FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.25

C-HS2 Monitoring Data Summary Report No. 1

Progress Report

September 2011

4423-001

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In association with

SCHOOL OF MINES 1874 COLORADO

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Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.25
PROGRESS REPORT

C-HS2 Monitoring
Data Summary Report No. 1

Prepared for:

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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 Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the field sites. The Task C.23 Instrumentation of C-HS2 mound system and plume documents the test area design, number and location of monitoring points, and preliminary field parameters from monitoring points for this Seminole County, Florida field site, and preliminary sample collection and analyses.

2.0 Purpose

This data documents data that was collected in the first C-HS2 mound monitoring and sampling event which was conducted July 25, 2011 through July 27, 2011. The corresponding sample event report was submitted as C-HS2 Sample Event Report No. 1, July 2011, as a deliverable under Task C.24. The monitoring event consisted of measurement of household water meters, groundwater elevation measured within the standpipe piezometers, measurement of field parameters, and collection of effluent and groundwater samples and their analyses in a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The C-HS2 field site is located in Seminole County, FL in a neighborhood less than a mile from the Little Wekiva River. The onsite sewage treatment and disposal system (OSTDS) for the residence consists of a 1,050 gallon fiberglass baffled septic tank located adjacent to the drainfield mound and has a gravity fed standard bed mounded drainfield.

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3.2 Monitoring and Sampling Locations and Identification

A sampling grid for groundwater screening was developed downgradient of the OSTDS as depicted in Figure 1. A 10-foot by 40-foot grid was staked then locations surveyed (x, y, and z). Transect lines A through D were located perpendicular to the groundwater flow direction (southwest) and increase (higher letter identification) moving southward from the mound. Transect lines 0 through 15 were located parallel to the groundwater flow direction and increase moving from southeast to northwest. Groundwater monitoring points were installed in June and July 2011. One type of monitoring point was installed using either hand or drilling methods: standpipe piezometers. Standpipe piezometers consist of either ¾-inch or 2-inch diameter PVC with a 1-foot, 2-foot, or 4-foot screen (0.010-inch slots) and riser extending to the ground surface (refer to the Task C QAPP and Task C.23 C-HS2 Instrumentation Report for additional detail).

Each monitoring location was assigned a unique identification indicating grid location (self explanatory), and depth below ground surface (bottom of the drive point or well screen in feet). For example A09-7 is a standpipe piezometer sampler located on the grid at A09 at 7-feet below ground surface. A schematic of the C-HS2 monitoring network is shown in Figure 1. A complete list of all installed standpipe piezometers is included in Appendix A. A total of 62 specific monitoring locations were sampled during this first C-HS2 sampling event.

