.56	117.98	119.38	119.58			120.27	122.05		
18-Nov-10			119.45	122.26			120.56	119.93	119.38		119.96	120.45	119.01	120.09	119.71	118.49	118.34	119.45	119.45	119.53	119.51	119.91	121.96		
9-Dec-10	122.97	118.52	119.21	121.76	121.53	122.09	120.22	119.65	119.15	120.37	119.57	120.16	118.72	119.77	119.37	118.26	118.22	119.18	119.17	119.22	119.21	119.64	121.46		
11-Feb-11	123.38	119.60	120.13	122.38	122.18	123.30	121.06	120.54	120.08	121.22	120.55		119.55	119.56	120.20	119.19	119.44	120.08	120.10	120.10	120.11	120.51	122.07	121.42	
21-Feb-11	123.66	119.62	120.01	122.33	122.27	123.05	120.98	120.45	120.03	121.10	120.44	120.95	119.44	120.40	120.03	119.06	119.44	119.97	119.98	119.96	119.94	120.37	122.01	121.28	
28-Feb-11	123.27	119.48	119.90	122.17	122.08	122.95	120.85	120.33	119.90	120.98	120.33	120.82	119.34	120.28	119.93	118.94	119.35	119.85	119.86	119.85	119.83	120.24	121.86	121.15	
21-Mar-11	123.04	119.11	119.80	121.97	121.60	123.10	120.64	120.14	119.75	120.79	120.15	120.58	119.17	120.16	119.81	118.88	119.37	119.73	119.76	119.71	119.71	120.07	121.65	120.97	
31-Mar-11	123.24	119.78	120.60	119.19	121.87	123.50	121.10	120.81	120.53	121.21	120.85	121.12	119.99	120.82	120.53	119.82	119.82	120.48	120.49	120.48	120.47	120.77	124.70	121.35	
1-Apr-11							122.67	122.17	121.68	122.86	122.13	122.60		122.10	121.41			121.58	121.61	121.60	121.48	121.98		122.92	
1-Apr-11	124.62	120.37	121.24	120.73	123.32	125.33	122.63	121.98	121.39	122.92	121.91	122.45	120.28	121.96	121.36	120.10	119.99	121.35	121.37	121.27	121.28	121.90	126.30	123.08	
4-Apr-11		119.74	120.60				121.96	121.25	120.64	122.17	121.25	121.82	119.93	121.36	120.91	119.57	119.57	120.66	120.67	120.69	120.68	121.25		122.46	
4-Apr-11		119.68	120.54				121.90	121.18	120.56	122.14	121.20	121.75	119.90	121.33	120.81	119.51	119.63	120.59	120.57	120.63	120.63	121.20		122.44	
5-Apr-11			120.50				121.82	121.11	120.51	122.04	121.10	121.65	119.86	121.25	120.76			120.55	120.57	120.58	120.57	121.11		122.34	123.49
6-Apr-11	124.73	119.90	120.79	123.67	123.17		122.17	121.49	120.86	122.36	121.48	122.06	120.08	121.56	121.04	119.78	119.55	120.88	120.89	120.89	120.88	121.46	123.36	122.62	123.89
7-Apr-11	124.76	119.66	120.55	123.58	123.03		121.94	121.21	120.57	122.15	121.22	121.80	119.92	121.35	120.86	119.54	119.45	120.62	120.63	120.66	120.65	121.21	123.26	122.43	123.65
8-Apr-11	124.71	119.56	120.45	123.49	122.90		121.80	121.08	120.46	122.02	121.11	121.65	119.85	121.23	120.73	119.45	119.39	120.50	120.53	120.56	120.54	121.10	123.18	122.31	123.48
12-Apr-11	124.37	119.27	120.19	123.15	122.49		121.46	120.77	120.17	121.67	120.81	121.28	119.69	120.92	120.47	119.24	119.15	120.25	120.27	120.31	120.31	120.81	122.85	121.93	123.11
13-Apr-11	124.32	119.22	120.18	123.10	122.41		121.40	120.71	120.12	121.61	120.76	121.23	119.66	120.89	120.43	119.22	119.13	120.20	120.21	120.28	120.26	120.77	122.80	121.88	123.06
14-Apr-11							121.33					121.16													122.98
15-Apr-11												121.09													122.90
18-Apr-11												120.91													122.73
19-Apr-11	123.92	118.87	119.93	122.73	121.92		121.03	120.37	119.82	121.27	120.44	120.84	119.44	120.60	120.16	119.01	119.05	119.91	119.90	119.99	119.98	120.46	122.44	121.52	122.65
20-Apr-11												120.77													122.61
22-Apr-11												120.68													122.49

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Appendix E: Water Quality Analytical Results

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Table E.1
Water Quality Analytical Results
(March 29 – April 4, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TSS (mg/L)	TS (% by wt.)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg-N/L)	TKN (mg-N/L)	Organic N (mg-N/L)	NH3-N (mg-N/L)	Nox-N (mg-N/L)	TIN (mg-N/L)	TP (mg-P/L)	Fecal (1cfu/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4	B	Ca	Fe	Mg	Mn	K	Na
STE Sample																																			
STE-EX Pump Tank	04-Apr-11 11:40	G	26.4	6.8	270	0.30	830	18	0.03	83		41.03	41	8.00	33	0.03	33.03	5.9	200			4.6	47	0.03	0.01	3.2	21	0.15	58	7	18	0.081	15	43
STE-EX Pump Tank-D	04-Apr-11 11:50	G	26.4	6.8	290	0.30	830	18	0.04	87		43.03	43	7.00	36	0.03	36.03	5.1	200			4.4	48	0.03	0.01	3.2	22	0.15	53	1.2	16	0.070	14	39
Drivepoints																																			
DP-AA9-14	30-Mar-11 08:55	G	23.0	5.0	4.9	0.99	699					48.60	2.6	2.58	0.021	46	46.02																		
DP-AA9-22	30-Mar-11 09:10	G	23.8	5.3	6.9	0.77	286					9.10	1.2	1.16	0.041	7.9	7.94																		
DP-AA9-27	30-Mar-11 09:30	G	23.9	5.2	3.0	0.82	288					11.10	1.1	1.06	0.044	10	10.04																		
DP-AA9-27-D	30-Mar-11 09:35	G	23.9	5.2	4.0	0.82	288					10.46	0.46	0.46	0.005	10	10.01																		
DP-C11-8	30-Mar-11 08:30	G	21.8	5.9	35	3.50	319					4.60	1.5	1.41	0.09	3.1	3.19																		
DP-D07-5	30-Mar-11 11:20	G	24.1	6.0	14	4.86	326					13.00	2.0	2.00	0.005	11	11.01																		
DP-D07-5-D	30-Mar-11 11:15	G	24.1	6.0	11	4.86	326					12.60	1.6	1.60	0.005	11	11.01																		
DP-D07-7	30-Mar-11 11:45	G	23.3	4.7	2.0	0.77	365				20	13.60	1.6	1.59	0.011	12	12.01	0.015		1.7	1.4	0.12	23	12	0.01	0.010	53	0.096	27	0.054	5.4	0.008	8.0	20
DP-D07-9	30-Mar-11 12:05	G	24	4.5	2.0	4.50	392					23.80	1.8	1.79	0.007	22	22.01																		
DP-D7.5-14	30-Mar-11 11:10	G	23.8	5.0	4.0	0.67	514					32.20	3.2	3.19	0.009	29	29.01																		
DP-D7.5-20	30-Mar-11 11:40	G	25	5.3	5.9	1.26	296				10	8.90	1.3	1.30	0.005	7.6	7.61	0.16		1.8	1.3	0.041	10	7.6	0.01	0.16	67	0.050	28	0.022	6.5	0.21	16	6.7
DP-D7.5-26	30-Mar-11 12:10	G	25	5.3	4.0	1.47	292					8.70	1.3	1.30	0.005	7.4	7.41																		
DP-D08-9	30-Mar-11 10:25	G	24.6	5.6	20	1.36	502				16	21.00	2.0	1.88	0.12	19	19.12	0.16			3.5	0.056	42	19	0.01	0.15	52	0.094	33	11	10	0.33	8.0	35
DP-D09-6	30-Mar-11 09:50	G	22.6	4.5	2.0	4.50	456					21.84	0.84	0.83	0.008	21	21.01																		
DP-D09-8	30-Mar-11 10:05	G	22.6	4.6	2.0	1.01	487					29.80	2.8	2.80	0.005	27	27.01																		
DP-D09-15	30-Mar-11 10:20	G	23.3	5.4	15	1.16	470					20.00	2.0	2.00	0.005	18	18.01																		
DP-D09-21	30-Mar-11 10:35	G	24.2	5.3	4.9	0.80	298					8.30	0.4	0.40	0.005	7.9	7.91																		
DP-D09-27	30-Mar-11 10:55	G	24.5	6.0	11	0.76	309					2.15	0.25	0.20	0.048	1.9	1.95																		
DP-D10-8	30-Mar-11 09:40	G	23.8	5.7	23	1.45	337					4.10	1.9	1.88	0.025	2.2	2.23																		
DP-D11-11	30-Mar-11 08:00	G	21.7	5.3	9.9	1.39	479					26.80	1.8	1.72	0.080	25	25.08																		
DP-D12-11	29-Mar-11 13:45	G	22.3	4.8	6.9	0.65	477					12.30	2.8	2.06	0.74	9.5	10.24																		
DP-E02-6	29-Mar-11 08:35	G	21.3	5.5	4.9	2.41	98.5					2.02	0.42	0.40	0.022	1.6	1.62																		
DP-E02-8	29-Mar-11 08:45	G	21.3	5.1	5.0	0.46	158.9					0.64	0.22	0.21	0.006	0.42	0.43																		
DP-E03-10	29-Mar-11 09:15	G	21.3	5.3	6.9	2.21	211.3					2.61	0.81	0.74	0.075	1.8	1.88																		
DP-E03-10-D	29-Mar-11 09:20	G	21.3	5.3	7.9	2.21	211.3					2.60	0.7	0.67	0.029	1.9	1.93																		
DP-E04-6	29-Mar-11 09:50	G	22.3	4.7	2.0	3.49	90.6				39	1.13	0.67	0.65	0.018	0.46	0.48	2.5			3.2	0.076	2.7	0.46	0.01	0.010	21	0.050	7.5	0.33	1.8	0.049	0.94	2.3
DP-E04-8	29-Mar-11 10:15	G	22	4.9	4.9	1.43	171.1					3.80	1.0	0.98	0.024	2.8	2.82																		
DP-E05-6	29-Mar-11 10:40	G	24.8	6.0	33	2.96	171.8					3.16	3.1	0.50	2.6	0.06	2.66																		
DP-E06-6	29-Mar-11 11:00	G	22.8	4.4	2.0	1.89	162.8					3.20	1.3	1.29	0.013	1.9	1.91																		
DP-E06-8	29-Mar-11 11:55	G	22.7	4.5	2.0	10.90	180.6					3.22	0.82	0.81	0.007	2.4	2.41																		
DP-E07-10	29-Mar-11 11:25	G	22.5	4.9	5.9	1.19	289					10.10	2.3	2.25	0.052	7.8	7.85																		
DP-E08-6	29-Mar-11 12:00	G	22.4	5.0	3.0	1.83	326					12.00	2.1	2.09	0.014	9.9	9.91																		
DP-E08-8	29-Mar-11 12:30	G	22.6	5.0	3.0	1.52	348					12.60	1.6	1.60	0.005	11	11.01																		
DP-E10-6	29-Mar-11 12:40	G	23	4.6	3.0	0.60	407					9.70	1.2	1.20	0.005	8.5	8.51																		
DP-E11-12	29-Mar-11 13:00	G	23	5.1	8.9	0.99	441					14.60	1.6	1.58	0.018	13	13.02																		
DP-E12-10	29-Mar-11 13:30	G	23.9	5.1	8.9	0.35	520				24	23.20	1.2	1.04	0.16	22	22.16	0.026		1.2	0.88	0.010	41	22	0.01	0.010	47	0.075	39	0.089	9.9	0.21	11	33
DP-E12-15	30-Mar-11 07:35	G	21.9	5.0	8.9	0.60	460				14	19.50	2.5	2.50	0.005	17	17.01	0.012			0.92	0.029	36	17	0.01	0.18	54	0.1	35	0.032	7.1	0.045	12	33
DP-E12-15-D	30-Mar-11 07:55	G	21.9	5.0	8.9	0.60	460				10	18.30	1.3	1.30	0.005	17	17.01	0.12			0.50	0.035	38	17	0.01	0.088	54	0.1	35	0.063	7.5	0.047	11	33
DP-E12-22	30-Mar-11 08:20	G	22.5	5.3	5.9	0.59	297				10	12.00	2.9	2.61	0.29	9.1	9.39	0.035		1.2	0.83	0.017	12	9.1	0.01	0.24	56	0.1	29	0.037	6.1	0.16	10	8.4
DP-E12-28	30-Mar-11 08:45	G	22.8	5.3	4.0	0.57	310				10	11.70	1.9	1.89	0.013	9.8	9.81	0.069			0.50	0.019	15	9.8	0.01	0.065	59	0.050	27	0.023	9.5	0.11	15	5.3
DP-F03-8	29-Mar-11 10:00	G	21.7	6.2	18	1.22	145.6					3.30	1.6	1.21	0.39	1.7	2.09																		
DP-F04-17	29-Mar-11 10:25	G	22	7.3	90	0.57	415.7					2.15	0.35	0.32	0.028	1.8	1.83																		
DP-F04-22	29-Mar-11 10:45	G	22.8	6.0	9.9	0.72	314.1					10.90	2.7	2.68	0.017	8.2	8.22																		
DP-F04-32	29-Mar-11 11:00	G	23.1	6.9	69	1.04	345.6					0.96	0.25	0.21	0.042	0.71	0.75																		
DP-F05-5	30-Mar-11 13:25	G	27.7	5.8	6.9	7.36	173.3					2.41	2.4	2.27	0.13	0.01	0.14																		
DP-F05-31	29-Mar-11 11:15	G	24.1	7.3	69	1.70	187.1				18	2.02	0.62	0.55	0.07	1.4	1.47	0.29			1.7	0.58	10	1.3	0.11	0.010	23	0.050	31	1.5	6.4	0.063	2.9	11
DP-F06-10	29-Mar-11 11:40	G	21.8	5.2	4.0	0.30	190.6					1.83	0.33	0.27	0.056	1.5	1.56																		
DP-F07-6	29-Mar-11 12:00	dry	dry									0.00		0.00			0.00																		
DP-F08-14	29-Mar-11 12:15	G	22.5	7.6	140	1.28	501					4.70	1.2	1.11	0.090	3.5	3.59																		
DP-F08-20	29-Mar-11 12:30	G	23.1	6.0	9.9	0.41	335.6				10	10.70	2.1	2.07	0.03	8.6	8.63	0.33			0.80	0.032	11	8.6	0.01	0.010	65	0.050	32	0.067	7.3	0.22	14	6.4
DP-F08-28	29-Mar-11 12:45	G	23.4	6.3	18	0.37	323.9					4.00	1.1	1.09	0.012	2.9	2.91																		
DP-F09-5	29-Mar-11 13:15	G	24.8	6.6	22	1.15	191.1				24	3.40	1.5	1.27	0.23	1.9	2.13	0.27			7.7	0.1	10	1.9	0.01	0.026	26	0.050	14	5.8	3.5	0.37	4.7	9.1
DP-F09-5-D	29-Mar-11 13:30	G	24.8	6.6	22	1.15	141.1				32	3.30	1.3	1.08	0.22	2	2.22	0.33			7.7	0.11	10	2.0	0.01	0.026	27	0.050	14	5.7	3.5	0.35	4.7	11
DP-F10-11	30-Mar-11 07:45	G	21.3	4.7	2.0	0.80	475.9					32.30	2.3	1.20	1.1	30	31.10																		

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Table E.1 (con't)
Water Quality Analytical Results
(March 29 – April 4, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	Specific Conductance	TSS (mg/L)	TS (% by wt.)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg-N/L)	TKN (mg-N/L)	Organic N (mg-	NH3-N (mg-N/L)	Nox-N (mg-N/L)	TIN (mg-N/L)	TP (mg-P/L)	Fecal (1cfu/100	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-F11-11	30-Mar-11 08:00	G	21.4	5.3	8.9	0.90	412.7					22.50	1.5	1.06	0.44	21	21.44																		
DP-F11-11-D	30-Mar-11 08:05	G	21.4	5.3	9.9	0.90	412.7					22.90	1.9	1.47	0.43	21	21.43																		
DP-F11-15	30-Mar-11 08:20	G	21.8	5.1	7.9	0.28	453.3					29.50	1.5	1.36	0.14	28	28.14																		
DP-F11-18	30-Mar-11 08:40	G	22.2	5.4	7.9	1.18	433.9					20.00	2	1.93	0.067	18	18.07																		
DP-F11-21	30-Mar-11 09:00	G	22.5	5.2	5.9	0.43	318.4					21.10	1.1	1.10	0.005	20	20.01																		
DP-F11-24	30-Mar-11 09:30	G	22.8	5.1	4.0	0.30	301.1					16.10	1.1	1.09	0.008	15	15.01																		
DP-F11-27	30-Mar-11 09:50	G	23.2	5.3	4.9	0.39	307.5					8.60	1.3	1.29	0.008	7.3	7.31																		
DP-F12-10	31-Mar-11 08:50	G	21.5	5.0	2.0	0.90	427					24.50	1.5	1.34	0.16	23	23.16																		
DP-F15-14	31-Mar-11 09:22	G	21.7	5.2	11	0.53	512					31.74	0.74	0.62	0.12	31	31.12																		
DP-F15-20	31-Mar-11 09:37	G	22.3	5.4	12	0.78	383					20.40	1.4	1.40	0.005	19	19.01																		
DP-F15-20-D	31-Mar-11 09:40	G	22.3	5.4	9.9	0.78	383					19.70	1.7	1.69	0.012	18	18.01																		
DP-F15-26	31-Mar-11 10:00	G	22.5	5.2	4.0	0.78	306					18.50	1.5	1.43	0.074	17	17.07																		
DP-G05-6	30-Mar-11 13:40	G	26.2	6.1	22	2.49	151.9				32	2.04	1.9	0.50	1.4	0.14	1.54	0.43			8.7	0.075	4.1	0.14	0.01	0.18	30	0.050	11	8.2	3.3	0.4	2.8	2.6
DP-G06-7	30-Mar-11 14:45	G	28.9	6.2	34	2.36	184					0.68	0.55	0.28	0.27	0.13	0.40																		
DP-G07-13	30-Mar-11 15:05	G	25.2	5.8	14	2.19	232					3.40	0.7	0.37	0.33	2.7	3.03																		
DP-G07-15	30-Mar-11 15:30	G	23.4	5.2	4.0	1.20	272					4.95	0.45	0.45	0.005	4.5	4.51																		
DP-G07-17	30-Mar-11 15:50	G	23.7	5.3	4.9	1.52	317					10.00	1.1	1.10	0.005	8.9	8.91																		
DP-G07-21	31-Mar-11 07:55	G	22.2	5.6	4.9	0.57	326					15.60	2.6	2.53	0.071	13	13.07																		
DP-G07-24	31-Mar-11 08:15	G	22.3	5.7	4.9	0.94	271					15.50	2.5	2.50	0.005	13	13.01																		
DP-G07-27	31-Mar-11 08:35	G	22.3	5.2	4.0	0.95	303					17.80	2.8	2.80	0.005	15	15.01																		
DP-G08-5	30-Mar-11 15:15	G	26.1	5.6	4.9	7.64	157.8					2.52	0.92	0.92	0.005	1.6	1.61																		
DP-G09-11	30-Mar-11 15:45	G	24	5.4	7.9	2.08	285				41	10.20	1.1	1.09	0.01	9.1	9.11	0.11			1.3	0.036	13	9.1	0.01	0.010	51	0.050	27	1.1	5.6	0.26	7	12
DP-G11-8	31-Mar-11 08:05	G	21.2	5.1	3.0	1.38	295					14.20	2.2	2.19	0.015	12	12.02																		
DP-G12-9	31-Mar-11 08:30	G	21.4	4.7	3.0	2.62	341					11.70	1.7	1.66	0.036	10	10.04																		
DP-G12-15	31-Mar-11 08:45	G	21.8	5.5	6.9	0.96	487					28.70	2.7	2.42	0.28	26	26.28																		
DP-G12-18	31-Mar-11 08:55	G	22.2	5.2	6.9	1.40	494					30.70	1.7	1.70	0.005	29	29.01																		
DP-G12-18-D	31-Mar-11 09:00	G	22.2	5.2	7.9	1.40	494					31.00	2.0	1.99	0.013	29	29.01																		
DP-G12-21	31-Mar-11 09:15	G	22.7	5.4	8.9	0.50	385					17.00	4.0	3.90	0.099	13	13.10																		
DP-G12-24	31-Mar-11 09:30	G	22.7	5.4	3.9	0.82	324					12.98	0.98	0.98	0.005	12	12.01																		
DP-G12-27	31-Mar-11 09:50	G	22.9	5.4	4.9	0.43	311					13.20	1.2	1.08	0.12	12	12.12																		
DP-H05-7	04-Apr-11 10:40	G	25.6	6.3	15	6.73	136.7					1.75	1.7	0.10	1.6	0.05	1.65																		
DP-H06-7	01-Apr-11 07:55	G	19.8	6.0	18	4.04	152.4					1.35	1.2	0.55	0.65	0.15	0.80																		
DP-H07-8	01-Apr-11 07:30	G	20.2	5.1	2.0	1.57	151.3					1.69	0.71	0.66	0.051	0.98	1.03																		
DP-H08-10	31-Mar-11 11:00	G	22.7	6.2	24	2.97	189					2.95	2.2	1.32	0.88	0.75	1.63																		
DP-H09-12	31-Mar-11 10:25	G	21.9	5.7	6.9	3.40	249					8.60	1.2	1.19	0.010	7.4	7.41																		
DP-H10-11	31-Mar-11 10:10	G	22.2	6.2	25	5.83	204.5					2.11	0.21	0.12	0.089	1.9	1.99																		
DP-H12-5	31-Mar-11 09:02	G	21.9	5.6	7.9	0.94	188.5					2.81	0.81	0.76	0.047	2.0	2.05																		
DP-H12-5-D	31-Mar-11 09:05	G	21.9	5.6	7.9	0.94	188.5					3.13	0.93	0.91	0.016	2.2	2.22																		
DP-I06-14	01-Apr-11 07:58	G	20.9	5.3	5.9	1.44	212.3					2.07	0.57	0.57	0.005	1.5	1.51																		
DP-I06-20	01-Apr-11 08:15	G	21.4	5.0	3.9	1.03	358					19.10	1.1	1.10	0.005	18	18.01																		
DP-I06-26	01-Apr-11 08:30	G	21.6	4.9	3.0	1.13	305					16.20	2.2	2.20	0.005	14	14.01																		
DP-I07-8	01-Apr-11 07:25	G	19.4	5.8	17	2.23	170.7					1.28	0.42	0.38	0.041	0.86	0.90																		
DP-I08-5	31-Mar-11 11:05	G	23	6.5	15	4.69	191.5					2.44	2.1	0.90	1.2	0.34	1.54																		
DP-I09-11	31-Mar-11 10:35	G	21.5	5.1	3.0	0.77	180.6					2.22	0.72	0.72	0.005	1.5	1.51																		
DP-I10-6	01-Apr-11 08:55	G	20.2	6.2	27	5.10	173.4					1.75	1.4	0.74	0.66	0.35	1.01																		
DP-I11-10	01-Apr-11 09:20	G	21.4	5.7	17	0.90	166.8					1.03	0.64	0.38	0.26	0.39	0.65																		
DP-I12-6	01-Apr-11 09:40	G	21.9	5.6	11	1.87	127.6					7.77	0.67	0.67	0.005	7.1	7.11																		
DP-J08-6	01-Apr-11 08:25	G	19.7	6.0	15	2.70	140.3					3.75	3.7	0.70	3.0	0.05	3.05																		
DP-J09-12	01-Apr-11 08:50	G	21.1	4.8	2.0	0.81	167					1.55	0.45	0.45	0.005	1.1	1.11																		
DP-J09-14	01-Apr-11 09:10	G	21.4	4.8	3.0	0.73	226					8.19	0.79	0.79	0.005	7.4	7.41																		
DP-J09-20	01-Apr-11 09:30	G	22.1	4.4	4.0	0.66	365					18.20	1.2	1.20	0.005	17	17.01				0.91														
DP-J09-26	01-Apr-11 09:50	G	22.5	5.0	4.0	0.73	297					17.70	1.7	1.70	0.005	16	16.01																		
DP-J10-6	01-Apr-11 11:05	G	24	5.9	14	3.48	186.6					3.40	2.4	0.00	2.4	1	3.40																		
DP-J11-12	01-Apr-11 11:40	G	23.7	4.4	2.0	1.02	196.7				14	2.65	0.55	0.55	0.005	2.1	2.11	0.010			1.1	0.16	6.3	2.1	0.01	0.010	65	0.050	16	0.039	4.2	0.15	3.8	2.9
DP-J12-13	01-Apr-11 11:50	G	22.9	4.9	4.0	1.54	238					6.21	0.61	0.61	0.005	5.6	5.61																		
DP-J12-15	01-Apr-11 12:00	G	23.3	5.1	5.9	1.13	281					8.96	0.46	0.46	0.005	8.5	8.51																		
DP-J12-20	01-Apr-11 12:50	G	23.4	5.6	5.9	1.20	354				18	11.50	1.5	1.50	0.005	10	10.01	0.11			1.3	0.011	14	10	0.01	0.010	88	0.050	33	0.020	9.6	0.059	21	4.3
DP-J12-27	01-Apr-11 13:11	G	23.6	5.1	4.0	0.92	303					17.00	1	1.00	0.005	16	16.01																		
DP-K10-7	01-Apr-11 11:25	G	24.2	6.0	6.9	3.79	163.8					2.33	2	0.40	1.6	0.33	1.93																		

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Table E.1 (con't)
Water Quality Analytical Results
(March 29 – April 4, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	Specific Conductance	TSS (mg/L)	TS (% by wt.)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg-N/L)	TKN (mg-N/L)	Organic N (mg-	NH3-N (mg-N/L)	Nox-N (mg-N/L)	TIN (mg-N/L)	TP (mg-P/L)	Fecal (1cfu/100	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4	B	Ca	Fe	Mg	Mn	K	Na
DP-K11-13	01-Apr-11 10:30	G	22.1	4.9	4.0	1.84	168.3					1.89	0.59	0.59	0.005	1.3	1.31																		
DP-K12-5	01-Apr-11 10:05	G	22.3	5.6	6.9	1.40	59.3				55	0.81	0.77	0.68	0.092	0.04	0.13	0.34			7.3	0.083	1.9	0.04	0.01	0.010	11	0.050	5.5	2.2	0.86	0.21	0.4	1.9
DP-K12-5-D	01-Apr-11 10:10	G	22.3	5.6	6.9	1.40	59.3				43	1.73	1.7	1.63	0.071	0.03	0.10	0.32			7	0.058	1.6	0.03	0.01	0.010	9.2	0.050	5.4	2.5	0.92	0.2	0.44	1.9
DP-M07-15	01-Apr-11 14:10	G	23	5.2	5.9	0.71	267					6.61	0.61	0.61	0.005	6	6.01																		
DP-M07-21	01-Apr-11 14:15	G	24	4.9	2.0	0.88	362					13.50	1.5	1.50	0.005	12	12.01																		
DP-M07-27	01-Apr-11 14:20	G	23.8	5.2	5.9	1.08	293					10.10	2.2	2.20	0.005	7.9	7.91																		
DP-M12-10	01-Apr-11 12:10	G	24	5.7	8.9	1.83	161.6					1.49	0.6	0.52	0.083	0.89	0.97																		
DP-N12-14	01-Apr-11 12:40	G	22.9	4.8	3.0	0.91	178.6					5.08	0.98	0.98	0.005	4.1	4.11																		
DP-N12-18	01-Apr-11 13:00	G	23.2	5.1	4.0	1.11	250					7.20	1.1	1.10	0.005	6.1	6.11																		
DP-N12-21	01-Apr-11 13:20	G	23.3	5.2	5.9	1.04	279					6.74	0.54	0.54	0.005	6.2	6.21																		
DP-N12-24	01-Apr-11 13:40	G	24.1	5.2	4.9	0.78	348					13.30	1.3	1.30	0.005	12	12.01																		
DP-N12-27	01-Apr-11 13:55	G	23.9	5.1	4.9	0.68	342					21.80	1.8	1.80	0.005	20	20.01																		
DP-O10-12	01-Apr-11 13:30	G	22.9	4.3	2.0	1.13	185.9					0.22	0.18	0.18	0.005	0.04	0.05																		
DP-O10-18	01-Apr-11 13:50	G	23.5	5.3	5.9	1.04	294					9.60	2.1	2.10	0.005	7.5	7.51																		
DP-O10-24	01-Apr-11 14:00	G	24.2	5.1	3.0	0.95	361					20.40	4.4	4.40	0.005	16	16.01																		
DP-O10-24-D	01-Apr-11 14:02	G	24.2	5.1	4.0	0.95	361					17.50	1.5	1.42	0.082	16	16.08																		
DP-Q15-15	04-Apr-11 09:15	G	22.7	4.8	3.0	0.61	285					5.29	0.39	0.39	0.005	4.9	4.91																		
DP-Q15-21	04-Apr-11 09:40	G	23.5	5.2	5.9	0.73	319					8.91	0.41	0.41	0.005	8.5	8.51																		
DP-Q15-26	04-Apr-11 10:10	G	23.2	5.2	5.9	1.33	333					7.59	0.89	0.85	0.037	6.7	6.74																		
Standpipe Piezometers																																			
PZ01-BKG-9	31-Mar-11 09:30	G	22.8	4.6	2.0	6.78	146.8					0.37	0.36	0.25	0.11	0.01	0.12																		
PZ02-P02-9	30-Mar-11 15:35	G	24.4	4.7	2.0	4.63	73.6					1.73	0.96	0.96	0.005	0.77	0.78																		
PZ03-H11-6	30-Mar-11 12:14	G	25.9	4.8	2.0	3.68	138.4					3.80	2.3	2.29	0.006	1.5	1.51																		
PZ04-BKG-9	31-Mar-11 08:44	G	21.7	5.4	6.9	3.84	78.2				28	0.65	0.35	0.31	0.038	0.3	0.34	0.021			2.6	0.091	1.7	0.3	0.01	0.010	12	0.050	5.6	0.066	1.6	0.069	0.94	1.8
PZ04-BKG-9-D	31-Mar-11 08:44	G	21.7	5.4	7.9	3.84	78.2				16	0.60	0.30	0.30	0.005	0.3	0.31	0.021			2.6	0.11	1.8	0.3	0.01	0.010	12	0.050	6.2	0.020	1.8	0.077	0.95	1.8
PZ05-BKG-9	31-Mar-11 10:14	G	21.8	5.1	6.9	4.38	98.8					4.80	1.2	1.17	0.034	3.6	3.63																		
PZ06-BKG-12	31-Mar-11 10:03	G	23.1	4.7	3.0	5.41	59.4					0.26	0.25	0.21	0.041	0.01	0.05																		
PZ07-D05-7	30-Mar-11 13:47	G	25.3	4.7	3.0	0.39	221.6					5.20	1.6	1.60	0.005	3.6	3.61																		
PZ08-FG7-6	30-Mar-11 10:06	G	23.6	4.8	2.0	3.33	126.9					2.13	1.3	1.30	0.005	0.83	0.84																		
PZ09-I08-5	30-Mar-11 14:38	G	21.9	5.2	2.0	6.03	94.2					1.99	1.4	1.40	0.005	0.59	0.60																		
PZ10-CD6-13	30-Mar-11 14:00	G	26	6	26	2.85	524					7.70	2.5	2.45	0.050	5.2	5.25																		
PZ11-E09-10	30-Mar-11 12:55	G	25.8	5.6	12	2.33	453.8					23.10	2.1	1.61	0.49	21	21.49																		
PZ13-F04-8	29-Mar-11 09:25	G	21.4	5.6	7.9	2.48	125.5					2.15	0.75	0.71	0.037	1.4	1.44																		
PZ14-G13-7	30-Mar-11 15:05	G	24.5	5.8	15	1.04	246.1					7.59	0.19	0.19	0.005	7.4	7.41																		
PZ15-A11-6	30-Mar-11 11:22	G	24.8	5.2	4.9	2.52	100					0.88	0.61	0.57	0.041	0.27	0.31																		
PZ16-C12-28	30-Mar-11 11:48	G	25.4	5.7	9.9	0.66	295.1					2.21	1.9	1.88	0.016	0.31	0.33																		
PZ17-I15-26	31-Mar-11 10:35	G	23.1	4.8	3.0	2.46	307.1					17.18	0.18	0.17	0.006	17	17.01																		
PZ18-R12-26	31-Mar-11 11:03	G	23.4	5.0	8.9	0.89	328.1					15.40	3.4	3.38	0.022	12	12.02																		
PZ19-G10-26	30-Mar-11 09:45	G	23.1	5.1	4.0	1.07	302.1					17.90	0.9	0.89	0.014	17	17.01																		
PZ20-G10-15	30-Mar-11 09:01	G	22.2	5.6	15.0	1.97	356.1					22.70	3.7	3.70	0.005	19	19.01																		
PZ21-E11-26	30-Mar-11 11:04	G	23.6	5.2	4.0	0.36	295.6					9.85	0.55	0.54	0.012	9.3	9.31																		
PZ22-E11-15	30-Mar-11 10:30	G	24.4	5.3	8.9	1.36	416					5.60	1.4	1.39	0.007	4.2	4.21																		
PZ23-D09-27	30-Mar-11 13:06	G	24.4	5.4	5.9	0.18	306.2					8.50	1.2	1.20	0.005	7.3	7.31																		
PZ24-BKG-26	31-Mar-11 08:14	G	23.1	5.0	4.0	0.50	270.9				12	11.00	1.9	1.84	0.057	9.1	9.16	1.2		3.6	0.79	0.013	15	9.1	0.01	0.010	43	0.050	21	0.11	9.7	0.17	8.9	7.7
PZ24-BKG-26-D	31-Mar-11 08:19	G	23.1	5.0	4.9	0.50	270.9				18	11.40	1.9	1.89	0.008	9.5	9.51	0.43		2.9	2.7	0.027	16	9.5	0.01	0.010	45	0.050	20	0.042	10	0.18	9.1	8
PZ25-A6.5-10	31-Mar-11 11:25	G	22	6.0	48	5.65	770					22.30	2.3	2.28	0.022	20	20.02																		
Blanks																																			
Equipment Rinsate	04-Apr-11 10:50	G	27.5	6.0	2.0	7.90	1.38					0.08	0.05	0.02	0.026	0.03	0.06																		
Field Blank DI	04-Apr-11 09:00	G	21.5	6.1	2.0	8.55	1.19					0.06	0.05	0.05	0.005	0.01	0.02																		
Field Blank Tap	04-Apr-11 10:30	G	23.6	7.7	140	8.13	432					0.10	0.05	0.05	0.005	0.05	0.06																		

Notes
DO - Dissolved oxygen
G - Grab sample
Gray - Shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.
Yellow shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Dark Orange shaded data points indicate too many colonies were present for accurate counting.

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Appendix F: Summary of Water Quality Data

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Table F.1
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	ORP (mV)	Specific Conductance (µS)	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations							TS
																						F^-	Cl^-	NO_3-N^-	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na	
STE Sample																																				
STE-EX Pump Tank	n	5	5	6	3	1	4	3	5	4	4	5	5	5	6	6	5	4	5	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	26.0		235.5	0.18		789.0	410.3	33.2	138.7	271.0	40.7	40.6	8.74	27.6	0.06	32.0	4.1	256052.0			4.6	47.0	0.03	0.01	3.2	21.0	0.15	58.0	7.0	18.0	0.081	15.0	43.0	0.03
	STD. DEV.	3.9		95.0	0.11		354.0	166.9	27.1	107.6	273.3	13.7	13.7	8.67	12.1	0.10	6.6	2.4	425495.9																
	MIN	19.9	6.5	150.0	0.10	-310.0	494.0	260.0	14.0	82.7	120.0	24.2	24.2	-1.00	5.8	0.01	21.5	1.3	60.0			4.6	47.0	0.03	0.01	3.2	21	0.15	58	7.0	18.0	0.081	15.0	43.0	0.03
	MAX	30.4	7.3	410.0	0.30	-310.0	1273.0	590.0	80.0	300.0	680.0	56.0	56.0	21.00	39.0	0.26	39.3	6.4	1000000.0			4.6	47.0	0.03	0.01	3.2	21	0.15	58	7.0	18.0	0.081	15.0	43.0	0.03
Drivepoints																																				
DP-AA9-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.3		8.0	0.94		490.5					27.7	1.8	1.75	0.014	26.0	26.0																			
	STD. DEV.	1.1		4.3	0.07		294.9					29.5	1.2	1.17	0.011	28.4	28.4																			
	MIN	21.5	5.0	4.9	0.89		281.9					6.8	0.9	0.92	0.006	5.9	5.9																			
	MAX	23.0	5.1	11.0	0.99		699.0					48.6	2.6	2.58	0.021	46.0	46.0																			
DP-AA9-22	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.6		4.5	0.92		302.4					10.0	1.0	0.98	0.027	9.0	9.0																			
	STD. DEV.	0.4		3.5	0.21		23.1					1.2	0.3	0.25	0.020	1.5	1.5																			
	MIN	23.3	4.9	2.0	0.77		286.0					9.1	0.8	0.81	0.013	7.9	7.9																			
	MAX	23.8	5.3	6.9	1.06		318.7					10.8	1.2	1.16	0.041	10.0	10.0																			
DP-AA9-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.3		2.5	0.83		290.6					9.5	1.1	1.01	0.036	8.5	8.5																			
	STD. DEV.	0.8		0.7	0.01		3.7					2.3	0.1	0.06	0.011	2.2	2.2																			
	MIN	22.7	4.8	2.0	0.82		288.0					7.9	1.0	0.97	0.028	6.9	6.9																			
	MAX	23.9	5.2	3.0	0.84		293.2					11.1	1.1	1.06	0.044	10.0	10.0																			
DP-C11-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.8		35.0	3.50		319.0					4.6	1.5	1.41	0.09	3.1	3.2																			
	STD. DEV.																																			
	MIN	21.8	5.9	35.0	3.50		319.0					4.6	1.5	1.41	0.09	3.1	3.2																			
	MAX	21.8	5.9	35.0	3.50		319.0					4.6	1.5	1.41	0.09	3.1	3.2																			
DP-D07-5	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.1		14	4.86		326					13	2	2.00	0.005	11.0	11.01																			
	STD. DEV.																																			
	MIN	24.1	6.0	14	4.86		326					13	2	2.00	0.005	11.0	11.01																			
	MAX	24.1	6.0	14	4.86		326					13.0	2.0	2.00	0.005	11.0	11.01																			
DP-D07-7	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	MEAN	23.3		2.0	0.77		365.0				20	13.6	1.6	1.59	0.011	12.0	12.0	0.015		1.7	1.4	0.1	23.0	12.0	0.010	0.010	53	0.096	27	0.054	5.4	0.0084	8.0	20.0	
	STD. DEV.																																			
	MIN	23.3	4.7	2.0	0.77		365.0				20	13.6	1.6	1.59	0.011	12.0	12.0	0.015		1.7	1.4	0.1	23.0	12.0	0.010	0.010	53	0.096	27	0.054	5.4	0.0084	8.0	20.0	
	MAX	23.3	4.7	2.0	0.77		365.0				20	13.6	1.6	1.59	0.011	12.0	12.0	0.015		1.7	1.4	0.1	23.0	12.0	0.010	0.010	53	0.096	27	0.054	5.4	0.0084	8.0	20.0	
DP-D07-9	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.0		2.0	4.50		392.0					23.8	1.8	1.8	0.007	22.0	22.0																			
	STD. DEV.																																			
	MIN	24.0	4.5	2.0	4.50		392.0					23.8	1.8	1.8	0.007	22.0	22.0																			
	MAX	24.0	4.5	2.0	4.50		392.0					23.8	1.8	1.8	0.007	22.0	22.0																			
DP-D7.5-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.5		3.0	0.89		473.0					27.4	1.9	1.88	0.065	25.5	25.6			2.9	1.2															
	STD. DEV.	1.8		1.4	0.30		58.0					6.7	1.8	1.9	0.078	4.9	4.9																			
	MIN	21.2	5.0	2.0	0.67		432.0					22.7	0.7	0.56	0.009	22.0	22.1			2.9	1.2															
	MAX	23.8	7.0	4.0	1.1		514.0					32.2	3.2	3.19	0.120	29.0	29.0			2.9	1.2															
DP-D7.5-20	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	MEAN	23.6		4.0	1.91		277.0				10.0	8.6	1.1	1.04	0.014	7.5	7.5	0.2		1.8	1.3	0.0	10.0	7.6	0.01	0.2	67	0.1	28	0.022	6.5	0.21	16.0	6.7	
	STD. DEV.	2.0		2.8	0.91		26.9					0.5	0.4	0.37	0.012	0.1	0.1																			
	MIN	22.2	5.3	2.0	1.26		258.0				10	8.2	0.8	0.78	0.005	7.4	7.4	0.2		1.8	1.3	0.0	10.0	7.6	0.01	0.16	67	0.050	28	0.022	6.5	0.21	16.0	6.7	
	MAX	25.0	7.0	5.9	2.55		296.0				10	8.9	1.3	1.30	0.022	7.6	7.6	0.2		1.8	1.3	0.0	10.0	7.6	0.01	0.16	67	0.050	28	0.022	6.5	0.21	16.0	6.7	
DP-D7.5-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.2		3.0	1.74		293.5					10.8	1.1	1.1	0.022	9.7	9.7																			
	STD. DEV.	2.6		1.4	0.38		2.1					3.0	0.2	0.2	0.023	3.3	3.3																			
	MIN	21.3	5.3	2.0	1.47		292.0					8.7	1.0	0.95	0.005	7.4	7.4																			
	MAX	25.0	7.0	4.0	2.01		295.0					13.0	1.3	1.30	0.038	12.0	12.0																			
DP-D08-9	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	MEAN	24.6		20.0	1.36		502.0				16	21.0	2.0	1.9	0.1	19.0	19.1	0.2			3.5	0.1	42.0	19.0	0.0	0.2	52.0	0.094	33	11.0	10	0.33	8.0	35.0	
	STD. DEV.																																			
	MIN	24.6	5.6	20.0	1.36		502.0				16	21.0	2.0	1.9	0.1	19.0	19.1	0.2			3.5	0.1	42.0	19.0	0.01	0.15	52.0	0.094	33	11.0	10	0.33	8.0	35.0	
	MAX	24.6	5.6	20.0	1.36		502.0				16	21.0	2.0	1.9	0.1	19.0	19.1	0.2			3.5	0.1	42.0	19.0	0.01	0.15	52.0	0.094	33	11.0	10	0.33	8.0	35.0	
DP-D09-6	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	19.8		2.0	5.05		409.5					16.84	0.84	0.82	0.018	16.0	16.0																			
	STD. DEV.	4.0		0.0	0.77		65.8					7.07	0.00	0.01	0.014	7.1	7.1																			
	MIN	17.0	4.5	2.0	4.50		363.0					11.84	0.84	0.81	0.038	11.0	11.0																			
	MAX	22.6	4.8	2.0	5.59		456.0					21.84	0.84	0.83	0.028	21.0	21.0																			
DP-D09-8	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	20.5		2.0	2.27		433.5					21.4	1.9	1.84	0.014	19.5	19.5																			
	STD. DEV.	3.0		0.0	1.77		75.7					11.9	1.3	1.3	0.012	10.6	10.6																			
	MIN	18.4	4.6	2.0	1.01		380.0					12.9	0.9	0.89	0.005	12.0	12.0																			
	MAX	22.6	4.7	2.0	3.52		487.0					29.8	2.8	2.80	0.022	27.0	27.0																			
DP-D09-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.2		8.5	2.18		451.5					16.7	1.2	1.17	0.046	15.5	15.5			5.3	2.5															
	STD. DEV.	3.0		9.2	1.44		26.2					4.6	1.1	1.17	0.057	3.5	3.5																			
	MIN	19.1	5.3	2.0	1.16		433.0					13.4	0.4	0.34	0.005	13.0	13.1			5.3	2.5															
	MAX	23.3	5.4	15	3.20		470.0					20.0	2.0	2.00	0.086	18.0	18.0			5.3	2.5															
DP-D09-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		3.5	1.08		299.0					8.0	0.3	0.3	0.029	7.7	7.7																			
	STD. DEV.	1.8		2.1	0.39		1.4					0.4	0.1	0.1	0.034	0.4	0.3																			
	MIN	21.7	5.3	2.0	0.80		298.0					7.7	0.3	0.2	0.005	7.4	7.5																			
	MAX	24.2	5.8	4.9	1.35		300.0					8.3	0.4	0.4	0.053	7.9	7.9																			
DP-D09-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.4		7.0	1.51		289.5					1.8	0.7	0.65	0.029	1.1	1.1																			
	STD. DEV.	3.0		5.7	1.06		27.6					0.5	0.6	0.6	0.027	1.1	1.1																			
	MIN	20.2	6.0	3.0	0.76		270.0					1.4	0.3	0.20	0.010	0.3	0.3																			
	MAX	24.5	6.0	11.0	2.26		309.0					2.2	1.1	1.09	0.048	1.9	1.9																			