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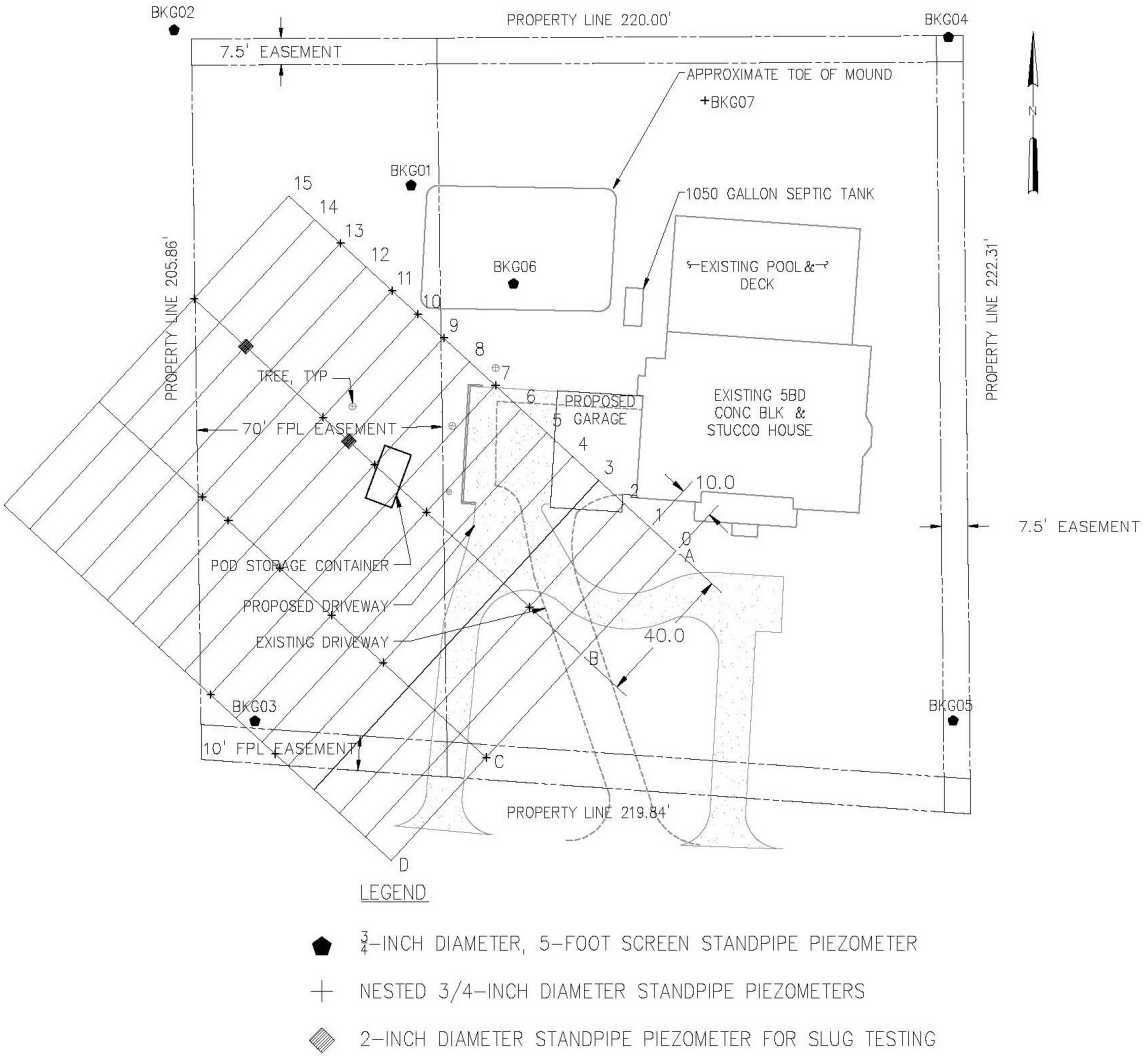

Figure 1
C-HS2 Monitoring Network

3.3 Operational Monitoring

The water meter for the house site was read and recorded. The residence has a garden with irrigation thus the actual wastewater flow can only be estimated. A weather station (Sheffield in the Crossings, Longwood, FL) is located approximately 5 miles from the

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site. Data from this weather station is available at the following website: http://www.wunderground.com.

3.4 Soil Characteristics

Continuous soil samples were collected using the direct push method at grid locations A09, A11, B08 and C10 during the groundwater monitoring network instrumentation. The soil descriptions are provided in Appendix B. The samples were sent to a soil laboratory for analysis.

3.5 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and directions of flow. Groundwater levels were measured using a flat tape water level meter graduated in feet (measurement accuracy is 0.01 feet). The groundwater level within all 65 standpipe piezometers was measured for this sampling event.

3.6 Water Quality Sample Collection and Analyses

Groundwater and septic tank effluent (STE) were collected July 25 through July 27, 2011 for water quality analysis. A sample was collected from the septic tank outlet filter to represent the effluent delivered to the drainfield. A peristaltic pump was used to collect STE directly into the analysis-specific containers. Groundwater samples were obtained using a peristaltic pump, which was attached directly to dedicated standpipe piezometer tubing. Samples were collected after sufficient purging (the sample was clear and pH and conductivity readings had stabilized) had occurred. Field parameters were then recorded.

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. Chain of custody forms were used to document the transfer of samples from field personnel to the analytical laboratory.

In addition, field sample duplicates were collected immediately subsequent to the regular samples. The field duplicate samples taken include:

- C-HS2-STE
- C-HS2-A09-7
- C-HS2-C00-7
- C-HS2-C06-5

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- C-HS2-C08-5
- C-HS2-D07-6

Field parameters (pH, specific conductance, temperature (Temp), and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed in an overflowing plastic beaker 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), nitrate/nitrite nitrogen (NO_X-N), chemical oxygen demand (COD), and total phosphorus (TP). Additionally, the STE sample was analyzed for carbonaceous biological oxygen demand ($CBOD_5$), total suspended solids (TSS), and total solids % by weight (TS), but not COD. All analyses were performed by an independent and fully certified analytical laboratory (Southern Analytical Laboratory). Table 1 lists the analytical parameters, analytical methods, and detection limits for these analyses.

Table 1
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
Chemical Oxygen Demand (COD)	EPA 410.4	10 mg/L
Total Kjeldahl Nitrogen (TKN-N)	EPA 351.2	0.05 mg/L
Ammonia Nitrogen (NH_3-N)	EPA 350.1	0.005 mg/L
Nitrate/Nitrite Nitrogen (NO_X-N)	EPA 300.0	0.02 mg/L
Total Phosphorus (TP)	SM 4500P-E	0.01 mg/L
Carbonaceous Biological Oxygen Demand ($CBOD_5$)	SM5210B	2 mg/L
Total Solids (TS)	EPA 160.3	0.01 % by wt
Total Suspended Solids (TSS)	SM 2540D	1 mg/L

3.7 Data Management

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.

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4.0 Results

4.1 Operational Data and Site Conditions

Table 2 summarizes the water meter readings and average daily water use for the residence at site C-HS2.

Table 2
Water Meter Readings and Water Usage for C-HS2

Residence	Date and Time Read	Meter Reading	Gallons/day
C-HS2 Residence	7/13/2011 14:45	5302677.9	
	7/20/2011 17:50	5304207.8	215
	7/26/2011 15:19	5305257.9	178

Monthly recorded meteorological data is provided in Appendix C. Table 3 provides the daily averages leading up to and during the sample event.

Table 3
Meteorological Data Daily Averages Measured July 20, 2011 – July 27, 2011

Date	Temperature (°F)			Humidity (%)	Wind (mph)	Rain Total (inches)
	High	Avg	Low	Avg	Avg	Sum
7/20/11	99	90	75	54	1	0
7/21/11	100	91	75	55	2	0
7/22/11	98	91	76	61	1	0
7/23/11	94	89	73	69	2	0
7/24/11	99	89	78	70	2	0
7/25/11	98	89	79	63	2	0
7/26/11	88	84	78	71	1	0
7/27/11	95	83	80	72	3	0
7/28/11	95	85	75	74	2	0.41

4.2 Groundwater Levels

Water levels were measured at all standpipe piezometers on July 27, 2011 for this sampling event as summarized in Table 4. Figure 2 illustrates the surficial groundwater contours as measured within the standpipe piezometers on July 27, 2011. The groundwater

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elevations have been found to fluctuate due to periods of dry weather and/or heavy precipitation; however, the general flow-path does not change.

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Table 4
Standpipe Piezometer Groundwater Levels
Measured on July 27, 2011

Identification	Water Table Elevation (feet)	Identification	Water Table Elevation (feet)
C-HS2-BKG01	93.23	C-HS2-B15-5	92.92
C-HS2-BKG02	93.21	C-HS2-B15-7	92.93
C-HS2-BKG03	91.78	C-HS2-B15-10	92.90
C-HS2-BKG04	94.43	C-HS2-C00-5	92.06
C-HS2-BKG05	92.73	C-HS2-C00-7	92.05
C-HS2-BKG06	93.37	C-HS2-C00-10	92.06
C-HS2-A07-6	93.11	C-HS2-C04-5	92.19
C-HS2-A07-8	93.09	C-HS2-C04-7	92.19
C-HS2-A07-11	93.08	C-HS2-C04-10	92.21
C-HS2-A09-7	93.15	C-HS2-C06-5	92.28
C-HS2-A09-9	93.13	C-HS2-C06-7	92.29
C-HS2-A09-12	93.14	C-HS2-C06-10	92.33
C-HS2-A10-7	93.21	C-HS2-C08-5	92.36
C-HS2-A10-9	93.20	C-HS2-C08-7	92.44
C-HS2-A10-12	93.19	C-HS2-C08-10	92.38
C-HS2-A11-5	93.17	C-HS2-C10-6	92.46
C-HS2-A11-7	93.17	C-HS2-C10-8	92.48
C-HS2-A11-10	93.17	C-HS2-C10-11	92.48
C-HS2-A13-5	93.18	C-HS2-C11-5	92.49
C-HS2-A13-7	93.20	C-HS2-C11-7	92.49
C-HS2-A13-10	93.19	C-HS2-C11-10	92.51
C-HS2-B02-6	92.52	C-HS2-D04-5	91.83
C-HS2-B02-8	92.53	C-HS2-D04-7	91.84
C-HS2-B02-11	92.54	C-HS2-D04-10	91.85
C-HS2-B06-6	92.65	C-HS2-D07-6	91.98
C-HS2-B06-8	92.65	C-HS2-D07-8	91.99
C-HS2-B06-11	92.66	C-HS2-D07-11	92.02
C-HS2-B08-5	92.70	C-HS2-BKG07-5	93.96
C-HS2-B08-7	92.73	C-HS2-BKG07-7	93.96
C-HS2-B08-10	92.75	C-HS2-BKG07-10	93.96
C-HS2-B10-5	92.81	C-HS2-B09	93.38
C-HS2-B10-7	92.82	C-HS2-B13	93.53
C-HS2-B10-10	92.81		