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4	B	Ca	Fe	Mg	Mn	K	Na
DP-D10-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.8		23	1.45		337.0					4.1	1.9	1.9	0.025	2.2	2.2																	
	STD. DEV.																																	
	MIN	23.8	5.7	23	1.45		337.0					4.1	1.9	1.9	0.025	2.2	2.2																	
	MAX	23.8	5.7	23	1.45		337.0					4.1	1.9	1.9	0.025	2.2	2.2																	
DP-D11-11	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.7		9.9	1.39		479.0					26.8	1.8	1.7	0.080	25.0	25.1																	
	STD. DEV.																																	
	MIN	21.7	5.3	9.9	1.39		479.0					26.8	1.8	1.7	0.080	25.0	25.1																	
	MAX	21.7	5.3	9.9	1.39		479.0					26.8	1.8	1.7	0.080	25.0	25.1																	
DP-D12-11	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.3		6.9	0.65		477					12.3	2.8	2.06	0.74	9.5	10.24																	
	STD. DEV.																																	
	MIN	22.3	4.8	6.9	0.65		477					12.3	2.8	2.06	0.74	9.5	10.24																	
	MAX	22.3	4.8	6.9	0.65		477					12.3	2.8	2.06	0.74	9.5	10.24																	
DP-E02-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.3		4.9	2.41		98.5					2.02	0.42	0.398	0.022	1.6	1.622																	
	STD. DEV.																																	
	MIN	21.3	5.5	4.9	2.41		98.5					2.02	0.42	0.398	0.022	1.6	1.622																	
	MAX	21.3	5.5	4.9	2.41		98.5					2.02	0.42	0.398	0.022	1.6	1.622																	
DP-E02-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.3		5.0	0.46		158.9					0.64	0.22	0.214	0.006	0.42	0.426																	
	STD. DEV.																																	
	MIN	21.3	5.1	5.0	0.46		158.9					0.64	0.22	0.214	0.006	0.42	0.426																	
	MAX	21.3	5.1	5.0	0.46		158.9					0.64	0.22	0.214	0.006	0.42	0.426																	
DP-E03-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.3		6.9	2.21		211.3					2.61	0.81	0.74	0.075	1.8	1.88																	
	STD. DEV.																																	
	MIN	21.3	5.3	6.9	2.21		211.3					2.61	0.81	0.74	0.075	1.8	1.88																	
	MAX	21.3	5.3	6.9	2.21		211.3					2.61	0.81	0.74	0.075	1.8	1.88																	
DP-E04-6	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	22.3		2.0	3.49		90.6				39	1.13	0.67	0.652	0.018	0.46	0.478	2.5			3.2	0.076	2.7	0.46	0.01	0.01	21	0.05	7.5	0.33	1.8	0.049	0.94	2.3
	STD. DEV.																																	
	MIN	22.3	4.7	2.0	3.49		90.6					1.13	0.67	0.652	0.018	0.46	0.478	2.5			3.2	0.076	2.7	0.46	0.01	0.01	21	0.05	7.5	0.33	1.8	0.049	0.94	2.3
	MAX	22.3	4.7	2.0	3.49		90.6				39	1.13	0.67	0.652	0.018	0.46	0.478	2.5			3.2	0.076	2.7	0.46	0.01	0.01	21	0.05	7.5	0.33	1.8	0.049	0.94	2.3
DP-E04-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.0		4.9	1.43		171.1					3.8	1	0.976	0.024	2.8	2.824																	
	STD. DEV.																																	
	MIN	22.0	4.9	4.9	1.43		171.1					3.8	1.0	0.976	0.024	2.8	2.824																	
	MAX	22.0	4.9	4.9	1.43		171.1					3.8	1.0	0.976	0.024	2.8	2.824																	
DP-E05-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.8		33	2.96		171.8					3.16	3.1	0.5	2.6	0.06	2.66																	
	STD. DEV.																																	
	MIN	24.8	6.0	33	2.96		171.8					3.16	3.1	0.5	2.6	0.06	2.66																	
	MAX	24.8	6.0	33	2.96		171.8					3.16	3.1	0.5	2.6	0.06	2.66																	
DP-E06-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		2.0	1.89		162.8					3.2	1.3	1.287	0.013	1.9	1.913																	
	STD. DEV.																																	
	MIN	22.8	4.4	2.0	1.89		162.8					3.2	1.3	1.287	0.013	1.9	1.913																	
	MAX	22.8	4.4	2.0	1.89		162.8					3.2	1.3	1.287	0.013	1.9	1.913																	
DP-E06-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		2.0	10.9		180.6					3.22	0.82	0.813	0.007	2.4	2.407																	
	STD. DEV.																																	
	MIN	22.7	4.5	2.0	10.9		180.6					3.22	0.82	0.813	0.007	2.4	2.407																	
	MAX	22.7	4.5	2.0	10.9		180.6					3.22	0.82	0.813	0.007	2.4	2.407																	
DP-E07-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.5		5.9	1.19		289					10.1	2.3	2.248	0.052	7.8	7.852																	
	STD. DEV.																																	
	MIN	22.5	4.9	5.9	1.19		289					10.1	2.3	2.248	0.052	7.8	7.852																	
	MAX	22.5	4.9	5.9	1.19		289					10.1	2.3	2.248	0.052	7.8	7.852																	
DP-E08-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.4		3.0	1.83		326.0					12	2.1	2.086	0.014	9.9	9.914																	
	STD. DEV.																																	
	MIN	22.4	5.0	3.0	1.83		326.0					12	2.1	2.086	0.014	9.9	9.914																	
	MAX	22.4	5.0	3.0	1.83		326.0					12	2.1	2.086	0.014	9.9	9.914																	
DP-E08-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		3.0	1.52		348.0					12.6	1.6	1.595	0.005	11	11.005																	
	STD. DEV.																																	
	MIN	22.6	5.0	3.0	1.52		348.0					12.6	1.6	1.595	0.005	11	11.005																	
	MAX	22.6	5.0	3.0	1.52		348.0					12.6	1.6	1.595	0.005	11	11.005																	

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-E10-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		3.0	0.60		407.0					9.7	1.2	1.195	0.005	8.5	8.505																	
	STD. DEV.																																	
	MIN	23.0	4.6	3.0	0.60		407.0					9.7	1.2	1.195	0.005	8.5	8.505																	
	MAX	23.0	4.6	3.0	0.60		407.0					9.7	1.2	1.195	0.005	8.5	8.505																	
DP-E11-12	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		8.9	0.99		441					14.6	1.6	1.582	0.018	13	13.018																	
	STD. DEV.																																	
	MIN	23.0	5.1	8.9	0.99		441.0					14.6	1.6	1.582	0.018	13	13.018																	
	MAX	23.0	5.1	8.9	0.99		441.0					14.6	1.6	1.582	0.018	13	13.018																	
DP-E12-10	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	21.55		5.45	2.515		505.5				24	25.25	1.75	1.555	0.195	23.5	23.695	0.026		1.2	0.88	0.01	41	22	0.01	0.01	47	0.075	39	0.089	9.9	0.21	11	33
	STD. DEV.	3.32		4.88	3.06		20.51					2.90	0.78	0.73	0.05	2.12	2.17																	
	MIN	19.2	5.1	2.0	0.35		491.0				24	23.2	1.2	1.04	0.16	22	22.16	0.026		1.2	0.88	0.01	41	22	0.01	0.01	47	0.075	39	0.089	9.9	0.21	11	33
	MAX	23.9	5.48	8.9	4.68		520.0				24	27.3	2.3	2.07	0.23	25	25.23	0.026		1.2	0.88	0.01	41	22	0.01	0.01	47	0.075	39	0.089	9.9	0.21	11	33
DP-E12-15	n	2	2	2	2		2	0	0	0	1	2	2	2	2	2	2	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	22.05		5.45	1.5		505				14	23.19	1.69	1.56	0.13	21.5	21.63	0.012			0.92	0.029	36	17	0.01	0.18	54	0.100	35	0.032	7.1	0.045	12	33
	STD. DEV.	0.21		4.88	1.32		63.64					5.22	1.15	1.32	0.17	6.36	6.54																	
	MIN	21.9	4.88	2.0	0.6		460.0				14	19.5	0.88	0.63	0.005	17	17.005	0.012			0.92	0.029	36	17	0.01	0.18	54	0.100	35	0.032	7.1	0.045	12	33
	MAX	22.2	5	8.9	2.47		550.0				14	26.88	2.5	2.495	0.25	26	26.25	0.012			0.92	0.029	36	17	0.01	0.18	54	0.100	35	0.032	7.1	0.045	12	33
DP-E12-22	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	21.45		3.95	1.27		380.5				10	15.5	1.95	1.78	0.17	13.55	13.72	0.035		1.75	1.17	0.017	12	9.1	0.01	0.24	56	0.1	29	0.037	6.1	0.16	10	8.4
	STD. DEV.	1.48		2.76	0.96		118.09					4.95	1.34	1.17	0.17	6.29	6.12			0.78	0.47													
	MIN	20.4	5.0	2.0	0.59		297.0				10	12	1	0.951	0.049	9.1	9.39	0.035		1.2	0.83	0.017	12	9.1	0.01	0.24	56	0.1	29	0.037	6.1	0.16	10	8.4
	MAX	22.5	5.3	5.9	1.95		464.0				10	19	2.9	2.61	0.29	18	18.05	0.035		2.3	1.5	0.017	12	9.1	0.01	0.24	56	0.1	29	0.037	6.1	0.16	10	8.4
DP-E12-28	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	22.4		3.0	1.29		303.5				10	11.0	2.1	2.06	0.041	8.9	8.9	0.069			0.5	0.019	15	9.8	0.01	0.065	59	0.05	27	0.023	9.5	0.11	15	5.3
	STD. DEV.	0.6		1.4	1.02		9.2					1.1	0.3	0.2	0.040	1.3	1.3																	
	MIN	21.9	5.2	2.0	0.57		297.0				10	10.2	1.9	1.89	0.013	7.9	8.0	0.069			0.5	0.019	15	9.8	0.01	0.065	59	0.05	27	0.023	9.5	0.11	15	5.3
	MAX	22.8	5.3	4.0	2.01		310.0				10	11.7	2.3	2.23	0.069	9.8	9.8	0.069			0.5	0.019	15	9.8	0.01	0.065	59	0.05	27	0.023	9.5	0.11	15	5.3
DP-F03-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.7		18	1.22		145.6					3.3	1.6	1.21	0.39	1.7	2.09																	
	STD. DEV.																																	
	MIN	21.7	6.2	18	1.22		145.6					3.3	1.6	1.21	0.39	1.7	2.09																	
	MAX	21.7	6.2	18	1.22		145.6					3.3	1.6	1.21	0.39	1.7	2.09																	
DP-F04-17	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.0		90	0.57		415.7					2.15	0.35	0.322	0.028	1.8	1.828																	
	STD. DEV.																																	
	MIN	22.0	7.3	90	0.57		415.7					2.15	0.35	0.322	0.028	1.8	1.828																	
	MAX	22.0	7.3	90	0.57		415.7				0	2.15	0.35	0.322	0.028	1.8	1.828																	
DP-F04-22	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		9.9	0.72		314.1					10.9	2.7	2.683	0.017	8.2	8.217																	
	STD. DEV.																																	
	MIN	22.8	6.0	9.9	0.72		314.1					10.9	2.7	2.683	0.017	8.2	8.217																	
	MAX	22.8	6.0	9.9	0.72		314.1					10.9	2.7	2.683	0.017	8.2	8.217																	
DP-F04-32	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.1		69	1.04		345.6					0.96	0.25	0.208	0.042	0.71	0.752																	
	STD. DEV.																																	
	MIN	23.1	6.9	69	1.04		345.6					0.96	0.25	0.208	0.042	0.71	0.752																	
	MAX	23.1	6.9	69	1.04		345.6					0.96	0.25	0.208	0.042	0.71	0.752																	
DP-F05-5	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	27.7		6.9	7.36		173.3					2.41	2.4	2.27	0.13	0.01	0.14																	
	STD. DEV.																																	
	MIN	27.7	5.8	6.9	7.36		173.3					2.41	2.4	2.27	0.13	0.01	0.14																	
	MAX	27.7	5.8	6.9	7.36		173.3					2.41	2.4	2.27	0.13	0.01	0.14																	
DP-F05-31	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	23.0		35.5	1.86		242.1				18	6.11	1.46	1.39	0.07	4.65	4.72	0.29			1.7	0.58	10	1.3	0.11	0.01	23	0.05	31	1.5	6.4	0.063	2.9	11
	STD. DEV.	1.6		47.4	0.22		77.7					5.78	1.19	1.19	0.00	4.60	4.60																	
	MIN	21.9	5.2	2.0	1.70		187.1				18	2.02	0.62	0.55	0.069	1.40	1.47	0.29			1.7	0.58	10	1.3	0.11	0.01	23	0.05	31	1.5	6.4	0.063	2.9	11
	MAX	24.1	7.3	69	2.01		297.0				18	10.2	2.3	2.231	0.07	7.90	7.97	0.29			1.7	0.58	10	1.3	0.11	0.01	23	0.05	31	1.5	6.4	0.063	2.9	11
DP-F06-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.8		4.0	0.30		190.6					1.83	0.33	0.274	0.056	1.5	1.556	0																
	STD. DEV.																																	
	MIN	21.8	5.2	4.0	0.30		190.6					1.83	0.33	0.274	0.056	1.5	1.556	0																
	MAX	21.8	5.2	4.0	0.30		190.6					1.83	0.33	0.274	0.056	1.5	1.556	0																
DP-F08-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.5		225.0	3.69		956.5					7.1	1.1	0.91	0.140	6.0	6.1																	
	STD. DEV.	0.1		120.2	3.40		644.2					3.3	0.2	0.3	0.071	3.5	3.6																	
	MIN	22.4	7.0	140	1.28		501.0					4.7	0.9	0.71	0.090	3.5	3.6																	
	MAX	22.5	7.6	310	6.1		1412.0					9.4	1.2	1.11	0.190	8.5	8.7																	
DP-F08-20	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	23.2		6.5	1.09		351.8				10	10.8	1.5	1.45	0.033	9.3	9.3	0.33		3.0	1.60	0.032	11	8.6	0.01	0.01	65	0.05	32	0.067	7.3	0.22	14	6.4
	STD. DEV.	0.1		4.9	0.96		22.9					0.1	0.9	0.87	0.004	1.0	1.0				1.13													
	MIN	23.1	6.0	3.0	0.41		335.6				10	10.7	0.9	0.83	0.030	8.6	8.6	0.33		3.0	0.80	0.032	11	8.6	0.01	0.01	65	0.05	32	0.067	7.3	0.22	14	6.4
	MAX	23.2	6.3	9.9	1.77		368.0				10	10.9	2.1	2.07	0.036	10.0	10.0	0.33		3.0	2.40	0.032	11	8.6	0.01	0.01	65	0.05	32	0.067	7.3	0.22	14	6.4

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4	B	Ca	Fe	Mg	Mn	K	Na
DP-F08-28	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.3		26.5	1.05		328.0					3.97	0.9	0.8	0.081	3.1	3.2																		
	STD. DEV.	0.2		12.0	0.96		5.7					0.05	0.3	0.4	0.098	0.3	0.4																		
	MIN	23.1	6.1	18	0.37		323.9					3.93	0.6	0.5	0.012	2.9	2.9																		
	MAX	23.4	6.3	35	1.73		332.0					4.00	1.1	1.1	0.150	3.3	3.5																		
DP-F09-05	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	24.8		22	1.15		191.1				24	3.4	1.5	1.27	0.23	1.9	2.13	0.27			7.7	0.1	10	1.9	0.01	0.026	26	0.05	14	5.8	3.5	0.37	4.7	9.1
	STD. DEV.																																		
	MIN	24.8	6.6	22	1.15		191.1				24	3.4	1.5	1.27	0.23	1.9	2.13	0.27			7.7	0.1	10	1.9	0.01	0.026	26	0.05	14	5.8	3.5	0.37	4.7	9.1
	MAX	24.8	6.6	22	1.15		191.1				24	3.4	1.5	1.27	0.23	1.9	2.13	0.27			7.7	0.1	10	1.9	0.01	0.026	26	0.05	14	5.8	3.5	0.37	4.7	9.1
DP-F10-11	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.3		2.0	0.80		475.9					32.3	2.3	1.2	1.1	30	31.1																		
	STD. DEV.																																		
	MIN	21.3	4.7	2.0	0.80		475.9					32.3	2.3	1.2	1.1	30	31.1																		
	MAX	21.3	4.7	2.0	0.80		475.9					32.3	2.3	1.2	1.1	30	31.1																		
DP-F11-11	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	20.5		5.5	3.08		389					18.6	1.6	0.6	0.97	17.0	18.0																		
	STD. DEV.	1.3		4.9	3.08		33.0					5.5	0.1	0.6	0.75	5.7	4.9																		
	MIN	19.5	5.3	2.0	0.90		366.0					14.7	1.5	0.2	0.44	13.0	14.5																		
	MAX	21.4	5.4	8.9	5.26		412.7					22.5	1.7	1.1	1.50	21.0	21.4																		
DP-F11-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.3		5.0	1.96		500.2					29.8	1.3	1.0	0.26	28.5	28.8																		
	STD. DEV.	0.7		4.2	2.38		66.3					0.4	0.3	0.5	0.17	0.7	0.9																		
	MIN	21.8	5.0	2.0	0.28		453.3					29.5	1.1	0.7	0.14	28.0	28.1																		
	MAX	22.8	5.1	7.9	3.64		547.0					30.1	1.5	1.4	0.38	29.0	29.4																		
DP-F11-18	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		5.0	1.83		465.5					21.3	1.3	1.2	0.046	20.0	20.0			4.1	1.3														
	STD. DEV.	0.6		4.2	0.92		44.6					1.8	1.0	1.0	0.030	2.8	2.8																		
	MIN	22.2	5.0	2.0	1.18		433.9					20.0	0.6	0.5	0.024	18.0	18.1			4.1	1.3														
	MAX	23.1	5.4	7.9	2.48		497.0					22.6	2.0	1.9	0.067	22.0	22.0			4.1	1.3														
DP-F11-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		4.0	1.27		388.2					20.4	0.9	0.9	0.012	19.5	19.5																		
	STD. DEV.	0.1		2.8	1.18		98.7					1.0	0.3	0.3	0.009	0.7	0.7																		
	MIN	22.5	5.0	2.0	0.43		318.4					19.6	0.6	0.6	0.005	19.0	19.0																		
	MAX	22.7	5.2	5.9	2.10		458.0					21.1	1.1	1.1	0.018	20.0	20.0																		
DP-F11-24	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.9		3.0	0.73		388.1					19.8	0.8	0.8	0.015	19.0	19.0																		
	STD. DEV.	0.1		1.4	0.60		123.0					5.2	0.4	0.5	0.010	5.7	5.7																		
	MIN	22.8	5.0	2.0	0.30		301.1					16.1	0.5	0.4	0.008	15.0	15.0																		
	MAX	22.9	5.1	4.0	1.15		475.0					23.5	1.1	1.1	0.022	23.0	23.0																		
DP-F11-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.3		3.5	0.61		302.3					6.6	1.1	1.0	0.017	5.5	5.5																		
	STD. DEV.	0.1		2.1	0.30		7.4					2.9	0.3	0.3	0.013	2.5	2.5																		
	MIN	23.2	5.2	2.0	0.39		297.0					4.5	0.8	0.8	0.008	3.7	3.7																		
	MAX	23.3	5.3	4.9	0.82		307.5					8.6	1.3	1.3	0.026	7.3	7.3																		
DP-F12-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.5		2.0	0.90		427					24.5	1.5	1.34	0.16	23	23.16																		
	STD. DEV.																																		
	MIN	21.5	5.0	2.0	0.90		427					24.5	1.5	1.34	0.16	23	23.16																		
	MAX	21.5	5.0	2.0	0.90		427					24.5	1.5	1.34	0.16	23	23.16																		
DP-F15-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.6		16.5	0.82		460.3					24.5	0.5	0.3	0.16	24.0	24.2																		
	STD. DEV.	0.1		7.8	0.41		73.1					10.2	0.3	0.4	0.05	9.9	9.8																		
	MIN	21.5	5.1	11	0.53		408.6					17.3	0.3	0.1	0.12	17.0	17.2																		
	MAX	21.7	5.2	22	1.11		512.0					31.7	0.7	0.6	0.19	31.0	31.1																		
DP-F15-20	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.2		11.5	0.70		516.0					24.9	0.9	0.8	0.012	24.0	24.0			1.1	1.2														
	STD. DEV.	0.1		0.7	0.11		188.1					6.3	0.8	0.8	0.010	7.1	7.1																		
	MIN	22.1	4.9	11.0	0.62		383.0					20.4	0.3	0.3	0.005	19.0	19.0			1.1	1.2														
	MAX	22.3	5.4	12	0.78		649.0					29.3	1.4	1.4	0.019	29.0	29.0			1.1	1.2														
DP-F15-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.2		3.0	0.65		298.4					15.0	1.0	1.0	0.045	14.0	14.0																		
	STD. DEV.	0.5		1.4	0.18		10.7					4.9	0.7	0.6	0.041	4.2	4.3																		
	MIN	21.8	4.9	2.0	0.52		290.8					11.5	0.5	0.5	0.016	11.0	11.0																		
	MAX	22.5	5.2	4.0	0.78		306.0					18.5	1.5	1.4	0.074	17.0	17.1																		
DP-G05-6	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	26.2		22	2.49		151.9				32	2.04	1.9	0.5	1.4	0.14	1.54	0.43			8.7	0.075	4.1	0.14	0.01	0.18	30	0.05	11	8.2	3.3	0.4	2.8	2.6
	STD. DEV.																																		
	MIN	26.2	6.1	22	2.49		151.9				32	2.04	1.9	0.5	1.4	0.14	1.54	0.43			8.7	0.075	4.1	0.14	0.01	0.18	30	0.05	11	8.2	3.3	0.4	2.8	2.6
	MAX	26.2	6.1	22	2.49		151.9				32	2.04	1.9	0.5	1.4	0.14	1.54	0.43			8.7	0.075	4.1	0.14	0.01	0.18	30	0.05	11	8.2	3.3	0.4	2.8	2.6
DP-G06-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	28.9		34	2.36		184					0.68	0.55	0.28	0.27	0.13	0.4																		
	STD. DEV.																																		
	MIN	28.9	6.2	34	2.36		184					0.68	0.55	0.28	0.27	0.13	0.4																		
	MAX	28.9	6.2	34	2.36		184					0.68	0.55	0.28	0.27	0.13	0.4																		

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-G07-13	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.2		14	2.19		232					3.40	0.70	0.37	0.33	2.7	3.03																	
	STD. DEV.																																	
	MIN	25.2	5.8	14	2.19		232					3.40	0.70	0.37	0.33	2.7	3.03																	
	MAX	25.2	5.8	14	2.19		232					3.40	0.70	0.37	0.33	2.7	3.03																	
DP-G07-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.4		5.1	2.27		271.5					4.87	0.47	0.45	0.022	4.40	4.42																	
	STD. DEV.	1.4		1.5	1.51		0.7					0.11	0.03	0.00	0.024	0.14	0.12																	
	MIN	21.4	5.2	4.0	1.20		271.0					4.79	0.45	0.45	0.005	4.30	4.34																	
	MAX	23.4	5.5	6.1	3.33		272.0					4.95	0.49	0.45	0.039	4.50	4.51																	
DP-G07-17	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		5.0	1.86		314.5					8.51	0.71	0.70	0.005	7.80	7.81																	
	STD. DEV.	1.3		0.1	0.47		3.5					2.11	0.56	0.56	0.000	1.56	1.56																	
	MIN	21.9	5.3	4.9	1.52		312.0					7.01	0.31	0.31	0.005	6.70	6.71																	
	MAX	23.7	5.4	5.1	2.19		317.0					10.00	1.10	1.10	0.005	8.90	8.91																	
DP-G07-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		5.5	1.12		334.5					14.06	1.56	1.52	0.038	12.50	12.54																	
	STD. DEV.	0.5		0.8	0.77		12.0					2.18	1.48	1.43	0.047	0.71	0.75																	
	MIN	22.2	5.4	4.9	0.57		326.0					12.51	0.51	0.51	0.005	12.00	12.01																	
	MAX	22.9	5.6	6.1	1.66		343.0					15.60	2.60	2.53	0.071	13.0	13.1																	
DP-G07-24	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		6.0	1.04		285.5					15.00	1.50	1.50	0.005	13.50	13.51																	
	STD. DEV.	0.4		1.6	0.13		20.5					0.71	1.41	1.41	0.000	0.71	0.71																	
	MIN	22.3	5.3	4.9	0.94		271.0					14.50	0.50	0.50	0.005	13.00	13.01																	
	MAX	22.9	5.7	7.1	1.13		300.0					15.50	2.50	2.50	0.005	14.00	14.01																	
DP-G07-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.4		4.6	1.16		298					13.12	1.77	1.77	0.005	11.35	11.36																	
	STD. DEV.	0.1		0.8	0.30		7.1					6.62	1.46	1.46	0.0	5.16	5.16																	
	MIN	22.3	5.2	4.0	0.95		293					8.44	0.74	0.74	0.005	7.70	7.71																	
	MAX	22.5	5.2	5.1	1.37		303					17.80	2.80	2.80	0.005	15.00	15.01																	
DP-G08-05	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	26.1		4.9	7.64		157.8					2.52	0.92	0.92	0.005	1.60	1.61																	
	STD. DEV.																																	
	MIN	26.1	5.6	4.9	7.64		157.8					2.52	0.92	0.92	0.005	1.60	1.61																	
	MAX	26.1	5.6	4.9	7.64		157.8					2.52	0.92	0.92	0.005	1.60	1.61																	
DP-G09-11	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	24.0		7.9	2.08		285.0				41	10.2	1.10	1.09	0.010	9.10	9.11	0.1			1.3	0.036	13.0	9.1	0.0	0.0	51	0.05	27	1.1	5.6	0.3	7.0	12
	STD. DEV.																																	
	MIN	24.0	5.4	7.9	2.08		285.0				41	10.2	1.10	1.09	0.010	9.10	9.11	0.1			1.3	0.036	13.0	9.1	0.01	0.010	51	0.05	27	1.1	5.6	0.3	7.0	12
	MAX	24.0	5.4	7.9	2.08		285.0				41	10.2	1.10	1.09	0.010	9.10	9.11	0.1			1.3	0.036	13.0	9.1	0.01	0.010	51	0.05	27	1.1	5.6	0.3	7.0	12
DP-G11-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.2		3.0	1.38		295.0					14.20	2.20	2.19	0.015	12.00	12.02																	
	STD. DEV.																																	
	MIN	21.2	5.1	3.0	1.38		295.0					14.20	2.20	2.19	0.015	12.00	12.02																	
	MAX	21.2	5.1	3.0	1.38		295.0					14.20	2.20	2.19	0.015	12.00	12.02																	
DP-G12-9	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.4		3.0	2.62		341.0					11.70	1.70	1.66	0.036	10.00	10.04																	
	STD. DEV.																																	
	MIN	21.4	4.7	3.0	2.62		341.0					11.70	1.70	1.66	0.036	10.00	10.04																	
	MAX	21.4	4.7	3.0	2.62		341.0					11.70	1.70	1.66	0.036	10.00	10.04																	
DP-G12-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.1		6.0	0.93		497.5					26.85	1.85	1.60	0.25	25.00	25.25																	
	STD. DEV.	0.4		1.3	0.05		14.8					2.62	1.20	1.16	0.04	1.41	1.46																	
	MIN	21.8	4.7	5.1	0.89		487.0					25.00	1.00	0.78	0.22	24.00	24.22																	
	MAX	22.3	5.5	6.9	0.96		508.0					28.70	2.70	2.42	0.28	26.00	26.28																	
DP-G12-18	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.2		6.9	1.40		494.0					30.70	1.70	1.70	0.005	29.00	29.01																	
	STD. DEV.																																	
	MIN	22.2	5.2	6.9	1.40		494.0					30.70	1.70	1.70	0.005	29.00	29.01																	
	MAX	22.2	5.2	6.9	1.40		494.0					30.70	1.70	1.70	0.005	29.00	29.01																	
DP-G12-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		6.5	0.75		510.5					24.03	2.03	1.98	0.052	22.00	22.05																	
	STD. DEV.	0.0		3.4	0.35		177.5					9.94	2.79	2.72	0.066	12.73	12.66																	
	MIN	22.7	4.9	4.1	0.50		385.0					17.00	0.06	0.06	0.005	13.00	13.10																	
	MAX	22.7	5.4	8.9	0.99		636.0					31.06	4.00	3.90	0.099	31.00	31.01																	
DP-G12-24	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		3.9	0.82		324.0					12.98	0.98	0.98	0.005	12.00	12.01																	
	STD. DEV.																																	
	MIN	22.7	5.4	3.9	0.82		324.0					12.98	0.98	0.98	0.005	12.00	12.01																	
	MAX	22.7	5.4	3.9	0.82		324.0					12.98	0.98	0.98	0.005	12.00	12.01																	
DP-G12-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		5.5	0.44		410.0					16.44	0.94	0.77	0.17	15.50	15.67																	
	STD. DEV.	0.1		0.8	0.01		140.0					4.58	0.37	0.44	0.07	4.95	5.02																	
	MIN	22.9	4.7	4.9	0.43		311.0					13.20	0.68	0.46	0.12	12.00	12.12																	
	MAX	23.1	5.4	6.1	0.45		509.0					19.68	1.20	1.08	0.22	19.00	19.22																	

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-H05-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.6		15	6.73		136.7					1.75	1.70	0.10	1.60	0.05	1.65																	
	STD. DEV.																																	
	MIN	25.6	6.3	15	6.73		136.7					1.75	1.70	0.10	1.60	0.05	1.65																	
	MAX	25.6	6.3	15	6.73		136.7					1.75	1.70	0.10	1.60	0.05	1.65																	
DP-H06-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	19.8		18	4.04		152.4					1.35	1.20	0.55	0.65	0.15	0.80																	
	STD. DEV.																																	
	MIN	19.8	6.0	18	4.04		152.4					1.35	1.20	0.55	0.65	0.15	0.80																	
	MAX	19.8	6.0	18	4.04		152.4					1.35	1.20	0.55	0.65	0.15	0.80																	
DP-H07-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	20.2		2.0	1.57		151.3					1.69	0.71	0.66	0.051	0.98	1.03																	
	STD. DEV.																																	
	MIN	20.2	5.1	2.0	1.57		151.3					1.69	0.71	0.66	0.051	0.98	1.03																	
	MAX	20.2	5.1	2.0	1.57		151.3					1.69	0.71	0.66	0.051	0.98	1.03																	
DP-H08-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		24	2.97		189.0					2.95	2.20	1.32	0.88	0.75	1.63																	
	STD. DEV.																																	
	MIN	22.7	6.2	24	2.97		189.0					2.95	2.20	1.32	0.88	0.75	1.63																	
	MAX	22.7	6.2	24	2.97		189.0					2.95	2.20	1.32	0.88	0.75	1.63																	
DP-H09-12	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.9		6.9	3.40		249.0					8.60	1.20	1.19	0.010	7.40	7.41																	
	STD. DEV.																																	
	MIN	21.9	5.7	6.9	3.40		249.0					8.60	1.20	1.19	0.010	7.40	7.41																	
	MAX	21.9	5.7	6.9	3.40		249.0					8.60	1.20	1.19	0.010	7.40	7.41																	
DP-H10-11	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.2		25	5.83		204.5					2.11	0.21	0.12	0.089	1.90	1.99																	
	STD. DEV.																																	
	MIN	22.2	6.2	25	5.83		204.5					2.11	0.21	0.12	0.089	1.90	1.99																	
	MAX	22.2	6.2	25	5.83		204.5					2.11	0.21	0.12	0.089	1.90	1.99																	
DP-H12-5	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.9		7.9	0.94		188.5					2.81	0.81	0.76	0.047	2.00	2.05																	
	STD. DEV.																																	
	MIN	21.9	5.6	7.9	0.94		188.5					2.81	0.81	0.76	0.047	2.00	2.05																	
	MAX	21.9	5.6	7.9	0.9		188.5					2.81	0.81	0.76	0.047	2.00	2.05																	
DP-I06-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	20.7		6.0	1.55		226.2					3.19	0.84	0.83	0.005	2.35	2.36																	
	STD. DEV.	0.4		0.1	0.16		19.6					1.58	0.37	0.37	0.000	1.20	1.20																	
	MIN	20.4	5.3	5.9	1.44		212.3					2.07	0.57	0.57	0.005	1.50	1.51																	
	MAX	20.9	5.3	6.1	1.66		240.0					4.30	1.10	1.10	0.005	3.20	3.21																	
DP-I06-20	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.4		3.0	1.42		362.5					17.28	0.78	0.78	0.005	16.50	16.51																	
	STD. DEV.	0.0		1.3	0.54		6.4					2.57	0.45	0.45	0.000	2.12	2.12																	
	MIN	21.4	5.0	2.0	1.03		358.0					15.46	0.46	0.46	0.005	15.00	15.01																	
	MAX	21.4	5.0	3.9	1.80		367.0					19.10	1.10	1.10	0.005	18.00	18.01																	
DP-I06-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.5		2.5	1.75		303.5					13.29	1.29	1.29	0.005	12.00	12.01			0.75	1.00													
	STD. DEV.	0.2		0.7	0.87		2.1					4.12	1.29	1.29	0.000	2.83	2.83																	
	MIN	21.3	4.9	2.0	1.13		302.0					10.38	0.38	0.38	0.005	10.00	10.01			0.75	1.00													
	MAX	21.6	5.0	3.0	2.36		305.0					16.20	2.20	2.20	0.005	14.00	14.01			0.75	1.00													
DP-I07-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	19.4		17	2.2		170.7					1.28	0.42	0.38	0.041	0.86	0.90																	
	STD. DEV.																																	
	MIN	19.4	5.8	17	2.2		170.7					1.28	0.42	0.38	0.041	0.86	0.90																	
	MAX	19.4	5.8	17	2.2		170.7					1.28	0.42	0.38	0.041	0.86	0.90																	
DP-I08-5	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		15	4.69		191.5					2.44	2.10	0.90	1.20	0.34	1.54																	
	STD. DEV.																																	
	MIN	23.0	6.5	15	4.69		191.5					2.44	2.10	0.90	1.20	0.34	1.54																	
	MAX	23.0	6.5	15	4.69	0.0	191.5					2.44	2.10	0.90	1.20	0.34	1.54																	
DPI09-11	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.5		3.0	0.77		180.6					2.22	0.72	0.72	0.005	1.50	1.51																	
	STD. DEV.																																	
	MIN	21.5	5.1	3.0	0.77		180.6					2.22	0.72	0.72	0.005	1.50	1.51																	
	MAX	21.5	5.1	3.0	0.77		180.6					2.22	0.72	0.72	0.005	1.50	1.51																	
DP-I10-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	20.2		27	5.10		173.4					1.75	1.40	0.74	0.66	0.35	1.01																	
	STD. DEV.																																	
	MIN	20.2	6.2	27	5.10		173.4					1.75	1.40	0.74	0.66	0.35	1.01																	
	MAX	20.2	6.2	27	5.10		173.4					1.75	1.40	0.74	0.66	0.35	1.01																	
DP-I11-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.4		17	0.90		166.8					1.03	0.64	0.38	0.26	0.39	0.65																	
	STD. DEV.																																	
	MIN	21.4	5.7	17	0.90		166.8					1.03	0.64	0.38	0.26	0.39	0.65																	
	MAX	21.4	5.7	17	0.90		166.8					1.03	0.64	0.38	0.26	0.39	0.65																	