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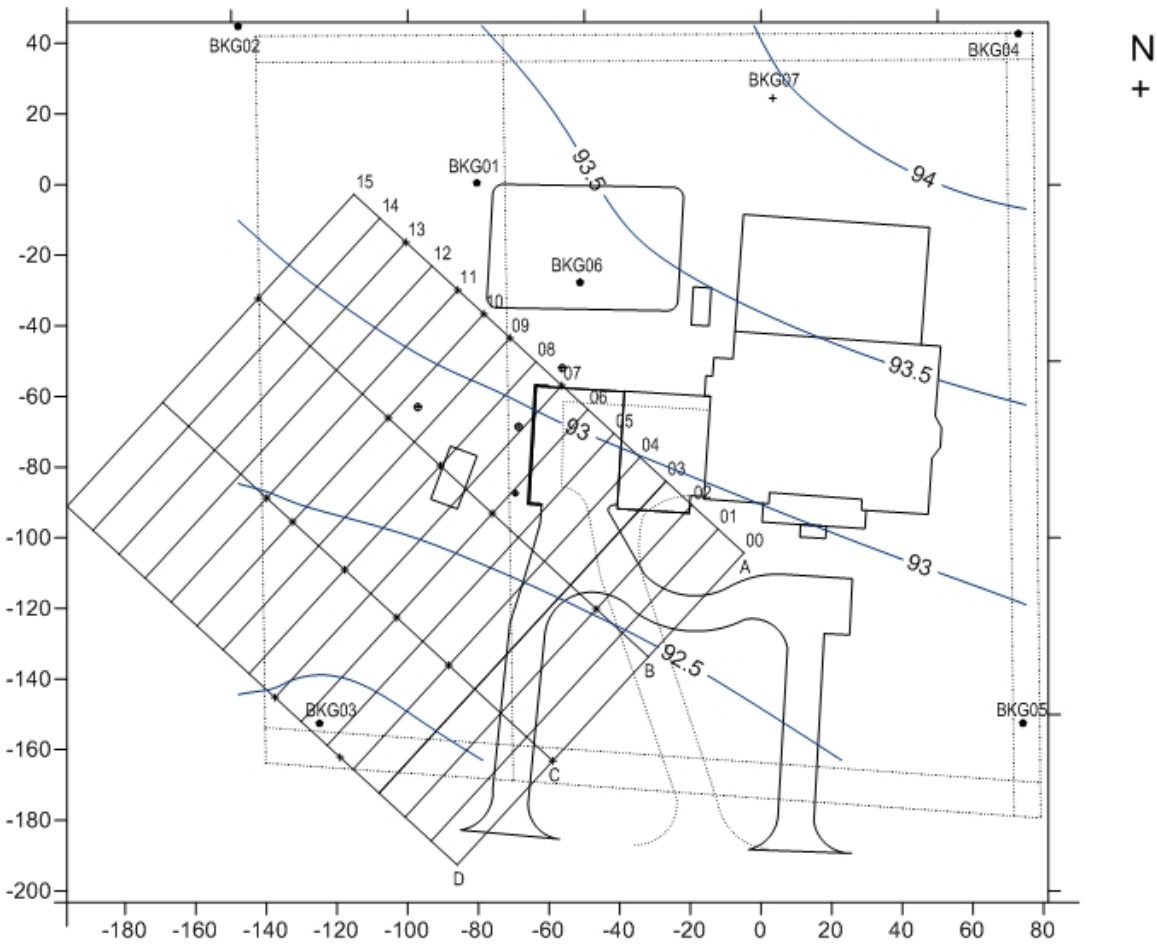

Figure 2
Surficial Groundwater Contours July 27, 2011

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 July sampling event and are provided in Appendix D. Variations in measured values were expected as the chemical composition of the groundwater varied due to the discharge of STE. The temperature was found to range from 24.3 to 29.6 °C but the inter-quartile range (IQR) was between 25.9 and 27.1, pH varied from 4.4 to 6.9 with an IQR from 5.3 to 6.1, DO varied from 0.1 to 1.3 mg/L with an IQR of 0.2 to 0.8, and finally the conductivity varied from 123 to 809

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µS with an IQR of 140 to 441 (Table 5). The small range for some of these field parameters may suggest little variation in the plume groundwater.