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-I12-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.9		11	1.87		127.6					7.77	0.67	0.67	0.005	7.10	7.11																	
	STD. DEV.																																	
	MIN	21.9	5.6	11	1.87		127.6					7.77	0.67	0.67	0.005	7.10	7.11																	
	MAX	21.9	5.6	11	1.87		127.6					7.77	0.67	0.67	0.005	7.10	7.11																	
DP-J08-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	19.7		15	2.70		140.3					3.75	3.70	0.70	3.00	0.05	3.05																	
	STD. DEV.																																	
	MIN	19.7	6.0	15	2.70		140.3					3.75	3.70	0.70	3.00	0.05	3.05																	
	MAX	19.7	6.0	15	2.70		140.3					3.75	3.70	0.70	3.00	0.05	3.05																	
DP-J09-12	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.1		2.0	0.81		167.0					1.55	0.45	0.45	0.005	1.10	1.11																	
	STD. DEV.																																	
	MIN	21.1	4.8	2.0	0.81		167.0					1.55	0.45	0.45	0.005	1.10	1.11																	
	MAX	21.1	4.8	2.0	0.81		167.0					1.55	0.45	0.45	0.005	1.10	1.11																	
DP-J09-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.7		2.5	2.01		229.1					6.06	0.61	0.60	0.005	5.45	5.46																	
	STD. DEV.	0.4		0.7	1.81		4.3					3.02	0.26	0.26	0.000	2.76	2.76																	
	MIN	21.4	4.5	2.0	0.73		226.0					3.92	0.42	0.42	0.005	3.50	3.51																	
	MAX	21.9	4.8	3.0	3.29		232.1					8.19	0.79	0.79	0.005	7.40	7.41																	
DP-J09-20	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		3.0	1.12		351.6					13.18	0.63	0.62	0.005	12.55	12.56				0.91													
	STD. DEV.	0.8		1.4	0.64		19.0					7.11	0.81	0.81	0.000	6.29	6.29																	
	MIN	22.1	4.4	2.0	0.66		338.1					8.15	0.05	0.05	0.005	8.10	8.11				0.91													
	MAX	23.2	4.9	4.0	1.57		365.0					18.20	1.20	1.20	0.005	17.00	17.01				0.91													
DP-J09-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		3.0	1.62		297.6					14.05	1.40	1.40	0.005	12.65	12.66																	
	STD. DEV.	0.4		1.4	1.26		0.8					5.16	0.42	0.42	0.000	4.74	4.74																	
	MIN	22.5	4.9	2.0	0.73		297.0					10.40	1.10	1.10	0.005	9.30	9.31																	
	MAX	23.0	5.0	4.0	2.51		298.2					17.70	1.70	1.70	0.005	16.00	16.01																	
DP-J10-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.0		14	3.48		186.6					3.4	2.4	0.0	2.4	1.0	3.4																	
	STD. DEV.																																	
	MIN	24.0	5.9	14	3.48		186.6					3.4	2.4	0.0	2.4	1.0	3.4																	
	MAX	24.0	5.9	14	3.48		186.6					3.4	2.4	0.0	2.4	1.0	3.4																	
DP-J11-12	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	23.7		2.0	1.02		196.7				14	2.65	0.55	0.55	0.005	2.10	2.11	0.010			1.1	0.16	6.3	2.1	0.0	0.0	65	0.05	16	0.039	4.2	0.15	3.8	2.9
	STD. DEV.																																	
	MIN	23.7	4.4	2.0	1.02		196.7				14	2.65	0.55	0.55	0.005	2.10	2.11	0.010			1.1	0.16	6.3	2.1	0.01	0.010	65	0.05	16	0.039	4.2	0.15	3.8	2.9
	MAX	23.7	4.4	2.0	1.02		196.7				14	2.65	0.55	0.55	0.005	2.10	2.11	0.010			1.1	0.16	6.3	2.1	0.01	0.010	65	0.05	16	0.039	4.2	0.15	3.8	2.9
DP-J12-13	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.9		4.0	1.54		238.0					6.21	0.61	0.61	0.005	5.60	5.61																	
	STD. DEV.																																	
	MIN	22.9	4.9	4.0	1.54		238.0					6.21	0.61	0.61	0.005	5.60	5.61																	
	MAX	22.9	4.9	4.0	1.54		238.0					6.21	0.61	0.61	0.005	5.60	5.61																	
DP-J12-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.7		4.0	1.32		284.3					7.01	0.26	0.25	0.005	6.75	6.76																	
	STD. DEV.	0.8		2.8	0.26		4.6					2.76	0.29	0.29	0.000	2.47	2.47																	
	MIN	22.1	4.8	2.0	1.13		281.0					5.05	0.05	0.05	0.005	5.00	5.01																	
	MAX	23.3	5.1	5.9	1.50		287.5					8.96	0.46	0.46	0.005	8.50	8.51																	
DP-J12-20	n	2	2	2	2		2	0	0	0	1	2	2	2	2	2	2	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	23.2		4.0	1.17		348.5				18	10.1	1.2	1.16	0.005	8.9	8.9	0.11		2.6	1.4	0.011	14	10	0.01	0.010	88	0.050	33	0.020	9.6	0.059	21	4.3
	STD. DEV.	0.4		2.8	0.05		7.8					2.0	0.5	0.47	0.000	1.6	1.6				0.14													
	MIN	22.9	5.0	2.0	1.13		342.9				18	8.6	0.8	0.83	0.005	7.8	7.8	0.11		2.60	1.30	0.011	14	10	0.01	0.010	88	0.050	33	0.020	9.6	0.059	21	4.3
	MAX	23.4	5.6	5.9	1.20		354.0				18	11.5	1.5	1.50	0.005	10.0	10.0	0.11		2.60	1.50	0.011	14	10	0.01	0.010	88	0.050	33	0.020	9.6	0.059	21	4.3
DP-J12-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.1		3.0	1.03		305.1					15.05	1.05	1.05	0.005	14.00	14.01																	
	STD. DEV.	0.7		1.4	0.16		2.9					2.76	0.07	0.07	0.000	2.83	2.83																	
	MIN	22.6	4.8	2.0	0.92		303.0					13.10	1.00	1.00	0.005	12.00	12.01																	
	MAX	23.6	5.1	4.0	1.14		307.1					17.00	1.10	1.10	0.005	16.00	16.01																	
DP-K10-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.2		6.9	3.79		163.8					2.33	2	0.4	1.6	0.33	1.93																	
	STD. DEV.																																	
	MIN	24.2	6.0	6.9	3.79		163.8					2.33	2	0.4	1.6	0.33	1.93																	
	MAX	24.2	6.0	6.9	3.79		163.8					2.33	2	0.4	1.6	0.33	1.93																	
DP-K11-13	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.1		4.0	1.8		168.3					1.89	0.59	0.59	0.005	1.3	1.31																	
	STD. DEV.																																	
	MIN	22.1	4.9	4.0	1.8		168.3					1.89	0.59	0.59	0.005	1.3	1.31																	
	MAX	22.1	4.9	4.0	1.8		168.3					1.89	0.59	0.59	0.005	1.3	1.31																	
DP-K12-5	n	1	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	22.3		6.9	1.40		59.3				55	0.81	0.77	0.68	0.092	0.04	0.13	0.34			7.30	0.083	1.9	0.04	0.01	0.010	11	0.050	5.5	2.2	0.86	0.210	0.40	1.9
	STD. DEV.																																	
	MIN	22.3	5.6	6.9	1.40		59.3				55	0.81	0.77	0.68	0.092	0.04	0.13	0.34			7.30	0.083	1.9	0.04	0.01	0.010	11	0.050	5.5	2.2	0.86	0.210	0.40	1.9
	MAX	22.3	5.6	6.9	1.40		59.3				55	0.81	0.77	0.68	0.092	0.04	0.13	0.34			7.30	0.083	1.9	0.04	0.01	0.010	11	0.050	5.5	2.2	0.86	0.210	0.40	1.9

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N^-	PO_4-P^-	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-M07-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		4.0	0.8		285.5					6.62	0.52	0.51	0.005	6.1	6.11																	
	STD. DEV.	0.6		2.8	0.1		26.2					0.01	0.13	0.13	0.000	0.1	0.14																	
	MIN	22.2	4.8	2.0	0.7		267.0					6.61	0.42	0.42	0.005	6.0	6.01																	
	MAX	23.0	5.2	5.9	0.8		304.0					6.62	0.61	0.61	0.005	6.2	6.21																	
DP-M07-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.3		2.0	0.7		368.5					13.7	1.2	1.18	0.0	12.5	12.5																	
	STD. DEV.	1.1		0.0	0.2		9.1					0.3	0.5	0.45	0.0	0.7	0.7																	
	MIN	22.5	4.9	2.0	0.6		362.0					13.5	0.9	0.86	0.005	12.0	12.0																	
	MAX	24.0	4.9	2.0	0.9		374.9					13.9	1.5	1.50	0.005	13.0	13.0																	
DP-M07-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.2		4.0	0.79		297.3					9.7	1.5	1.5	0.0	8.3	8.3																	
	STD. DEV.	0.9		2.8	0.42		6.0					0.5	1.0	1.0	0.0	0.5	0.5																	
	MIN	22.5	4.8	2.0	0.49		293					9.34	0.74	0.74	0.005	7.9	7.91																	
	MAX	23.8	5.2	5.9	1.08		301.5					10.10	2.2	2.20	0.005	8.6	8.61																	
DP-M12-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.0		8.9	1.83		161.6					1.49	0.60	0.52	0.083	0.89	0.97																	
	STD. DEV.																																	
	MIN	24.0	5.7	8.9	1.83		161.6					1.49	0.60	0.52	0.083	0.89	0.97																	
	MAX	24.0	5.7	8.9	1.83		161.6					1.49	0.60	0.52	0.083	0.89	0.97																	
DP-N12-14	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.5		2.5	1.10		171.0					3.06	0.62	0.62	0.005	2.44	2.44																	
	STD. DEV.	0.6		0.7	0.26		10.7					2.86	0.51	0.51	0.000	2.35	2.35																	
	MIN	22.1	4.8	2.0	0.91		163.4					1.03	0.26	0.26	0.005	0.77	0.78																	
	MAX	22.9	5.0	3.0	1.28		178.6					5.08	0.98	0.98	0.005	4.10	4.11																	
DP-N12-18	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.2		4.0	1.11		250					7.2	1.1	1.1	0.005	6.1	6.11																	
	STD. DEV.																																	
	MIN	23.2	5.1	4.0	1.11		250					7.2	1.1	1.1	0.005	6.1	6.11																	
	MAX	23.2	5.1	4.0	1.11		250					7.2	1.1	1.1	0.005	6.1	6.11																	
DP-N12-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		4.0	1.48		291.6					5.7	0.57	0.57	0.005	5.15	5.16																	
	STD. DEV.	0.7		2.8	0.62		17.7					1.4	0.04	0.04	0.000	1.48	1.48																	
	MIN	22.3	4.9	2.0	1.04		279.0					4.7	0.54	0.54	0.005	4.10	4.11																	
	MAX	23.3	5.2	5.9	1.91		304.1					6.7	0.60	0.60	0.005	6.20	6.21																	
DP-N12-24	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.1		4.9	0.78		348.0					13.30	1.30	1.30	0.005	12.00	12.01																	
	STD. DEV.																																	
	MIN	24.1	5.2	4.9	0.78		348.0					13.30	1.30	1.30	0.005	12.00	12.01																	
	MAX	24.1	5.2	4.9	0.78		348.0					13.30	1.30	1.30	0.005	12.00	12.01																	
DP-N12-27	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		3.5	1.57		336.8					16.90	1.40	1.39	0.005	15.50	15.51			1.5	2.0													
	STD. DEV.	1.6		2.1	1.25		7.4					6.94	0.57	0.57	0.000	6.36	6.36																	
	MIN	21.6	5.0	2.0	0.68		331.6					11.99	0.99	0.99	0.005	11.00	11.01			1.5	2.0													
	MAX	23.9	5.1	4.9	2.45		342.0					21.80	1.80	1.80	0.005	20.00	20.01			1.5	2.0													
DP-O10-12	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.0		2.0	1.22		186.2					0.19	0.14	0.14	0.005	0.05	0.06																	
	STD. DEV.	1.3		0.0	0.13		0.4					0.04	0.06	0.06	0.000	0.01	0.01																	
	MIN	21.1	4.3	2.0	1.13		185.9					0.16	0.10	0.10	0.005	0.04	0.05																	
	MAX	22.9	4.3	2.0	1.31		186.4					0.22	0.18	0.18	0.005	0.06	0.07																	
DP-O10-18	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.9		4.0	0.91		296.3					7.07	1.32	1.32	0.005	5.75	5.76																	
	STD. DEV.	0.9		2.8	0.19		3.3					3.58	1.10	1.10	0.000	2.47	2.47																	
	MIN	22.2	4.8	2.0	0.77		294.0					4.54	0.54	0.54	0.005	4.00	4.01																	
	MAX	23.5	5.3	5.9	1.04		298.6					9.60	2.10	2.10	0.005	7.50	7.51																	
DP-O10-24	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.0		2.5	0.82		271.6					10.3	2.25	2.24	0.0050	8.04	8.04																	
	STD. DEV.	1.7		0.7	0.18		126.4					14.3	3.05	3.05	0.0000	11.26	11.26																	
	MIN	21.8	4.2	2.0	0.69		182.2					0.2	0.09	0.09	0.0050	0.07	0.08																	
	MAX	24.2	5.1	3.0	0.95		361.0					20.4	4.40	4.40	0.0050	16.00	16.01																	
DP-Q15-15	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.7		2.5	1.46		294.2					3.54	0.34	0.34	0.005	3.20	3.21																	
	STD. DEV.	1.4		0.7	1.20		13.0					2.47	0.07	0.07	0.000	2.40	2.40																	
	MIN	20.7	4.7	2.0	0.61		285.0					1.79	0.29	0.29	0.005	1.50	1.51																	
	MAX	22.7	4.8	3.0	2.31		303.4					5.29	0.39	0.39	0.005	4.90	4.91																	
DP-Q15-21	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.1		4.0	1.09		321.3					7.41	0.66	0.65	0.005	6.75	6.76																	
	STD. DEV.	0.6		2.8	0.50		3.3					2.13	0.35	0.35	0.000	2.47	2.47																	
	MIN	22.6	5.0	2.0	0.73		319.0					5.90	0.41	0.41	0.005	5.00	5.01																	
	MAX	23.5	5.2	5.9	1.44		323.6					8.91	0.90	0.90	0.005	8.50	8.51																	

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_3-N	NO_2-N	PO_4-P	SO_4^-	B	Ca	Fe	Mg	Mn	K	Na
DP-Q15-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.4		4.0	1.15		328.5					8.30	0.80	0.77	0.021	7.50	7.52																	
	STD. DEV.	1.2		2.8	0.26		6.4					1.00	0.13	0.11	0.023	1.13	1.11																	
	MIN	21.5	5.1	2.0	0.96		324.0					7.59	0.70	0.70	0.005	6.70	6.74																	
	MAX	23.2	5.2	5.9	1.33		333.0					9.00	0.89	0.85	0.037	8.30	8.31																	
Standpipe Piezometers																																		
PZ01-BKG-9	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.8		2.0	6.78		146.8					0.37	0.36	0.25	0.11	0.01	0.12																	
	STD. DEV.																																	
	MIN	22.8	4.6	2.0	6.78		146.8					0.37	0.36	0.25	0.11	0.01	0.12																	
	MAX	22.8	4.6	2.0	6.78		146.8					0.37	0.36	0.25	0.11	0.01	0.12																	
PZ02-P02-9	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.4		2.0	4.63		73.6					1.73	0.96	0.96	0.005	0.77	0.78																	
	STD. DEV.																																	
	MIN	24.4	4.7	2.0	4.63		73.6					1.73	0.96	0.96	0.005	0.77	0.78																	
	MAX	24.4	4.7	2.0	4.63		73.6					1.73	0.96	0.96	0.005	0.77	0.78																	
PZ03-H11-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.9		2.0	3.68		138.4					3.80	2.30	2.29	0.006	1.50	1.51																	
	STD. DEV.																																	
	MIN	25.9	4.8	2.0	3.68		138.4					3.80	2.30	2.29	0.006	1.50	1.51																	
	MAX	25.9	4.8	2.0	3.68		138.4					3.80	2.30	2.29	0.006	1.50	1.51																	
PZ04-BKG-9	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	21.7		7.5	2.47		75.6				28.0	0.39	0.23	0.21	0.022	0.16	0.18	0.021		2.9	2.7	0.091	1.7	0.3	0.01	0.010	12.0	0.050	5.6	0.066	1.6	0.1	0.9	1.8
	STD. DEV.	0.1		0.8	1.94		3.7					0.37	0.17	0.15	0.023	0.21	0.23				0.1													
	MIN	21.6	5.3	6.9	1.10		72.9				28	0.12	0.11	0.11	0.005	0.01	0.02	0.021		2.9	2.6	0.091	1.7	0.3	0.01	0.010	12	0.050	5.6	0.066	1.6	0.069	0.94	1.8
	MAX	21.7	5.4	8.1	3.84		78.2				28	0.65	0.35	0.31	0.038	0.30	0.34	0.021		2.9	2.8	0.091	1.7	0.3	0.01	0.010	12	0.050	5.6	0.066	1.6	0.069	0.94	1.8
PZ05-BKG-9	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.8		6.9	4.38		98.8					4.80	1.20	1.17	0.034	3.60	3.63																	
	STD. DEV.																																	
	MIN	21.8	5.1	6.9	4.38		98.8					4.80	1.20	1.17	0.034	3.60	3.63																	
	MAX	21.8	5.1	6.9	4.38		98.8					4.80	1.20	1.17	0.034	3.60	3.63																	
PZ06-BKG-12	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.1		3.0	5.41		59.4					0.26	0.25	0.21	0.04	0.01	0.05																	
	STD. DEV.																																	
	MIN	23.1	4.7	3.0	5.41		59.4					0.26	0.25	0.21	0.04	0.01	0.05																	
	MAX	23.1	4.7	3.0	5.41		59.4					0.26	0.25	0.21	0.04	0.01	0.05																	
PZ07-D05-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.3		3.0	0.39		221.6					5.20	1.60	1.60	0.005	3.6	3.61																	
	STD. DEV.																																	
	MIN	25.3	4.7	3.0	0.39		221.6					5.20	1.60	1.60	0.005	3.6	3.61																	
	MAX	25.3	4.7	3.0	0.39		221.6					5.20	1.60	1.60	0.005	3.6	3.61																	
PZ08-FG7-12	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.6		2.0	3.33		126.9					2.13	1.30	1.30	0.005	0.83	0.84																	
	STD. DEV.																																	
	MIN	23.6	4.8	2.0	3.33		126.9					2.13	1.30	1.30	0.005	0.83	0.84																	
	MAX	23.6	4.8	2.0	3.33		126.9					2.13	1.30	1.30	0.005	0.83	0.84																	
PZ09-I08-5	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.9		2.0	6.03		94.2					1.99	1.40	1.40	0.005	0.59	0.60																	
	STD. DEV.																																	
	MIN	21.9	5.2	2.0	6.03		94.2					1.99	1.40	1.40	0.005	0.59	0.60																	
	MAX	21.9	5.2	2.0	6.03		94.2					1.99	1.40	1.40	0.005	0.59	0.60																	
PZ10-CD6-13	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.6		26	2.85		524.0					7.70	2.50	2.45	0.050	5.20	5.25																	
	STD. DEV.																																	
	MIN	25.6	6.0	26	2.85		524.0					7.70	2.50	2.45	0.050	5.20	5.25																	
	MAX	25.6	6.0	26	2.85		524.0					7.70	2.50	2.45	0.050	5.20	5.25																	
PZ11-E09-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	25.8		12	2.33		453.8					23.10	2.10	1.61	0.49	21.00	21.49																	
	STD. DEV.																																	
	MIN	25.8	5.6	12	2.33		453.8					23.10	2.10	1.61	0.49	21.00	21.49																	
	MAX	25.8	5.6	12	2.33		453.8					23.10	2.10	1.61	0.49	21.00	21.49																	
PZ13-F04-8	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	21.4		7.9	2.48		125.5					2.15	0.75	0.71	0.037	1.40	1.44																	
	STD. DEV.																																	
	MIN	21.4	5.6	7.9	2.48		125.5					2.15	0.75	0.71	0.037	1.40	1.44																	
	MAX	21.4	5.6	7.9	2.48		125.5					2.15	0.75	0.71	0.037	1.40	1.44																	
PZ14-G13-7	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.5		15	1.04		246.1					7.59	0.19	0.19	0.005	7.40	7.41																	
	STD. DEV.																																	
	MIN	24.5	5.8	15	1.04		246.1					7.59	0.19	0.19	0.005	7.40	7.41																	
	MAX	24.5	5.8	15	1.04		246.1					7.59	0.19	0.19	0.005	7.40	7.41																	
PZ15-A11-6	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.8		4.9	2.5		100.0					0.88	0.61	0.57	0.041	0.27	0.31																	
	STD. DEV.																																	
	MIN	24.8	5.2	4.9	2.5		100.0					0.88	0.61	0.57	0.041	0.27	0.31																	
	MAX	24.8	5.2	4.9	2.5		100.0					0.88	0.61	0.57	0.041	0.27	0.31																	

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Table F.1 (con't)
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity	DO (mg/L)	ORP (mV)	Specific Conductance	TDS (mg/L)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD (mg/L)	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)	Fecal (Ct/100 mL)	TOC (mg/L)	DOC (mg/L)	Anions						Cations						
																						F^-	Cl^-	NO_2-N	NO_3-N	PO_4-P	SO_4	B	Ca	Fe	Mg	Mn	K	Na
PZ16-C12-28	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	26.5		10.5	0.68		293.5					1.25	1.01	0.99	0.017	0.24	0.26																	
	STD. DEV.	1.6		0.8	0.03		2.3					1.36	1.26	1.26	0.001	0.10	0.10																	
	MIN	25.4	5.6	9.9	0.66		291.8					0.29	0.12	0.10	0.016	0.17	0.19																	
	MAX	27.6	5.7	11	0.70		295.1					2.21	1.90	1.88	0.017	0.31	0.33																	
PZ17-I15-26	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.6		3.6	1.49		300.6					13.74	0.39	0.38	0.006	13.35	13.36			4.0	1.0													
	STD. DEV.	0.7		0.8	1.37		9.2					4.86	0.30	0.30	0.001	5.16	5.16																	
	MIN	22.1	4.8	3.0	0.52		294.1					10.30	0.18	0.17	0.005	9.70	9.71			4.0	1.0													
	MAX	23.1	5.7	4.1	2.46		307.1					17.18	0.60	0.60	0.006	17.00	17.01			4.0	1.0													
PZ18-R12-26	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.4		8.9	0.89		328.1					15.40	3.40	3.38	0.022	12.00	12.02																	
	STD. DEV.																																	
	MIN	23.4	5.0	8.9	0.89		328.1					15.40	3.40	3.38	0.022	12.00	12.02																	
	MAX	23.4	5.0	8.9	0.89		328.1					15.40	3.40	3.38	0.022	12.00	12.02																	
PZ19-G10-26	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.1		4.0	1.07		302.1					17.90	0.90	0.89	0.014	17.00	17.01																	
	STD. DEV.																																	
	MIN	23.1	5.1	4.0	1.07		302.1					17.90	0.90	0.89	0.014	17.00	17.01																	
	MAX	23.1	5.1	4.0	1.07		302.1					17.90	0.90	0.89	0.014	17.00	17.01																	
PZ20-G10-15	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.2		15	1.97		356.1					22.70	3.70	3.70	0.005	19.00	19.01																	
	STD. DEV.																																	
	MIN	22.2	5.6	15	1.97		356.1					22.70	3.70	3.70	0.005	19.00	19.01																	
	MAX	22.2	5.6	15	1.97		356.1					22.70	3.70	3.70	0.005	19.00	19.01																	
PZ21-E11-26	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	23.6		4.0	0.36		295.6					9.85	0.55	0.54	0.012	9.30	9.31																	
	STD. DEV.																																	
	MIN	23.6	5.2	4.0	0.36		295.6					9.85	0.55	0.54	0.012	9.30	9.31																	
	MAX	23.6	5.2	4.0	0.36		295.6					9.85	0.55	0.54	0.012	9.30	9.31																	
PZ22-E11-15	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.4		8.9	1.36		416.0					5.60	1.40	1.39	0.007	4.20	4.21																	
	STD. DEV.																																	
	MIN	24.4	5.3	8.9	1.36		416.0					5.60	1.40	1.39	0.007	4.20	4.21																	
	MAX	24.4	5.3	8.9	1.36		416.0					5.60	1.40	1.39	0.007	4.20	4.21																	
PZ23-D09-27	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	24.4		5.9	0.18		306.2					8.50	1.20	1.20	0.005	7.30	7.31																	
	STD. DEV.																																	
	MIN	24.4	5.4	5.9	0.18		306.2					8.50	1.20	1.20	0.005	7.30	7.31																	
	MAX	24.4	5.4	5.9	0.18		306.2					8.50	1.20	1.20	0.005	7.30	7.31																	
PZ24-BKG-26	n	2	2	2	2	0	2	0	0	0	1	2	2	2	2	2	2	1	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
	MEAN	23.6		4.1	0.60		283.6				12.0	11.8	1.3	1.2	0.0	10.6	10.6	1.2		2.5	0.9	0.01	15.00	9.10	0.01	0.01	43.00	0.050	21.0	0.11	9.7	0.2	8.9	7.7
	STD. DEV.	0.7		0.1	0.14		17.9					1.1	0.9	0.9	0.0	2.1	2.0			1.6	0.2													
	MIN	23.1	5.0	4.0	0.50		270.9				12	11.00	0.6	0.60	0.005	9.1	9.16	1.2		1.3	0.79	0.013	15	9.1	0.01	0.010	43	0.050	21	0.11	9.7	0.17	8.9	7.7
	MAX	24.1	5.1	4.1	0.70		296.2				12	12.60	1.9	1.84	0.057	12	12.01	1.2		3.6	1.1	0.013	15	9.1	0.01	0.010	43	0.050	21	0.11	9.7	0.17	8.9	7.7
PZ25-A6.5-10	n	1	1	1	1	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	22.0		48	5.7		770.0					22.3	2.3	2.3	0.022	20.0	20.0																	
	STD. DEV.																																	
	MIN	22.0	6.0	48	5.7		770.0					22.3	2.3	2.3	0.022	20.0	20.0																	
	MAX	22.0	6.0	48	5.7		770.0					22.3	2.3	2.3	0.022	20.0	20.0																	
Blanks																																		
FB-DI	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	16.8		2.0	9.00		1.3					0.06	0.05	0.05	0.005	0.01	0.02																	
	STD. DEV.	6.6		0.0	0.63		0.2					0.00	0.00	0.00	0.000	0.00	0.00																	
	MIN	12.1	5.7	2.0	8.55		1.2					0.06	0.05	0.05	0.005	0.01	0.02																	
	MAX	21.5	6.1	2.0	9.44		1.5					0.06	0.05	0.05	0.005	0.01	0.02																	
FB-TAP	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	16.6		140	9.60		438.5					0.08	0.05	0.05	0.005	0.03	0.04																	
	STD. DEV.	9.9		0	2.08		9.2					0.03	0.00	0.00	0.000	0.03	0.03																	
	MIN	9.6	7.0	140	8.13		432.0					0.06	0.05	0.05	0.005	0.01	0.02																	
	MAX	23.6	7.7	140	11.07		445.0					0.10	0.05	0.05	0.005	0.05	0.06																	
Equipment Rinsate	n	2	2	2	2	0	2	0	0	0	0	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	19.7		2.0	5.11		7.3					0.07	0.05	0.03	0.02	0.02	0.04																	
	STD. DEV.	11.0		0.0	3.95		8.4					0.01	0.00	0.01	0.015	0.01	0.03																	
	MIN	11.9	6.0	2.0	2.31		1.4					0.06	0.05	0.02	0.005	0.01	0.02																	
	MAX	27.5	7.2	2.0	7.90		13.2					0.08	0.05	0.05	0.026	0.03	0.06																	

Notes:

[1]Total Nitrogen (TN) is a calculated value equal to the sum of TKN and NO_x.

[2]Organic Nitrogen (ON) is a calculated value equal to the difference of TKN and NH_3.

[3]Total Inorganic Nitrogen (TIN) is a calculated value equal to the sum of NH_3 and NO_x.

DO - Dissolved oxygen

Gray-shaded data points indicate values below method detection level (mdl), mdl value used for statistical analyses.

Yellow-shaded data points indicate the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit, value used for statistical analyses.

Blue-shaded data points indicate the number is greater than reported value.

Orange - shaded data points indicate too many colonies were present. The numberic value represents the dilution factor times the maximum reportable number of colonies.

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Appendix G: Laboratory Report

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SOUTHERN ANALYTICAL LABORATORIES, INC.
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Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 21, 2011
Work Order: 1102588
Revised Report

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ04-BKG-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-01**						
Date/Time Collected		**03/31/11 08:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		21.7 °C						
Conductivity		78.2 umhos						
Dissolved Oxygen		3.84 mg/L						
Inorganics								
Ammonia as N	mg/L	0.038	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Chemical Oxygen Demand	mg/L	28	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	1.7	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.091	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Nitrate (as N)	mg/L	0.30	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Phosphorous - Total as P	mg/L	0.021 I	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	12	EPA 300.0	0.60	0.20		04/01/11 11:52	MEJ
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.35	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.30	EPA 300.0	0.08	0.02		04/01/11 11:52	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.6	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:03	LCB
Calcium	mg/L	5.6	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:03	LCB
Iron	mg/L	0.066 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:03	LCB
Magnesium	mg/L	1.6	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:03	LCB
Manganese	mg/L	0.069	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:03	LCB
Potassium	mg/L	0.94	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:36	LCB
Sodium	mg/L	1.8	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:36	LCB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ24-BKG-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-02**						
Date/Time Collected		**03/31/11 08:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.0						
Temperature		23.1 °C						
Conductivity		270.9 umhos						
Dissolved Oxygen		0.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.057	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Chemical Oxygen Demand	mg/L	12 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	15	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.013 I	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Nitrate (as N)	mg/L	9.1	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Phosphorous - Total as P	mg/L	1.2	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	43	EPA 300.0	0.60	0.20		04/01/11 11:52	MEJ
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Total Organic Carbon	mg/L	3.6	SM 5310B	1.0	0.50		04/04/11 13:41	MEJ
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	9.1	EPA 300.0	0.08	0.02		04/01/11 11:52	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.79 I	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:20	LCB
Calcium	mg/L	21	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:20	LCB
Iron	mg/L	0.11	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:20	LCB
Magnesium	mg/L	9.7	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:20	LCB
Manganese	mg/L	0.17	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:20	LCB
Potassium	mg/L	8.9	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:46	LCB
Sodium	mg/L	7.7	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:46	LCB

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Work Order: 1102588
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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-AA9-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-03**						
Date/Time Collected		**03/30/11 08:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.0						
Temperature		23.0 °C						
Conductivity		699 umhos						
Dissolved Oxygen		0.99 mg/L						
Inorganics								
Ammonia as N	mg/L	0.021	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	46	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-AA9-22**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-04**						
Date/Time Collected		**03/30/11 09:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		23.8 °C						
Conductivity		286 umhos						
Dissolved Oxygen		0.77 mg/L						
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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April 21, 2011
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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-AA9-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-05**						
Date/Time Collected		**03/30/11 09:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		23.9 °C						
Conductivity		288 umhos						
Dissolved Oxygen		0.82 mg/L						
Inorganics								
Ammonia as N	mg/L	0.044	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**PZ15-A11-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-06**						
Date/Time Collected		**03/30/11 11:22**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		24.8 °C						
Conductivity		100 umhos						
Dissolved Oxygen		2.52 mg/L						
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.61	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.27	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ10-CD6-13**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-07**						
Date/Time Collected		**03/30/11 14:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.0						
Temperature		25.6 °C						
Conductivity		524 umhos						
Dissolved Oxygen		2.85 mg/L						
Inorganics								
Ammonia as N	mg/L	0.050	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	26	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	26	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-C11-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-08**						
Date/Time Collected		**03/30/11 08:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.9						
Temperature		21.8 °C						
Conductivity		319 umhos						
Dissolved Oxygen		3.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.090	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	35	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	35	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	3.1	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ16-C12-28**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-09**						
Date/Time Collected		**03/30/11 11:48**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.7						
Temperature		25.4 °C						
Conductivity		295.1 umhos						
Dissolved Oxygen		0.66 mg/L						
Inorganics								
Ammonia as N	mg/L	0.016	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.31	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**PZ07-D05-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-10**						
Date/Time Collected		**03/30/11 13:47**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.7						
Temperature		25.3 °C						
Conductivity		221.6 umhos						
Dissolved Oxygen		0.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	3.6	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D07-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-11**						
Date/Time Collected		**03/30/11 11:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.7						
Temperature		23.3 °C						
Conductivity		365 umhos						
Dissolved Oxygen		0.77 mg/L						
Inorganics								
Ammonia as N	mg/L	0.011	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	23	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.12	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	12	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.015 I	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	53	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Total Organic Carbon	mg/L	1.7	SM 5310B	1.0	0.50		03/31/11 09:00	MEJ
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	12	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.4	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.096 I	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:24	LCB
Calcium	mg/L	27	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:24	LCB
Iron	mg/L	0.054 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:24	LCB
Magnesium	mg/L	5.4	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:24	LCB
Manganese	mg/L	0.0084 I	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:24	LCB
Potassium	mg/L	8.0	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:50	LCB
Sodium	mg/L	20	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:50	LCB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D7.5-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-12**						
Date/Time Collected		**03/30/11 11:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.0						
Temperature		23.8 °C						
Conductivity		514 umhos						
Dissolved Oxygen		0.67 mg/L						
Inorganics								
Ammonia as N	mg/L	0.009 I	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	3.2	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	29	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Sample Description		**DP-D7.5-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-13**						
Date/Time Collected		**03/30/11 11:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		25.0 °C						
Conductivity		296 umhos						
Dissolved Oxygen		1.26 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	10	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.041	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	7.6	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.16	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.16	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	67	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D7.5-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-13**						
Date/Time Collected		**03/30/11 11:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		25.0 °C						
Conductivity		296 umhos						
Dissolved Oxygen		1.26 mg/L						
Total Organic Carbon	mg/L	1.8	SM 5310B	1.0	0.50		03/31/11 09:00	MEJ
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	7.6	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.3	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:27	LCB
Calcium	mg/L	28	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:27	LCB
Iron	mg/L	0.022 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:27	LCB
Magnesium	mg/L	6.5	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:27	LCB
Manganese	mg/L	0.21	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:27	LCB
Potassium	mg/L	16	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:53	LCB
Sodium	mg/L	6.7	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:53	LCB

Sample Description		**DP-D7.5-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-14**						
Date/Time Collected		**03/30/11 12:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		25.0 °C						
Conductivity		292 umhos						
Dissolved Oxygen		1.47 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D7.5-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-14**						
Date/Time Collected		**03/30/11 12:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		25.0 °C						
Conductivity		292 umhos						
Dissolved Oxygen		1.47 mg/L						
Nitrate+Nitrite (N)	mg/L	7.4	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Sample Description		**DP-D08-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-15**						
Date/Time Collected		**03/30/11 10:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.6						
Temperature		24.6 °C						
Conductivity		502 umhos						
Dissolved Oxygen		1.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	16 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	42	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.056	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	19	EPA 300.0	0.04	0.01		04/01/11 10:00	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.15	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.16	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	52	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	20	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	20	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	19	EPA 300.0	0.08	0.02		04/01/11 10:00	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D08-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-15**						
Date/Time Collected		**03/30/11 10:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.6						
Temperature		24.6 °C						
Conductivity		502 umhos						
Dissolved Oxygen		1.36 mg/L						
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	3.5	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.094 I	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:31	LCB
Calcium	mg/L	33	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:31	LCB
Iron	mg/L	11	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:31	LCB
Magnesium	mg/L	10	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:31	LCB
Manganese	mg/L	0.33	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:31	LCB
Potassium	mg/L	8.0	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:57	LCB
Sodium	mg/L	35	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 16:57	LCB

Sample Description		**DP-D09-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-16**						
Date/Time Collected		**03/30/11 10:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.6						
Temperature		22.6 °C						
Conductivity		487 umhos						
Dissolved Oxygen		1.01 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	27	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Sample Description		**DP-D09-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-17**						
Date/Time Collected		**03/30/11 10:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.4						
Temperature		23.3 °C						
Conductivity		470 umhos						
Dissolved Oxygen		1.16 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-D09-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-18**						
Date/Time Collected		**03/30/11 10:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		24.2 °C						
Conductivity		298 umhos						
Dissolved Oxygen		0.80 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.40	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D09-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-19**						
Date/Time Collected		**03/30/11 10:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.0						
Temperature		24.5 °C						
Conductivity		309 umhos						
Dissolved Oxygen		0.76 mg/L						
Inorganics								
Ammonia as N	mg/L	0.048	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	11	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.25	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	11	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.9	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-D10-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-20**						
Date/Time Collected		**03/30/11 09:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.7						
Temperature		23.8 °C						
Conductivity		337 umhos						
Dissolved Oxygen		1.45 mg/L						
Inorganics								
Ammonia as N	mg/L	0.025	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	23	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	23	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	2.2	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D11-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-21**						
Date/Time Collected		**03/30/11 08:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		21.7 °C						
Conductivity		479 umhos						
Dissolved Oxygen		1.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.080	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	25	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-D12-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-22**						
Date/Time Collected		**03/29/11 13:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.8						
Temperature		22.3 °C						
Conductivity		477 umhos						
Dissolved Oxygen		0.65 mg/L						
Inorganics								
Ammonia as N	mg/L	0.74	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	9.5	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E02-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-23**						
Date/Time Collected		**03/29/11 08:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.1						
Temperature		21.3 °C						
Conductivity		158.9 umhos						
Dissolved Oxygen		0.46 mg/L						
Inorganics								
Ammonia as N	mg/L	0.006 I	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	5.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.22	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	5.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	0.42	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-E03-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102588-24**						
Date/Time Collected		**03/29/11 09:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.3						
Temperature		21.3 °C						
Conductivity		211.3 umhos						
Dissolved Oxygen		2.21 mg/L						
Inorganics								
Ammonia as N	mg/L	0.075	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.81	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	1.8	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC12919 - TOC prep										
Blank (BC12919-BLK1)					Prepared & Analyzed: 03/30/11					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC12919-BS1)					Prepared & Analyzed: 03/30/11					
Total Organic Carbon	9.54	1.0	0.50	mg/L	10		95	90-110		
Matrix Spike (BC12919-MS1)		**Source: 1102417-01**			Prepared & Analyzed: 03/30/11					
Total Organic Carbon	13.2	1.0	0.50	mg/L	10	3.85	93	85-115		
Matrix Spike Dup (BC12919-MSD1)		**Source: 1102417-01**			Prepared & Analyzed: 03/30/11					
Total Organic Carbon	12.6	1.0	0.50	mg/L	10	3.85	87	85-115	5	10
Batch BC13009 - Ammonia by SEAL										
Blank (BC13009-BLK1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BC13009-BLK2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BC13009-BS1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		107	90-110		
LCS (BC13009-BS2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		99	90-110		
Matrix Spike (BC13009-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13009 - Ammonia by SEAL										
Matrix Spike (BC13009-MS2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.034	102	90-110		
Matrix Spike Dup (BC13009-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110	0.1	10
Matrix Spike Dup (BC13009-MSD2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.034	107	90-110	5	10
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK1)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BC13012-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13012-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BC13012-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BC13012-MS1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.519	97	80-120		
Matrix Spike (BC13012-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.48 J5	0.20	0.05	mg/L	2.5	0.808	106	80-120		

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Batch BC13012 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BC13012-MSD1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.519	95	80-120	2	20
Matrix Spike Dup (BC13012-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.57 J5	0.20	0.05	mg/L	2.5	0.808	109	80-120	2	20
Batch BC13019 - alkalinity										
Blank (BC13019-BLK1)					Prepared & Analyzed: 03/30/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13019-BS1)					Prepared & Analyzed: 03/30/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13019-MS1)		**Source: 1102588-22**			Prepared & Analyzed: 03/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	89	80-120		26
Matrix Spike Dup (BC13019-MSD1)		**Source: 1102588-22**			Prepared & Analyzed: 03/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	89	80-120	0	26
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Batch BC13102 - alkalinity										
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Batch BC13102 - alkalinity										
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13106-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.800	0.04	0.01	mg/L	0.80		100	90-110		
LCS (BC13106-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.827	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BC13106-MS1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike (BC13106-MS2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.00	0.04	0.01	mg/L	1.0	ND	100	77-119		
Matrix Spike Dup (BC13106-MSD1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	3	20
Matrix Spike Dup (BC13106-MSD2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.02	0.04	0.01	mg/L	1.0	ND	102	77-119	2	20
Batch BC13111 - Ion Chromatography 300.0 Prep										
Blank (BC13111-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13111 - Ion Chromatography 300.0 Prep										
LCS (BC13111-BS1)					Prepared & Analyzed: 03/31/11					
Orthophosphate as P	0.853	0.040	0.010	mg/L	0.90		95	85-115		
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115		
Fluoride	0.840	0.040	0.010	mg/L	0.90		93	85-115		
LCS Dup (BC13111-BSD1)					Prepared & Analyzed: 03/31/11					
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115	2	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Fluoride	0.890	0.040	0.010	mg/L	0.90		99	85-115	6	200
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115	0	200
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115	0	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	1	200
Matrix Spike (BC13111-MS1)		**Source: 1102612-12**			Prepared & Analyzed: 03/31/11					
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7	0.140	89	85-115		
Fluoride	0.903	0.040	0.010	mg/L	0.90	0.0752	92	85-115		
Chloride	6.67	0.20	0.050	mg/L	3.0	4.11	85	80-120		
Orthophosphate as P	1.04	0.040	0.010	mg/L	0.90	0.176	96	85-115		
Sulfate	39.5	0.60	0.20	mg/L	9.0	30.3	102	85-115		
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4	ND	90	85-115		
Matrix Spike (BC13111-MS2)		**Source: 1102765-02**			Prepared & Analyzed: 03/31/11					
Fluoride	872	0.040	0.010	mg/L	900	34.8	93	85-115		
Chloride	8,610	0.20	0.050	mg/L	3000	5850	92	80-120		
Nitrate (as N)	1,600	0.04	0.01	mg/L	1700	14.5	93	85-115		
Orthophosphate as P	1,010	0.040	0.010	mg/L	900	62.6	105	85-115		
Nitrite (as N)	1,270	0.04	0.01	mg/L	1400	ND	91	85-115		
Sulfate	9,850	0.60	0.20	mg/L	9000	1420	94	85-115		

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Batch BC13117 - Digestion for TKN by EPA 351.2										
Blank (BC13117-BLK1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BC13117-BLK2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13117-BS1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
LCS (BC13117-BS2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BC13117-MS1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.20 J5	0.20	0.05	mg/L	2.5	3.92	50	80-120		
Matrix Spike (BC13117-MS2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.18	0.20	0.05	mg/L	2.5	0.747	96	80-120		
Matrix Spike Dup (BC13117-MSD1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.61 J5	0.20	0.05	mg/L	2.5	3.92	66	80-120	8	20
Matrix Spike Dup (BC13117-MSD2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.16	0.20	0.05	mg/L	2.5	0.747	95	80-120	0.6	20
Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13123-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.815	0.04	0.01	mg/L	0.80		102	90-110		
LCS (BC13123-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BC13123-MS1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0832	101	77-119		
Matrix Spike (BC13123-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	8.89	0.04	0.01	mg/L	1.0	7.92	97	77-119		
Matrix Spike Dup (BC13123-MSD1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.12	0.04	0.01	mg/L	1.0	0.0832	103	77-119	2	20
Matrix Spike Dup (BC13123-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	9.02	0.04	0.01	mg/L	1.0	7.92	111	77-119	2	20
Batch BD10108 - Ammonia by SEAL										
Blank (BD10108-BLK1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10108-BLK2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						

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Batch BD10108 - Ammonia by SEAL										
LCS (BD10108-BS1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
LCS (BD10108-BS2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
Matrix Spike (BD10108-MS1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.021	100	90-110		
Matrix Spike (BD10108-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.041	95	90-110		
Matrix Spike Dup (BD10108-MSD1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50	0.021	99	90-110	0.8	10
Matrix Spike Dup (BD10108-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.041	97	90-110	2	10
Batch BD10110 - COD prep										
Blank (BD10110-BLK1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10110-BS1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BD10110-MS1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115		