Table 5
Field Parameters

Field Parameters	Range	IQR
Temperature (°C)	24.3 – 29.6	25.9 – 27.1
pH	4.4 – 6.9	5.3 – 6.1
DO (mg/L)	0.1 – 1.3	0.2 – 0.8
Specific conductance (µS)	123 - 809	140 - 441

4.3.2 Correlations

Correlations between various field parameters and nitrogen concentration were conducted. Such correlations can provide insight into expected nitrogen removal or can be used to approximate difficult to obtain parameter values. However, no significant correlations were observed including the relationship between specific conductance and the concentration of total nitrogen (Figure 3).

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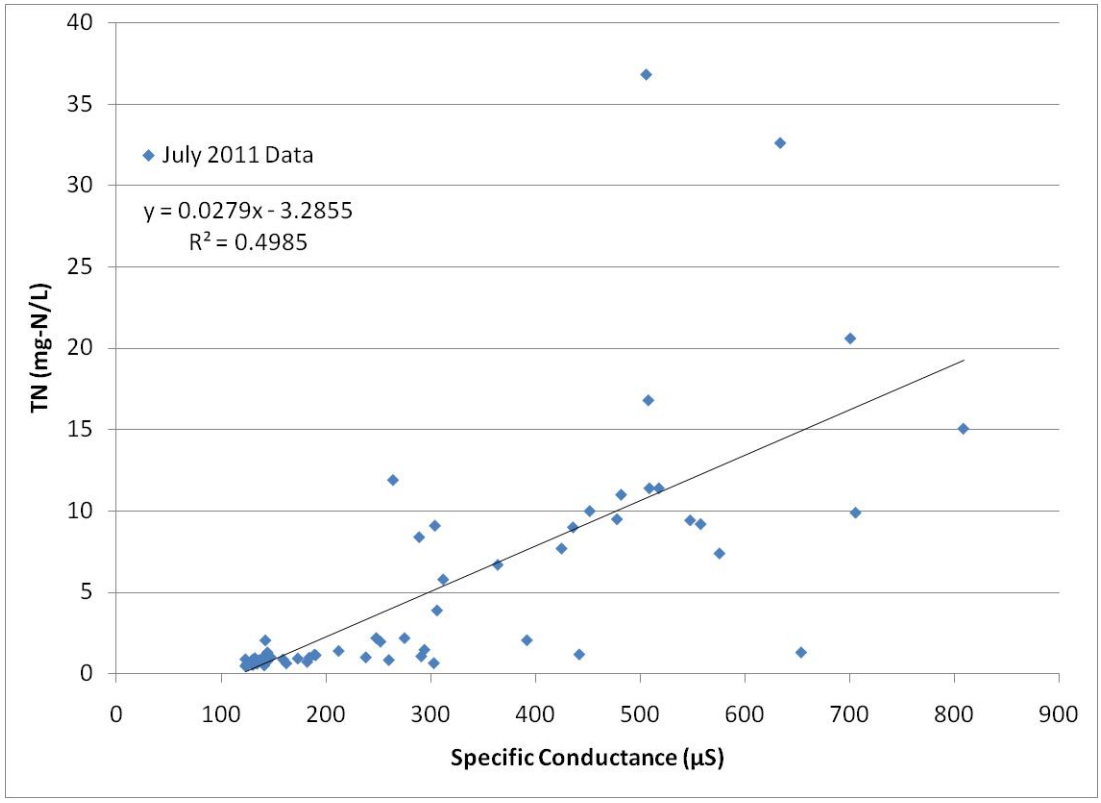

Figure 3
Correlation Between the Specific Conductance (uS) and the Concentrations of Total Nitrogen (mg-N/L)

4.3.3 Analytical Parameters

In addition to measuring field parameters, all samples were analyzed for total alkalinity (as $CaCO_3$), chemical oxygen demand (COD), total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH3-N), nitrate/nitrite nitrogen (NOX-N), and total phosphorus (TP). By analyzing for the different nitrogen species, a clearer picture will be gained on the transformation of nitrogen within the plume. The complete water quality analytical results for Sample Event No. 1 are listed in Table 1 of Appendix D. The summary of the water quality is presented in Table 1 of Appendix E. The laboratory report containing the raw analytical data is included in Appendix F.

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4.3.4 Nitrate/Nitrite Concentrations with Depth

Based on this first sampling event, the general trend of the nitrogen plume at the site can be somewhat determined. Although **Surfer** is an excellent tool for mapping the information from the site, it cannot project a 3-dimensional view of concentrations with depth. The 65 piezometers installed at different locations and depths below the ground surface were mapped in **Surfer**. The concentrations of NOX and specific conductance at all locations that groundwater sample was obtained are illustrated in Figures 4 and 5 respectively. The maps show contours of the concentrations as estimated using the Kriging method in Surfer. As is evident, an overall trend is visible. The highest concentration of NOX (Figure 4) is close to the southwest corner of the mound with a maximum concentration in B08-5.

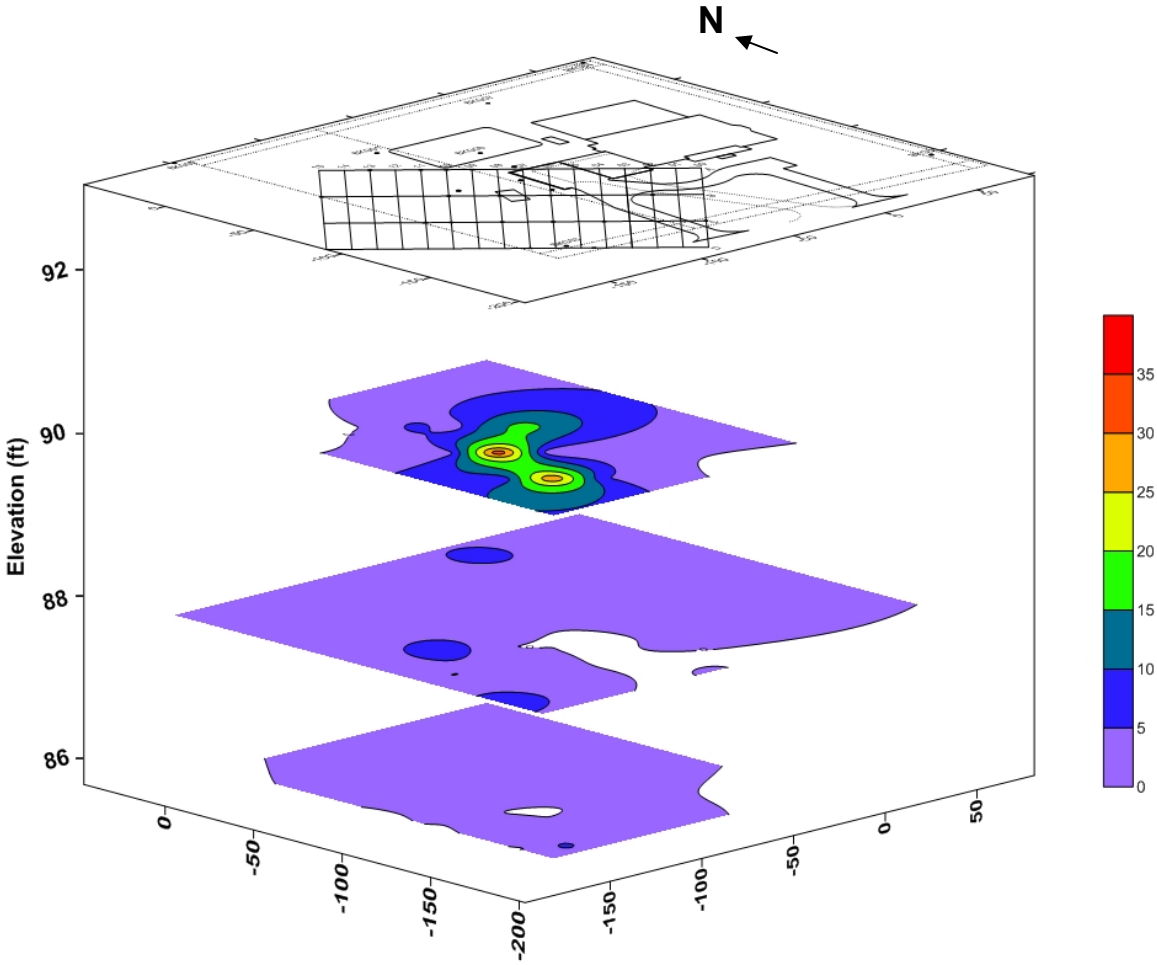

Figure 4
A layered schematic (using Surfer) illustrating NOX Concentrations (mg-N/L) in the subsurface at three different elevation intervals (based on July 2011 sampling event).

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5.0 C-HS2 Data Summary Report No. 1: Summary and Recommendations

5.1 Summary

The results of this first sampling event served to identify the general trend of the NOX plume and provide the basis upon which to make adjustments and modifications to future monitoring locations. Results of Sample Event No. 1 indicate that:

- There are small variations in field parameters over the site with no clear correlations between field parameters and NOX concentrations identified.
- The nitrogen plume appears to be flowing in a southwesterly direction and similar to the groundwater contours.