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Batch BD10110 - COD prep										
Matrix Spike Dup (BD10110-MSD1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115	0	32
Batch BD10113 - Ion Chromatography 300.0 Prep										
Blank (BD10113-BLK1)					Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
LCS (BD10113-BS1)					Prepared & Analyzed: 04/01/11					
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115		
Sulfate	8.42	0.60	0.20	mg/L	9.0		94	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Orthophosphate as P	0.860	0.040	0.010	mg/L	0.90		96	85-115		
Fluoride	0.888	0.040	0.010	mg/L	0.90		99	85-115		
Nitrate (as N)	1.63	0.04	0.01	mg/L	1.7		96	85-115		
LCS Dup (BD10113-BSD1)					Prepared & Analyzed: 04/01/11					
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	1	200
Fluoride	0.894	0.040	0.010	mg/L	0.90		99	85-115	0.7	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	0.5	200
Nitrate (as N)	1.65	0.04	0.01	mg/L	1.7		97	85-115	1	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Sulfate	8.43	0.60	0.20	mg/L	9.0		94	85-115	0.1	200

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Batch BD10113 - Ion Chromatography 300.0 Prep										
Matrix Spike (BD10113-MS1)		**Source: 1102764-01**			Prepared & Analyzed: 04/01/11					
Nitrate (as N)	170	0.04	0.01	mg/L	170	12.4	93	85-115		
Nitrite (as N)	126	0.04	0.01	mg/L	140	ND	90	85-115		
Fluoride	86.6	0.040	0.010	mg/L	90		96	85-115		
Sulfate	946	0.60	0.20	mg/L	900	131	91	85-115		
Chloride	875	0.20	0.050	mg/L	300	584	97	80-120		
Orthophosphate as P	90.5	0.040	0.010	mg/L	90		101	85-115		
Matrix Spike (BD10113-MS2)		**Source: 1102635-16**			Prepared & Analyzed: 04/01/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Sulfate	18.2	0.60	0.20	mg/L	9.0	9.20	100	85-115		
Orthophosphate as P	0.909	0.040	0.010	mg/L	0.90	ND	101	85-115		
Fluoride	0.922	0.040	0.010	mg/L	0.90	0.0579	96	85-115		
Chloride	4.65	0.20	0.050	mg/L	3.0	1.64	100	80-120		
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7	0.0324	93	85-115		
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		

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Tampa, FL 33619

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10114 - Digestion for TKN by EPA 351.2										
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10201 - Ammonia by SEAL										
Blank (BD10201-BLK1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10201-BLK2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10201-BS1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50		103	90-110		
LCS (BD10201-BS2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		97	90-110		
Matrix Spike (BD10201-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.062	98	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10201 - Ammonia by SEAL										
Matrix Spike (BD10201-MS2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.068	100	90-110		
Matrix Spike Dup (BD10201-MSD1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.062	94	90-110	3	10
Matrix Spike Dup (BD10201-MSD2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.068	96	90-110	3	10
Batch BD10421 - TOC prep										
Blank (BD10421-BLK1)					Prepared & Analyzed: 04/04/11					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BD10421-BS1)					Prepared & Analyzed: 04/04/11					
Total Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BD10421-MS1)		**Source: 1102588-02**			Prepared & Analyzed: 04/04/11					
Total Organic Carbon	13.0	1.0	0.50	mg/L	10	3.62	94	85-115		
Matrix Spike Dup (BD10421-MSD1)		**Source: 1102588-02**			Prepared & Analyzed: 04/04/11					
Total Organic Carbon	12.8	1.0	0.50	mg/L	10	3.62	92	85-115	2	10
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10518 - alkalinity										
Blank (BD10518-BLK1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10518 - alkalinity										
Blank (BD10518-BLK2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BD10518-BS1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10518-BS2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10518-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	92	80-120		26
Matrix Spike (BD10518-MS2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	150	8.0	2.0	mg/L	120	12	109	80-120		26
Matrix Spike Dup (BD10518-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	93	80-120	0.8	26
Matrix Spike Dup (BD10518-MSD2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	12	100	80-120	8	26

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13112 - DOC prep										
Blank (BC13112-BLK1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC13112-BS1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	9.99	1.0	0.50	mg/L	10		100	90-110		
Duplicate (BC13112-DUP1)		**Source: 1102597-01**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	3.21	1.0	0.50	mg/L		3.17			1	15
Matrix Spike (BC13112-MS1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.8	1.0	0.50	mg/L	10	1.34	105	85-125		
Matrix Spike Dup (BC13112-MSD1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.9	1.0	0.50	mg/L	10	1.34	106	85-125	0.8	25
Batch BD10638 - DOC prep										
Blank (BD10638-BLK1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BD10638-BS1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BD10638-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.2	1.0	0.50	mg/L	10	1.06	102	85-125		
Matrix Spike Dup (BD10638-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.3	1.0	0.50	mg/L	10	1.06	103	85-125	0.8	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10104 - Metals Preparation for EPA Method 200.7										
Blank (BD10104-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Sodium	0.010 U	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Magnesium	0.010 U	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Potassium	0.049 I	0.050	0.010	mg/L						
Calcium	0.010 U	0.050	0.010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
LCS (BD10104-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Sodium	22	0.050	0.010	mg/L	20		109	85-115		
Magnesium	21	0.050	0.010	mg/L	20		106	85-115		
Boron	0.38	0.10	0.050	mg/L	0.40		96	85-115		
Calcium	21	0.050	0.010	mg/L	20		106	85-115		
Potassium	22	0.050	0.010	mg/L	20		108	85-115		
Iron	8.1	0.10	0.020	mg/L	8.0		102	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Matrix Spike (BD10104-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/01/11					
Boron	0.40	0.10	0.050	mg/L	0.40	ND	100	70-130		
Iron	8.2	0.10	0.020	mg/L	8.0	0.066	102	70-130		
Calcium	27	0.050	0.010	mg/L	20	5.6	105	70-130		
Potassium	22	0.050	0.010	mg/L	20	0.94	106	70-130		
Manganese	0.48	0.010	0.0010	mg/L	0.40	0.069	103	70-130		
Magnesium	23	0.050	0.010	mg/L	20	1.6	107	70-130		
Sodium	23	0.050	0.010	mg/L	20	1.8	106	70-130		
Matrix Spike Dup (BD10104-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/01/11					
Manganese	0.48	0.010	0.0010	mg/L	0.40	0.069	103	70-130	0.1	30
Sodium	23	0.050	0.010	mg/L	20	1.8	105	70-130	2	30
Magnesium	23	0.050	0.010	mg/L	20	1.6	107	70-130	0.2	30
Potassium	22	0.050	0.010	mg/L	20	0.94	105	70-130	0.8	30
Calcium	27	0.050	0.010	mg/L	20	5.6	107	70-130	2	30
Boron	0.41	0.10	0.050	mg/L	0.40	ND	102	70-130	2	30
Iron	8.2	0.10	0.020	mg/L	8.0	0.066	102	70-130	0.2	30

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102588

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes:
DW-Drinking Water WW-Wastewater
SW-SurfaceWater SL-Sludge SO-Soil
GW-Groundwater SA-Saline Water O-Other
R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250ml P, HNO3 B, Ca, Na, K, Mg, Mn, Fe No. of Containers (Total per each location)
01	PZ04-BKG-9	3/31/11	0844	GW		X	1 **	1 *		1	5.4	3.84	78.2	21.7	1
02	PZ24-BKG-26	033111	~~0807~~ 0814	GW		X	1 **	1 *	2	1					1
03	DP-AA9-14	3/30/11	0855	GW		X	1	1			5.0	0.99	699	23.0	
04	DP-AA9-22	3/30/11	0910	GW		X	1	1			5.3	0.77	286	23.8	
05	DP-AA9-27	3/30/11	0930	GW		X	1	1			5.2	0.82	288	23.9	
06	PZ15-A11-6	033011	1122	GW		X	1	1			5.2	2.52	100.0	24.8	
07	PZ10-CD6-13	033011	1400	GW		X	1	1			6.0	2.85	524	25.6	
08	DP-C11-8	033011	0830	GW		X	1	1			5.9	3.50	319	21.8	
09	PZ16-C12-28	033011	1148	GW		X	1	1			5.7	0.66	295.1	25.4	
10	PZ07-D05-7	033011	1347	GW		X	1	1			4.7	0.39	221.6	25.3	
11	DP-D07-7	3/30/11	1145	GW		X	1 **	1 *	2	1	4.7	0.77	365	23.3	1
12	DP-D7.5-14	3/30/11	1110	GW		X	1	1			5.0	0.67	514	23.8	

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	Date/Time: 1630 03-27-11	Received:	Date/Time: 0500 032911
Relinquished:	Date/Time: 1830 033011	Received:	Date/Time:
Relinquished:	Date/Time: 1430 3/31/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

3-21

1,2

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

** Cl, NO_x 300, OP, SO_4, F

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Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102588

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO_3 B, Ca, Fe, Mg, Mn, K, Fe	No. of Containers (Total per each location)
13	DP-D7.5-20	3/30/11	1140	GW		X	1 **	1 *	2	1	5.3	1.26	296	25.0	1	
14	DP-D7.5-26	3/30/11	1210	GW		X	1	1								
15	DP-D08-9	3/30/11	1025	GW		X	1 **	1 *		1	5.6	1.36	502	24.6	1	
16	DP-D09-8	3/30/11	1005	GW		X	1	1			4.6	1.01	487	22.6		
17	DP-D09-15	3/30/11	1020	GW		X	1	1			5.4	1.16	470	23.3		
18	DP-D09-21	3/30/11	1035	GW		X	1	1			5.3	0.80	298	24.2		
19	DP-D09-27	3/30/11	1055	GW		X	1	1			6.0	0.76	309	24.5		
20	DP-D10-8	3/30/11	0940	GW		X	1	1			5.7	1.45	337	23.8		
21	DP-D11-11	033011	0800	GW		X	1	1			5.3	1.39	479	21.7		
22	DP-D12-11	032911	1345	GW		X	1	1			4.8	0.65	477	22.3		
23	DP-E02-8	032911	0845	GW		X	1	1			5.1	0.46	158.9	21.3		
24	DP-E03-10 (Has dupe was E02-6-D)	032911	0915	GW		X	1	1			5.3	2.21	211.3	21.3		

Containers Prepared/ Relinquished:	Date/Time: 1638 03-27-11	Received:	Date/Time: 0800 032911
Relinquished:	Date/Time: 1600 032911	Received:	Date/Time: 3/29/11 1600
Relinquished:	Date/Time: 1430 3/31/11	Received:	Date/Time:
Relinquished: shipped by J. Edeback via courier	Date/Time: 1545 4/1/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

22-24

24, 21-22, 8, 3, 4, 5, 20

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

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Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102588	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ04-BKG-9	Sample ID	01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.85	PURGE PUMP CODE: (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.11	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.13	1/4 WELL VOLUME		3 WELL VOLUMES	0.40	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.0	FINAL TUBING LEGNTH IN WELL (FEET)	9.0	PURGE TIME START	0835	PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-0-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0838	0.30	0.30	0.10	7.01	5.4	21.7	81.8	3.64	6.26	clear	none
0841	0.30	0.60	0.10	7.01	5.4	21.7	80.8	3.91	4.11		
0844	0.30	0.90	0.10	7.01	5.4	21.7	78.2	3.84	2.02		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		9.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	0845	SAMPLING ENDED		FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	(Y) N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Rain Past 24 hrs						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102588 PZ24-BKG-26	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ24-BKG-26	Sample ID	02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	2.0	WELL CAPACITY (gal/ft)	0.167	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	30.3	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	3.35	1/4 WELL VOLUME	0.83	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	15.0	FINAL TUBING LEGNTH IN WELL (FEET)	15.0	PURGE TIME START	0740	PURGE TIME END	0813	TOTAL PURGED	6.40
INST. ID				SAL-SAM-63-____	SAL-SAM-65-____	SAL-SAM-63-____	SAL-SAM-55-__	SAL-SAM-0____	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0757	3.40	3.4	0.2	10.21	5.0	23.0	269.6	0.91	147	Cloudy	None
0803	1.0	4.4	0.2	10.21	5.0	23.1	270.1	0.84	92.5		
0808	1.0	5.4	0.2	10.21	5.0	23.1	270.3	0.62	59.6		
0813	1.0	6.4	0.2	10.21	5.0	23.1	270.9	0.50	42.3		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	15.0		SAMPLE PUMP FLOW RATE (mL/min)	0.2
SAMPLING INITIATED	0814	SAMPLING ENDED	0814	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	(Y) N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Windy Drizzle / Rain Past 24 hrs						
COMMENTS	Could Not get turbidity below 20.						

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102588	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ15-A11-6	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.70	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	7.51	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.108	1/4 WELL VOLUME		3 WELL VOLUMES	0.324	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	7.0	FINAL TUBING LEGNTH IN WELL (FEET)	7.0	PURGE TIME START	1106	PURGE TIME END	1121	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1109	0.30	0.30	0.10	6.61	5.3	24.8	107.9	2.85	84.4	cloudy	NONE
1112	0.30	0.60	0.10	6.61	5.2	24.8	100.1	2.64	53.6		
1115	0.30	0.90	0.10	6.61	5.2	24.8	99.6	2.55	44.4		
1118	0.30	1.20	0.10	6.61	5.2	24.8	99.4	2.54	31.8		
1121	0.30	1.50	0.10	6.61	5.2	24.8	100.0	2.52	26.0		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		7.0	SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	1122	SAMPLING ENDED	1122	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102588	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ10-CD6-13	Sample ID	07	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.15	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.47	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.8	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.10	1/4 WELL VOLUME		3 WELL VOLUMES	0.30	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME	~~10.6~~ *	TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	10.0	FINAL TUBING LEGNTH IN WELL (FEET)	10.0	PURGE TIME START	1350	PURGE TIME END	1359	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1353	0.30	0.30	0.10	12.6	6.0	25.5	528	2.97	21.8	clear	None
1356	0.30	0.60	0.10	12.6	6.0	25.6	525	2.91	21.6	/	/
1359	0.30	0.90	0.10	12.6	6.0	25.6	524	2.85	21.5	/	/

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	10.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	1400	SAMPLING ENDED	1400	FIELD CLEANED	(Y) N	CLEANING STEPS	OI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102588	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ16-C12-28	Sample ID	09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	3.33	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	29.0	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.51	1/4 WELL VOLUME		3 WELL VOLUMES	1.53	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	15.0	FINAL TUBING LEGNTH IN WELL (FEET)	15.0	PURGE TIME START	1138	PURGE TIME END	1147	TOTAL PURGED	1.80

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1141	0.60	0.60	0.20	5.62	5.8	25.3	283.5	1.04	40.9		
1144	0.60	1.20	0.20	5.62	5.8	25.3	288.3	0.86	33.3		
1147	0.60	1.80	0.20	5.62	5.7	25.4	295.1	0.66	18.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	15.0		SAMPLE PUMP FLOW RATE (mL/min)	0.20
SAMPLING INITIATED	1148	SAMPLING ENDED	1148	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	SUNNY						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102588	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ07-D05-7	Sample ID	11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.65	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.04	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.14	1/4 WELL VOLUME		3 WELL VOLUMES	0.43	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.0	FINAL TUBING LEGNTH IN WELL (FEET)	9.0	PURGE TIME START	1337	PURGE TIME END	1346	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1340	0.30	0.30	0.10	7.11	4.7	25.3	224.2	0.47	10.5		
1343	0.30	0.60	0.10	7.11	4.7	25.3	222.0	0.39	7.01		
1346	0.30	0.90	0.10	7.11	4.7	25.3	221.6	0.39	6.68		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	9.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	1347	SAMPLING ENDED	1347	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Avenue Suite 200
Tampa, FLORIDA 33619

April 6, 2011
Work Order: 1102597

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E04-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-01**						
Date/Time Collected		**03/29/11 09:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.7						
Temperature		22.3 °C						
Conductivity		90.6 umhos						
Dissolved Oxygen		3.49 mg/L						
Inorganics								
Ammonia as N	mg/L	0.018	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	39	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	2.7	EPA 300.0	0.20	0.050		03/30/11 13:32	MEJ
Fluoride	mg/L	0.076	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	0.46	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	2.5	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	21	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.67	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	0.46	EPA 300.0	0.08	0.02		03/30/11 13:32	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	3.2	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 15:08	LCB
Calcium	mg/L	7.5	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:08	LCB
Iron	mg/L	0.33	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 15:08	LCB
Magnesium	mg/L	1.8	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:08	LCB
Manganese	mg/L	0.049	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 15:08	LCB
Potassium	mg/L	0.94	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:08	LCB
Sodium	mg/L	2.3	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:08	LCB

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E05-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-02**						
Date/Time Collected		**03/29/11 10:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.0						
Temperature		24.8 °C						
Conductivity		171.8 umhos						
Dissolved Oxygen		2.96 mg/L						
Inorganics								
Ammonia as N	mg/L	2.6	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	33	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	3.1	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	33	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	0.06	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-E06-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-03**						
Date/Time Collected		**03/29/11 11:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.5						
Temperature		22.7 °C						
Conductivity		180.6 umhos						
Dissolved Oxygen		10.9 mg/L						
Inorganics								
Ammonia as N	mg/L	0.007 I	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.82	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	2.4	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E07-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-04**						
Date/Time Collected		**03/29/11 11:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.9						
Temperature		22.5 °C						
Conductivity		289.0 umhos						
Dissolved Oxygen		1.19 mg/L						
Inorganics								
Ammonia as N	mg/L	0.052	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	7.8	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-E08-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-05**						
Date/Time Collected		**03/29/11 12:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.0						
Temperature		22.6 °C						
Conductivity		348 umhos						
Dissolved Oxygen		1.52 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	11	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ11-E09-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-06**						
Date/Time Collected		**03/30/11 12:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.6						
Temperature		25.8 °C						
Conductivity		453.8 umhos						
Dissolved Oxygen		2.33 mg/L						
Inorganics								
Ammonia as N	mg/L	0.49	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	12	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	12	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	21	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-E10-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-07**						
Date/Time Collected		**03/29/11 12:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.6						
Temperature		23.0 °C						
Conductivity		407 umhos						
Dissolved Oxygen		0.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	8.5	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ21-E11-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-08**						
Date/Time Collected		**03/30/11 11:04**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		23.6 °C						
Conductivity		295.6 umhos						
Dissolved Oxygen		0.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.012	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.55	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	9.3	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**PZ22-E11-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-09**						
Date/Time Collected		**03/30/11 10:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		24.4 °C						
Conductivity		416.0 umhos						
Dissolved Oxygen		1.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.007 I	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	4.2	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E12-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-10**						
Date/Time Collected		**03/29/11 13:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.1						
Temperature		23.9 °C						
Conductivity		520 umhos						
Dissolved Oxygen		0.35 mg/L						
Inorganics								
Ammonia as N	mg/L	0.16	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	41	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	22	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	0.026 I	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	47	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Total Organic Carbon	mg/L	1.2	SM 5310B	1.0	0.50		03/30/11 15:13	MEJ
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	22	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.88 I	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.075 I	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 15:11	LCB
Calcium	mg/L	39	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:11	LCB
Iron	mg/L	0.089 I	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 15:11	LCB
Magnesium	mg/L	9.9	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:11	LCB
Manganese	mg/L	0.21	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 15:11	LCB
Potassium	mg/L	11	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:11	LCB
Sodium	mg/L	33	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:11	LCB

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E12-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-11**						
Date/Time Collected		**03/30/11 07:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.0						
Temperature		21.9 °C						
Conductivity		460 umhos						
Dissolved Oxygen		0.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	14 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	36	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.029 I	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	17	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.18	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.012 I	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	54	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	17	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.92 I	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.10	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:34	LCB
Calcium	mg/L	35	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:34	LCB
Iron	mg/L	0.032 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:34	LCB
Magnesium	mg/L	7.1	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:34	LCB
Manganese	mg/L	0.045	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:34	LCB
Potassium	mg/L	12	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:00	LCB
Sodium	mg/L	33	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:00	LCB

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April 6, 2011
Work Order: 1102597

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E12-22**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-12**						
Date/Time Collected		**03/30/11 08:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		22.5 °C						
Conductivity		297 umhos						
Dissolved Oxygen		0.59 mg/L						
Inorganics								
Ammonia as N	mg/L	0.29	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	12	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.017 I	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	9.1	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.24	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.035 I	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	56	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.9	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Total Organic Carbon	mg/L	1.2	SM 5310B	1.0	0.50		03/31/11 09:00	MEJ
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	9.1	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.83 I	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.10	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:38	LCB
Calcium	mg/L	29	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:38	LCB
Iron	mg/L	0.037 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:38	LCB
Magnesium	mg/L	6.1	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:38	LCB
Manganese	mg/L	0.16	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:38	LCB
Potassium	mg/L	10	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:11	LCB
Sodium	mg/L	8.4	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:11	LCB

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April 6, 2011
Work Order: 1102597

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E12-28**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-13**						
Date/Time Collected		**03/30/11 08:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		22.8 °C						
Conductivity		310 umhos						
Dissolved Oxygen		0.57 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	15	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.019 I	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	9.8	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.065	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.069	SM 4500P-E	0.040	0.010	04/05/11 11:52	04/06/11 14:50	SMB
Sulfate	mg/L	59	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	9.8	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.50 U	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:41	LCB
Calcium	mg/L	27	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:41	LCB
Iron	mg/L	0.023 I	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:41	LCB
Magnesium	mg/L	9.5	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:41	LCB
Manganese	mg/L	0.11	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:41	LCB
Potassium	mg/L	15	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:14	LCB
Sodium	mg/L	5.3	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:14	LCB

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ13-F04-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-14**						
Date/Time Collected		**03/29/11 09:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.6						
Temperature		21.4 °C						
Conductivity		125.5 umhos						
Dissolved Oxygen		2.48 mg/L						
Inorganics								
Ammonia as N	mg/L	0.037	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.75	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	1.4	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-F04-17**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-15**						
Date/Time Collected		**03/29/11 10:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		7.3						
Temperature		22.0 °C						
Conductivity		415.7 umhos						
Dissolved Oxygen		0.57 mg/L						
Inorganics								
Ammonia as N	mg/L	0.028	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	90	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.35	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	90	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	1.8	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F04-22**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-16**						
Date/Time Collected		**03/29/11 10:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.0						
Temperature		22.8 °C						
Conductivity		314.1 umhos						
Dissolved Oxygen		0.72 mg/L						
Inorganics								
Ammonia as N	mg/L	0.017	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	8.2	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-F05-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-17**						
Date/Time Collected		**03/30/11 13:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.8						
Temperature		27.7 °C						
Conductivity		173.3 umhos						
Dissolved Oxygen		7.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.13	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F05-31**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-18**						
Date/Time Collected		**03/29/11 11:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		7.3						
Temperature		24.1 °C						
Conductivity		187.1 umhos						
Dissolved Oxygen		1.7 mg/L						
Inorganics								
Ammonia as N	mg/L	0.070	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	10	EPA 300.0	0.20	0.050		03/30/11 13:32	MEJ
Fluoride	mg/L	0.58	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	1.3	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Nitrite (as N)	mg/L	0.11	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	0.29	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	23	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	69	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.62	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	69	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	1.4	EPA 300.0	0.08	0.02		03/30/11 13:32	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.7	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 15:15	LCB
Calcium	mg/L	31	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:15	LCB
Iron	mg/L	1.5	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 15:15	LCB
Magnesium	mg/L	6.4	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:15	LCB
Manganese	mg/L	0.063	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 15:15	LCB
Potassium	mg/L	2.9	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:15	LCB
Sodium	mg/L	11	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:15	LCB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F06-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-19**						
Date/Time Collected		**03/29/11 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.2						
Temperature		21.8 °C						
Conductivity		190.6 umhos						
Dissolved Oxygen		0.3 mg/L						
Inorganics								
Ammonia as N	mg/L	0.056	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	0.33	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	1.5	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**PZ08-FG7-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-20**						
Date/Time Collected		**03/30/11 10:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.8						
Temperature		23.6 °C						
Conductivity		126.9 umhos						
Dissolved Oxygen		3.33 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	0.83	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F08-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-21**						
Date/Time Collected		**03/29/11 12:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		7.6						
Temperature		22.5 °C						
Conductivity		501 umhos						
Dissolved Oxygen		1.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.090	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	140	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	3.5	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK

Sample Description		**DP-F08-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-22**						
Date/Time Collected		**03/29/11 12:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.0						
Temperature		23.1 °C						
Conductivity		335.6 umhos						
Dissolved Oxygen		0.41 mg/L						
Inorganics								
Ammonia as N	mg/L	0.030	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	11	EPA 300.0	0.20	0.050		03/30/11 13:32	MEJ
Fluoride	mg/L	0.032 I	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	8.6	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	0.33	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	65	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F08-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-22**						
Date/Time Collected		**03/29/11 12:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.0						
Temperature		23.1 °C						
Conductivity		335.6 umhos						
Dissolved Oxygen		0.41 mg/L						
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	8.6	EPA 300.0	0.08	0.02		03/30/11 13:32	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.80 I	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 15:18	LCB
Calcium	mg/L	32	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:18	LCB
Iron	mg/L	0.067 I	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 15:18	LCB
Magnesium	mg/L	7.3	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:18	LCB
Manganese	mg/L	0.22	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 15:18	LCB
Potassium	mg/L	14	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:18	LCB
Sodium	mg/L	6.4	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:18	LCB

Sample Description		**DP-F08-28**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-23**						
Date/Time Collected		**03/29/11 12:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.3						
Temperature		23.4 °C						
Conductivity		323.9 umhos						
Dissolved Oxygen		0.37 mg/L						
Inorganics								
Ammonia as N	mg/L	0.012	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	18	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (as N)	mg/L	2.9	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F08-28**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-23**						
Date/Time Collected		**03/29/11 12:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.3						
Temperature		23.4 °C						
Conductivity		323.9 umhos						
Dissolved Oxygen		0.37 mg/L						
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Sample Description		**DP-F09-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-24**						
Date/Time Collected		**03/29/11 13:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		24.8 °C						
Conductivity		191.1 umhos						
Dissolved Oxygen		1.15 mg/L						
Inorganics								
Ammonia as N	mg/L	0.23	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	10	EPA 300.0	0.20	0.050		03/30/11 13:32	MEJ
Fluoride	mg/L	0.10	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	1.9	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.026 I	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	0.27	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	26	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Nitrate+Nitrite (N)	mg/L	1.9	EPA 300.0	0.08	0.02		03/30/11 13:32	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/30/11 13:00	03/30/11 15:12	JMK
Inorganic, Dissolved								

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Project Name		**GCREC Mound Groundwater Analyses**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**DP-F09-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102597-24**						
Date/Time Collected		**03/29/11 13:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		24.8 °C						
Conductivity		191.1 umhos						
Dissolved Oxygen		1.15 mg/L						
Dissolved Organic Carbon	mg/L	7.7	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 15:29	LCB
Calcium	mg/L	14	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:29	LCB
Iron	mg/L	5.8	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 15:29	LCB
Magnesium	mg/L	3.5	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:29	LCB
Manganese	mg/L	0.37	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 15:29	LCB
Potassium	mg/L	4.7	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:29	LCB
Sodium	mg/L	9.1	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 15:29	LCB

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC12919 - TOC prep										
Blank (BC12919-BLK1)					Prepared & Analyzed: 03/30/11					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC12919-BS1)					Prepared & Analyzed: 03/30/11					
Total Organic Carbon	9.54	1.0	0.50	mg/L	10		95	90-110		
Matrix Spike (BC12919-MS1)		**Source: 1102417-01**			Prepared & Analyzed: 03/30/11					
Total Organic Carbon	13.2	1.0	0.50	mg/L	10	3.85	93	85-115		
Matrix Spike Dup (BC12919-MSD1)		**Source: 1102417-01**			Prepared & Analyzed: 03/30/11					
Total Organic Carbon	12.6	1.0	0.50	mg/L	10	3.85	87	85-115	5	10
Batch BC13009 - Ammonia by SEAL										
Blank (BC13009-BLK1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BC13009-BLK2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BC13009-BS1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		107	90-110		
LCS (BC13009-BS2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		99	90-110		
Matrix Spike (BC13009-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13009 - Ammonia by SEAL										
Matrix Spike (BC13009-MS2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.034	102	90-110		
Matrix Spike Dup (BC13009-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110	0.1	10
Matrix Spike Dup (BC13009-MSD2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.034	107	90-110	5	10
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK1)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BC13012-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13012-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BC13012-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BC13012-MS1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.519	97	80-120		
Matrix Spike (BC13012-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.48 J5	0.20	0.05	mg/L	2.5	0.808	106	80-120		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13012 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BC13012-MSD1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.519	95	80-120	2	20
Matrix Spike Dup (BC13012-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.57 J5	0.20	0.05	mg/L	2.5	0.808	109	80-120	2	20
Batch BC13014 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BC13014-BLK1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BC13014-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BC13014-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.471	0.040	0.010	mg/L	0.50		94	90-110		
LCS (BC13014-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.539	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BC13014-MS1)		**Source: 1102466-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.514	0.040	0.010	mg/L	0.50	0.0553	92	75-125		
Matrix Spike (BC13014-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.520	0.040	0.010	mg/L	0.50	0.0758	89	75-125		
Matrix Spike Dup (BC13014-MSD1)		**Source: 1102466-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.516	0.040	0.010	mg/L	0.50	0.0553	92	75-125	0.3	25

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13014 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike Dup (BC13014-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.482	0.040	0.010	mg/L	0.50	0.0758	81	75-125	8	25
Batch BC13015 - Ion Chromatography 300.0 Prep										
Blank (BC13015-BLK1)					Prepared & Analyzed: 03/30/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
LCS (BC13015-BS1)					Prepared & Analyzed: 03/30/11					
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115		
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
Sulfate	8.46	0.60	0.20	mg/L	9.0		94	85-115		
Orthophosphate as P	0.862	0.040	0.010	mg/L	0.90		96	85-115		
Nitrite (as N)	1.36	0.04	0.01	mg/L	1.4		97	85-115		
Fluoride	0.869	0.040	0.010	mg/L	0.90		97	85-115		
LCS Dup (BC13015-BSD1)					Prepared & Analyzed: 03/30/11					
Fluoride	0.859	0.040	0.010	mg/L	0.90		95	85-115	1	200
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115	2	200
Sulfate	8.51	0.60	0.20	mg/L	9.0		95	85-115	0.6	200
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115	0	200
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Orthophosphate as P	0.876	0.040	0.010	mg/L	0.90		97	85-115	2	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13015 - Ion Chromatography 300.0 Prep										
Matrix Spike (BC13015-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 03/30/11					
Nitrate (as N)	2.81	0.04	0.01	mg/L	1.7	1.21	94	85-115		
Orthophosphate as P	1.33	0.040	0.010	mg/L	0.90	0.496	93	85-115		
Nitrite (as N)	1.48	0.04	0.01	mg/L	1.4	ND	106	85-115		
Sulfate	95.8	0.60	0.20	mg/L	9.0	86.2	107	85-115		
Fluoride	1.38	0.040	0.010	mg/L	0.90	0.531	94	85-115		
Chloride	48.3 +O	0.20	0.050	mg/L	3.0	48.1	7	80-120		
Matrix Spike (BC13015-MS2)		**Source: 1102754-01**			Prepared & Analyzed: 03/30/11					
Nitrite (as N)	0.350 +O	0.04	0.01	mg/L	1.4	ND	25	85-115		
Orthophosphate as P	2.26 +O	0.040	0.010	mg/L	0.90	2.19	8	85-115		
Fluoride	1.07	0.040	0.010	mg/L	0.90	0.109	107	85-115		
Nitrate (as N)	3.97 +O	0.04	0.01	mg/L	1.7	1.52	144	85-115		
Chloride	42.0 +O	0.20	0.050	mg/L	3.0	42.8	NR	80-120		
Sulfate	45.9	0.60	0.20	mg/L	9.0	38.2	86	85-115		
Batch BC13016 - COD prep										
Blank (BC13016-BLK1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BC13016-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BC13016-MS1)		**Source: 1102664-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	2,100	25	10	mg/L	1000	1300	87	85-115		
Matrix Spike Dup (BC13016-MSD1)		**Source: 1102664-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	2,200	25	10	mg/L	1000	1300	91	85-115	2	32

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13019 - alkalinity										
Blank (BC13019-BLK1)					Prepared & Analyzed: 03/30/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13019-BS1)					Prepared & Analyzed: 03/30/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13019-MS1)		**Source: 1102588-22**			Prepared & Analyzed: 03/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	89	80-120		26
Matrix Spike Dup (BC13019-MSD1)		**Source: 1102588-22**			Prepared & Analyzed: 03/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	89	80-120	0	26
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Blank (BC13106-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13106 - Nitrate 353.2 by seal										
LCS (BC13106-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.800	0.04	0.01	mg/L	0.80		100	90-110		
LCS (BC13106-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.827	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BC13106-MS1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike (BC13106-MS2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.00	0.04	0.01	mg/L	1.0	ND	100	77-119		
Matrix Spike Dup (BC13106-MSD1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	3	20
Matrix Spike Dup (BC13106-MSD2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.02	0.04	0.01	mg/L	1.0	ND	102	77-119	2	20
Batch BC13111 - Ion Chromatography 300.0 Prep										
Blank (BC13111-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13111 - Ion Chromatography 300.0 Prep										
LCS (BC13111-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115		
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115		
Fluoride	0.840	0.040	0.010	mg/L	0.90		93	85-115		
Orthophosphate as P	0.853	0.040	0.010	mg/L	0.90		95	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
LCS Dup (BC13111-BSD1)					Prepared & Analyzed: 03/31/11					
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115	0	200
Fluoride	0.890	0.040	0.010	mg/L	0.90		99	85-115	6	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115	0	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	1	200
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115	2	200
Matrix Spike (BC13111-MS1)		**Source: 1102612-12**			Prepared & Analyzed: 03/31/11					
Chloride	6.67	0.20	0.050	mg/L	3.0	4.11	85	80-120		
Fluoride	0.903	0.040	0.010	mg/L	0.90	0.0752	92	85-115		
Sulfate	39.5	0.60	0.20	mg/L	9.0	30.3	102	85-115		
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4	ND	90	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7	0.140	89	85-115		
Orthophosphate as P	1.04	0.040	0.010	mg/L	0.90	0.176	96	85-115		
Matrix Spike (BC13111-MS2)		**Source: 1102765-02**			Prepared & Analyzed: 03/31/11					
Fluoride	872	0.040	0.010	mg/L	900	34.8	93	85-115		
Chloride	8,610	0.20	0.050	mg/L	3000	5850	92	80-120		
Sulfate	9,850	0.60	0.20	mg/L	9000	1420	94	85-115		
Nitrate (as N)	1,600	0.04	0.01	mg/L	1700	14.5	93	85-115		
Orthophosphate as P	1,010	0.040	0.010	mg/L	900	62.6	105	85-115		
Nitrite (as N)	1,270	0.04	0.01	mg/L	1400	ND	91	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13118 - Digestion for TKN by EPA 351.2										
Blank (BC13118-BLK1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13118-BS1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5		101	90-110		
Matrix Spike (BC13118-MS1)		**Source: 1102700-02**			Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	5.51 J5	0.20	0.05	mg/L	2.5	3.59	76	80-120		
Matrix Spike Dup (BC13118-MSD1)		**Source: 1102700-02**			Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	5.23 J5	0.20	0.05	mg/L	2.5	3.59	65	80-120	5	20
Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Blank (BC13123-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13123-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.815	0.04	0.01	mg/L	0.80		102	90-110		
LCS (BC13123-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BC13123-MS1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.09	0.04	0.01	mg/L	1.0	0.0832	101	77-119		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13123 - Nitrate 353.2 by seal										
Matrix Spike (BC13123-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	8.89	0.04	0.01	mg/L	1.0	7.92	97	77-119		
Matrix Spike Dup (BC13123-MSD1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	1.12	0.04	0.01	mg/L	1.0	0.0832	103	77-119	2	20
Matrix Spike Dup (BC13123-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (as N)	9.02	0.04	0.01	mg/L	1.0	7.92	111	77-119	2	20
Batch BD10108 - Ammonia by SEAL										
Blank (BD10108-BLK1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10108-BLK2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10108-BS1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
LCS (BD10108-BS2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
Matrix Spike (BD10108-MS1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.021	100	90-110		
Matrix Spike (BD10108-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.041	95	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10108 - Ammonia by SEAL										
Matrix Spike Dup (BD10108-MSD1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50	0.021	99	90-110	0.8	10
Matrix Spike Dup (BD10108-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.041	97	90-110	2	10
Batch BD10110 - COD prep										
Blank (BD10110-BLK1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10110-BS1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BD10110-MS1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115		
Matrix Spike Dup (BD10110-MSD1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115	0	32
Batch BD10113 - Ion Chromatography 300.0 Prep										
Blank (BD10113-BLK1)					Prepared & Analyzed: 04/01/11					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BD10113-BS1)					Prepared & Analyzed: 04/01/11					
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10113 - Ion Chromatography 300.0 Prep										
LCS Dup (BD10113-BSD1)					Prepared & Analyzed: 04/01/11					
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	1	200
Matrix Spike (BD10113-MS1)		**Source: 1102764-01**			Prepared & Analyzed: 04/01/11					
Chloride	875	0.20	0.050	mg/L	300	584	97	80-120		
Matrix Spike (BD10113-MS2)		**Source: 1102635-16**			Prepared & Analyzed: 04/01/11					
Chloride	4.65	0.20	0.050	mg/L	3.0	1.64	100	80-120		
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10437-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10511 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10511-BLK1)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10511-BLK2)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10511-BS1)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.455	0.040	0.010	mg/L	0.50		91	90-110		
LCS (BD10511-BS2)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.465	0.040	0.010	mg/L	0.50		93	90-110		
Matrix Spike (BD10511-MS1)		**Source: 1102750-01**			Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.608	0.040	0.010	mg/L	0.50	0.105	101	75-125		
Matrix Spike (BD10511-MS2)		**Source: 1102750-02**			Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.477	0.040	0.010	mg/L	0.50	0.0268	90	75-125		
Matrix Spike Dup (BD10511-MSD1)		**Source: 1102750-01**			Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.596	0.040	0.010	mg/L	0.50	0.105	98	75-125	2	25

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10511 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike Dup (BD10511-MSD2)		**Source: 1102750-02**			Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.515	0.040	0.010	mg/L	0.50	0.0268	98	75-125	8	25

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13112 - DOC prep										
Blank (BC13112-BLK1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC13112-BS1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	9.99	1.0	0.50	mg/L	10		100	90-110		
Duplicate (BC13112-DUP1)		**Source: 1102597-01**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	3.21	1.0	0.50	mg/L		3.17			1	15
Matrix Spike (BC13112-MS1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.8	1.0	0.50	mg/L	10	1.34	105	85-125		
Matrix Spike Dup (BC13112-MSD1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.9	1.0	0.50	mg/L	10	1.34	106	85-125	0.8	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13002 - Metals Preparation for EPA Method 200.7										
Blank (BC13002-BLK1)					Prepared & Analyzed: 03/30/11					
Potassium	0.036 I	0.050	0.010	mg/L						
Iron	0.036 I	0.10	0.020	mg/L						
Magnesium	0.048 I	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.31	0.050	0.010	mg/L						
Calcium	0.034 I	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
LCS (BC13002-BS1)					Prepared & Analyzed: 03/30/11					
Magnesium	22	0.050	0.010	mg/L	20		108	85-115		
Sodium	21	0.050	0.010	mg/L	20		103	85-115		
Calcium	21	0.050	0.010	mg/L	20		106	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Potassium	20	0.050	0.010	mg/L	20		102	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		99	85-115		
Manganese	0.41	0.010	0.0010	mg/L	0.40		103	85-115		
Matrix Spike (BC13002-MS1)		**Source: 1102032-01**			Prepared & Analyzed: 03/30/11					
Potassium	23	0.050	0.010	mg/L	20	2.2	102	70-130		
Boron	0.41	0.10	0.050	mg/L	0.40	ND	104	70-130		
Calcium	27	0.050	0.010	mg/L	20	5.4	110	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	102	70-130		
Sodium	23	0.050	0.010	mg/L	20	3.0	102	70-130		
Iron	8.2	0.10	0.020	mg/L	8.0	0.034	101	70-130		
Magnesium	22	0.050	0.010	mg/L	20	0.70	105	70-130		
Matrix Spike Dup (BC13002-MSD1)		**Source: 1102032-01**			Prepared & Analyzed: 03/30/11					
Potassium	23	0.050	0.010	mg/L	20	2.2	106	70-130	4	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130	1	30
Sodium	24	0.050	0.010	mg/L	20	3.0	105	70-130	3	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	103	70-130	0.7	30
Calcium	28	0.050	0.010	mg/L	20	5.4	114	70-130	3	30
Magnesium	22	0.050	0.010	mg/L	20	0.70	106	70-130	1	30
Iron	8.3	0.10	0.020	mg/L	8.0	0.034	103	70-130	1	30

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10104 - Metals Preparation for EPA Method 200.7										
Blank (BD10104-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Sodium	0.010 U	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Magnesium	0.010 U	0.050	0.010	mg/L						
Potassium	0.049 I	0.050	0.010	mg/L						
Calcium	0.010 U	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
LCS (BD10104-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Sodium	22	0.050	0.010	mg/L	20		109	85-115		
Boron	0.38	0.10	0.050	mg/L	0.40		96	85-115		
Potassium	22	0.050	0.010	mg/L	20		108	85-115		
Manganese	0.40	0.010	0.0010	mg/L	0.40		101	85-115		
Calcium	21	0.050	0.010	mg/L	20		106	85-115		
Iron	8.1	0.10	0.020	mg/L	8.0		102	85-115		
Magnesium	21	0.050	0.010	mg/L	20		106	85-115		
Matrix Spike (BD10104-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/01/11					
Manganese	0.48	0.010	0.0010	mg/L	0.40	0.069	103	70-130		
Sodium	23	0.050	0.010	mg/L	20	1.8	106	70-130		
Iron	8.2	0.10	0.020	mg/L	8.0	0.066	102	70-130		
Magnesium	23	0.050	0.010	mg/L	20	1.6	107	70-130		
Boron	0.40	0.10	0.050	mg/L	0.40	ND	100	70-130		
Calcium	27	0.050	0.010	mg/L	20	5.6	105	70-130		
Potassium	22	0.050	0.010	mg/L	20	0.94	106	70-130		
Matrix Spike Dup (BD10104-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/01/11					
Manganese	0.48	0.010	0.0010	mg/L	0.40	0.069	103	70-130	0.1	30
Potassium	22	0.050	0.010	mg/L	20	0.94	105	70-130	0.8	30
Boron	0.41	0.10	0.050	mg/L	0.40	ND	102	70-130	2	30
Iron	8.2	0.10	0.020	mg/L	8.0	0.066	102	70-130	0.2	30
Sodium	23	0.050	0.010	mg/L	20	1.8	105	70-130	2	30
Magnesium	23	0.050	0.010	mg/L	20	1.6	107	70-130	0.2	30
Calcium	27	0.050	0.010	mg/L	20	5.6	107	70-130	2	30

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April 6, 2011
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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.
Questions regarding this report should be directed to Client Services at 813-855-1844.