5.2 Recommendation

The following recommendation is based on the existing available information in context of the overriding goal to develop a field-monitoring framework at home sites and a simple groundwater model (Task D). The project team will continue to evaluate all results including those that result from implementation of the recommendations and make further adaptations as needed (observational method). Following is a list with select recommendations which the next sample event will address:

- Additional analyses of field parameters will give a better understanding of if and how they may correlate to nitrogen occurrence and reduction.
- Groundwater level monitoring will provide information needed to determine the necessary parameters for model development.
- Sampling of all locations will provide a snapshot of the site needed for plume identification and for nitrogen fate and transport determination.

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Appendix A: C-HS2 Sample Identification

Table A.1
C-HS2 Sample Identification

	Sample ID	Type of Monitoring Point	Surface Elevation (ft)	Bottom Elevation (ft)
1	STE	Waste Water	N/A	N/A
2	C-HS2-SW-6 inch	Storm sewer catch basin southwest of home	N/A	N/A
3	C-HS2-SW-M	Storm sewer catch basin southwest of home	N/A	N/A
4	C-HS2-BKG01-7	3/4" Standpipe Piezometer, 5' screen	96.11	88.93
5	C-HS2-BKG02-6	3/4" Standpipe Piezometer, 5' screen	94.48	88.20
6	C-HS2-BKG03-7	3/4" Standpipe Piezometer, 5' screen	93.52	86.56
7	C-HS2-BKG04-7	3/4" Standpipe Piezometer, 5' screen	96.00	88.94
8	C-HS2-BKG05-8	3/4" Standpipe Piezometer, 5' screen	95.21	87.26
9	C-HS2-BKG06-12	3/4" Standpipe Piezometer, 5' screen	99.55	87.93
10	C-HS2-A07-6	3/4" Standpipe Piezometer, 2' screen	97.33	91.67
11	C-HS2-A07-8	3/4" Standpipe Piezometer, 1' screen	97.34	89.69
12	C-HS2-A07-11	3/4" Standpipe Piezometer, 1' screen	97.33	86.78
13	C-HS2-A09-7	3/4" Standpipe Piezometer, 2' screen	98.23	91.34
14	C-HS2-A09-9	3/4" Standpipe Piezometer, 1' screen	98.22	89.01
15	C-HS2-A09-12	3/4" Standpipe Piezometer, 1' screen	98.22	86.47
16	C-HS2-A10-7	3/4" Standpipe Piezometer, 2' screen	97.63	90.76
17	C-HS2-A10-9	3/4" Standpipe Piezometer, 1' screen	97.65	88.84
18	C-HS2-A10-12	3/4" Standpipe Piezometer, 1' screen	97.65	85.65
19	C-HS2-A11-5	3/4" Standpipe Piezometer, 2' screen	96.45	91.46
20	C-HS2-A11-7	3/4" Standpipe Piezometer, 1' screen	96.45	89.63
21	C-HS2-A11-10	3/4" Standpipe Piezometer, 1' screen	96.45	86.59
22	C-HS2-A13-5	3/4" Standpipe Piezometer, 2' screen	95.76	90.77
23	C-HS2-A13-7	3/4" Standpipe Piezometer, 1' screen	95.76	88.78
24	C-HS2-A13-10	3/4" Standpipe Piezometer, 1' screen	95.77	86.03
25	C-HS2-B02-6	3/4" Standpipe Piezometer, 2' screen	95.85	90.29
26	C-HS2-B02-8	3/4" Standpipe Piezometer, 1' screen	95.85	88.06
27	C-HS2-B02-11	3/4" Standpipe Piezometer, 1' screen	95.85	85.12
28	C-HS2-B06-6	3/4" Standpipe Piezometer, 2' screen	95.85	90.17

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Table A.1
C-HS2 Sample Identification