J5	Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O	Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102597

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO3 B, Ca, Fe, K, Mg, Mn, Na No. of Containers (Total per each location)
01	DP-E04-6	032911	950	GW		X	1**	1*		1	4.7	3.49	90.6	22.3	1
02	DP-E05-6	032911	1090	GW		X	1	1			6.0	2.96	171.8	24.8	
03	DP-E06-8	032911	1155	GW		X	1	1			4.5	1.09	180.6	22.7	
04	DP-E07-10	032911	1125	GW		X	1	1			4.9	1.19	289.0	22.5	
05	DP-E08-8	032911	1230	GW		X	1	1			5.0	1.52	348	22.6	
06	PZ11-E09-10	033011	1255	GW		X	1	1			5.6	2.33	453.8	25.8	
07	DP-E10-6	032911	1240	GW		X	1	1			4.6	0.60	407	23.0	
08	PZ21-E11-26	033011	1104	GW		X	1	1			5.2	0.36	295.6	23.6	
09	PZ22-E11-15	033011	1030	GW		X	1	1			5.3	1.36	416.0	24.4	
10	DP-E12-10	032911	1330	GW		X	1**	1*	2	1	5.1	0.35	520	23.9	1
11	DP-E12-15	033011	0745	GW		X	1**	1*		1	5.0	0.60	460	21.9	1
12	DP-E12-22	033011	0820	GW		X	1**	1*	2	1	5.3	0.59	297	22.5	1

	Date/Time		Date/Time
Containers Prepared/ Relinquished:	1600 03-27-11	Received:	0500 032911
Relinquished:	1830 033011	Received:	
Relinquished:	~~1430~~ ~~3/31/11~~	Received:	
Relinquished:		Received:	
Relinquished:		Received:	

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

** Cl, F, SO_4, OP, NOx 300

1102597

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102597

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498
jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes:
DW-Drinking Water WW-Wastewater
SW-SurfaceWater SL-Sludge SO-Soil
GW-Groundwater SA-Saline Water O-Other
R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO_3 B, Ca, Fe, K, Mg, Mn, Na	No. of Containers (Total per each location)
13	DP-E12-28	033011	0845	GW		X	1**	1*		1	5.3	0.57	310	22.8		1
14	PZ13-F04-8	032911	0925	GW		X	1	1			5.6	2.48	125.5	21.4	Z	1
15	DP-F04-17	032911	1025	GW		X	1	1			7.3	0.57	415.7	22.0	Z	1
16	DP-F04-22	032911	1045	GW		X	1	1			6.0	0.72	314.1	22.8	Z	1
17	DP-F05-5	3/30/11	1325	GW		X	1	1			5.8	7.36	173.3	27.7		
18	DP-F05-31	032911	1115	GW		X	1**	1*		1	7.3	1.70	187.1	24.1	Z	1
19	DP-F06-10	032911	1140	GW		X	1	1			5.2	0.30	190.6	21.8	Z	1
20	PZ08-FG7-6	033011	1006	GW		X	1	1			4.8	3.33	126.9	23.6		
21	DP-F08-14	032911	1215	GW		X	1	1			7.6	1.28	501	22.5		
22	DP-F08-20	032911	1230	GW		X	1**	1*		1	6.0	0.41	335.6	23.1		1
23	DP-F08-28	032911	1245	GW		X	1	1			6.3	0.37	323.9	23.4		
24	DP-F09-5	032911	1315	GW		X	1**	1*		1	6.6	1.15	191.1	24.8		1

Containers Prepared/ Relinquished:	Date/Time: 1600 03-27-11	Received:	Date/Time: 0500 032911
Relinquished:	Date/Time: 1600 032911	Received:	Date/Time: 3/29/11 1600
Relinquished:	Date/Time: 1830 033011	Received:	Date/Time:
Relinquished:	Date/Time: ~~1480~~ 3/31/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

Seal intact? Y N N/A
Samples intact upon arrival? Y N N/A
Received on ice? Temp_____ Y N N/A
Proper preservatives indicated? Y N N/A
Rec'd within holding time? Y N N/A
Volatiles rec'd w/out headspace Y N N/A
Proper containers used? Y N N/A

Instructions / Remarks
* COD, TP
** Cl, F, OP, NOX 300, SO4

1102597

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

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April 6, 2011
Work Order: 1102612
Revised Report

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F10-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-01**						
Date/Time Collected		**03/30/11 07:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.7						
Temperature		21.3 °C						
Conductivity		475.9 umhos						
Dissolved Oxygen		0.80 mg/L						
Inorganics								
Ammonia as N	mg/L	1.1	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	30	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F11-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-02**						
Date/Time Collected		**03/30/11 08:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		21.4 °C						
Conductivity		412.7 umhos						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.44	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	21	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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April 6, 2011
Work Order: 1102612
Revised Report

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F11-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-03**						
Date/Time Collected		**03/30/11 08:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.1						
Temperature		21.8 °C						
Conductivity		453.3 umhos						
Dissolved Oxygen		0.28 mg/L						
Inorganics								
Ammonia as N	mg/L	0.14	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	28	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F11-18**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-04**						
Date/Time Collected		**03/30/11 08:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.2 °C						
Conductivity		433.9 umhos						
Dissolved Oxygen		1.18 mg/L						
Inorganics								
Ammonia as N	mg/L	0.067	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	18	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F11-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-05**						
Date/Time Collected		**03/30/11 09:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		22.5 °C						
Conductivity		318.4 umhos						
Dissolved Oxygen		0.43 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	20	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F11-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-06**						
Date/Time Collected		**03/30/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.1						
Temperature		22.8 °C						
Conductivity		301.1 umhos						
Dissolved Oxygen		0.30 mg/L						
Inorganics								
Ammonia as N	mg/L	0.008 I	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	15	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F11-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-07**						
Date/Time Collected		**03/30/11 09:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		23.2 °C						
Conductivity		307.5 umhos						
Dissolved Oxygen		0.39 mg/L						
Inorganics								
Ammonia as N	mg/L	0.008 I	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	7.3	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F12-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-08**						
Date/Time Collected		**03/31/11 08:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.0						
Temperature		21.5 °C						
Conductivity		427 umhos						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.16	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	23	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Sample Description		**DP-F15-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-09**						
Date/Time Collected		**03/31/11 09:22**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 09:22**						
Client Provided Field Data								
pH		5.2						
Temperature		21.7 °C						
Conductivity		512 umhos						
Dissolved Oxygen		0.53 mg/L						
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	11	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.74	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	11	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	31	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-F15-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-10**						
Date/Time Collected		**03/31/11 09:37**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.3 °C						
Conductivity		383 umhos						
Dissolved Oxygen		0.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	12	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	12	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	19	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F15-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-11**						
Date/Time Collected		**03/31/11 10:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.2						
Temperature		22.5 °C						
Conductivity		306 umhos						
Dissolved Oxygen		0.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.074	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	17	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-G05-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-12**						
Date/Time Collected		**03/30/11 13:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.1						
Temperature		26.2 °C						
Conductivity		151.9 umhos						
Dissolved Oxygen		2.49 mg/L						
Inorganics								
Ammonia as N	mg/L	1.4	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Chemical Oxygen Demand	mg/L	32	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	4.1	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.075	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	0.14	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.18	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.43	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	30	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G05-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-12**						
Date/Time Collected		**03/30/11 13:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.1						
Temperature		26.2 °C						
Conductivity		151.9 umhos						
Dissolved Oxygen		2.49 mg/L						
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.14	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	8.7	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:45	LCB
Calcium	mg/L	11	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:45	LCB
Iron	mg/L	8.2	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:45	LCB
Magnesium	mg/L	3.3	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:45	LCB
Manganese	mg/L	0.40	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:45	LCB
Potassium	mg/L	2.8	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:18	LCB
Sodium	mg/L	2.6	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:18	LCB
Sample Description		**DP-G07-13**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-13**						
Date/Time Collected		**03/30/11 15:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.8						
Temperature		25.2 °C						
Conductivity		232 umhos						
Dissolved Oxygen		2.19 mg/L						
Inorganics								
Ammonia as N	mg/L	0.33	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD

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Sample Description		**DP-G07-13**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-13**						
Date/Time Collected		**03/30/11 15:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.8						
Temperature		25.2 °C						
Conductivity		232 umhos						
Dissolved Oxygen		2.19 mg/L						
Total Alkalinity	mg/L	14	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.70	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	14	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	2.7	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-G07-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-14**						
Date/Time Collected		**03/30/11 15:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		23.4 °C						
Conductivity		272 umhos						
Dissolved Oxygen		1.20 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.45	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	4.5	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G07-17**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-15**						
Date/Time Collected		**03/30/11 15:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		23.7 °C						
Conductivity		317 umhos						
Dissolved Oxygen		1.52 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/01/11 07:51	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	8.9	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-G07-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-16**						
Date/Time Collected		**03/31/11 07:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.6						
Temperature		22.2 °C						
Conductivity		326 umhos						
Dissolved Oxygen		0.57 mg/L						
Inorganics								
Ammonia as N	mg/L	0.071	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	13	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G07-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-17**						
Date/Time Collected		**03/31/11 08:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.7						
Temperature		22.3 °C						
Conductivity		271 umhos						
Dissolved Oxygen		0.94 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	13	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-G07-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-18**						
Date/Time Collected		**03/31/11 08:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.2						
Temperature		22.3 °C						
Conductivity		303 umhos						
Dissolved Oxygen		0.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	15	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G08-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-19**						
Date/Time Collected		**03/30/11 15:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.6						
Temperature		26.1 °C						
Conductivity		157.8 umhos						
Dissolved Oxygen		7.64 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.92	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	1.6	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-G09-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-20**						
Date/Time Collected		**03/30/11 15:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.4						
Temperature		24.0 °C						
Conductivity		285 umhos						
Dissolved Oxygen		2.08 mg/L						
Inorganics								
Ammonia as N	mg/L	0.010	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Chemical Oxygen Demand	mg/L	41	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	13	EPA 300.0	0.20	0.050		03/31/11 12:58	MEJ
Fluoride	mg/L	0.036 I	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	9.1	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	51	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G09-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-20**						
Date/Time Collected		**03/30/11 15:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.4						
Temperature		24.0 °C						
Conductivity		285 umhos						
Dissolved Oxygen		2.08 mg/L						
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	9.1	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.3	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/01/11 09:38	04/01/11 16:55	LCB
Calcium	mg/L	27	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:55	LCB
Iron	mg/L	1.1	EPA 200.7	0.10	0.020	04/01/11 09:38	04/01/11 16:55	LCB
Magnesium	mg/L	5.6	EPA 200.7	0.050	0.010	04/01/11 09:38	04/01/11 16:55	LCB
Manganese	mg/L	0.26	EPA 200.7	0.010	0.0010	04/01/11 09:38	04/01/11 16:55	LCB
Potassium	mg/L	7.0	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:21	LCB
Sodium	mg/L	12	EPA 200.7	0.050	0.010	04/01/11 09:38	04/05/11 17:21	LCB
Sample Description		**PZ19-G10-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-21**						
Date/Time Collected		**03/30/11 09:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.1						
Temperature		23.1 °C						
Conductivity		302.1 umhos						
Dissolved Oxygen		1.07 mg/L						
Inorganics								
Ammonia as N	mg/L	0.014	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ19-G10-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-21**						
Date/Time Collected		**03/30/11 09:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.1						
Temperature		23.1 °C						
Conductivity		302.1 umhos						
Dissolved Oxygen		1.07 mg/L						
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	17	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Sample Description		**PZ20-G10-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-22**						
Date/Time Collected		**03/30/11 09:01**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.6						
Temperature		22.2 °C						
Conductivity		356.1 umhos						
Dissolved Oxygen		1.97 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	3.7	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	19	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G11-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-23**						
Date/Time Collected		**03/31/11 08:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.1						
Temperature		21.2 °C						
Conductivity		295 umhos						
Dissolved Oxygen		1.38 mg/L						
Inorganics								
Ammonia as N	mg/L	0.015	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	12	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-G12-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102612-24**						
Date/Time Collected		**03/31/11 08:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		4.7						
Temperature		21.4 °C						
Conductivity		341 umhos						
Dissolved Oxygen		2.62 mg/L						
Inorganics								
Ammonia as N	mg/L	0.036	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	10	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26

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Batch BC13102 - alkalinity										
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BC13111 - Ion Chromatography 300.0 Prep										
Blank (BC13111-BLK1)					Prepared & Analyzed: 03/31/11					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BC13111-BS1)					Prepared & Analyzed: 03/31/11					
Orthophosphate as P	0.853	0.040	0.010	mg/L	0.90		95	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115		
Fluoride	0.840	0.040	0.010	mg/L	0.90		93	85-115		
Chloride	3.06	0.20	0.050	mg/L	3.0		102	85-115		
LCS Dup (BC13111-BSD1)					Prepared & Analyzed: 03/31/11					
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115	0	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	1	200
Chloride	3.01	0.20	0.050	mg/L	3.0		100	85-115	2	200
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115	0	200
Fluoride	0.890	0.040	0.010	mg/L	0.90		99	85-115	6	200

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Batch BC13111 - Ion Chromatography 300.0 Prep										
Matrix Spike (BC13111-MS1)		**Source: 1102612-12**			Prepared & Analyzed: 03/31/11					
Chloride	6.67	0.20	0.050	mg/L	3.0	4.11	85	80-120		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7	0.140	89	85-115		
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4	ND	90	85-115		
Orthophosphate as P	1.04	0.040	0.010	mg/L	0.90	0.176	96	85-115		
Sulfate	39.5	0.60	0.20	mg/L	9.0	30.3	102	85-115		
Fluoride	0.903	0.040	0.010	mg/L	0.90	0.0752	92	85-115		
Matrix Spike (BC13111-MS2)		**Source: 1102765-02**			Prepared & Analyzed: 03/31/11					
Nitrate (as N)	1,600	0.04	0.01	mg/L	1700	14.5	93	85-115		
Sulfate	9,850	0.60	0.20	mg/L	9000	1420	94	85-115		
Fluoride	872	0.040	0.010	mg/L	900	34.8	93	85-115		
Chloride	8,610	0.20	0.050	mg/L	3000	5850	92	80-120		
Orthophosphate as P	1,010	0.040	0.010	mg/L	900	62.6	105	85-115		
Nitrite (as N)	1,270	0.04	0.01	mg/L	1400	ND	91	85-115		
Batch BC13117 - Digestion for TKN by EPA 351.2										
Blank (BC13117-BLK1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BC13117-BLK2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13117-BS1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
LCS (BC13117-BS2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		

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Batch BC13117 - Digestion for TKN by EPA 351.2										
Matrix Spike (BC13117-MS1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.20 J5	0.20	0.05	mg/L	2.5	3.92	50	80-120		
Matrix Spike (BC13117-MS2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.18	0.20	0.05	mg/L	2.5	0.747	96	80-120		
Matrix Spike Dup (BC13117-MSD1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.61 J5	0.20	0.05	mg/L	2.5	3.92	66	80-120	8	20
Matrix Spike Dup (BC13117-MSD2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.16	0.20	0.05	mg/L	2.5	0.747	95	80-120	0.6	20
Batch BD10106 - Nitrate 353.2 by seal										
Blank (BD10106-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10106-BLK2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10106-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.749	0.04	0.01	mg/L	0.80		94	90-110		
LCS (BD10106-BS2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.765	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BD10106-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.40	0.04	0.01	mg/L	1.0	0.370	103	77-119		

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Batch BD10106 - Nitrate 353.2 by seal										
Matrix Spike (BD10106-MS2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119		
Matrix Spike Dup (BD10106-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.38	0.04	0.01	mg/L	1.0	0.370	102	77-119	1	20
Matrix Spike Dup (BD10106-MSD2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119	0.01	20
Batch BD10108 - Ammonia by SEAL										
Blank (BD10108-BLK1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10108-BLK2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10108-BS1)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
LCS (BD10108-BS2)					Prepared & Analyzed: 04/01/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		108	90-110		
Matrix Spike (BD10108-MS1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.021	100	90-110		
Matrix Spike (BD10108-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.041	95	90-110		

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Batch BD10108 - Ammonia by SEAL										
Matrix Spike Dup (BD10108-MSD1)		**Source: 1102588-03**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50	0.021	99	90-110	0.8	10
Matrix Spike Dup (BD10108-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 04/01/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.041	97	90-110	2	10
Batch BD10110 - COD prep										
Blank (BD10110-BLK1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10110-BS1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BD10110-MS1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115		
Matrix Spike Dup (BD10110-MSD1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115	0	32
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Batch BD10114 - Digestion for TKN by EPA 351.2										
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10118 - Nitrate 353.2 by seal										
Blank (BD10118-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10118-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.850	0.04	0.01	mg/L	0.80		106	90-110		
Matrix Spike (BD10118-MS1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119		

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Batch BD10118 - Nitrate 353.2 by seal										
Matrix Spike Dup (BD10118-MSD1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119	0.02	20
Batch BD10201 - Ammonia by SEAL										
Blank (BD10201-BLK1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10201-BLK2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10201-BS1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50		103	90-110		
LCS (BD10201-BS2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		97	90-110		
Matrix Spike (BD10201-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.062	98	90-110		
Matrix Spike (BD10201-MS2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.068	100	90-110		
Matrix Spike Dup (BD10201-MSD1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.062	94	90-110	3	10
Matrix Spike Dup (BD10201-MSD2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.068	96	90-110	3	10

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Batch BD10203 - Ammonia by SEAL										
Blank (BD10203-BLK1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10203-BLK2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10203-BS1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		98	90-110		
LCS (BD10203-BS2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		96	90-110		
Matrix Spike (BD10203-MS1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.051	94	90-110		
Matrix Spike (BD10203-MS2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.047	94	90-110		
Matrix Spike Dup (BD10203-MSD1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.051	98	90-110	4	10
Matrix Spike Dup (BD10203-MSD2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.047	99	90-110	5	10
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10518 - alkalinity										
Blank (BD10518-BLK1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Batch BD10518 - alkalinity										
Blank (BD10518-BLK2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BD10518-BS1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10518-BS2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10518-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	92	80-120		26
Matrix Spike (BD10518-MS2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	150	8.0	2.0	mg/L	120	12	109	80-120		26
Matrix Spike Dup (BD10518-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	93	80-120	0.8	26
Matrix Spike Dup (BD10518-MSD2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	12	100	80-120	8	26

Hazen and Sawyer
10002 Princess Palm Avenue Suite 200
Tampa, FLORIDA 33619

April 6, 2011
Work Order: 1102612
Revised Report

Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13112 - DOC prep										
Blank (BC13112-BLK1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC13112-BS1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	9.99	1.0	0.50	mg/L	10		100	90-110		
Duplicate (BC13112-DUP1)		**Source: 1102597-01**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	3.21	1.0	0.50	mg/L		3.17			1	15
Matrix Spike (BC13112-MS1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.8	1.0	0.50	mg/L	10	1.34	105	85-125		
Matrix Spike Dup (BC13112-MSD1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.9	1.0	0.50	mg/L	10	1.34	106	85-125	0.8	25

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Metals - Quality Control

Analyte	Result		PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10104 - Metals Preparation for EPA Method 200.7											
Blank (BD10104-BLK1)						Prepared: 04/01/11 Analyzed: 04/05/11					
Potassium	0.049	I	0.050	0.010	mg/L						
Iron	0.020	U	0.10	0.020	mg/L						
Manganese	0.0010	U	0.010	0.0010	mg/L						
Magnesium	0.010	U	0.050	0.010	mg/L						
Boron	0.050	U	0.10	0.050	mg/L						
Sodium	0.010	U	0.050	0.010	mg/L						
Calcium	0.010	U	0.050	0.010	mg/L						
LCS (BD10104-BS1)						Prepared & Analyzed: 04/01/11					
Iron	8.1		0.10	0.020	mg/L	8.0		102	85-115		
Sodium	22		0.050	0.010	mg/L	20		109	85-115		
Boron	0.38		0.10	0.050	mg/L	0.40		96	85-115		
Magnesium	21		0.050	0.010	mg/L	20		106	85-115		
Potassium	22		0.050	0.010	mg/L	20		108	85-115		
Calcium	21		0.050	0.010	mg/L	20		106	85-115		
Manganese	0.40		0.010	0.0010	mg/L	0.40		101	85-115		
Matrix Spike (BD10104-MS1)			**Source: 1102588-01**			Prepared: 04/01/11 Analyzed: 04/05/11					
Sodium	23		0.050	0.010	mg/L	20	1.8	106	70-130		
Calcium	27		0.050	0.010	mg/L	20	5.6	105	70-130		
Magnesium	23		0.050	0.010	mg/L	20	1.6	107	70-130		
Boron	0.40		0.10	0.050	mg/L	0.40	ND	100	70-130		
Potassium	22		0.050	0.010	mg/L	20	0.94	106	70-130		
Iron	8.2		0.10	0.020	mg/L	8.0	0.066	102	70-130		
Manganese	0.48		0.010	0.0010	mg/L	0.40	0.069	103	70-130		
Matrix Spike Dup (BD10104-MSD1)			**Source: 1102588-01**			Prepared & Analyzed: 04/01/11					
Manganese	0.48		0.010	0.0010	mg/L	0.40	0.069	103	70-130	0.1	30
Iron	8.2		0.10	0.020	mg/L	8.0	0.066	102	70-130	0.2	30
Magnesium	23		0.050	0.010	mg/L	20	1.6	107	70-130	0.2	30
Potassium	22		0.050	0.010	mg/L	20	0.94	105	70-130	0.8	30
Boron	0.41		0.10	0.050	mg/L	0.40	ND	102	70-130	2	30
Sodium	23		0.050	0.010	mg/L	20	1.8	105	70-130	2	30
Calcium	27		0.050	0.010	mg/L	20	5.6	107	70-130	2	30

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April 6, 2011
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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102612

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO3 Ca, Fe, Na, K, Mn, Mg, B No. of Containers (Total per each location)
01	DP-F10-11	033011	0745	GW		X	1	1			4.7	0.80	475.9	21.3	
02	DP-F11-11	033011	0800	GW		X	1	1			5.3	0.90	412.7	21.4	
03	DP-F11-15	033011	0820	GW		X	1	1			5.1	0.28	453.3	21.8	
04	DP-F11-18	033011	0840	GW		X	1	1			5.4	1.18	433.9	22.2	
05	DP-F11-21	033011	0900	GW		X	1	1			5.2	0.43	318.4	22.5	
06	DP-F11-24	033011	0930	GW		X	1	1			5.1	0.30	301.1	22.8	
07	DP-F11-27	033011	0950	GW		X	1	1			5.3	0.39	307.5	23.2	
JMH 08	DP-F12-10	3/31/11	0850	GW		X	1	1			5.0	0.90	427	24.5	
JMH 09	DP-F15-14	3/31/11	0922	GW		X	1	1			5.2	0.53	512	24.7	
JMH 10	DP-F15-20	3/31/11	0937	GW		X	1	1			5.4	0.78	383	22.3	
JMH 11	DP-F15-26	3/31/11	1000	GW		X	1	1			5.2	0.78	306	22.5	
12	DP-G05-6	3/30/11	1340	GW		X	1 **	1 *		1	6.1	2.49	151.9	24.2	1

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	1700 03-27-11		0500 032911
1-7, 12, 13-16, 19-22 Relinquished:	1830 033011		
8-11, 17-18, 23-24 Relinquished:	1430 3/31/11		
Relinquished:			
Relinquished:			

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

** F, Cl, SO_4, OP, NOx 300

1102612

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102612

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

	SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO_3 Ca, Fe, K, Na, Mn, Mg, B	No. of Containers (Total per each location)
	13	DP-G07-13	3/30/11	1505	GW		X	1	1			5.8	2.19	232	25.2		
	14	DP-G07-15	3/30/11	1530	GW		X	1	1			5.2	1.20	272	23.4		
	15	DP-G07-17	3/30/11	1550	GW		X	1	1			5.3	1.52	317	23.7		
JMH	16	DP-G07-21	3/31/11	0755	GW		X	1	1			5.6	0.57	326	22.2		
JMH	17	DP-G07-24	3/31/11	0815	GW		X	1	1			5.7	0.94	271	22.3		
JMH	18	DP-G07-27	3/31/11	0835	GW		X	1	1			5.2	0.95	303	22.3		
	19	DP-G08-5	3/30/11	1515	GW		X	1	1			5.6	7.64	157.8	26.1		
	20	DP-G09-11	3/30/11	1545	GW		X	1**	1*		1	5.4	2.08	285	24.0	1	
	21	PZ19-G10-26	033011	0945	GW		X	1	1			5.1	1.07	302.1	23.1		
	22	PZ20-G10-15	033011	0901	GW		X	1	1			5.6	1.97	356.1	22.2		
JMH	23	DP-G11-8	3/31/11	0805	GW		X	1	1			5.1	1.38	295	21.2		
JMH	24	DP-G12-9	3-31-11	0830	GW		X	1	1			4.7	2.62	341	21.4		

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	Date/Time: 1700 03-27-11	Received:	Date/Time: 032911 0500
Relinquished:	Date/Time: 1830 033011	Received:	Date/Time:
Relinquished:	Date/Time: 1430 3/31/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

1-7, 12-15, 19-22, 8-11, 16-18, 23, 24

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

*COD, TP

** Cl, F, SO_4, OP, NOx 300

1102612

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102612	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ19-G10-26	Sample ID	21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	2.0	WELL CAPACITY (gal/ft)	0.16	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.4	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	30.0	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	3.68	1/4 WELL VOLUME	0.92	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	15.0	FINAL TUBING LEGNTH IN WELL (FEET)	15.0	PURGE TIME START	0915	PURGE TIME END	0944	TOTAL PURGED	5.8

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0934	3.8	3.8	0.20		5.1	23.2	312.2	1.13	27.3	Cloudy	None
0939	1.0	4.8	0.20		5.1	23.1	304.8	1.10	18.4		
0944	1.0	5.8	0.20		5.1	23.1	302.1	1.07	18.3		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		15		SAMPLE PUMP FLOW RATE (mL/min)	0.20
SAMPLING INITIATED	0945	SAMPLING ENDED	0945	FIELD CLEANED	(Y) N	CLEANING STEPS	clean tubing DI
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
						SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Sunny / windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By:		Date:	

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102612	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ20-G10-15	Sample ID	22	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.49	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	19.4	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.238	1/4 WELL VOLUME	0.05	3 WELL VOLUMES	0.714	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		~~15~~ 15.0	FINAL TUBING LEGNTH IN WELL (FEET)		15.0	PURGE TIME START	0851	PURGE TIME END	0900	TOTAL PURGED	0.90
INST. ID					SAL-SAM-63-03	SAL-SAM-65-63	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0854	0.30	0.30	0.10	9.61	5.6	22.1	356.0	1.97	9.70	cloudy	none
0857	0.30	0.60	0.10	9.61	5.6	22.1	356.2	1.96	9.61		
0900	0.30	0.90	0.10	9.61	5.6	22.2	356.1	1.97	9.58		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	GAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	15.00		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	0901	SAMPLING ENDED	0901	FIELD CLEANED	(Y) N	CLEANING STEPS	New tubing
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED		033011			
WEATHER CONDITIONS	SUNNY						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Avenue Suite 200
Tampa, FLORIDA 33619

April 8, 2011
Work Order: 1102625
Revised Report

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G12-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-01**						
Date/Time Collected		**03/31/11 08:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.5						
Temperature		21.8 °C						
Conductivity		487 umhos						
Dissolved Oxygen		0.96 mg/L						
Inorganics								
Ammonia as N	mg/L	0.28	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	26	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-G12-18**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-02**						
Date/Time Collected		**03/31/11 08:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.2						
Temperature		22.2 °C						
Conductivity		494 umhos						
Dissolved Oxygen		1.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	29	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Hazen and Sawyer
10002 Princess Palm Avenue Suite 200
Tampa, FLORIDA 33619

April 8, 2011
Work Order: 1102625
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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G12-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-03**						
Date/Time Collected		**03/31/11 09:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.7 °C						
Conductivity		385 umhos						
Dissolved Oxygen		0.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.099	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	4.0	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	13	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-G12-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-04**						
Date/Time Collected		**03/31/11 09:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.7 °C						
Conductivity		324 umhos						
Dissolved Oxygen		0.82 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	12	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G12-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-05**						
Date/Time Collected		**03/31/11 09:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.9 °C						
Conductivity		311 umhos						
Dissolved Oxygen		0.43 mg/L						
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	12	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**PZ14-G13-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-06**						
Date/Time Collected		**03/30/11 15:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.8						
Temperature		24.5 °C						
Conductivity		246.1 umhos						
Dissolved Oxygen		1.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.19 I	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	15	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (as N)	mg/L	7.4	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-H06-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-07**						
Date/Time Collected		**04/01/11 07:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		6.0						
Temperature		19.8 °C						
Conductivity		152.4 umhos						
Dissolved Oxygen		4.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.65	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	18	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	0.15	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-H08-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-08**						
Date/Time Collected		**03/31/11 11:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		6.2						
Temperature		22.7 °C						
Conductivity		189 umhos						
Dissolved Oxygen		2.97 mg/L						
Inorganics								
Ammonia as N	mg/L	0.88	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	24	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	24	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	0.75	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-H10-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-09**						
Date/Time Collected		**03/31/11 10:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		6.2						
Temperature		22.2 °C						
Conductivity		204.5 umhos						
Dissolved Oxygen		5.83 mg/L						
Inorganics								
Ammonia as N	mg/L	0.089	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	25	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.21	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	25	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	1.9	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-H12-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-10**						
Date/Time Collected		**03/31/11 09:02**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.6						
Temperature		21.9 °C						
Conductivity		188.5 umhos						
Dissolved Oxygen		0.94 mg/L						
Inorganics								
Ammonia as N	mg/L	0.047	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.81	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	2.0	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-I06-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-11**						
Date/Time Collected		**04/01/11 07:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.3						
Temperature		20.9 °C						
Conductivity		212.3 umhos						
Dissolved Oxygen		1.44 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	1.5	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-I06-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-12**						
Date/Time Collected		**04/01/11 08:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.0						
Temperature		21.4 °C						
Conductivity		358 umhos						
Dissolved Oxygen		1.03 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	3.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	18	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-I06-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-13**						
Date/Time Collected		**04/01/11 08:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.9						
Temperature		21.6 °C						
Conductivity		305 umhos						
Dissolved Oxygen		1.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	14	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-I07-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-14**						
Date/Time Collected		**04/01/11 07:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.8						
Temperature		19.4 °C						
Conductivity		170.7 umhos						
Dissolved Oxygen		2.23 mg/L						
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	17	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.42	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	17	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (as N)	mg/L	0.86	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-I09-11**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-15**						
Date/Time Collected		**03/31/11 10:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.1						
Temperature		21.5 °C						
Conductivity		180.6 umhos						
Dissolved Oxygen		0.77 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.72	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	1.5	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-I11-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-16**						
Date/Time Collected		**04/01/11 09:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.7						
Temperature		21.4 °C						
Conductivity		166.8 umhos						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.26	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	17	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.64	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	17	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	0.39	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ17-I15-26**							
Matrix		**Groundwater**							
SAL Sample Number		**1102625-17**							
Date/Time Collected		**03/31/11 10:35**							
Collected by		**Sean Harmon**							
Date/Time Received		**03/31/11 14:30**							
Client Provided Field Data									
pH		4.8							
Temperature		23.1 °C							
Conductivity		307.1 umhos							
Dissolved Oxygen		2.46 mg/L							
Inorganics									
Ammonia as N	mg/L	0.006	I	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	3.0	I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.18	I	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.0	I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	17		EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-J08-6**							
Matrix		**Groundwater**							
SAL Sample Number		**1102625-18**							
Date/Time Collected		**04/01/11 08:25**							
Collected by		**Sean Harmon**							
Date/Time Received		**04/01/11 15:45**							
Client Provided Field Data									
pH		6.0							
Temperature		19.7 °C							
Conductivity		140.3 umhos							
Dissolved Oxygen		2.70 mg/L							
Inorganics									
Ammonia as N	mg/L	3.0		EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	15		SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	3.7		EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	15		SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	0.05		EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J09-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-19**						
Date/Time Collected		**04/01/11 08:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.8						
Temperature		21.1 °C						
Conductivity		167 umhos						
Dissolved Oxygen		0.81 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.45	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	1.1	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Sample Description		**DP-J09-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-20**						
Date/Time Collected		**04/01/11 09:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.8						
Temperature		21.4 °C						
Conductivity		226 umhos						
Dissolved Oxygen		0.73 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.79	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	7.4	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J09-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-21**						
Date/Time Collected		**04/01/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.4						
Temperature		22.1 °C						
Conductivity		365 umhos						
Dissolved Oxygen		0.66 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	17	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.91 I	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ

Sample Description		**DP-J09-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-22**						
Date/Time Collected		**04/01/11 09:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.0						
Temperature		22.5 °C						
Conductivity		297 umhos						
Dissolved Oxygen		0.73 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	16	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J09-26**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-22**						
Date/Time Collected		**04/01/11 09:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.0						
Temperature		22.5 °C						
Conductivity		297 umhos						
Dissolved Oxygen		0.73 mg/L						
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Sample Description		**DP-J10-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-23**						
Date/Time Collected		**04/01/11 11:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.9						
Temperature		24.0 °C						
Conductivity		186.6 umhos						
Dissolved Oxygen		3.48 mg/L						
Inorganics								
Ammonia as N	mg/L	2.4	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	14	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	14	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (as N)	mg/L	1.0	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Sample Description		**DP-J11-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-24**						
Date/Time Collected		**04/01/11 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.4						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J11-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102625-24**						
Date/Time Collected		**04/01/11 11:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.4						
Temperature		23.7 °C						
Conductivity		196.7 umhos						
Dissolved Oxygen		1.02 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Chemical Oxygen Demand	mg/L	14 I	EPA 410.4	25	10		04/05/11 13:00	MMF
Chloride	mg/L	6.3	EPA 300.0	0.20	0.050		04/01/11 16:00	MEJ
Fluoride	mg/L	0.16	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Nitrate (as N)	mg/L	2.1	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Phosphorous - Total as P	mg/L	0.010 U	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	65	EPA 300.0	0.60	0.20		04/01/11 16:00	MEJ
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.55	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	2.1	EPA 300.0	0.08	0.02		04/01/11 16:00	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.1	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 17:31	LCB
Calcium	mg/L	16	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:31	LCB
Iron	mg/L	0.039 I	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 17:31	LCB
Magnesium	mg/L	4.2	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:31	LCB
Manganese	mg/L	0.15	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 17:31	LCB
Potassium	mg/L	3.8	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:31	LCB
Sodium	mg/L	2.9	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:31	LCB

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BD10113 - Ion Chromatography 300.0 Prep										
Blank (BD10113-BLK1)					Prepared & Analyzed: 04/01/11					
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10113-BS1)					Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.860	0.040	0.010	mg/L	0.90		96	85-115		
Nitrate (as N)	1.63	0.04	0.01	mg/L	1.7		96	85-115		
Sulfate	8.42	0.60	0.20	mg/L	9.0		94	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115		
Fluoride	0.888	0.040	0.010	mg/L	0.90		99	85-115		
LCS Dup (BD10113-BSD1)					Prepared & Analyzed: 04/01/11					
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	1	200
Nitrate (as N)	1.65	0.04	0.01	mg/L	1.7		97	85-115	1	200
Sulfate	8.43	0.60	0.20	mg/L	9.0		94	85-115	0.1	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Fluoride	0.894	0.040	0.010	mg/L	0.90		99	85-115	0.7	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	0.5	200

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10113 - Ion Chromatography 300.0 Prep										
Matrix Spike (BD10113-MS1)		**Source: 1102764-01**			Prepared & Analyzed: 04/01/11					
Nitrite (as N)	126	0.04	0.01	mg/L	140	ND	90	85-115		
Orthophosphate as P	90.5	0.040	0.010	mg/L	90		101	85-115		
Chloride	875	0.20	0.050	mg/L	300	584	97	80-120		
Sulfate	946	0.60	0.20	mg/L	900	131	91	85-115		
Fluoride	86.6	0.040	0.010	mg/L	90		96	85-115		
Nitrate (as N)	170	0.04	0.01	mg/L	170	12.4	93	85-115		
Matrix Spike (BD10113-MS2)		**Source: 1102635-16**			Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.909	0.040	0.010	mg/L	0.90	ND	101	85-115		
Fluoride	0.922	0.040	0.010	mg/L	0.90	0.0579	96	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Sulfate	18.2	0.60	0.20	mg/L	9.0	9.20	100	85-115		
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7	0.0324	93	85-115		
Chloride	4.65	0.20	0.050	mg/L	3.0	1.64	100	80-120		
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10114 - Digestion for TKN by EPA 351.2										
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10118 - Nitrate 353.2 by seal										
Blank (BD10118-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10118-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	0.850	0.04	0.01	mg/L	0.80		106	90-110		
Matrix Spike (BD10118-MS1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119		
Matrix Spike Dup (BD10118-MSD1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (as N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119	0.02	20
Batch BD10203 - Ammonia by SEAL										
Blank (BD10203-BLK1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						

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Batch BD10203 - Ammonia by SEAL										
Blank (BD10203-BLK2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10203-BS1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		98	90-110		
LCS (BD10203-BS2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		96	90-110		
Matrix Spike (BD10203-MS1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.051	94	90-110		
Matrix Spike (BD10203-MS2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.047	94	90-110		
Matrix Spike Dup (BD10203-MSD1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.051	98	90-110	4	10
Matrix Spike Dup (BD10203-MSD2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.047	99	90-110	5	10
Batch BD10204 - Nitrate 353.2 by seal										
Blank (BD10204-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10204-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.01 U	0.04	0.01	mg/L						

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Batch BD10204 - Nitrate 353.2 by seal										
LCS (BD10204-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.766	0.04	0.01	mg/L	0.80		96	90-110		
LCS (BD10204-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.742	0.04	0.01	mg/L	0.80		93	90-110		
Matrix Spike (BD10204-MS1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.986	0.04	0.01	mg/L	1.0	0.0331	95	77-119		
Matrix Spike (BD10204-MS2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	10.0 J5	0.04	0.01	mg/L	1.0	ND	1000	77-119		
Matrix Spike Dup (BD10204-MSD1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	0.982	0.04	0.01	mg/L	1.0	0.0331	95	77-119	0.4	20
Matrix Spike Dup (BD10204-MSD2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (as N)	12.7 J5	0.04	0.01	mg/L	1.0	ND	NR	77-119	24	20
Batch BD10415 - Digestion for TKN by EPA 351.2										
Blank (BD10415-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10415-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10415-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10415 - Digestion for TKN by EPA 351.2										
LCS (BD10415-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5		107	90-110		
Matrix Spike (BD10415-MS1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.34	0.20	0.05	mg/L	2.5	0.695	104	80-120		
Matrix Spike (BD10415-MS2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	0.966	107	80-120		
Matrix Spike Dup (BD10415-MSD1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.44	0.20	0.05	mg/L	2.5	0.695	108	80-120	3	20
Matrix Spike Dup (BD10415-MSD2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	0.966	106	80-120	0.9	20
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10437-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10518 - alkalinity										
Blank (BD10518-BLK1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BD10518-BLK2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10518 - alkalinity										
LCS (BD10518-BS1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10518-BS2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10518-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	92	80-120		26
Matrix Spike (BD10518-MS2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	150	8.0	2.0	mg/L	120	12	109	80-120		26
Matrix Spike Dup (BD10518-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	93	80-120	0.8	26
Matrix Spike Dup (BD10518-MSD2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	12	100	80-120	8	26
Batch BD10605 - COD prep										
Blank (BD10605-BLK1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10605-BS1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	55	25	10	mg/L	50		110	90-110		
Matrix Spike (BD10605-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	61	25	10	mg/L	50	14	94	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10605 - COD prep										
Matrix Spike Dup (BD10605-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	65	25	10	mg/L	50	14	102	85-115	6	32
Batch BD10626 - Ammonia by SEAL										
Blank (BD10626-BLK1)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10626-BLK2)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10626-BS1)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		106	90-110		
LCS (BD10626-BS2)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		106	90-110		
Matrix Spike (BD10626-MS1)		**Source: 1102777-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.56	0.010	0.005	mg/L	0.50	0.042	104	90-110		
Matrix Spike (BD10626-MS2)		**Source: 1102831-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.032	102	90-110		
Matrix Spike Dup (BD10626-MSD1)		**Source: 1102777-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.042	96	90-110	7	10
Matrix Spike Dup (BD10626-MSD2)		**Source: 1102831-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.032	103	90-110	0.7	10

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10725 - alkalinity										
Blank (BD10725-BLK1)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BD10725-BLK2)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BD10725-BS1)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10725-BS2)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10725-MS1)		**Source: 1102625-15**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	3.0	98	80-120		26
Matrix Spike (BD10725-MS2)		**Source: 1102630-11**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	8.9	94	80-120		26
Matrix Spike Dup (BD10725-MSD1)		**Source: 1102625-15**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	3.0	98	80-120	0	26

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10725 - alkalinity										
Matrix Spike Dup (BD10725-MSD2)		**Source: 1102630-11**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	8.9	94	80-120	0	26

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10638 - DOC prep										
Blank (BD10638-BLK1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BD10638-BS1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BD10638-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.2	1.0	0.50	mg/L	10	1.06	102	85-125		
Matrix Spike Dup (BD10638-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.3	1.0	0.50	mg/L	10	1.06	103	85-125	0.8	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Blank (BD10407-BLK1)					Prepared & Analyzed: 04/05/11					
Calcium	0.016 I	0.050	0.010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Sodium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.010 U	0.050	0.010	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
LCS (BD10407-BS1)					Prepared & Analyzed: 04/05/11					
Iron	8.5	0.10	0.020	mg/L	8.0		106	85-115		
Sodium	21	0.050	0.010	mg/L	20		105	85-115		
Potassium	21	0.050	0.010	mg/L	20		104	85-115		
Manganese	0.43	0.010	0.0010	mg/L	0.40		107	85-115		
Magnesium	21	0.050	0.010	mg/L	20		107	85-115		
Calcium	21	0.050	0.010	mg/L	20		105	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		102	85-115		
Matrix Spike (BD10407-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130		
Calcium	35	0.050	0.010	mg/L	20	16	93	70-130		
Potassium	23	0.050	0.010	mg/L	20	3.8	97	70-130		
Magnesium	25	0.050	0.010	mg/L	20	4.2	102	70-130		
Manganese	0.55	0.010	0.0010	mg/L	0.40	0.15	99	70-130		
Sodium	23	0.050	0.010	mg/L	20	2.9	99	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	0.039	103	70-130		
Matrix Spike (BD10407-MS2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Magnesium	23	0.050	0.010	mg/L	20	3.4	99	70-130		
Potassium	21	0.050	0.010	mg/L	20	1.2	98	70-130		
Iron	8.5	0.10	0.020	mg/L	8.0	0.51	99	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130		
Sodium	34	0.050	0.010	mg/L	20	16	91	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	102	70-130		
Calcium	66 +O	0.050	0.010	mg/L	20	54	65	70-130		

Hazen and Sawyer
10002 Princess Palm Avenue Suite 200
Tampa, FLORIDA 33619

April 8, 2011
Work Order: 1102625
Revised Report

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BD10407-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Manganese	0.57	0.010	0.0010	mg/L	0.40	0.15	104	70-130	3	30
Potassium	24	0.050	0.010	mg/L	20	3.8	103	70-130	5	30
Calcium	38	0.050	0.010	mg/L	20	16	106	70-130	7	30
Sodium	24	0.050	0.010	mg/L	20	2.9	105	70-130	5	30
Boron	0.44	0.10	0.050	mg/L	0.40	ND	109	70-130	5	30
Iron	8.5	0.10	0.020	mg/L	8.0	0.039	106	70-130	3	30
Magnesium	26	0.050	0.010	mg/L	20	4.2	107	70-130	3	30
Matrix Spike Dup (BD10407-MSD2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Sodium	35	0.050	0.010	mg/L	20	16	98	70-130	4	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	103	70-130	1	30
Magnesium	24	0.050	0.010	mg/L	20	3.4	103	70-130	3	30
Calcium	70 +O	0.050	0.010	mg/L	20	54	81	70-130	5	30
Boron	0.43	0.10	0.050	mg/L	0.40	ND	109	70-130	3	30
Iron	8.7	0.10	0.020	mg/L	8.0	0.51	103	70-130	3	30
Potassium	21	0.050	0.010	mg/L	20	1.2	100	70-130	3	30

Hazen and Sawyer
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April 8, 2011
Work Order: 1102625
Revised Report

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

J5	Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O	Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102625

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

	SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	No. of Containers (Total per each location)
JMH	01	DP-G12-15	3/31/11	0845	GW		X	1	1			5.6	0.96	487	21.8	
JMH	02	DP-G12-18	3/31/11	855	GW		X	1	1			5.2	1.40	494	22.2	
JMH	03	DP-G12-21	3/31/11	915	GW		X	1	1			5.4	0.50	385	22.7	
JMH	04	DP-G12-24	3/31/11	9:30	GW		X	1	1			5.4	0.82	324	22.7	
JMH	05	DP-G12-27	3/31/11	950	GW		X	1	1			5.4	0.43	311	22.9	
	06	PZ14-G13-7	03/30/11	1505	GW		X	1	1			5.8	4.04	246.1	24.5	
	07	DP-H06-7	4/1/11	0755	GW		X	1	1			Cool 5.8 SA	4.04 SA	246.1	24.5 SA	
JMH	08	DP-H06-10	3/31/11	1100	GW		X	1	1			6.2	2.97	189	22.7	
JMH	09	DP-H06-11	3/31/11	1010	GW		X	1	1			6.2	5.83	2045	22.2	
JMH	10	DP-H12-5	3/31/11	~~1035~~ 900	GW		X	1	1			5.6	0.94	188.5	21.9	
	11	DP-I06-14	4/1/11	0758	GW		X	1	1			5.3	1.44	2123	20.9	
	12	DP-I06-20	4/1/11	085	GW		X	1	1			5.0	1.03	358	21.4	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	1430 03-26-11		0500 032911
Relinquished:	1830 033011	Received:	
Relinquished:	1430 3/31/11	Received:	
Relinquished:		Received:	
Relinquished:		Received:	

6

1-5, 8-10, 15, 17

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

1102625

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102625

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO3 B, Ca, Na, K, Fe, Mn, Mg No. of Containers (Total per each location)
13	DP-I06-26	4/1/11	0830	GW		X	1	1			4.9	1.13	305	21.6	
14	DP-I07-8	↓	0725	GW		X	1	1			5.8	2.23	170.7	19.4	
JMH 15	DP-I09-11	3/31/11	1035	GW		X	1	1			5.1	0.77	180.6	21.5	
16	DP-I11-10	4/1/11	0920	GW		X	1	1			5.7	0.90	166.8	21.4	
17	PZ17-I15-26	3/31/11	1035	GW		X	1	1			4.8	2.46	307.1	23.1	
18	DP-J08-6	4/1/11	0825	GW		X	1	1			6.0	2.70	140.3	19.7	
19	DP-J09-12		0850	GW		X	1	1			4.8	0.81	167.0	21.1	
20	DP-J09-14		0910	GW		X	1	1			4.8	0.73	226	21.4	
21	DP-J09-20		0930	GW		X	1	1			4.4	0.66	365	22.1	
22	DP-J09-26		0950	GW		X	1	1			5.0	0.73	297	22.5	
23	DP-J10-6		1105	GW		X	1	1			5.9	3.48	186.6	24.0	
24	DP-J11-12	↓	1140	GW		X	1 **	1 *		1	4.4	1.02	196.7	23.7	1

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	1430 03-26-11		0500 03-29-11
	1430 3/31/11		

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace? Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

** Cl, F, SO_4, OP, NO_2, 300

1102625

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102625	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ14-G13-7	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.2	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.25	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.24	1/4 WELL VOLUME		3 WELL VOLUMES	0.72	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.0	FINAL TUBING LEGNTH IN WELL (FEET)	9.0	PURGE TIME START	1455	PURGE TIME END	1504	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-03	SAL-SAM-~~65~~-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1458	0.30	0.30	0.10		5.8	24.5	239.6	4.10	263	Brown	None
1501	0.30	0.60	0.10		5.8	24.5	240.0	4.06	115		
1504	0.30	0.90	0.10		5.8	24.5	246.1	4.04	72.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	9.0	SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	1505	SAMPLING ENDED	1505	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102625	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ17-I15-26	Sample ID	17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	7.55	PURGE PUMP CODE: PP GP IBP
TOTAL WELL DEPTH (Feet)	30.45	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.45	1/4 WELL VOLUME		3 WELL VOLUMES	1.35	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	25.0	FINAL TUBING LEGNTH IN WELL (FEET)	25.0	PURGE TIME START	1025	PURGE TIME END	1034	TOTAL PURGED	1.80
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1028	0.60	0.60	0.20	11.67	4.8	~~299.5~~ 23.1	299.5	3.47	258	cloudy	none
1031	0.60	1.20	0.20	11.67	4.8	~~299.8~~ 23.1	299.8	3.27	107		
1034	0.60	1.80	0.20	11.67	4.8	~~307.1~~ 23.1	307.1	2.46	69.4		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	25.0		SAMPLE PUMP FLOW RATE (mL/min)	0.20
SAMPLING INITIATED	1035	SAMPLING ENDED	1035	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Rain Past 24 hrs - Drizzle - Wind						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 12, 2011
Work Order: 1102630

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J12-13**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-01**						
Date/Time Collected		**04/01/11 11:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.9						
Temperature		22.9 °C						
Conductivity		238 umhos						
Dissolved Oxygen		1.54 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.61	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	5.6	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-J12-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-02**						
Date/Time Collected		**04/01/11 12:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		23.3 °C						
Conductivity		281 umhos						
Dissolved Oxygen		1.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.46	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	8.5	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 12, 2011
Work Order: 1102630

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J12-20**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-03**						
Date/Time Collected		**04/01/11 12:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.6						
Temperature		23.4 °C						
Conductivity		354 umhos						
Dissolved Oxygen		1.20 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		04/05/11 13:00	MMF
Chloride	mg/L	14	EPA 300.0	0.20	0.050		04/01/11 16:00	MEJ
Fluoride	mg/L	0.011 I	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Nitrate (as N)	mg/L	10	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	88	EPA 300.0	0.60	0.20		04/01/11 16:00	MEJ
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	10	EPA 300.0	0.08	0.02		04/01/11 16:00	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	1.3	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 17:42	LCB
Calcium	mg/L	33	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:42	LCB
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 17:42	LCB
Magnesium	mg/L	9.6	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:42	LCB
Manganese	mg/L	0.059	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 17:42	LCB
Potassium	mg/L	21	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:42	LCB
Sodium	mg/L	4.3	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:42	LCB

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-J12-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-04**						
Date/Time Collected		**04/01/11 13:11**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		23.6 °C						
Conductivity		303 umhos						
Dissolved Oxygen		0.92 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-K10-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-05**						
Date/Time Collected		**04/01/11 11:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		6.0						
Temperature		24.2 °C						
Conductivity		163.8 umhos						
Dissolved Oxygen		3.79 mg/L						
Inorganics								
Ammonia as N	mg/L	1.6	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	0.33	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-K11-13**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-06**						
Date/Time Collected		**04/01/11 10:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.9						
Temperature		22.1 °C						
Conductivity		168.3 umhos						
Dissolved Oxygen		1.84 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.59	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	1.3	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-K12-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-07**						
Date/Time Collected		**04/01/11 10:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.6						
Temperature		22.3 °C						
Conductivity		59.3 umhos						
Dissolved Oxygen		1.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.092	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Chemical Oxygen Demand	mg/L	55	EPA 410.4	25	10		04/05/11 13:00	MMF
Chloride	mg/L	1.9	EPA 300.0	0.20	0.050		04/01/11 16:00	MEJ
Fluoride	mg/L	0.083	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Nitrate (as N)	mg/L	0.04	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Phosphorous - Total as P	mg/L	0.34	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	11	EPA 300.0	0.60	0.20		04/01/11 16:00	MEJ

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-K12-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-07**						
Date/Time Collected		**04/01/11 10:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.6						
Temperature		22.3 °C						
Conductivity		59.3 umhos						
Dissolved Oxygen		1.40 mg/L						
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.77	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	0.04 I	EPA 300.0	0.08	0.02		04/01/11 16:00	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	7.3	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 17:52	LCB
Calcium	mg/L	5.5	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:52	LCB
Iron	mg/L	2.2	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 17:52	LCB
Magnesium	mg/L	0.86	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:52	LCB
Manganese	mg/L	0.21	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 17:52	LCB
Potassium	mg/L	0.40	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:52	LCB
Sodium	mg/L	1.9	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:52	LCB

Sample Description		**DP-M07-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-08**						
Date/Time Collected		**04/01/11 14:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.2						
Temperature		23.0 °C						
Conductivity		267 umhos						
Dissolved Oxygen		0.71 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-M07-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-08**						
Date/Time Collected		**04/01/11 14:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.2						
Temperature		23.0 °C						
Conductivity		267 umhos						
Dissolved Oxygen		0.71 mg/L						
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.61	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	6.0	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Sample Description		**DP-M07-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-09**						
Date/Time Collected		**04/01/11 14:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.9						
Temperature		24.0 °C						
Conductivity		362 umhos						
Dissolved Oxygen		0.88 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-M07-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-10**						
Date/Time Collected		**04/01/11 14:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.2						
Temperature		23.8 °C						
Conductivity		293 umhos						
Dissolved Oxygen		1.08 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	2.2	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	7.9	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-M12-10**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-11**						
Date/Time Collected		**04/01/11 12:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.7						
Temperature		24.0 °C						
Conductivity		161.6 umhos						
Dissolved Oxygen		1.83 mg/L						
Inorganics								
Ammonia as N	mg/L	0.083	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.60	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	0.89	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-N12-14**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-12**						
Date/Time Collected		**04/01/11 12:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.8						
Temperature		22.9 °C						
Conductivity		178.6 umhos						
Dissolved Oxygen		0.91 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	4.1	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-N12-18**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-13**						
Date/Time Collected		**04/01/11 13:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		23.2 °C						
Conductivity		250 umhos						
Dissolved Oxygen		1.11 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	6.1	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-N12-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-14**						
Date/Time Collected		**04/01/11 13:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.2						
Temperature		23.3 °C						
Conductivity		279 umhos						
Dissolved Oxygen		1.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.54	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	6.2	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-N12-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-15**						
Date/Time Collected		**04/01/11 13:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.2						
Temperature		24.1 °C						
Conductivity		348 umhos						
Dissolved Oxygen		0.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	12	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-N12-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-16**						
Date/Time Collected		**04/01/11 13:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		23.9 °C						
Conductivity		342 umhos						
Dissolved Oxygen		0.68 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-O10-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-17**						
Date/Time Collected		**04/01/11 13:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		4.3						
Temperature		22.9 °C						
Conductivity		185.9 umhos						
Dissolved Oxygen		1.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.18 I	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	0.04	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-O10-18**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-18**						
Date/Time Collected		**04/01/11 13:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.3						
Temperature		23.5 °C						
Conductivity		294 umhos						
Dissolved Oxygen		1.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	7.5	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-O10-24**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-19**						
Date/Time Collected		**04/01/11 14:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		24.2 °C						
Conductivity		361 umhos						
Dissolved Oxygen		0.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	4.4	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-Q15-15**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-20**						
Date/Time Collected		**04/04/11 09:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		4.8						
Temperature		22.7 °C						
Conductivity		285 umhos						
Dissolved Oxygen		0.61 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.39	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	4.9	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**DP-Q15-21**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-21**						
Date/Time Collected		**04/04/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/04/11 09:40**						
Client Provided Field Data								
pH		5.2						
Temperature		23.5 °C						
Conductivity		319 umhos						
Dissolved Oxygen		0.73 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.41	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	8.5	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-Q15-26**							
Matrix		**Groundwater**							
SAL Sample Number		**1102630-22**							
Date/Time Collected		**04/04/11 10:10**							
Collected by		**Josephine Edeback-Hirst**							
Date/Time Received		**04/04/11 13:15**							
Client Provided Field Data									
pH		5.2							
Temperature		23.2 °C							
Conductivity		333 umhos							
Dissolved Oxygen		1.33 mg/L							
Inorganics									
Ammonia as N	mg/L	0.037		EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	5.9	I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	0.89		EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	5.9	I	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	6.7		EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

Sample Description		**PZ18-R12-26**							
Matrix		**Groundwater**							
SAL Sample Number		**1102630-23**							
Date/Time Collected		**03/31/11 11:03**							
Collected by		**Sean Harmon**							
Date/Time Received		**03/31/11 14:30**							
Client Provided Field Data									
pH		5.0							
Temperature		23.4 °C							
Conductivity		328.1 umhos							
Dissolved Oxygen		0.89 mg/L							
Inorganics									
Ammonia as N	mg/L	0.022		EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	8.9		SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Total Kjeldahl Nitrogen	mg/L	3.4		EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	8.9		SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Nitrate+Nitrite (N)	mg/L	12		EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0		04/07/11 12:25	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ02-P02-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102630-24**						
Date/Time Collected		**03/30/11 15:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.7						
Temperature		24.4 °C						
Conductivity		73.6 umhos						
Dissolved Oxygen		4.63 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/07/11 09:13	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.77	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26

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Inorganics - Quality Control

Analyte	Result		PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity											
Matrix Spike Dup (BC13102-MSD4)			**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130		8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BD10113 - Ion Chromatography 300.0 Prep											
Blank (BD10113-BLK1)						Prepared & Analyzed: 04/01/11					
Fluoride	0.010	U	0.040	0.010	mg/L						
Nitrate (as N)	0.01	U	0.04	0.01	mg/L						
Chloride	0.050	U	0.20	0.050	mg/L						
Orthophosphate as P	0.010	U	0.040	0.010	mg/L						
Sulfate	0.20	U	0.60	0.20	mg/L						
Nitrite (as N)	0.01	U	0.04	0.01	mg/L						
LCS (BD10113-BS1)						Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.860		0.040	0.010	mg/L	0.90		96	85-115		
Sulfate	8.42		0.60	0.20	mg/L	9.0		94	85-115		
Nitrite (as N)	1.27		0.04	0.01	mg/L	1.4		91	85-115		
Nitrate (as N)	1.63		0.04	0.01	mg/L	1.7		96	85-115		
Fluoride	0.888		0.040	0.010	mg/L	0.90		99	85-115		
Chloride	2.98		0.20	0.050	mg/L	3.0		99	85-115		
LCS Dup (BD10113-BSD1)						Prepared & Analyzed: 04/01/11					
Chloride	2.95		0.20	0.050	mg/L	3.0		98	85-115	1	200
Sulfate	8.43		0.60	0.20	mg/L	9.0		94	85-115	0.1	200
Orthophosphate as P	0.864		0.040	0.010	mg/L	0.90		96	85-115	0.5	200
Nitrite (as N)	1.28		0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Nitrate (as N)	1.65		0.04	0.01	mg/L	1.7		97	85-115	1	200
Fluoride	0.894		0.040	0.010	mg/L	0.90		99	85-115	0.7	200

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10113 - Ion Chromatography 300.0 Prep										
Matrix Spike (BD10113-MS1)		**Source: 1102764-01**			Prepared & Analyzed: 04/01/11					
Chloride	875	0.20	0.050	mg/L	300	584	97	80-120		
Nitrate (as N)	170	0.04	0.01	mg/L	170	12.4	93	85-115		
Sulfate	946	0.60	0.20	mg/L	900	131	91	85-115		
Orthophosphate as P	90.5	0.040	0.010	mg/L	90		101	85-115		
Fluoride	86.6	0.040	0.010	mg/L	90		96	85-115		
Nitrite (as N)	126	0.04	0.01	mg/L	140	ND	90	85-115		
Matrix Spike (BD10113-MS2)		**Source: 1102635-16**			Prepared & Analyzed: 04/01/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Chloride	4.65	0.20	0.050	mg/L	3.0	1.64	100	80-120		
Fluoride	0.922	0.040	0.010	mg/L	0.90	0.0579	96	85-115		
Orthophosphate as P	0.909	0.040	0.010	mg/L	0.90	ND	101	85-115		
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7	0.0324	93	85-115		
Sulfate	18.2	0.60	0.20	mg/L	9.0	9.20	100	85-115		
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10114 - Digestion for TKN by EPA 351.2										
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10118 - Nitrate 353.2 by seal										
Blank (BD10118-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10118-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.850	0.04	0.01	mg/L	0.80		106	90-110		
Matrix Spike (BD10118-MS1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119		
Matrix Spike Dup (BD10118-MSD1)		**Source: 1102777-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.03	0.04	0.01	mg/L	1.0	0.126	91	77-119	0.02	20
Batch BD10204 - Nitrate 353.2 by seal										
Blank (BD10204-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10204 - Nitrate 353.2 by seal										
Blank (BD10204-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10204-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.766	0.04	0.01	mg/L	0.80		96	90-110		
LCS (BD10204-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.742	0.04	0.01	mg/L	0.80		93	90-110		
Matrix Spike (BD10204-MS1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.986	0.04	0.01	mg/L	1.0	0.0331	95	77-119		
Matrix Spike (BD10204-MS2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	10.0 J5	0.04	0.01	mg/L	1.0	ND	1000	77-119		
Matrix Spike Dup (BD10204-MSD1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.982	0.04	0.01	mg/L	1.0	0.0331	95	77-119	0.4	20
Matrix Spike Dup (BD10204-MSD2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	12.7 J5	0.04	0.01	mg/L	1.0	ND	NR	77-119	24	20
Batch BD10415 - Digestion for TKN by EPA 351.2										
Blank (BD10415-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10415-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10415 - Digestion for TKN by EPA 351.2										
LCS (BD10415-BS1)					Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10415-BS2)					Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5		107	90-110		
Matrix Spike (BD10415-MS1)		**Source: 1102831-07**			Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	3.34	0.20	0.05	mg/L	2.5	0.695	104	80-120		
Matrix Spike (BD10415-MS2)		**Source: 1102786-02**			Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	0.966	107	80-120		
Matrix Spike Dup (BD10415-MSD1)		**Source: 1102831-07**			Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	3.44	0.20	0.05	mg/L	2.5	0.695	108	80-120	3	20
Matrix Spike Dup (BD10415-MSD2)		**Source: 1102786-02**			Prepared: 04/04/11	Analyzed: 04/05/11				
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	0.966	106	80-120	0.9	20
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11	Analyzed: 04/05/11				
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10437-BLK2)					Prepared: 04/04/11	Analyzed: 04/05/11				
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11	Analyzed: 04/05/11				
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10523 - Nitrate 353.2 by seal										
Blank (BD10523-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10523-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10523-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.778	0.04	0.01	mg/L	0.80		97	90-110		
LCS (BD10523-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.810	0.04	0.01	mg/L	0.80		101	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10523 - Nitrate 353.2 by seal										
Matrix Spike (BD10523-MS1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.985	0.04	0.01	mg/L	1.0	ND	99	77-119		
Matrix Spike (BD10523-MS2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.958	0.04	0.01	mg/L	1.0	ND	96	77-119		
Matrix Spike Dup (BD10523-MSD1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0	ND	101	77-119	2	20
Matrix Spike Dup (BD10523-MSD2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.956	0.04	0.01	mg/L	1.0	ND	96	77-119	0.3	20
Batch BD10605 - COD prep										
Blank (BD10605-BLK1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10605-BS1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	55	25	10	mg/L	50		110	90-110		
Matrix Spike (BD10605-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	61	25	10	mg/L	50	14	94	85-115		
Matrix Spike Dup (BD10605-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	65	25	10	mg/L	50	14	102	85-115	6	32
Batch BD10624 - Digestion for TKN by EPA 351.2										
Blank (BD10624-BLK1)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10624 - Digestion for TKN by EPA 351.2										
Blank (BD10624-BLK2)					Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10624-BS1)					Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.64	0.20	0.05	mg/L	2.5		104	90-110		
LCS (BD10624-BS2)					Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BD10624-MS1)		**Source: 1102635-02**			Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5	ND	101	80-120		
Matrix Spike (BD10624-MS2)		**Source: 1102750-01**			Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5	ND	100	80-120		
Matrix Spike Dup (BD10624-MSD1)		**Source: 1102635-02**			Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.45	0.20	0.05	mg/L	2.5	ND	97	80-120	5	20
Matrix Spike Dup (BD10624-MSD2)		**Source: 1102750-01**			Prepared: 04/06/11	Analyzed: 04/07/11				
Total Kjeldahl Nitrogen	2.68	0.20	0.05	mg/L	2.5	ND	106	80-120	6	20
Batch BD10626 - Ammonia by SEAL										
Blank (BD10626-BLK1)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10626-BLK2)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10626 - Ammonia by SEAL										
LCS (BD10626-BS1)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		106	90-110		
LCS (BD10626-BS2)					Prepared & Analyzed: 04/07/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		106	90-110		
Matrix Spike (BD10626-MS1)		**Source: 1102777-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.56	0.010	0.005	mg/L	0.50	0.042	104	90-110		
Matrix Spike (BD10626-MS2)		**Source: 1102831-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.032	102	90-110		
Matrix Spike Dup (BD10626-MSD1)		**Source: 1102777-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.042	96	90-110	7	10
Matrix Spike Dup (BD10626-MSD2)		**Source: 1102831-07**			Prepared & Analyzed: 04/07/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.032	103	90-110	0.7	10
Batch BD10725 - alkalinity										
Blank (BD10725-BLK1)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BD10725-BLK2)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10725 - alkalinity										
LCS (BD10725-BS1)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10725-BS2)					Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10725-MS1)		**Source: 1102625-15**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	3.0	98	80-120		26
Matrix Spike (BD10725-MS2)		**Source: 1102630-11**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	8.9	94	80-120		26
Matrix Spike Dup (BD10725-MSD1)		**Source: 1102625-15**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	3.0	98	80-120	0	26
Matrix Spike Dup (BD10725-MSD2)		**Source: 1102630-11**			Prepared & Analyzed: 04/07/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	8.9	94	80-120	0	26

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10638 - DOC prep										
Blank (BD10638-BLK1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BD10638-BS1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BD10638-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.2	1.0	0.50	mg/L	10	1.06	102	85-125		
Matrix Spike Dup (BD10638-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.3	1.0	0.50	mg/L	10	1.06	103	85-125	0.8	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Blank (BD10407-BLK1)					Prepared & Analyzed: 04/05/11					
Iron	0.020 U	0.10	0.020	mg/L						
Calcium	0.016 I	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.010 U	0.050	0.010	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.010 U	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
LCS (BD10407-BS1)					Prepared & Analyzed: 04/05/11					
Magnesium	21	0.050	0.010	mg/L	20		107	85-115		
Manganese	0.43	0.010	0.0010	mg/L	0.40		107	85-115		
Calcium	21	0.050	0.010	mg/L	20		105	85-115		
Iron	8.5	0.10	0.020	mg/L	8.0		106	85-115		
Sodium	21	0.050	0.010	mg/L	20		105	85-115		
Potassium	21	0.050	0.010	mg/L	20		104	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		102	85-115		
Matrix Spike (BD10407-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Sodium	23	0.050	0.010	mg/L	20	2.9	99	70-130		
Calcium	35	0.050	0.010	mg/L	20	16	93	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130		
Potassium	23	0.050	0.010	mg/L	20	3.8	97	70-130		
Manganese	0.55	0.010	0.0010	mg/L	0.40	0.15	99	70-130		
Magnesium	25	0.050	0.010	mg/L	20	4.2	102	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	0.039	103	70-130		
Matrix Spike (BD10407-MS2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Magnesium	23	0.050	0.010	mg/L	20	3.4	99	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130		
Calcium	66 +O	0.050	0.010	mg/L	20	54	65	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	102	70-130		
Sodium	34	0.050	0.010	mg/L	20	16	91	70-130		
Potassium	21	0.050	0.010	mg/L	20	1.2	98	70-130		
Iron	8.5	0.10	0.020	mg/L	8.0	0.51	99	70-130		

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 12, 2011
Work Order: 1102630

Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BD10407-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Boron	0.44	0.10	0.050	mg/L	0.40	ND	109	70-130	5	30
Potassium	24	0.050	0.010	mg/L	20	3.8	103	70-130	5	30
Sodium	24	0.050	0.010	mg/L	20	2.9	105	70-130	5	30
Manganese	0.57	0.010	0.0010	mg/L	0.40	0.15	104	70-130	3	30
Magnesium	26	0.050	0.010	mg/L	20	4.2	107	70-130	3	30
Iron	8.5	0.10	0.020	mg/L	8.0	0.039	106	70-130	3	30
Calcium	38	0.050	0.010	mg/L	20	16	106	70-130	7	30
Matrix Spike Dup (BD10407-MSD2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Iron	8.7	0.10	0.020	mg/L	8.0	0.51	103	70-130	3	30
Calcium	70 +O	0.050	0.010	mg/L	20	54	81	70-130	5	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	103	70-130	1	30
Magnesium	24	0.050	0.010	mg/L	20	3.4	103	70-130	3	30
Boron	0.43	0.10	0.050	mg/L	0.40	ND	109	70-130	3	30
Potassium	21	0.050	0.010	mg/L	20	1.2	100	70-130	3	30
Sodium	35	0.050	0.010	mg/L	20	16	98	70-130	4	30

Hazen and Sawyer
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April 12, 2011
Work Order: 1102630

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.
Questions regarding this report should be directed to Client Services at 813-855-1844.

J5	Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O	Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102630

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

Project Name / Location: GCREC Mound Groundwater Analyses

jedeback@hazanandsawyer.com

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250 ml P, HNO_3 B, Fe, Ca, Mg, K, Mn, Na No. of Containers (Total per each location)
01	DP-J12-13	4/01/11	1150	GW		X	1	1			4.9	1.54	238	22.9	
02	DP-J12-15	↓	1200	GW		X	1	1			5.1	1.13	281	23.3	
03	DP-J12-20		1250	GW		X	1**	1*		1	5.6	1.20	354	23.4	1
04	DP-J12-27	↓	1311	GW		X	1	1			5.1	0.92	303	23.6	
05	DP-K10-7	04/01/11	1125	GW		X	1	1			6.0	3.79	163.8	24.2	
06	DP-K11-13	↓	1030	GW		X	1	1			4.9	1.84	168.3	22.1	
07	DP-K12-5		1005	GW		X	1**	1*		1	5.6	1.40	59.3	22.3	1
08	DP-M07-15		1410	GW		X	1	1			5.2	0.71	267	23.0	
09	DP-M07-21		1415	GW		X	1	1			4.9	0.88	362	24.0	
10	DP-M07-27		1420	GW		X	1	1			5.2	1.08	293	23.8	
11	DP-M12-10		1210	GW		X	1	1			5.7	1.83	161.6	24.0	
12	DP-M12-14	↓	1240	GW		X	1	1			4.8	0.91	178.6	22.9	

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished:	1530 03-22-11		0500 032911

Seal intact? Y N N/A

Samples intact upon arrival? Y N N/A

Received on ice? Temp_____ Y N N/A

Proper preservatives indicated? Y N N/A

Rec'd within holding time? Y N N/A

Volatiles rec'd w/out headspace Y N N/A

Proper containers used? Y N N/A

Instructions / Remarks

* COD, TP

** Cl, F, SO_4, OP, NOx 300

1102630

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102630

Client Name: Hazan and Sawyer	Contact / Phone: Josephin Edeback-Hirst 813-630-4498
Project Name / Location: GCREC Mound Groundwater Analyses	jedeback@hazanandsawyer.com
Samplers: (Signature)	

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

	SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	No. of Containers (Total per each location)
	13	DP-N12-18	4/1/11	1300	GW		X	1	1			5.1	1.11	250	23.2	
	14	DP-N12-21	4/1/11	1320	GW		X	1	1			5.2	1.04	279	23.3	
~~BMH~~	15	DP-N12-24	~~3/31/11~~	~~1035~~ 1340	GW		X	1	1			5.2	0.78	348	24.1	
	16	DP-N12-27		1355	GW		X	1	1			5.1	0.68	342	23.9	
~~SH~~ ~~BMH~~	17	DP-O10-12	~~3/31/11~~	~~1035~~ 1330	GW		X	1	1			4.3	1.13	1859	22.9	
	18	DP-O10-18		1350	GW		X	1	1			5.3	1.04	294	23.5	
	19	DP-O10-24		1400	GW		X	1	1			5.1	0.95	361	24.2	
	20	DP-Q15-15	4/4/11	0915	GW		X	1	1			4.8	0.61	285	22.7	
	21	DP-Q15-21	4/4/11	0940	GW		X	1	1			5.2	0.73	319	23.5	
	22	DP-Q15-26	4/4/11	1010	GW		X	1	1			5.2	1.33	333	23.2	
SH	23	PZ18-R12-26	3/31/11	1103	GW		X	1	1			5.0	0.89	328.1	23.4	
	24	PZ02-P02-9	033011	1535	GW		X	1	1			4.7	5.63	73.6	24.4	

	Date/Time	Received:	Date/Time
Containers Prepared/ Relinquished:	1530 03-27-11		0500 032911
24 Relinquished:	1830 033011	Received:	
23 Relinquished:	1430 3/31/11	Received:	
20, 21, 22 Relinquished: courier	1315 4/4/11	Received:	
Relinquished:		Received:	

Seal intact?	Y N N/A
Samples intact upon arrival?	Y N N/A
Received on ice? Temp_____	Y N N/A
Proper preservatives indicated?	Y N N/A
Rec'd within holding time?	Y N N/A
Volatiles rec'd w/out headspace	Y N N/A
Proper containers used?	Y N N/A

Instructions / Remarks

1102630

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102630	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ18-R12-26	Sample ID	23	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	2.09	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	25.5	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.46	1/4 WELL VOLUME		3 WELL VOLUMES	1.38	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1053	PURGE TIME END	1102	TOTAL PURGED	1.80

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1056	0.60	0.60	0.20	8.93	5.0 ~~4.8~~	23.4	327.3	1.20	693	BROWN	NONE
1059	0.60	1.20	0.20	8.93	5.0 ~~4.8~~	23.4	325.8	0.99	—		
1102	0.60	1.80	0.20	8.93	5.0 ~~4.8~~	23.4	328.1	0.89	—		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		25.5	SAMPLE PUMP FLOW RATE (mL/min)	0.20	
SAMPLING INITIATED	1103	SAMPLING ENDED	1103	FIELD CLEANED	(Y) N	CLEANING STEPS	DI		
FIELD FILTERED?	Y (N)	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	Rain Past 24 hrs - wind								
COMMENTS	Turbidity was above readable limit —								

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102630	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ02-P02-9	Sample ID	24	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.93	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	10.0	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.24	1/4 WELL VOLUME		3 WELL VOLUMES	0.73	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	10.0	FINAL TUBING LEGNTH IN WELL (FEET)	10.0	PURGE TIME START	1525	PURGE TIME END	1534	TOTAL PURGED	0.90		
INST. ID				SAL-SAM-63-03	SAL-SAM-~~65~~-03	SAL-SAM-63-63	SAL-SAM-55-03	SAL-SAM-02			
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1528	0.30	0.30	0.10	6.81	4.7	24.5	72.1	4.50	20.6	clear	none
1531	0.30	0.60	0.10	6.81	4.7	24.5	73.1	5.51	18.2		
1534	0.30	0.90	0.10	6.81	4.7	24.4	73.6	5.63	16.1		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		10.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	1535	SAMPLING ENDED	1535	FIELD CLEANED	Y N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 15, 2011
Work Order: 1102633

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ01-BKG-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-01**						
Date/Time Collected		**03/31/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		4.6						
Temperature		22.8 °C						
Conductivity		146.8 umhos						
Dissolved Oxygen		6.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.11	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.36	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**PZ05-BKG-9**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-02**						
Date/Time Collected		**03/31/11 10:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.1						
Temperature		21.8 °C						
Conductivity		98.8 umhos						
Dissolved Oxygen		4.38 mg/L						
Inorganics								
Ammonia as N	mg/L	0.034	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	3.6	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 15, 2011
Work Order: 1102633

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ06-BKG-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-03**						
Date/Time Collected		**03/31/11 10:03**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		4.7						
Temperature		23.1 °C						
Conductivity		59.4 umhos						
Dissolved Oxygen		5.41 mg/L						
Inorganics								
Ammonia as N	mg/L	0.041	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.25	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-D07-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-04**						
Date/Time Collected		**03/30/11 11:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.0						
Temperature		24.1 °C						
Conductivity		326 umhos						
Dissolved Oxygen		4.86 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	14	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	14	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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April 15, 2011
Work Order: 1102633

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ23-D09-27**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-05**						
Date/Time Collected		**03/30/11 13:06**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.4						
Temperature		24.4 °C						
Conductivity		306.2 umhos						
Dissolved Oxygen		0.18 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	5.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	7.3	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-E02-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-06**						
Date/Time Collected		**03/29/11 08:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.5						
Temperature		21.3 °C						
Conductivity		98.5 umhos						
Dissolved Oxygen		2.41 mg/L						
Inorganics								
Ammonia as N	mg/L	0.022	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.42	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.6	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E11-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-07**						
Date/Time Collected		**03/29/11 13:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.1						
Temperature		23.0 °C						
Conductivity		441 umhos						
Dissolved Oxygen		0.99 mg/L						
Inorganics								
Ammonia as N	mg/L	0.018	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	13	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**PZ09-I08-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-08**						
Date/Time Collected		**03/30/11 14:38**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		21.9 °C						
Conductivity		94.2 umhos						
Dissolved Oxygen		6.03 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.59	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *		Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-D07-9**							
Matrix		**Groundwater**							
SAL Sample Number		**1102633-09**							
Date/Time Collected		**03/30/11 12:05**							
Collected by		**Josephine Edeback-Hirst**							
Date/Time Received		**03/30/11 18:30**							
Client Provided Field Data									
pH		4.5							
Temperature		24.0 °C							
Conductivity		392 umhos							
Dissolved Oxygen		4.5 mg/L							
Inorganics									
Ammonia as N	mg/L	0.007	I	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.8		EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	22		EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-D09-6**							
Matrix		**Groundwater**							
SAL Sample Number		**1102633-10**							
Date/Time Collected		**03/30/11 09:50**							
Collected by		**Josephine Edeback-Hirst**							
Date/Time Received		**03/30/11 18:30**							
Client Provided Field Data									
pH		4.5							
Temperature		22.6 °C							
Conductivity		456 umhos							
Dissolved Oxygen		4.5 mg/L							
Inorganics									
Ammonia as N	mg/L	0.008	I	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.84		EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	21		EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0	U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E04-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-11**						
Date/Time Collected		**03/29/11 10:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.9						
Temperature		22.0 °C						
Conductivity		171.1 umhos						
Dissolved Oxygen		1.43 mg/L						
Inorganics								
Ammonia as N	mg/L	0.024	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	2.8	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-E06-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-12**						
Date/Time Collected		**03/29/11 11:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		4.4						
Temperature		22.8 °C						
Conductivity		162.8 umhos						
Dissolved Oxygen		1.89 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.9	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E08-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-13**						
Date/Time Collected		**03/29/11 12:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.0						
Temperature		22.4 °C						
Conductivity		326 umhos						
Dissolved Oxygen		1.83 mg/L						
Inorganics								
Ammonia as N	mg/L	0.014	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	3.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	9.9	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F03-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-14**						
Date/Time Collected		**03/29/11 10:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.2						
Temperature		21.7 °C						
Conductivity		145.6 umhos						
Dissolved Oxygen		1.22 mg/L						
Inorganics								
Ammonia as N	mg/L	0.39	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	18	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.7	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G06-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-16**						
Date/Time Collected		**03/30/11 14:45**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.2						
Temperature		28.9 °C						
Conductivity		184 umhos						
Dissolved Oxygen		2.36 mg/L						
Inorganics								
Ammonia as N	mg/L	0.27	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	34	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.55	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	34	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.13	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-H05-7**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-17**						
Date/Time Collected		**04/04/11 10:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.3						
Temperature		25.6 °C						
Conductivity		136.7 umhos						
Dissolved Oxygen		6.73 mg/L						
Inorganics								
Ammonia as N	mg/L	1.6	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	15	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-H07-8**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-18**						
Date/Time Collected		**04/01/11 07:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		20.2 °C						
Conductivity		151.3 umhos						
Dissolved Oxygen		1.57 mg/L						
Inorganics								
Ammonia as N	mg/L	0.051	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.71	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.98	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-H09-12**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-19**						
Date/Time Collected		**03/31/11 10:25**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.7						
Temperature		21.9 °C						
Conductivity		249 umhos						
Dissolved Oxygen		3.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.010	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	7.4	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ03-H11-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-20**						
Date/Time Collected		**03/30/11 12:14**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		4.8						
Temperature		25.9 °C						
Conductivity		138.4 umhos						
Dissolved Oxygen		3.68 mg/L						
Inorganics								
Ammonia as N	mg/L	0.006 I	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.5	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-I08-5**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-21**						
Date/Time Collected		**03/31/11 11:05**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		6.5						
Temperature		23.0 °C						
Conductivity		191.5 umhos						
Dissolved Oxygen		4.69 mg/L						
Inorganics								
Ammonia as N	mg/L	1.2	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	15	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.34	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-I10-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-22**						
Date/Time Collected		**04/01/11 08:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		6.2						
Temperature		20.2 °C						
Conductivity		173.4 umhos						
Dissolved Oxygen		5.10 mg/L						
Inorganics								
Ammonia as N	mg/L	0.66	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	27	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	27	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.35	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-I12-6**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-23**						
Date/Time Collected		**04/01/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.6						
Temperature		21.9 °C						
Conductivity		127.6 umhos						
Dissolved Oxygen		1.87 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	11	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.67	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	11	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	7.1	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F04-32**						
Matrix		**Groundwater**						
SAL Sample Number		**1102633-24**						
Date/Time Collected		**03/29/11 11:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.9						
Temperature		23.1 °C						
Conductivity		345.6 umhos						
Dissolved Oxygen		1.04 mg/L						
Inorganics								
Ammonia as N	mg/L	0.042	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	69	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.25	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	69	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	0.71	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13009 - Ammonia by SEAL										
Blank (BC13009-BLK1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BC13009-BLK2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BC13009-BS1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		107	90-110		
LCS (BC13009-BS2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		99	90-110		
Matrix Spike (BC13009-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110		
Matrix Spike (BC13009-MS2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.034	102	90-110		
Matrix Spike Dup (BC13009-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110	0.1	10
Matrix Spike Dup (BC13009-MSD2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.034	107	90-110	5	10
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK1)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13012-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BC13012-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BC13012-MS1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.519	97	80-120		
Matrix Spike (BC13012-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.48 J5	0.20	0.05	mg/L	2.5	0.808	106	80-120		
Matrix Spike Dup (BC13012-MSD1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.519	95	80-120	2	20
Matrix Spike Dup (BC13012-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.57 J5	0.20	0.05	mg/L	2.5	0.808	109	80-120	2	20
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13106-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.800	0.04	0.01	mg/L	0.80		100	90-110		
LCS (BC13106-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.827	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BC13106-MS1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike (BC13106-MS2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.00	0.04	0.01	mg/L	1.0	ND	100	77-119		
Matrix Spike Dup (BC13106-MSD1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	3	20
Matrix Spike Dup (BC13106-MSD2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.02	0.04	0.01	mg/L	1.0	ND	102	77-119	2	20
Batch BC13118 - Digestion for TKN by EPA 351.2										
Blank (BC13118-BLK1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13118-BS1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5		101	90-110		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BC13123-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13123-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.815	0.04	0.01	mg/L	0.80		102	90-110		
LCS (BC13123-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BC13123-MS1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0832	101	77-119		
Matrix Spike (BC13123-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	8.89	0.04	0.01	mg/L	1.0	7.92	97	77-119		
Matrix Spike Dup (BC13123-MSD1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.12	0.04	0.01	mg/L	1.0	0.0832	103	77-119	2	20
Matrix Spike Dup (BC13123-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	9.02	0.04	0.01	mg/L	1.0	7.92	111	77-119	2	20
Batch BD10106 - Nitrate 353.2 by seal										
Blank (BD10106-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10106 - Nitrate 353.2 by seal										
Blank (BD10106-BLK2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10106-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.749	0.04	0.01	mg/L	0.80		94	90-110		
LCS (BD10106-BS2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.765	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BD10106-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.40	0.04	0.01	mg/L	1.0	0.370	103	77-119		
Matrix Spike (BD10106-MS2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119		
Matrix Spike Dup (BD10106-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.38	0.04	0.01	mg/L	1.0	0.370	102	77-119	1	20
Matrix Spike Dup (BD10106-MSD2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119	0.01	20
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10114 - Digestion for TKN by EPA 351.2										
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10201 - Ammonia by SEAL										
Blank (BD10201-BLK1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10201-BLK2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10201-BS1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50		103	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10201 - Ammonia by SEAL										
LCS (BD10201-BS2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		97	90-110		
Matrix Spike (BD10201-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.062	98	90-110		
Matrix Spike (BD10201-MS2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.068	100	90-110		
Matrix Spike Dup (BD10201-MSD1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.062	94	90-110	3	10
Matrix Spike Dup (BD10201-MSD2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.068	96	90-110	3	10
Batch BD10203 - Ammonia by SEAL										
Blank (BD10203-BLK1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10203-BLK2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10203-BS1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		98	90-110		
LCS (BD10203-BS2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		96	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10203 - Ammonia by SEAL										
Matrix Spike (BD10203-MS1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.051	94	90-110		
Matrix Spike (BD10203-MS2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.047	94	90-110		
Matrix Spike Dup (BD10203-MSD1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.051	98	90-110	4	10
Matrix Spike Dup (BD10203-MSD2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.047	99	90-110	5	10
Batch BD10204 - Nitrate 353.2 by seal										
Blank (BD10204-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10204-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10204-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.766	0.04	0.01	mg/L	0.80		96	90-110		
LCS (BD10204-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.742	0.04	0.01	mg/L	0.80		93	90-110		
Matrix Spike (BD10204-MS1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.986	0.04	0.01	mg/L	1.0	0.0331	95	77-119		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10204 - Nitrate 353.2 by seal										
Matrix Spike (BD10204-MS2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	10.0 J5	0.04	0.01	mg/L	1.0	ND	1000	77-119		
Matrix Spike Dup (BD10204-MSD1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.982	0.04	0.01	mg/L	1.0	0.0331	95	77-119	0.4	20
Matrix Spike Dup (BD10204-MSD2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	12.7 J5	0.04	0.01	mg/L	1.0	ND	NR	77-119	24	20
Batch BD10415 - Digestion for TKN by EPA 351.2										
Blank (BD10415-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10415-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10415-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10415-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5		107	90-110		
Matrix Spike (BD10415-MS1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.34	0.20	0.05	mg/L	2.5	0.695	104	80-120		
Matrix Spike (BD10415-MS2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	0.966	107	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10415 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BD10415-MSD1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.44	0.20	0.05	mg/L	2.5	0.695	108	80-120	3	20
Matrix Spike Dup (BD10415-MSD2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	0.966	106	80-120	0.9	20
Batch BD10518 - alkalinity										
Blank (BD10518-BLK1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BD10518-BLK2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BD10518-BS1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10518-BS2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10518 - alkalinity										
Matrix Spike (BD10518-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	92	80-120		26
Matrix Spike (BD10518-MS2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	150	8.0	2.0	mg/L	120	12	109	80-120		26
Matrix Spike Dup (BD10518-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	93	80-120	0.8	26
Matrix Spike Dup (BD10518-MSD2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	12	100	80-120	8	26
Batch BD10523 - Nitrate 353.2 by seal										
Blank (BD10523-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10523-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10523-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.778	0.04	0.01	mg/L	0.80		97	90-110		
LCS (BD10523-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.810	0.04	0.01	mg/L	0.80		101	90-110		
Matrix Spike (BD10523-MS1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.985	0.04	0.01	mg/L	1.0	ND	99	77-119		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10523 - Nitrate 353.2 by seal										
Matrix Spike (BD10523-MS2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.958	0.04	0.01	mg/L	1.0	ND	96	77-119		
Matrix Spike Dup (BD10523-MSD1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0	ND	101	77-119	2	20
Matrix Spike Dup (BD10523-MSD2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.956	0.04	0.01	mg/L	1.0	ND	96	77-119	0.3	20
Batch BD10624 - Digestion for TKN by EPA 351.2										
Blank (BD10624-BLK1)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10624-BLK2)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10624-BS1)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.64	0.20	0.05	mg/L	2.5		104	90-110		
LCS (BD10624-BS2)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BD10624-MS1)		**Source: 1102635-02**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5	ND	101	80-120		
Matrix Spike (BD10624-MS2)		**Source: 1102750-01**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5	ND	100	80-120		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10624 - Digestion for TKN by EPA 351.2										
Matrix Spike Dup (BD10624-MSD1)		**Source: 1102635-02**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.45	0.20	0.05	mg/L	2.5	ND	97	80-120	5	20
Matrix Spike Dup (BD10624-MSD2)		**Source: 1102750-01**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.68	0.20	0.05	mg/L	2.5	ND	106	80-120	6	20
Batch BD10901 - Ammonia by SEAL										
Blank (BD10901-BLK1)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10901-BLK2)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10901-BS1)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		101	90-110		
LCS (BD10901-BS2)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50		103	90-110		
Matrix Spike (BD10901-MS1)		**Source: 1102750-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50	ND	102	90-110		
Matrix Spike (BD10901-MS2)		**Source: 1102903-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	ND	109	90-110		
Matrix Spike Dup (BD10901-MSD1)		**Source: 1102750-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50	ND	100	90-110	2	10

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10901 - Ammonia by SEAL										
Matrix Spike Dup (BD10901-MSD2)		**Source: 1102903-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	ND	107	90-110	2	10
Batch BD11133 - alkalinity										
Blank (BD11133-BLK1)					Prepared & Analyzed: 04/11/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BD11133-BS1)					Prepared & Analyzed: 04/11/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD11133-MS1)		**Source: 1102567-01**			Prepared & Analyzed: 04/11/11					
Total Alkalinity	210	8.0	2.0	mg/L	120	80	101	80-120		26
Matrix Spike Dup (BD11133-MSD1)		**Source: 1102567-01**			Prepared & Analyzed: 04/11/11					
Total Alkalinity	210	8.0	2.0	mg/L	120	80	101	80-120	0	26

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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

J5 Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102633

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	No. of Containers (Total per each location)
01	PZ01-BKG-9	3/31/11	0930	GW		X	1	1			4.6	6.78	146.8	22.8	
02	PZ05-BKG-9	3/31/11	1014	GW		X	1	1			5.1	4.38	98.8	21.8	
03	PZ06-BKG-12	3/31/11	1003	GW		X	1	1			4.7	5.41	59.4	23.1	
04	DP-D07-5	3/30/11	1120	GW		X	1	1			6.0	4.86	326	24.1	
05	PZ23-D09-27	033011	1306	GW		X	1	1			5.4	0.18	306.2	24.4	
06	DP-E02-6	032911	0835	GW		X	1	1			5.5	2.41	98.5	21.3	2
07	DP-E11-12	032911	1300	GW		X	1	1			5.1	0.99	441	23.0	
08	PZ09-I08-5	033011	1438	GW		X	1	1			5.2	6.03	94.2	21.9	
09	DP-D07-9	3/30/11	1205	GW		X	1	1			4.5	0.97	392	24.0	
10	DP-D09-6	3/30/11	0950	GW		X	1	1			4.5	2.05	456	22.6	
11	DP-E04-8	032911	1015	GW		X	1	1			4.9	1.43	171.1	22.0	
12	DP-E06-6	032911	1100	GW		X	1	1			4.4	1.89	162.8	22.8	

Containers Prepared/ Relinquished:	Date/Time: 1515 03-27-11	Received:	Date/Time: 0500 032911
Relinquished:	Date/Time: 1600 032911	Received:	Date/Time: 3/29/11 1600
Relinquished:	Date/Time: 1830 033011	Received:	Date/Time:
Relinquished:	Date/Time: 1430 3/31/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

6,7,11,12 13-15,24 4,5,8-10, 16,20 1-3,19,21

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks

1102633

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102633

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	No. of Containers (Total per each location)
13	DP-E08-6	03291	1200	GW		X	1	1			5.0	1.83	326	22.4	
14	DP-F03-8	032911	1000	GW		X	1	1			6.2	1.22	145.6	21.7	2
15	~~DP-F07-6~~ 032911	0329	Dry	GW		X	1	1			Dry	—	—	—	—
16	DP-G06-7	3/30/11	1445	GW		X	1	1			6.2	2.36	184	28.9	
17	DP-H05-7	4/4/11	1040	GW		X	1	1			6.3	6.73	136.7	25.6	
18	DP-H07-8	04/01/11	0730	GW		X	1	1			5.1	1.57	151.3	20.2	
JMH 19	DP-H09-12	3/31/11	1025	GW		X	1	1			5.7	3.40	249	21.9	
20	PZ03-H11-6	033011	1214	GW		X	1	1			4.8	3.68	138.4	25.9	
JMH 21	DP-I08-5	3/31/11	1105	GW		X	1	1			6.5	4.69	191.5	23.0	
22	DP-I10-6	04/01/11	0855	GW		X	1	1			6.2	5.10	173.4	20.2	
23	DP-I12-6	04/01/11	0940	GW		X	1	1			5.6	1.87	127.6	21.9	
24	DP-F04-32	032911	1100	GW		X	1	1			6.9	1.04	345.6	23.1	

	Relinquished:	Date/Time:	Received:	Date/Time:
	Containers Prepared/ Relinquished:	1515 03-27-11		0500 032911
13-15, 24		1600 032911		1600 3/29/11
16,20		1830 033011		
19,21	Courier	1430 3/31/11		
17	Courier	1315 4/4/11		

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks

DP-F07-6 switch with water tank 1210 032911
Ph 7.5
DO 7.55
CON 427
Temp 22.8
1102633

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Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ01-BKG-9	Sample ID	01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	7.13	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.129	1/4 WELL VOLUME		3 WELL VOLUMES	0.387	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.28	FINAL TUBING LEGNTH IN WELL (FEET)	9.28	PURGE TIME START	0920	PURGE TIME END	0929	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0923	0.30	0.30	0.10	8.61	4.6	22.8	153.4	6.74	11.4	cloudy	None
0926	0.30	0.60	0.10	8.61	4.6	22.8	147.3	6.76	8.81	Clear	"
0929	0.30	0.90	0.10	8.61	4.6	22.8	146.8	6.78	6.15	"	"

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		9.28	SAMPLE PUMP FLOW RATE (mL/min)		0.10
SAMPLING INITIATED	0930	SAMPLING ENDED	0930	FIELD CLEANED	(Y) N	CLEANING STEPS	DI		
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy Rain Past 24 hrs								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	PAK ~~1102588~~ 1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PAK ~~PZ05~~-BKG-9	Sample ID	02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.68
PURGE PUMP CODE	(PP) GP IBP								
TOTAL WELL DEPTH (Feet)	9.16	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.08	1/4 WELL VOLUME		3 WELL VOLUMES	0.26	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.16	FINAL TUBING LEGNTH IN WELL (FEET)	9.16	PURGE TIME START	1005	PURGE TIME END	1014	TOTAL PURGED	0.90	
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02		

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1008	0.30	0.30	0.10	8.67	5.1	21.8	99.9	4.62	11.9	clear	none
1011	0.30	0.60	0.10	8.67	5.1	21.8	98.4	4.40	8.86		
1014	0.30	0.90	0.10	8.67	5.1	21.8	98.8	4.38	4.58		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		9.16	SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	1015	SAMPLING ENDED	1015	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Windy – Rain Past 24 hrs						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ06-BKG-12	Sample ID	03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.98	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	12.09	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.1266	1/4 WELL VOLUME		3 WELL VOLUMES	0.3798	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	12.09	FINAL TUBING LEGNTH IN WELL (FEET)	12.09	PURGE TIME START	0943	PURGE TIME END	1002	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0946	0.30	0.30	0.10	11.87	4.7	23.1	60.0	5.38	22.9	clear	None
0949	0.30	0.60	0.10	11.87	4.7	23.1	59.6	5.48	17.8		
1002	0.30	0.90	0.10	11.87	4.7	23.1	59.4	5.41	12.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP TL TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		12.09		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	1003	SAMPLING ENDED	1008	FIELD CLEANED	Y N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	Y N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	windy / Drizzle Rain Past 24 hrs						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ23-D09-27	Sample ID	05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	2.0	WELL CAPACITY (gal/ft)	0.1632	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	7.23	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	30.30	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	3.76	1/4 WELL VOLUME	0.94	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	15.0	FINAL TUBING LEGNTH IN WELL (FEET)	15.0	PURGE TIME START	1240	PURGE TIME END	1305	TOTAL PURGED	5.00		
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02			
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1259	3.80	3.80	0.20		5.5	24.4	306.4	0.48	16.6	clear	none
1302	0.60	4.40	0.20		5.5	24.4	305.3	0.25	15.4		
1305	0.60	5.00	0.20		5.4	24.4	306.2	0.18	14.7		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	15.0		SAMPLE PUMP FLOW RATE (mL/min)	0.20
SAMPLING INITIATED	1306	SAMPLING ENDED	1306	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ09-I08-5	Sample ID	08	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.55	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	6.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.093	1/4 WELL VOLUME		3 WELL VOLUMES	0.27		5 WELL VOLUMES		

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME			EQUIPMENT VOLUME		
INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1428	PURGE TIME END	1437	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-02	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1431	0.30	0.30	0.10	5.91	5.2	21.9	95.6	5.89	91.7	Cloudy	None
1434	0.10	0.60	0.10	5.91	5.2	21.9	95.2	5.88	21.3	Clear	"
1437	0.10	0.90	0.10	5.91	5.2	21.9	94.2	6.03	14.5	"	"

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	6.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10
SAMPLING INITIATED	1438	SAMPLING ENDED	1438	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	very windy						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033011	SAL Project #	1102633	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ03-H11-6	Sample ID	20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.85	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.1	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.135	1/4 WELL VOLUME		3 WELL VOLUMES	0.405	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.0	FINAL TUBING LEGNTH IN WELL (FEET)	9.0	PURGE TIME START	1204	PURGE TIME END	1213	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1207	0.30	0.30	0.10	7.21	4.9	26.0	141.2	4.08	18.0	clear	none
1210	0.30	0.60	0.10	7.21	4.9	25.9	141.4	4.23	10.2		
1213	0.30	0.90	0.10	7.21	4.8	25.9	138.4	3.68	5.57		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL				SAMPLER(S) SIGNATURES:				
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)	9.0		SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	1214	SAMPLING ENDED	1214	FIELD CLEANED	(Y) N	CLEANING STEPS	DI		
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.
110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

Hazen and Sawyer
10002 Princess Palm Ave, Suite 200
Tampa, FL 33619

April 21, 2011
Work Order: 1102635

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**STE-EX Pump Tank**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-01**						
Date/Time Collected		**04/04/11 11:40**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.8						
Temperature		26.4 °C						
Conductivity		830 umhos						
Dissolved Oxygen		0.30 mg/L						
Inorganics								
Ammonia as N	mg/L	33	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Carbonaceous BOD	mg/L	83	SM 5210B	2	2	04/04/11 13:18	04/09/11 17:12	KTC
Chloride	mg/L	47	EPA 300.0	0.20	0.050		04/06/11 14:23	MEJ
Fluoride	mg/L	4.6	EPA 300.0	0.040	0.010		04/05/11 08:39	MEJ
Nitrate (as N)	mg/L	0.03 I	EPA 300.0	0.04	0.01		04/05/11 08:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/05/11 08:39	MEJ
Orthophosphate as P	mg/L	3.2	EPA 300.0	0.040	0.010		04/05/11 08:39	MEJ
Phosphorous - Total as P	mg/L	5.9	SM 4500P-E	0.040	0.010	04/05/11 11:52	04/06/11 14:50	SMB
Sulfate	mg/L	21	EPA 300.0	0.60	0.20		04/05/11 08:39	MEJ
Total Alkalinity	mg/L	270	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	41	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Total Solids	% by wt	0.03	EPA 160.3	0.01	0.01	04/04/11 16:12	04/06/11 10:05	MMF
Total Suspended Solids	mg/L	18	SM 2540D	1	1	04/06/11 10:07	04/06/11 12:16	MMF
Bicarbonate Alkalinity	mg/L	270	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 300.0	0.08	0.02		04/05/11 08:39	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Metals								
Boron	mg/L	0.15	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 17:56	LCB
Calcium	mg/L	58	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:56	LCB
Iron	mg/L	7.0	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 17:56	LCB
Magnesium	mg/L	18	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:56	LCB
Manganese	mg/L	0.081	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 17:56	LCB
Potassium	mg/L	15	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:56	LCB
Sodium	mg/L	43	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:56	LCB
Microbiology								
Total Coliform	CFU/100 ml	200 Z	m-Coliblue24	1	1	04/04/11 14:30	04/05/11 14:30	JAA

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April 21, 2011
Work Order: 1102635

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**Field Blank DI**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-02**						
Date/Time Collected		**04/04/11 09:00**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.1						
Temperature		21.5 °C						
Conductivity		1.19 umhos						
Dissolved Oxygen		8.55 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK

Sample Description		**Field Blank Tap**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-03**						
Date/Time Collected		**04/04/11 10:30**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		7.7						
Temperature		23.6 °C						
Conductivity		432 umhos						
Dissolved Oxygen		8.13 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	140	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK

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April 21, 2011
Work Order: 1102635

Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**Equipment Rinsate**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-04**						
Date/Time Collected		**04/04/11 10:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.0						
Temperature		27.5 °C						
Conductivity		1.38 umhos						
Dissolved Oxygen		7.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.026	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB
Bicarbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		04/05/11 12:17	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Sample Description		**PZ04-BKG-9-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-05**						
Date/Time Collected		**03/31/11 08:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		21.7 °C						
Conductivity		78.2 umhos						
Dissolved Oxygen		3.84 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 I	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Chemical Oxygen Demand	mg/L	16 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	1.8	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.11	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Nitrate (as N)	mg/L	0.30	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Phosphorous - Total as P	mg/L	0.021 I	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	12	EPA 300.0	0.60	0.20		04/01/11 11:52	MEJ
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.30	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD

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April 21, 2011
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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ04-BKG-9-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-05**						
Date/Time Collected		**03/31/11 08:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		21.7 °C						
Conductivity		78.2 umhos						
Dissolved Oxygen		3.84 mg/L						
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.30	EPA 300.0	0.08	0.02		04/01/11 11:52	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.6	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 17:59	LCB
Calcium	mg/L	6.2	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:59	LCB
Iron	mg/L	0.020 U	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 17:59	LCB
Magnesium	mg/L	1.8	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:59	LCB
Manganese	mg/L	0.077	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 17:59	LCB
Potassium	mg/L	0.95	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:59	LCB
Sodium	mg/L	1.8	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 17:59	LCB
Sample Description		**PZ24-BKG-26-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-06**						
Date/Time Collected		**03/31/11 08:19**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.0						
Temperature		23.1 °C						
Conductivity		270.9 umhos						
Dissolved Oxygen		0.50 mg/L						
Inorganics								
Ammonia as N	mg/L	0.008 I	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	16	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.027 I	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Nitrate (as N)	mg/L	9.5	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**PZ24-BKG-26-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-06**						
Date/Time Collected		**03/31/11 08:19**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.0						
Temperature		23.1 °C						
Conductivity		270.9 umhos						
Dissolved Oxygen		0.50 mg/L						
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 11:52	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 11:52	MEJ
Phosphorous - Total as P	mg/L	0.43	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	45	EPA 300.0	0.60	0.20		04/01/11 11:52	MEJ
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Total Organic Carbon	mg/L	2.9	SM 5310B	1.0	0.50		04/04/11 13:41	MEJ
Bicarbonate Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	9.5	EPA 300.0	0.08	0.02		04/01/11 11:52	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	2.7	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 18:03	LCB
Calcium	mg/L	20	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:03	LCB
Iron	mg/L	0.042 I	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 18:03	LCB
Magnesium	mg/L	10	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:03	LCB
Manganese	mg/L	0.18	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 18:03	LCB
Potassium	mg/L	9.1	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:03	LCB
Sodium	mg/L	8.0	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:03	LCB
Sample Description		**DP-AA9-27-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-07**						
Date/Time Collected		**03/30/11 09:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		23.9 °C						
Conductivity		288 umhos						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-AA9-27-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-07**						
Date/Time Collected		**03/30/11 09:35**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.2						
Temperature		23.9 °C						
Conductivity		288 umhos						
Dissolved Oxygen		0.82 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.46	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	10	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-D07-5-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-08**						
Date/Time Collected		**03/30/11 11:15**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		6.0						
Temperature		24.1 °C						
Conductivity		326 umhos						
Dissolved Oxygen		4.86 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	11	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB
Bicarbonate Alkalinity	mg/L	11	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	11	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-E13-10-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-09**						
Date/Time Collected		**03/29/11 09:20**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		5.3						
Temperature		21.3 °C						
Conductivity		211.3 umhos						
Dissolved Oxygen		2.21 mg/L						
Inorganics								
Ammonia as N	mg/L	0.029	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	0.70	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	1.9	EPA 353.2	0.04	0.01		03/31/11 12:08	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Sample Description		**DP-E12-15-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-10**						
Date/Time Collected		**03/30/11 07:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.0						
Temperature		21.9 °C						
Conductivity		460 umhos						
Dissolved Oxygen		0.60 mg/L						
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10		04/01/11 14:59	MMF
Chloride	mg/L	38	EPA 300.0	0.20	0.050		04/01/11 11:52	MEJ
Fluoride	mg/L	0.035 I	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Nitrate (as N)	mg/L	17	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/31/11 12:58	MEJ
Orthophosphate as P	mg/L	0.088	EPA 300.0	0.040	0.010		03/31/11 12:58	MEJ
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	54	EPA 300.0	0.60	0.20		03/31/11 12:58	MEJ
Total Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/31/11 13:56	04/02/11 10:01	SMB

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Sample Description		**DP-E12-15-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-10**						
Date/Time Collected		**03/30/11 07:55**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.0						
Temperature		21.9 °C						
Conductivity		460 umhos						
Dissolved Oxygen		0.60 mg/L						
Bicarbonate Alkalinity	mg/L	8.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	17	EPA 300.0	0.08	0.02		03/31/11 12:58	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	0.50 U	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.10	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 18:06	LCB
Calcium	mg/L	35	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:06	LCB
Iron	mg/L	0.063 I	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 18:06	LCB
Magnesium	mg/L	7.5	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:06	LCB
Manganese	mg/L	0.047	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 18:06	LCB
Potassium	mg/L	11	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:06	LCB
Sodium	mg/L	33	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:06	LCB
Sample Description		**DP-F09-5-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-11**						
Date/Time Collected		**03/29/11 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		24.8 °C						
Conductivity		141.1 umhos						
Dissolved Oxygen		1.15 mg/L						
Inorganics								
Ammonia as N	mg/L	0.22	EPA 350.1	0.010	0.005		03/31/11 09:27	SMD
Chemical Oxygen Demand	mg/L	32	EPA 410.4	25	10	03/30/11 14:21	03/31/11 16:29	MMF
Chloride	mg/L	10	EPA 300.0	0.20	0.050		03/30/11 13:32	MEJ
Fluoride	mg/L	0.11	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Nitrate (as N)	mg/L	2.0	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F09-5-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-11**						
Date/Time Collected		**03/29/11 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/29/11 16:00**						
Client Provided Field Data								
pH		6.6						
Temperature		24.8 °C						
Conductivity		141.1 umhos						
Dissolved Oxygen		1.15 mg/L						
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		03/30/11 13:32	MEJ
Orthophosphate as P	mg/L	0.026 I	EPA 300.0	0.040	0.010		03/30/11 13:32	MEJ
Phosphorous - Total as P	mg/L	0.33	SM 4500P-E	0.040	0.010	03/30/11 12:59	03/31/11 15:45	SMB
Sulfate	mg/L	27	EPA 300.0	0.60	0.20		03/30/11 13:32	MEJ
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	03/30/11 12:12	04/01/11 07:46	SMB
Bicarbonate Alkalinity	mg/L	22	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	2.0	EPA 300.0	0.08	0.02		03/30/11 13:32	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	7.7	SM 5310B	1.0	0.50		03/31/11 12:15	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	03/30/11 10:19	03/30/11 16:25	LCB
Calcium	mg/L	14	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 16:25	LCB
Iron	mg/L	5.7	EPA 200.7	0.10	0.020	03/30/11 10:19	03/30/11 16:25	LCB
Magnesium	mg/L	3.5	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 16:25	LCB
Manganese	mg/L	0.35	EPA 200.7	0.010	0.0010	03/30/11 10:19	03/30/11 16:25	LCB
Potassium	mg/L	4.7	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 16:25	LCB
Sodium	mg/L	11	EPA 200.7	0.050	0.010	03/30/11 10:19	03/30/11 16:25	LCB
Sample Description		**DP-F11-11-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-12**						
Date/Time Collected		**03/30/11 08:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		21.4 °C						
Conductivity		412.7 umhos						
Dissolved Oxygen		0.90 mg/L						

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-F11-11-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-12**						
Date/Time Collected		**03/30/11 08:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/30/11 18:30**						
Client Provided Field Data								
pH		5.3						
Temperature		21.4 °C						
Conductivity		412.7 umhos						
Dissolved Oxygen		0.90 mg/L						
Inorganics								
Ammonia as N	mg/L	0.43	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Total Kjeldahl Nitrogen	mg/L	1.9	EPA 351.2	0.20	0.05	03/31/11 12:30	04/04/11 13:54	SMD
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Nitrate+Nitrite (N)	mg/L	21	EPA 353.2	0.04	0.01		03/31/11 13:45	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0	03/31/11 08:00	03/31/11 15:20	JMK

Sample Description		**DP-F15-20-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-13**						
Date/Time Collected		**03/31/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.4						
Temperature		22.3 °C						
Conductivity		383 umhos						
Dissolved Oxygen		0.78 mg/L						
Inorganics								
Ammonia as N	mg/L	0.012	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	18	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-G12-18-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-14**						
Date/Time Collected		**03/31/11 09:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.2						
Temperature		22.2 °C						
Conductivity		494 umhos						
Dissolved Oxygen		1.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.013	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.0	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	29	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**DP-H12-5-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-15**						
Date/Time Collected		**03/31/11 09:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		5.6						
Temperature		21.9 °C						
Conductivity		188.5 umhos						
Dissolved Oxygen		0.94 mg/L						
Inorganics								
Ammonia as N	mg/L	0.016	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	0.93	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD
Bicarbonate Alkalinity	mg/L	7.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	2.2	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-K12-5-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-16**						
Date/Time Collected		**04/01/11 10:10**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.6						
Temperature		22.3 °C						
Conductivity		59.3 umhos						
Dissolved Oxygen		1.40 mg/L						
Inorganics								
Ammonia as N	mg/L	0.071	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Chemical Oxygen Demand	mg/L	43	EPA 410.4	25	10		04/05/11 13:00	MMF
Chloride	mg/L	1.6	EPA 300.0	0.20	0.050		04/01/11 16:00	MEJ
Fluoride	mg/L	0.058	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Nitrate (as N)	mg/L	0.03 I	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/01/11 16:00	MEJ
Orthophosphate as P	mg/L	0.010 U	EPA 300.0	0.040	0.010		04/01/11 16:00	MEJ
Phosphorous - Total as P	mg/L	0.32	SM 4500P-E	0.040	0.010	04/04/11 16:50	04/05/11 14:13	SMB
Sulfate	mg/L	9.2	EPA 300.0	0.60	0.20		04/01/11 16:00	MEJ
Total Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	6.9 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 300.0	0.08	0.02		04/01/11 16:00	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Inorganic, Dissolved								
Dissolved Organic Carbon	mg/L	7.0	SM 5310B	1.0	0.50		04/06/11 14:55	MEJ
Metals								
Boron	mg/L	0.050 U	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 18:10	LCB
Calcium	mg/L	5.4	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:10	LCB
Iron	mg/L	2.5	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 18:10	LCB
Magnesium	mg/L	0.92	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:10	LCB
Manganese	mg/L	0.20	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 18:10	LCB
Potassium	mg/L	0.44	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:10	LCB
Sodium	mg/L	1.9	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:10	LCB

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Laboratory Report

Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**DP-O10-24-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-17**						
Date/Time Collected		**04/01/11 14:02**						
Collected by		**Sean Harmon**						
Date/Time Received		**04/01/11 15:45**						
Client Provided Field Data								
pH		5.1						
Temperature		24.2 °C						
Conductivity		361 umhos						
Dissolved Oxygen		0.95 mg/L						
Inorganics								
Ammonia as N	mg/L	0.082	EPA 350.1	0.010	0.005		04/04/11 11:13	SMD
Total Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	04/04/11 11:51	04/05/11 14:41	SMB
Bicarbonate Alkalinity	mg/L	4.0 I	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	16	EPA 353.2	0.04	0.01		04/05/11 09:16	SMD
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

Sample Description		**STE-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-18**						
Date/Time Collected		**04/04/11 11:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.8						
Temperature		26.4 °C						
Conductivity		830 umhos						
Dissolved Oxygen		0.30 mg/L						
Inorganics								
Ammonia as N	mg/L	36	EPA 350.1	0.010	0.005		04/08/11 10:37	SMD
Carbonaceous BOD	mg/L	87	SM 5210B	2	2	04/04/11 13:18	04/09/11 17:12	KTC
Chloride	mg/L	48	EPA 300.0	0.20	0.050		04/06/11 14:23	MEJ
Fluoride	mg/L	4.4	EPA 300.0	0.040	0.010		04/05/11 08:39	MEJ
Nitrate (as N)	mg/L	0.03 I	EPA 300.0	0.04	0.01		04/05/11 08:39	MEJ
Nitrite (as N)	mg/L	0.01 U	EPA 300.0	0.04	0.01		04/05/11 08:39	MEJ
Orthophosphate as P	mg/L	3.2	EPA 300.0	0.040	0.010		04/05/11 08:39	MEJ
Phosphorous - Total as P	mg/L	5.1	SM 4500P-E	0.040	0.010	04/07/11 14:00	04/08/11 16:12	SMD
Sulfate	mg/L	22	EPA 300.0	0.60	0.20		04/05/11 08:39	MEJ
Total Alkalinity	mg/L	290	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Total Kjeldahl Nitrogen	mg/L	43	EPA 351.2	0.20	0.05	04/06/11 12:10	04/07/11 10:03	SMB

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Project Name **GCREC Mound Groundwater Analyses**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**STE-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-18**						
Date/Time Collected		**04/04/11 11:50**						
Collected by		**Josephine Edeback-Hirst**						
Date/Time Received		**04/04/11 13:15**						
Client Provided Field Data								
pH		6.8						
Temperature		26.4 °C						
Conductivity		830 umhos						
Dissolved Oxygen		0.30 mg/L						
Total Solids	% by wt	0.04	EPA 160.3	0.01	0.01	04/04/11 16:12	04/06/11 10:05	MMF
Total Suspended Solids	mg/L	18	SM 2540D	1	1	04/06/11 10:07	04/06/11 12:16	MMF
Bicarbonate Alkalinity	mg/L	290	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 300.0	0.08	0.02		04/05/11 08:39	MEJ
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/11/11 13:03	JMK
Metals								
Boron	mg/L	0.15	EPA 200.7	0.10	0.050	04/05/11 11:45	04/05/11 18:13	LCB
Calcium	mg/L	53	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:13	LCB
Iron	mg/L	1.2	EPA 200.7	0.10	0.020	04/05/11 11:45	04/05/11 18:13	LCB
Magnesium	mg/L	16	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:13	LCB
Manganese	mg/L	0.070	EPA 200.7	0.010	0.0010	04/05/11 11:45	04/05/11 18:13	LCB
Potassium	mg/L	14	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:13	LCB
Sodium	mg/L	39	EPA 200.7	0.050	0.010	04/05/11 11:45	04/05/11 18:13	LCB
Microbiology								
Total Coliform	CFU/100 ml	200 Z	m-Coliblue24	1	1	04/04/11 14:30	04/05/11 14:30	JAA
Sample Description		**PZ-25**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-19**						
Date/Time Collected		**03/31/11 11:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		6.0						
Temperature		22.0 °C						
Conductivity		770 umhos						
Dissolved Oxygen		5.65 mg/L						
Inorganics								
Ammonia as N	mg/L	0.022	EPA 350.1	0.010	0.005		04/02/11 07:11	SMB
Total Alkalinity	mg/L	48	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	04/01/11 12:21	04/05/11 09:19	SMD

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Laboratory Report

Project Name		**GCREC Mound Groundwater Analyses**						
Parameters	**Units**	**Results ***	**Method**	**PQL**	**MDL**	**Prepared**	**Analyzed**	**By**
Sample Description		**PZ-25**						
Matrix		**Groundwater**						
SAL Sample Number		**1102635-19**						
Date/Time Collected		**03/31/11 11:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**03/31/11 14:30**						
Client Provided Field Data								
pH		6.0						
Temperature		22.0 °C						
Conductivity		770 umhos						
Dissolved Oxygen		5.65 mg/L						
Bicarbonate Alkalinity	mg/L	48	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Nitrate+Nitrite (N)	mg/L	20	EPA 353.2	0.04	0.01		04/01/11 10:00	SMB
Carbonate Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Hydroxide Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK
Phenolphthalein Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		04/05/11 14:30	JMK

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13009 - Ammonia by SEAL										
Blank (BC13009-BLK1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BC13009-BLK2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BC13009-BS1)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50		107	90-110		
LCS (BC13009-BS2)					Prepared & Analyzed: 03/31/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		99	90-110		
Matrix Spike (BC13009-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110		
Matrix Spike (BC13009-MS2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.034	102	90-110		
Matrix Spike Dup (BC13009-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.060	103	90-110	0.1	10
Matrix Spike Dup (BC13009-MSD2)		**Source: 1102740-08**			Prepared & Analyzed: 03/31/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.034	107	90-110	5	10
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK1)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13012 - Digestion for TKN by EPA 351.2										
Blank (BC13012-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13012-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.74	0.20	0.05	mg/L	2.5		108	90-110		
LCS (BC13012-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Total Kjeldahl Nitrogen	2.61	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BC13012-MS1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.99	0.20	0.05	mg/L	2.5	0.519	97	80-120		
Matrix Spike (BC13012-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.48 J5	0.20	0.05	mg/L	2.5	0.808	106	80-120		
Matrix Spike Dup (BC13012-MSD1)		**Source: 1102731-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	2.92	0.20	0.05	mg/L	2.5	0.519	95	80-120	2	20
Matrix Spike Dup (BC13012-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Total Kjeldahl Nitrogen	3.57 J5	0.20	0.05	mg/L	2.5	0.808	109	80-120	2	20
Batch BC13014 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BC13014-BLK1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BC13014-BLK2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13014 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BC13014-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.471	0.040	0.010	mg/L	0.50		94	90-110		
LCS (BC13014-BS2)					Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.539	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BC13014-MS1)		**Source: 1102466-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.514	0.040	0.010	mg/L	0.50	0.0553	92	75-125		
Matrix Spike (BC13014-MS2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.520	0.040	0.010	mg/L	0.50	0.0758	89	75-125		
Matrix Spike Dup (BC13014-MSD1)		**Source: 1102466-02**			Prepared: 03/30/11 Analyzed: 03/31/11					
Phosphorous - Total as P	0.516	0.040	0.010	mg/L	0.50	0.0553	92	75-125	0.3	25
Matrix Spike Dup (BC13014-MSD2)		**Source: 1102697-02**			Prepared: 03/30/11 Analyzed: 04/01/11					
Phosphorous - Total as P	0.482	0.040	0.010	mg/L	0.50	0.0758	81	75-125	8	25
Batch BC13015 - Ion Chromatography 300.0 Prep										
Blank (BC13015-BLK1)					Prepared & Analyzed: 03/30/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13015 - Ion Chromatography 300.0 Prep										
LCS (BC13015-BS1)					Prepared & Analyzed: 03/30/11					
Sulfate	8.46	0.60	0.20	mg/L	9.0		94	85-115		
Fluoride	0.869	0.040	0.010	mg/L	0.90		97	85-115		
Orthophosphate as P	0.862	0.040	0.010	mg/L	0.90		96	85-115		
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115		
Chloride	2.97	0.20	0.050	mg/L	3.0		99	85-115		
Nitrite (as N)	1.36	0.04	0.01	mg/L	1.4		97	85-115		
LCS Dup (BC13015-BSD1)					Prepared & Analyzed: 03/30/11					
Orthophosphate as P	0.876	0.040	0.010	mg/L	0.90		97	85-115	2	200
Fluoride	0.859	0.040	0.010	mg/L	0.90		95	85-115	1	200
Sulfate	8.51	0.60	0.20	mg/L	9.0		95	85-115	0.6	200
Chloride	2.90	0.20	0.050	mg/L	3.0		97	85-115	2	200
Nitrite (as N)	1.35	0.04	0.01	mg/L	1.4		96	85-115	0.7	200
Nitrate (as N)	1.61	0.04	0.01	mg/L	1.7		95	85-115	0	200
Matrix Spike (BC13015-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 03/30/11					
Sulfate	95.8	0.60	0.20	mg/L	9.0	86.2	107	85-115		
Fluoride	1.38	0.040	0.010	mg/L	0.90	0.531	94	85-115		
Chloride	48.3 +O	0.20	0.050	mg/L	3.0	48.1	7	80-120		
Orthophosphate as P	1.33	0.040	0.010	mg/L	0.90	0.496	93	85-115		
Nitrite (as N)	1.48	0.04	0.01	mg/L	1.4	ND	106	85-115		
Nitrate (as N)	2.81	0.04	0.01	mg/L	1.7	1.21	94	85-115		
Matrix Spike (BC13015-MS2)		**Source: 1102754-01**			Prepared & Analyzed: 03/30/11					
Nitrate (as N)	3.97 +O	0.04	0.01	mg/L	1.7	1.52	144	85-115		
Nitrite (as N)	0.350 +O	0.04	0.01	mg/L	1.4	ND	25	85-115		
Fluoride	1.07	0.040	0.010	mg/L	0.90	0.109	107	85-115		
Sulfate	45.9	0.60	0.20	mg/L	9.0	38.2	86	85-115		
Chloride	42.0 +O	0.20	0.050	mg/L	3.0	42.8	NR	80-120		
Orthophosphate as P	2.26 +O	0.040	0.010	mg/L	0.90	2.19	8	85-115		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13016 - COD prep										
Blank (BC13016-BLK1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BC13016-BS1)					Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BC13016-MS1)		**Source: 1102664-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	2,100	25	10	mg/L	1000	1300	87	85-115		
Matrix Spike Dup (BC13016-MSD1)		**Source: 1102664-01**			Prepared: 03/30/11 Analyzed: 03/31/11					
Chemical Oxygen Demand	2,200	25	10	mg/L	1000	1300	91	85-115	2	32
Batch BC13102 - alkalinity										
Blank (BC13102-BLK1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Blank (BC13102-BLK3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BC13102-BLK4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BC13102-BS1)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS2)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS3)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BC13102-BS4)					Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BC13102-MS1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120		26

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13102 - alkalinity										
Matrix Spike (BC13102-MS2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120		26
Matrix Spike (BC13102-MS3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120		26
Matrix Spike (BC13102-MS4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	4.0	107	80-120		26
Matrix Spike Dup (BC13102-MSD1)		**Source: 1102633-12**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	ND	101	80-120	0	26
Matrix Spike Dup (BC13102-MSD2)		**Source: 1102588-03**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.9	97	80-120	0	26
Matrix Spike Dup (BC13102-MSD3)		**Source: 1102597-08**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	0	26
Matrix Spike Dup (BC13102-MSD4)		**Source: 1102612-21**			Prepared & Analyzed: 03/31/11					
Total Alkalinity	130	8.0	2.0	mg/L	120	4.0	98	80-120	9	26
Batch BC13106 - Nitrate 353.2 by seal										
Blank (BC13106-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BC13106-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13106 - Nitrate 353.2 by seal										
LCS (BC13106-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.800	0.04	0.01	mg/L	0.80		100	90-110		
LCS (BC13106-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.827	0.04	0.01	mg/L	0.80		103	90-110		
Matrix Spike (BC13106-MS1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119		
Matrix Spike (BC13106-MS2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.00	0.04	0.01	mg/L	1.0	ND	100	77-119		
Matrix Spike Dup (BC13106-MSD1)		**Source: 1102727-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	3	20
Matrix Spike Dup (BC13106-MSD2)		**Source: 1102742-06**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.02	0.04	0.01	mg/L	1.0	ND	102	77-119	2	20
Batch BC13111 - Ion Chromatography 300.0 Prep										
Blank (BC13111-BLK1)					Prepared & Analyzed: 03/31/11					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13111-BS1)					Prepared & Analyzed: 03/31/11					
Orthophosphate as P	0.853	0.040	0.010	mg/L	0.90		95	85-115		
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115		
Fluoride	0.840	0.040	0.010	mg/L	0.90		93	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13111 - Ion Chromatography 300.0 Prep										
LCS Dup (BC13111-BSD1)					Prepared & Analyzed: 03/31/11					
Sulfate	8.41	0.60	0.20	mg/L	9.0		93	85-115	0	200
Fluoride	0.890	0.040	0.010	mg/L	0.90		99	85-115	6	200
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	1	200
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7		98	85-115	0	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Matrix Spike (BC13111-MS1)		**Source: 1102612-12**			Prepared & Analyzed: 03/31/11					
Nitrate (as N)	1.66	0.04	0.01	mg/L	1.7	0.140	89	85-115		
Sulfate	39.5	0.60	0.20	mg/L	9.0	30.3	102	85-115		
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4	ND	90	85-115		
Orthophosphate as P	1.04	0.040	0.010	mg/L	0.90	0.176	96	85-115		
Fluoride	0.903	0.040	0.010	mg/L	0.90	0.0752	92	85-115		
Matrix Spike (BC13111-MS2)		**Source: 1102765-02**			Prepared & Analyzed: 03/31/11					
Orthophosphate as P	1,010	0.040	0.010	mg/L	900	62.6	105	85-115		
Sulfate	9,850	0.60	0.20	mg/L	9000	1420	94	85-115		
Nitrite (as N)	1,270	0.04	0.01	mg/L	1400	ND	91	85-115		
Fluoride	872	0.040	0.010	mg/L	900	34.8	93	85-115		
Nitrate (as N)	1,600	0.04	0.01	mg/L	1700	14.5	93	85-115		
Batch BC13117 - Digestion for TKN by EPA 351.2										
Blank (BC13117-BLK1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BC13117-BLK2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13117 - Digestion for TKN by EPA 351.2										
LCS (BC13117-BS1)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
LCS (BC13117-BS2)					Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	2.30	0.20	0.05	mg/L	2.5		91	90-110		
Matrix Spike (BC13117-MS1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.20 J5	0.20	0.05	mg/L	2.5	3.92	50	80-120		
Matrix Spike (BC13117-MS2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.18	0.20	0.05	mg/L	2.5	0.747	96	80-120		
Matrix Spike Dup (BC13117-MSD1)		**Source: 1102745-02**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	5.61 J5	0.20	0.05	mg/L	2.5	3.92	66	80-120	8	20
Matrix Spike Dup (BC13117-MSD2)		**Source: 1102742-07**			Prepared: 03/31/11 Analyzed: 04/04/11					
Total Kjeldahl Nitrogen	3.16	0.20	0.05	mg/L	2.5	0.747	95	80-120	0.6	20
Batch BC13118 - Digestion for TKN by EPA 351.2										
Blank (BC13118-BLK1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BC13118-BS1)					Prepared: 03/31/11 Analyzed: 04/02/11					
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5		101	90-110		
Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13123 - Nitrate 353.2 by seal										
Blank (BC13123-BLK2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BC13123-BS1)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.815	0.04	0.01	mg/L	0.80		102	90-110		
LCS (BC13123-BS2)					Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	0.832	0.04	0.01	mg/L	0.80		104	90-110		
Matrix Spike (BC13123-MS1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0	0.0832	101	77-119		
Matrix Spike (BC13123-MS2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	8.89	0.04	0.01	mg/L	1.0	7.92	97	77-119		
Matrix Spike Dup (BC13123-MSD1)		**Source: 1102741-01**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	1.12	0.04	0.01	mg/L	1.0	0.0832	103	77-119	2	20
Matrix Spike Dup (BC13123-MSD2)		**Source: 1102588-04**			Prepared & Analyzed: 03/31/11					
Nitrate+Nitrite (N)	9.02	0.04	0.01	mg/L	1.0	7.92	111	77-119	2	20
Batch BD10106 - Nitrate 353.2 by seal										
Blank (BD10106-BLK1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10106-BLK2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10106 - Nitrate 353.2 by seal										
LCS (BD10106-BS1)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.749	0.04	0.01	mg/L	0.80		94	90-110		
LCS (BD10106-BS2)					Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.765	0.04	0.01	mg/L	0.80		96	90-110		
Matrix Spike (BD10106-MS1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.40	0.04	0.01	mg/L	1.0	0.370	103	77-119		
Matrix Spike (BD10106-MS2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119		
Matrix Spike Dup (BD10106-MSD1)		**Source: 1102727-07**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	1.38	0.04	0.01	mg/L	1.0	0.370	102	77-119	1	20
Matrix Spike Dup (BD10106-MSD2)		**Source: 1102740-01**			Prepared & Analyzed: 04/01/11					
Nitrate+Nitrite (N)	0.976	0.04	0.01	mg/L	1.0	ND	98	77-119	0.01	20
Batch BD10110 - COD prep										
Blank (BD10110-BLK1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10110-BS1)					Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	51	25	10	mg/L	50		102	90-110		
Matrix Spike (BD10110-MS1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10110 - COD prep										
Matrix Spike Dup (BD10110-MSD1)		**Source: 1102635-10**			Prepared & Analyzed: 04/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115	0	32
Batch BD10113 - Ion Chromatography 300.0 Prep										
Blank (BD10113-BLK1)					Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
Chloride	0.050 U	0.20	0.050	mg/L						
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10113-BS1)					Prepared & Analyzed: 04/01/11					
Sulfate	8.42	0.60	0.20	mg/L	9.0		94	85-115		
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4		91	85-115		
Chloride	2.98	0.20	0.050	mg/L	3.0		99	85-115		
Orthophosphate as P	0.860	0.040	0.010	mg/L	0.90		96	85-115		
Nitrate (as N)	1.63	0.04	0.01	mg/L	1.7		96	85-115		
Fluoride	0.888	0.040	0.010	mg/L	0.90		99	85-115		
LCS Dup (BD10113-BSD1)					Prepared & Analyzed: 04/01/11					
Orthophosphate as P	0.864	0.040	0.010	mg/L	0.90		96	85-115	0.5	200
Nitrite (as N)	1.28	0.04	0.01	mg/L	1.4		91	85-115	0.8	200
Fluoride	0.894	0.040	0.010	mg/L	0.90		99	85-115	0.7	200
Sulfate	8.43	0.60	0.20	mg/L	9.0		94	85-115	0.1	200
Nitrate (as N)	1.65	0.04	0.01	mg/L	1.7		97	85-115	1	200
Chloride	2.95	0.20	0.050	mg/L	3.0		98	85-115	1	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10113 - Ion Chromatography 300.0 Prep										
Matrix Spike (BD10113-MS1)		**Source: 1102764-01**			Prepared & Analyzed: 04/01/11					
Chloride	875	0.20	0.050	mg/L	300	584	97	80-120		
Sulfate	946	0.60	0.20	mg/L	900	131	91	85-115		
Nitrate (as N)	170	0.04	0.01	mg/L	170	12.4	93	85-115		
Fluoride	86.6	0.040	0.010	mg/L	90		96	85-115		
Orthophosphate as P	90.5	0.040	0.010	mg/L	90		101	85-115		
Nitrite (as N)	126	0.04	0.01	mg/L	140	ND	90	85-115		
Matrix Spike (BD10113-MS2)		**Source: 1102635-16**			Prepared & Analyzed: 04/01/11					
Nitrite (as N)	1.27	0.04	0.01	mg/L	1.4	ND	91	85-115		
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7	0.0324	93	85-115		
Chloride	4.65	0.20	0.050	mg/L	3.0	1.64	100	80-120		
Fluoride	0.922	0.040	0.010	mg/L	0.90	0.0579	96	85-115		
Orthophosphate as P	0.909	0.040	0.010	mg/L	0.90	ND	101	85-115		
Sulfate	18.2	0.60	0.20	mg/L	9.0	9.20	100	85-115		
Batch BD10114 - Digestion for TKN by EPA 351.2										
Blank (BD10114-BLK1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10114-BLK2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10114-BS1)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10114-BS2)					Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.49	0.20	0.05	mg/L	2.5		98	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10114 - Digestion for TKN by EPA 351.2										
Matrix Spike (BD10114-MS1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.48	0.20	0.05	mg/L	2.5	0.772	107	80-120		
Matrix Spike (BD10114-MS2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.84	0.20	0.05	mg/L	2.5	0.364	98	80-120		
Matrix Spike Dup (BD10114-MSD1)		**Source: 1102777-07**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.45	0.20	0.05	mg/L	2.5	0.772	106	80-120	1	20
Matrix Spike Dup (BD10114-MSD2)		**Source: 1102765-02**			Prepared: 04/01/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.82	0.20	0.05	mg/L	2.5	0.364	97	80-120	0.7	20
Batch BD10201 - Ammonia by SEAL										
Blank (BD10201-BLK1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10201-BLK2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10201-BS1)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50		103	90-110		
LCS (BD10201-BS2)					Prepared & Analyzed: 04/02/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		97	90-110		
Matrix Spike (BD10201-MS1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.062	98	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10201 - Ammonia by SEAL										
Matrix Spike (BD10201-MS2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.068	100	90-110		
Matrix Spike Dup (BD10201-MSD1)		**Source: 1102705-02**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	0.062	94	90-110	3	10
Matrix Spike Dup (BD10201-MSD2)		**Source: 1102742-07**			Prepared & Analyzed: 04/02/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.068	96	90-110	3	10
Batch BD10203 - Ammonia by SEAL										
Blank (BD10203-BLK1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BD10203-BLK2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10203-BS1)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		98	90-110		
LCS (BD10203-BS2)					Prepared & Analyzed: 04/04/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		96	90-110		
Matrix Spike (BD10203-MS1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.051	94	90-110		
Matrix Spike (BD10203-MS2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.047	94	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10203 - Ammonia by SEAL										
Matrix Spike Dup (BD10203-MSD1)		**Source: 1102633-18**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.051	98	90-110	4	10
Matrix Spike Dup (BD10203-MSD2)		**Source: 1102625-10**			Prepared & Analyzed: 04/04/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	0.047	99	90-110	5	10
Batch BD10204 - Nitrate 353.2 by seal										
Blank (BD10204-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10204-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10204-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.766	0.04	0.01	mg/L	0.80		96	90-110		
LCS (BD10204-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.742	0.04	0.01	mg/L	0.80		93	90-110		
Matrix Spike (BD10204-MS1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.986	0.04	0.01	mg/L	1.0	0.0331	95	77-119		
Matrix Spike (BD10204-MS2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	10.0 J5	0.04	0.01	mg/L	1.0	ND	1000	77-119		
Matrix Spike Dup (BD10204-MSD1)		**Source: 1102740-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.982	0.04	0.01	mg/L	1.0	0.0331	95	77-119	0.4	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10204 - Nitrate 353.2 by seal										
Matrix Spike Dup (BD10204-MSD2)		**Source: 1102740-03**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	12.7 J5	0.04	0.01	mg/L	1.0	ND	NR	77-119	24	20
Batch BD10415 - Digestion for TKN by EPA 351.2										
Blank (BD10415-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10415-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10415-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.69	0.20	0.05	mg/L	2.5		106	90-110		
LCS (BD10415-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5		107	90-110		
Matrix Spike (BD10415-MS1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.34	0.20	0.05	mg/L	2.5	0.695	104	80-120		
Matrix Spike (BD10415-MS2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.68	0.20	0.05	mg/L	2.5	0.966	107	80-120		
Matrix Spike Dup (BD10415-MSD1)		**Source: 1102831-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.44	0.20	0.05	mg/L	2.5	0.695	108	80-120	3	20
Matrix Spike Dup (BD10415-MSD2)		**Source: 1102786-02**			Prepared: 04/04/11 Analyzed: 04/05/11					
Total Kjeldahl Nitrogen	3.65	0.20	0.05	mg/L	2.5	0.966	106	80-120	0.9	20

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10419 - BOD										
Blank (BD10419-BLK1)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BD10419-BS1)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	207	2	2	mg/L	200		104	85-115		
LCS (BD10419-BS2)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	207	2	2	mg/L	200		103	85-115		
LCS (BD10419-BS3)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	206	2	2	mg/L	200		103	85-115		
LCS (BD10419-BS4)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	213	2	2	mg/L	200		106	85-115		
LCS (BD10419-BS5)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	221	2	2	mg/L	200		111	85-115		
LCS Dup (BD10419-BSD1)					Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	206	2	2	mg/L	200		103	85-115	0.5	10
Duplicate (BD10419-DUP1)		**Source: 1102868-03**			Prepared: 04/04/11 Analyzed: 04/09/11					
Carbonaceous BOD	2 U	2	2	mg/L		ND				25
Batch BD10421 - TOC prep										
Blank (BD10421-BLK1)					Prepared & Analyzed: 04/04/11					
Total Organic Carbon	0.50 U	1.0	0.50	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10421 - TOC prep										
LCS (BD10421-BS1)					Prepared & Analyzed: 04/04/11					
Total Organic Carbon	10.1	1.0	0.50	mg/L	10		101	90-110		
Matrix Spike (BD10421-MS1)		**Source: 1102588-02**			Prepared & Analyzed: 04/04/11					
Total Organic Carbon	13.0	1.0	0.50	mg/L	10	3.62	94	85-115		
Matrix Spike Dup (BD10421-MSD1)		**Source: 1102588-02**			Prepared & Analyzed: 04/04/11					
Total Organic Carbon	12.8	1.0	0.50	mg/L	10	3.62	92	85-115	2	10
Batch BD10424 - Ion Chromatography 300.0 Prep										
Blank (BD10424-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate (as N)	0.01 U	0.04	0.01	mg/L						
Sulfate	0.20 U	0.60	0.20	mg/L						
Nitrite (as N)	0.01 U	0.04	0.01	mg/L						
Fluoride	0.010 U	0.040	0.010	mg/L						
Orthophosphate as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10424-BS1)					Prepared & Analyzed: 04/05/11					
Sulfate	8.11	0.60	0.20	mg/L	9.0		90	85-115		
Orthophosphate as P	0.869	0.040	0.010	mg/L	0.90		97	85-115		
Fluoride	0.832	0.040	0.010	mg/L	0.90		92	85-115		
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4		90	85-115		
Nitrate (as N)	1.59	0.04	0.01	mg/L	1.7		94	85-115		
LCS Dup (BD10424-BSD1)					Prepared & Analyzed: 04/05/11					
Orthophosphate as P	0.935	0.040	0.010	mg/L	0.90		104	85-115	7	200
Sulfate	8.22	0.60	0.20	mg/L	9.0		91	85-115	1	200
Nitrate (as N)	1.62	0.04	0.01	mg/L	1.7		95	85-115	2	10
Nitrite (as N)	1.26	0.04	0.01	mg/L	1.4		90	85-115	0	200
Fluoride	0.838	0.040	0.010	mg/L	0.90		93	85-115	0.7	200

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10424 - Ion Chromatography 300.0 Prep										
Matrix Spike (BD10424-MS1)		**Source: 1102567-07**			Prepared & Analyzed: 04/05/11					
Orthophosphate as P	0.873	0.040	0.010	mg/L	0.90	0.0311	94	85-115		
Sulfate	12.6	0.60	0.20	mg/L	9.0	3.42	102	85-115		
Fluoride	1.69	0.040	0.010	mg/L	0.90	0.722	108	85-115		
Nitrate (as N)	1.82	0.04	0.01	mg/L	1.7	0.0688	103	85-115		
Nitrite (as N)	1.43	0.04	0.01	mg/L	1.4	ND	102	85-115		
Matrix Spike (BD10424-MS2)		**Source: 1102846-03**			Prepared & Analyzed: 04/05/11					
Sulfate	85.8 +O	0.60	0.20	mg/L	9.0	79.4	71	85-115		
Fluoride	1.33	0.040	0.010	mg/L	0.90	0.515	91	85-115		
Orthophosphate as P	0.937	0.040	0.010	mg/L	0.90	ND	104	85-115		
Nitrite (as N)	1.41	0.04	0.01	mg/L	1.4	ND	101	85-115		
Nitrate (as N)	2.78	0.04	0.01	mg/L	1.7	0.869	112	85-115		
Batch BD10434 - TS prep										
Blank (BD10434-BLK1)					Prepared: 04/04/11 Analyzed: 04/06/11					
Total Solids	0.01 U	0.01	0.01	% by wt						
Duplicate (BD10434-DUP1)		**Source: 1102873-05**			Prepared: 04/04/11 Analyzed: 04/06/11					
Total Solids	87.3	0.01	0.01	% by wt		87.9			0.7	10
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10437 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10437-BLK2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10437-BS1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.506	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BD10437-BS2)					Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.542	0.040	0.010	mg/L	0.50		108	90-110		
Matrix Spike (BD10437-MS1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.966	0.040	0.010	mg/L	0.50	0.426	108	75-125		
Matrix Spike (BD10437-MS2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125		
Matrix Spike Dup (BD10437-MSD1)		**Source: 1102612-12**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.426	106	75-125	1	25
Matrix Spike Dup (BD10437-MSD2)		**Source: 1102777-07**			Prepared: 04/04/11 Analyzed: 04/05/11					
Phosphorous - Total as P	0.565	0.040	0.010	mg/L	0.50	0.0811	97	75-125	0.1	25
Batch BD10511 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10511-BLK1)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10511-BLK2)					Prepared: 04/05/11 Analyzed: 04/06/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10511 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BD10511-BS1)					Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.455	0.040	0.010	mg/L	0.50		91	90-110		
LCS (BD10511-BS2)					Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.465	0.040	0.010	mg/L	0.50		93	90-110		
Matrix Spike (BD10511-MS1)		**Source: 1102750-01**			Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.608	0.040	0.010	mg/L	0.50	ND	122	75-125		
Matrix Spike (BD10511-MS2)		**Source: 1102750-02**			Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.477	0.040	0.010	mg/L	0.50	ND	95	75-125		
Matrix Spike Dup (BD10511-MSD1)		**Source: 1102750-01**			Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.596	0.040	0.010	mg/L	0.50	ND	119	75-125	2	25
Matrix Spike Dup (BD10511-MSD2)		**Source: 1102750-02**			Prepared: 04/05/11	Analyzed: 04/06/11				
Phosphorous - Total as P	0.515	0.040	0.010	mg/L	0.50	ND	103	75-125	8	25
Batch BD10518 - alkalinity										
Blank (BD10518-BLK1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BD10518-BLK2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10518 - alkalinity										
LCS (BD10518-BS1)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
LCS (BD10518-BS2)					Prepared & Analyzed: 04/05/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD10518-MS1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	92	80-120		26
Matrix Spike (BD10518-MS2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	150	8.0	2.0	mg/L	120	12	109	80-120		26
Matrix Spike Dup (BD10518-MSD1)		**Source: 1102588-01**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	6.9	93	80-120	0.8	26
Matrix Spike Dup (BD10518-MSD2)		**Source: 1102612-10**			Prepared & Analyzed: 04/05/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	12	100	80-120	8	26
Batch BD10523 - Nitrate 353.2 by seal										
Blank (BD10523-BLK1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BD10523-BLK2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BD10523-BS1)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.778	0.04	0.01	mg/L	0.80		97	90-110		

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10523 - Nitrate 353.2 by seal										
LCS (BD10523-BS2)					Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.810	0.04	0.01	mg/L	0.80		101	90-110		
Matrix Spike (BD10523-MS1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.985	0.04	0.01	mg/L	1.0	ND	99	77-119		
Matrix Spike (BD10523-MS2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.958	0.04	0.01	mg/L	1.0	ND	96	77-119		
Matrix Spike Dup (BD10523-MSD1)		**Source: 1102635-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0	ND	101	77-119	2	20
Matrix Spike Dup (BD10523-MSD2)		**Source: 1102750-02**			Prepared & Analyzed: 04/05/11					
Nitrate+Nitrite (N)	0.956	0.04	0.01	mg/L	1.0	ND	96	77-119	0.3	20
Batch BD10605 - COD prep										
Blank (BD10605-BLK1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BD10605-BS1)					Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	55	25	10	mg/L	50		110	90-110		
Matrix Spike (BD10605-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	61	25	10	mg/L	50	14	94	85-115		
Matrix Spike Dup (BD10605-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Chemical Oxygen Demand	65	25	10	mg/L	50	14	102	85-115	6	32

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10607 - Ion Chromatography 300.0 Prep										
Blank (BD10607-BLK1)					Prepared & Analyzed: 04/06/11					
Chloride	0.050 U	0.20	0.050	mg/L						
LCS (BD10607-BS1)					Prepared & Analyzed: 04/06/11					
Chloride	2.76	0.20	0.050	mg/L	3.0		92	85-115		
LCS Dup (BD10607-BSD1)					Prepared & Analyzed: 04/06/11					
Chloride	2.75	0.20	0.050	mg/L	3.0		92	85-115	0.4	200
Matrix Spike (BD10607-MS1)		**Source: 1102635-18**			Prepared & Analyzed: 04/06/11					
Sulfate	113	0.60	0.20	mg/L	90	28.5	94	85-115		
Nitrite (as N)	13.2	0.04	0.01	mg/L	14	ND	94	85-115		
Nitrate (as N)	16.9	0.04	0.01	mg/L	17	0.840	94	85-115		
Fluoride	13.0	0.040	0.010	mg/L	9.0	4.90	90	85-115		
Chloride	75.6	0.20	0.050	mg/L	30	47.7	93	80-120		
Matrix Spike (BD10607-MS2)		**Source: 1102887-02**			Prepared & Analyzed: 04/06/11					
Chloride	103	0.20	0.050	mg/L	30	74.6	95	80-120		
Batch BD10610 - TSS prep										
Blank (BD10610-BLK1)					Prepared & Analyzed: 04/06/11					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BD10610-BS1)					Prepared & Analyzed: 04/06/11					
Total Suspended Solids	51.5	1	1	mg/L	50		103	85-115		
Duplicate (BD10610-DUP1)		**Source: 1102567-01**			Prepared & Analyzed: 04/06/11					
Total Suspended Solids	6.00	1	1	mg/L		6.50			8	30

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10610 - TSS prep										
Duplicate (BD10610-DUP2)		**Source: 1102867-04**			Prepared & Analyzed: 04/06/11					
Total Suspended Solids	47.0	1	1	mg/L		45.0			4	30
Batch BD10624 - Digestion for TKN by EPA 351.2										
Blank (BD10624-BLK1)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BD10624-BLK2)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BD10624-BS1)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.64	0.20	0.05	mg/L	2.5		104	90-110		
LCS (BD10624-BS2)					Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5		99	90-110		
Matrix Spike (BD10624-MS1)		**Source: 1102635-02**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.57	0.20	0.05	mg/L	2.5	ND	101	80-120		
Matrix Spike (BD10624-MS2)		**Source: 1102750-01**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.52	0.20	0.05	mg/L	2.5	ND	100	80-120		
Matrix Spike Dup (BD10624-MSD1)		**Source: 1102635-02**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.45	0.20	0.05	mg/L	2.5	ND	97	80-120	5	20
Matrix Spike Dup (BD10624-MSD2)		**Source: 1102750-01**			Prepared: 04/06/11 Analyzed: 04/07/11					
Total Kjeldahl Nitrogen	2.68	0.20	0.05	mg/L	2.5	ND	106	80-120	6	20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10740 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BD10740-BLK1)					Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BD10740-BLK2)					Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BD10740-BS1)					Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.483	0.040	0.010	mg/L	0.50		97	90-110		
LCS (BD10740-BS2)					Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.474	0.040	0.010	mg/L	0.50		95	90-110		
Matrix Spike (BD10740-MS1)		**Source: 1102895-07**			Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.486	0.040	0.010	mg/L	0.50	0.0399	89	75-125		
Matrix Spike (BD10740-MS2)		**Source: 1102927-07**			Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.522	0.040	0.010	mg/L	0.50	ND	104	75-125		
Matrix Spike Dup (BD10740-MSD1)		**Source: 1102895-07**			Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.496	0.040	0.010	mg/L	0.50	0.0399	91	75-125	2	25
Matrix Spike Dup (BD10740-MSD2)		**Source: 1102927-07**			Prepared: 04/07/11 Analyzed: 04/08/11					
Phosphorous - Total as P	0.530	0.040	0.010	mg/L	0.50	ND	106	75-125	2	25
Batch BD10901 - Ammonia by SEAL										
Blank (BD10901-BLK1)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10901 - Ammonia by SEAL										
Blank (BD10901-BLK2)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BD10901-BS1)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		101	90-110		
LCS (BD10901-BS2)					Prepared & Analyzed: 04/08/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50		103	90-110		
Matrix Spike (BD10901-MS1)		**Source: 1102750-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50	ND	102	90-110		
Matrix Spike (BD10901-MS2)		**Source: 1102903-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50	ND	109	90-110		
Matrix Spike Dup (BD10901-MSD1)		**Source: 1102750-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50	ND	100	90-110	2	10
Matrix Spike Dup (BD10901-MSD2)		**Source: 1102903-01**			Prepared & Analyzed: 04/08/11					
Ammonia as N	0.53	0.010	0.005	mg/L	0.50	ND	107	90-110	2	10
Batch BD11133 - alkalinity										
Blank (BD11133-BLK1)					Prepared & Analyzed: 04/11/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Bicarbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Carbonate Alkalinity	2.0 U	8.0	2.0	mg/L						
Hydroxide Alkalinity	2.0 U	8.0	2.0	mg/L						
Phenolphthalein Alkalinity	2.0 U	8.0	2.0	mg/L						

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD11133 - alkalinity										
LCS (BD11133-BS1)					Prepared & Analyzed: 04/11/11					
Total Alkalinity	130	8.0	2.0	mg/L	120		101	90-110		20
Matrix Spike (BD11133-MS1)		**Source: 1102567-01**			Prepared & Analyzed: 04/11/11					
Total Alkalinity	210	8.0	2.0	mg/L	120	80	101	80-120		26
Matrix Spike Dup (BD11133-MSD1)		**Source: 1102567-01**			Prepared & Analyzed: 04/11/11					
Total Alkalinity	210	8.0	2.0	mg/L	120	80	101	80-120	0	26

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Inorganic, Dissolved - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13112 - DOC prep										
Blank (BC13112-BLK1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BC13112-BS1)					Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	9.99	1.0	0.50	mg/L	10		100	90-110		
Duplicate (BC13112-DUP1)		**Source: 1102597-01**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	3.21	1.0	0.50	mg/L		3.17			1	15
Matrix Spike (BC13112-MS1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.8	1.0	0.50	mg/L	10	1.34	105	85-125		
Matrix Spike Dup (BC13112-MSD1)		**Source: 1102612-20**			Prepared & Analyzed: 03/31/11					
Dissolved Organic Carbon	11.9	1.0	0.50	mg/L	10	1.34	106	85-125	0.8	25
Batch BD10638 - DOC prep										
Blank (BD10638-BLK1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	0.50 U	1.0	0.50	mg/L						
LCS (BD10638-BS1)					Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	10.4	1.0	0.50	mg/L	10		104	90-110		
Matrix Spike (BD10638-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.2	1.0	0.50	mg/L	10	1.06	102	85-125		
Matrix Spike Dup (BD10638-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/06/11					
Dissolved Organic Carbon	11.3	1.0	0.50	mg/L	10	1.06	103	85-125	0.8	25

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BC13002 - Metals Preparation for EPA Method 200.7										
Blank (BC13002-BLK1)					Prepared & Analyzed: 03/30/11					
Iron	0.036 I	0.10	0.020	mg/L						
Potassium	0.036 I	0.050	0.010	mg/L						
Magnesium	0.048 I	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Sodium	0.31	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Calcium	0.034 I	0.050	0.010	mg/L						
LCS (BC13002-BS1)					Prepared & Analyzed: 03/30/11					
Magnesium	22	0.050	0.010	mg/L	20		108	85-115		
Potassium	20	0.050	0.010	mg/L	20		102	85-115		
Manganese	0.41	0.010	0.0010	mg/L	0.40		103	85-115		
Iron	8.3	0.10	0.020	mg/L	8.0		104	85-115		
Calcium	21	0.050	0.010	mg/L	20		106	85-115		
Sodium	21	0.050	0.010	mg/L	20		103	85-115		
Boron	0.40	0.10	0.050	mg/L	0.40		99	85-115		
Matrix Spike (BC13002-MS1)		**Source: 1102032-01**			Prepared & Analyzed: 03/30/11					
Potassium	23	0.050	0.010	mg/L	20	2.2	102	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	102	70-130		
Sodium	23	0.050	0.010	mg/L	20	3.0	102	70-130		
Magnesium	22	0.050	0.010	mg/L	20	0.70	105	70-130		
Iron	8.2	0.10	0.020	mg/L	8.0	0.034	101	70-130		
Calcium	27	0.050	0.010	mg/L	20	5.4	110	70-130		
Boron	0.41	0.10	0.050	mg/L	0.40	ND	104	70-130		
Matrix Spike Dup (BC13002-MSD1)		**Source: 1102032-01**			Prepared & Analyzed: 03/30/11					
Sodium	24	0.050	0.010	mg/L	20	3.0	105	70-130	3	30
Magnesium	22	0.050	0.010	mg/L	20	0.70	106	70-130	1	30
Potassium	23	0.050	0.010	mg/L	20	2.2	106	70-130	4	30
Calcium	28	0.050	0.010	mg/L	20	5.4	114	70-130	3	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	ND	103	70-130	0.7	30
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130	1	30
Iron	8.3	0.10	0.020	mg/L	8.0	0.034	103	70-130	1	30

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Blank (BD10407-BLK1)					Prepared & Analyzed: 04/05/11					
Sodium	0.010 U	0.050	0.010	mg/L						
Manganese	0.0010 U	0.010	0.0010	mg/L						
Iron	0.020 U	0.10	0.020	mg/L						
Calcium	0.016 I	0.050	0.010	mg/L						
Boron	0.050 U	0.10	0.050	mg/L						
Potassium	0.010 U	0.050	0.010	mg/L						
Magnesium	0.010 U	0.050	0.010	mg/L						
LCS (BD10407-BS1)					Prepared & Analyzed: 04/05/11					
Calcium	21	0.050	0.010	mg/L	20		105	85-115		
Sodium	21	0.050	0.010	mg/L	20		105	85-115		
Iron	8.5	0.10	0.020	mg/L	8.0		106	85-115		
Potassium	21	0.050	0.010	mg/L	20		104	85-115		
Manganese	0.43	0.010	0.0010	mg/L	0.40		107	85-115		
Boron	0.41	0.10	0.050	mg/L	0.40		102	85-115		
Magnesium	21	0.050	0.010	mg/L	20		107	85-115		
Matrix Spike (BD10407-MS1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Sodium	23	0.050	0.010	mg/L	20	2.9	99	70-130		
Manganese	0.55	0.010	0.0010	mg/L	0.40	0.15	99	70-130		
Calcium	35	0.050	0.010	mg/L	20	16	93	70-130		
Magnesium	25	0.050	0.010	mg/L	20	4.2	102	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	104	70-130		
Iron	8.3	0.10	0.020	mg/L	8.0	0.039	103	70-130		
Potassium	23	0.050	0.010	mg/L	20	3.8	97	70-130		
Matrix Spike (BD10407-MS2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Iron	8.5	0.10	0.020	mg/L	8.0	0.51	99	70-130		
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	102	70-130		
Potassium	21	0.050	0.010	mg/L	20	1.2	98	70-130		
Calcium	66 +O	0.050	0.010	mg/L	20	54	65	70-130		
Sodium	34	0.050	0.010	mg/L	20	16	91	70-130		
Boron	0.42	0.10	0.050	mg/L	0.40	ND	105	70-130		
Magnesium	23	0.050	0.010	mg/L	20	3.4	99	70-130		

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Metals - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10407 - Metals Preparation for EPA Method 200.7										
Matrix Spike Dup (BD10407-MSD1)		**Source: 1102625-24**			Prepared & Analyzed: 04/05/11					
Calcium	38	0.050	0.010	mg/L	20	16	106	70-130	7	30
Manganese	0.57	0.010	0.0010	mg/L	0.40	0.15	104	70-130	3	30
Sodium	24	0.050	0.010	mg/L	20	2.9	105	70-130	5	30
Iron	8.5	0.10	0.020	mg/L	8.0	0.039	106	70-130	3	30
Potassium	24	0.050	0.010	mg/L	20	3.8	103	70-130	5	30
Magnesium	26	0.050	0.010	mg/L	20	4.2	107	70-130	3	30
Boron	0.44	0.10	0.050	mg/L	0.40	ND	109	70-130	5	30
Matrix Spike Dup (BD10407-MSD2)		**Source: 1102803-04**			Prepared & Analyzed: 04/05/11					
Magnesium	24	0.050	0.010	mg/L	20	3.4	103	70-130	3	30
Potassium	21	0.050	0.010	mg/L	20	1.2	100	70-130	3	30
Iron	8.7	0.10	0.020	mg/L	8.0	0.51	103	70-130	3	30
Manganese	0.41	0.010	0.0010	mg/L	0.40	0.0027	103	70-130	1	30
Sodium	35	0.050	0.010	mg/L	20	16	98	70-130	4	30
Calcium	70 +O	0.050	0.010	mg/L	20	54	81	70-130	5	30
Boron	0.43	0.10	0.050	mg/L	0.40	ND	109	70-130	3	30

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Microbiology - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BD10427 - mCOLI-MF										
Blank (BD10427-BLK1)					Prepared: 04/04/11 Analyzed: 04/05/11					
Total Coliform	1 U	1		CFU/100 ml						

SOUTHERN ANALYTICAL LABORATORIES, INC.
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* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limts and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.
Questions regarding this report should be directed to Client Services at 813-855-1844.

Z	Too many colonies were present for accurate counting.
J5	Matrix spike of this sample was outside typical range. All other QC criteria were acceptable.
+O	Matrix spike source sample was over the reccommended range for the method.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102635

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	250ml P, HNO_3 B, Ca, Fe, K, Na, Mn, Mg No. of Containers (Total per each location)
01	STE-EX Pump Tank ***	4/4/11	1140	GW		X	* 1	** 1			6.8	0.30	830	26.4	1
02	Field Blank-DI	4/4/11	0900	GW		X	1	1			6.1	8.55	1.19	21.5	
03	Field Blank-Tap	4/4/11	1030	GW		X	1	1			7.7	8.13	432	23.6	
04	Equipment Rinsate	4/4/11	1050	GW		X	1	1			6.0	7.90	1.38	27.5	
05	PZ04-BKG-9-D	3/31/11	0844	GW		X	1	1		1	5.4	3.84	78.2	21.7	
06	PZ24-BKG-26-D	033111	0819	GW		X	1	1	2	1	5.0	0.50	270.9	23.1	
07	DP-AA9-27-D	033011	0933 ~~0855~~ PdA	GW		X	1	1			~~5.0~~ 5.2	0.82 ~~0.44~~	2888 ~~699~~	~~23.0~~	239 PdA
08	DP-D07-5-D	3/30/11	1115	GW		X	1	1			6.10	4.86	324	24.1	
09	~~DP-E02-6-D~~ DP-E[illegible]-10-D SH	032911	0920	GW		X	1	1			5.3	2.21	211.3	21.3	
10	DP-E12-15-D	033011	0755 SH	GW		X	1	1			5.0	0.60	460	21.9	
11	DP-F09-5-D	032911	1330	GW		X	1	1			6.6	1.15	141.1	24.8	
12	DP-F11-~~15~~ 11-D (Dup was switched from DP-F11-15-D to DP-F11-11-D)	033011	0805	GW		X	1	1			5.3	0.90	412.7	21.4	

Containers Prepared/ Relinquished:	Date/Time: 1630 03-27-11	Received:	Date/Time: 0500 032911
Relinquished:	Date/Time: 1600 03-29-11	Received:	Date/Time: 3/29/11 1600
Relinquished:	Date/Time: 1830 03-30-11	Received:	Date/Time:
Relinquished:	Date/Time: 1430 3/31/11	Received:	Date/Time:
Relinquished: courier	Date/Time: 1315 4/4/11	Received:	Date/Time:

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp_____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks

* 1LP,C = Alk, CBOD, TS, TSS, Cl, F, OP, SO_4, NOx 300

** – TP

*** – 125 mlP, sterile, $Na_2S_2O_3$ m-Colibluer 24

1102635

9,11

7,8,10,12

5,6,13,15 19

02,03 04,01

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 fax 813-855-2218

SAL Project No. 1102635

Client Name: Hazan and Sawyer

Contact / Phone: Josephin Edeback-Hirst 813-630-4498

jedeback@hazanandsawyer.com

Project Name / Location: GCREC Mound Groundwater Analyses

Samplers: (Signature)

Matrix Codes: DW-Drinking Water WW-Wastewater SW-SurfaceWater SL-Sludge SO-Soil GW-Groundwater SA-Saline Water O-Other R-Reagent Water

PARAMETER / CONTAINER DESCRIPTION

SAL Use Only Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250ml P, Cool Alkalinity	250 ml P, H_2SO_4 TKN, NH_3, NOx	40 ml aV, HCl TOC	250ml aG, Cool DOC	Field pH	Field DO	Field Cond	Field Temp	~~No. of Containers (Total per each location)~~
13	DP-F15-20-D	3/31/11	940	GW		X	1	1			5.4	0.78	383	22.3	
14	DP-G12-18-D	3/31/11	900	GW		X	1	1			5.2	1.40	494	22.2	
15	DP-H12-5-D	3/31/11	905	GW		X	1	1			5.6	0.94	188.5	21.9	
16	DP-K12-5-D	4/1/11	1010	GW		X	1	1			5.6	1.40	59.3	22.3	
17	DP-O10-24-D	4/1/11	1402	GW		X	1	1			5.1	0.95	361	24.2	
18	STE-D	4/4/11	1150	GW		X	1	1			6.8	0.30	830	26.4	
19	PZ-25	3/31/11	1125	GW		X	1	1			6.0	5.65	770	22.0	

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	1650 03-27-11		0500 032911
Relinquished: ~~Courier~~ (5,6,13-15,19)	1430 3/31/11		
Relinquished: Courier (18)			
Relinquished:			
Relinquished:			

Seal intact? Y N (N/A)

Samples intact upon arrival? (Y) N N/A

Received on ice? Temp____ (Y) N N/A

Proper preservatives indicated? (Y) N N/A

Rec'd within holding time? (Y) N N/A

Volatiles rec'd w/out headspace Y N (N/A)

Proper containers used? (Y) N N/A

Instructions / Remarks

1102635

Chain of Custody.xls
Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	1102635	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ04-BKG-9-D	Sample ID	05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.85	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.11	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.13	1/4 WELL VOLUME		3 WELL VOLUMES	0.40	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	9.0	FINAL TUBING LEGNTH IN WELL (FEET)	9.0	PURGE TIME START	0835	PURGE TIME END		TOTAL PURGED	
INST. ID	X	X	X	X	SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0838	0.30	0.30	0.10	7.01	5.4	21.7	81.8	3.64	6.26	Clear	None
0841	0.30	0.60	0.10	|	5.4	21.7	80.8	3.91	4.11	|	|
0844	0.30	0.90	0.10	|	5.4	21.7	78.2	3.84	2.02	|	|

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)		9.0	SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	0850	SAMPLING ENDED	0850	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	(Y) N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Rain Past 24 hrs						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111	SAL Project #	11026035	Project Name	GCREC Mound Groundwater Analyses
Well Number	PZ24-BKG-26-D	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	2.0	WELL CAPACITY (gal/ft)	0.1632	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	30.3	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	3.35	1/4 WELL VOLUME	0.83	3 WELL VOLUMES		5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	15.0	FINAL TUBING LEGNTH IN WELL (FEET)	15.0	PURGE TIME START	0740	PURGE TIME END	0813 ~~0808~~ st	TOTAL PURGED	6.40
INST. ID	X	X	X	X	SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	X	X

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
0757	3.40	3.40	0.20	10.21	5.0	23.0	269.6	0.91	147	Cloudy	NONE
0803	1.00	4.40	0.20	10.21	5.0	23.1	270.1	0.84	92.5		
0808	1.00	5.40	0.20	10.21	5.0	23.1	270.3	0.62	59.6		
0813	1.00	6.40	0.20	10.21	5.0	23.1	270.9	0.50	42.3		

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)	15.0		SAMPLE PUMP FLOW RATE (mL/min)	0.20
SAMPLING INITIATED	0819	SAMPLING ENDED	0819	FIELD CLEANED	(Y) N	CLEANING STEPS	DI
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	(Y) N	VOC COLLECTED BY REVERSE FLOW?	Y N N/A
SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A						
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED					
WEATHER CONDITIONS	Windy - Drizzle / Rain Past 24 hrs						
COMMENTS							

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	Josefin Edeback-Hurst, PE
				Phone:	813-630-4498
Date Sampled	033111 PZ-25	SAL Project #	1102635	Project Name	GCREC Mound Groundwater Analyses
Well Number	~~PZ13 F04-8~~ SH	Sample ID	19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	11.62	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	13.57 ~~13.62~~	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)

WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =

ONE WELL VOLUME	0.039	1/4 WELL VOLUME		3 WELL VOLUMES	0.117	5 WELL VOLUMES	

EQUIPMENT VOLUME = PUMP VOLUME + (TUBING CAPACITY X TUBING LEGNTH) + FLOW CELL VOLUME

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)	13.57	FINAL TUBING LEGNTH IN WELL (FEET)	13.57	PURGE TIME START	1115	PURGE TIME END	1124	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-03	SAL-SAM-65-03	SAL-SAM-63-03	SAL-SAM-55-03	SAL-SAM-02	

TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1118	0.30	0.30	0.10	12.58	6.0	22.0	774	5.74	56.8	cloudy	none
1121	0.30	0.60	0.10	12.58	6.0	22.0	774	5.68	47.4	cloudy	"
1124	0.30	0.90	0.10	12.58	6.0	22.0	770	5.65	19.2	clear	"

Well Capacity (gallons/foot): 0.75"=0.02, 1.25"=0.06, 2"=0.16, 3"=0.37, 4"=0.65, 5"=1.02, 6"=1.47, 12"5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		13.57	SAMPLE PUMP FLOW RATE (mL/min)	0.10	
SAMPLING INITIATED	1125	SAMPLING ENDED	1125	FIELD CLEANED	(Y) N	CLEANING STEPS	DI Rinse		
FIELD FILTERED?	Y N	FILTER SIZE (µm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N N/A	SEMI-VOLS COLLECTED THROUGH TRAP?	Y N N/A
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED							
WEATHER CONDITIONS	windy - Thunder Storm - Rain								
COMMENTS									

PUMP CODES: PP=Peristaltic Pump, GP= Submersible Grundfos Pump, IBP= In-place Bladder Pump

TUBING MATERIAL CODES: PP= Polypropylene, PE= Polyethylene, NP= Non-inert Plastic, TL= Teflon Lined, TT= Teflon

Reviewed By: Date:

Revision Date 09/25/09