	Sample ID	Type of Monitoring Point	Surface Elevation (ft)	Bottom Elevation (ft)
29	C-HS2-B06-8	3/4" Standpipe Piezometer, 1' screen	95.85	88.03
30	C-HS2-B06-11	3/4" Standpipe Piezometer, 1' screen	95.84	85.08
31	C-HS2-B08-5	3/4" Standpipe Piezometer, 2' screen	95.38	90.41
32	C-HS2-B08-7	3/4" Standpipe Piezometer, 1' screen	95.40	88.62
33	C-HS2-B08-10	3/4" Standpipe Piezometer, 1' screen	95.42	85.52
34	C-HS2-B09-15	2" Standpipe Piezometer, 5' screen	95.37	80.20
35	C-HS2-B10-5	3/4" Standpipe Piezometer, 2' screen	95.40	90.42
36	C-HS2-B10-7	3/4" Standpipe Piezometer, 1' screen	95.40	88.60
37	C-HS2-B10-10	3/4" Standpipe Piezometer, 1' screen	95.40	85.55
38	C-HS2-B13-15	2" Standpipe Piezometer, 5' screen	95.34	80.12
39	C-HS2-B15-5	3/4" Standpipe Piezometer, 2' screen	95.28	90.43
40	C-HS2-B15-7	3/4" Standpipe Piezometer, 1' screen	95.28	88.78
41	C-HS2-B15-10	3/4" Standpipe Piezometer, 1' screen	95.26	85.60
42	C-HS2-C00-5	3/4" Standpipe Piezometer, 2' screen	94.50	89.81
43	C-HS2-C00-7	3/4" Standpipe Piezometer, 1' screen	94.50	87.69
44	C-HS2-C00-10	3/4" Standpipe Piezometer, 1' screen	94.51	84.66
45	C-HS2-C04-5	3/4" Standpipe Piezometer, 2' screen	94.61	89.91
46	C-HS2-C04-7	3/4" Standpipe Piezometer, 1' screen	94.60	87.79
47	C-HS2-C04-10	3/4" Standpipe Piezometer, 1' screen	94.61	84.76
48	C-HS2-C06-5	3/4" Standpipe Piezometer, 2' screen	94.53	89.55
49	C-HS2-C06-7	3/4" Standpipe Piezometer, 1' screen	94.53	87.74
50	C-HS2-C06-10	3/4" Standpipe Piezometer, 1' screen	94.53	84.68
51	C-HS2-C08-5	3/4" Standpipe Piezometer, 2' screen	95.18	90.21
52	C-HS2-C08-7	3/4" Standpipe Piezometer, 1' screen	95.25	88.47
53	C-HS2-C08-10	3/4" Standpipe Piezometer, 1' screen	95.20	85.33
54	C-HS2-C10-6	3/4" Standpipe Piezometer, 2' screen	95.77	90.12
55	C-HS2-C10-8	3/4" Standpipe Piezometer, 1' screen	95.78	88.00
56	C-HS2-C10-12	3/4" Standpipe Piezometer, 1' screen	95.78	84.01
57	C-HS2-C11-5	3/4" Standpipe Piezometer, 2' screen	95.30	90.63
58	C-HS2-C11-7	3/4" Standpipe Piezometer, 1' screen	95.30	88.51
59	C-HS2-C11-10	3/4" Standpipe Piezometer, 1' screen	95.31	85.46

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Table A.1
C-HS2 Sample Identification

	Sample ID	Type of Monitoring Point	Surface Elevation (ft)	Bottom Elevation (ft)
60	C-HS2-D04-5	3/4" Standpipe Piezometer, 2' screen	93.98	89.09
61	C-HS2-D04-7	3/4" Standpipe Piezometer, 1' screen	93.98	87.14
62	C-HS2-D04-10	3/4" Standpipe Piezometer, 1' screen	94.00	84.31
63	C-HS2-D07-6	3/4" Standpipe Piezometer, 2' screen	95.41	89.43
64	C-HS2-D07-8	3/4" Standpipe Piezometer, 1' screen	95.39	87.53
65	C-HS2-D07-11	3/4" Standpipe Piezometer, 1' screen	95.43	84.59
66	C-HS2-BKG07-5	3/4" Standpipe Piezometer, 2' screen	96.01	91.36
67	C-HS2-BKG07-7	3/4" Standpipe Piezometer, 1' screen	96.01	89.43
68	C-HS2-BKG07-10	3/4" Standpipe Piezometer, 1' screen	96.01	86.40

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Appendix B: Soil Sample Descriptions

Table B.1
Site C-HS2 Descriptions[1]

Location	Depth (ft bgs)	Munsell Soil Color	Description
A11	0-2.0	10YR 3/1	very dark gray fine sand
	2.0-2.7	10YR 5/2	grayish brown fine sand
	2.7-4.0	10YR 2/1	black fine sand
	4.0-5.0	10YR 3/2	dark brown fine sand
	5-5.9	10YR 3/4	dark yellowish brown fine sand
	5.9-10	10YR 5/3	brown fine sand
	10.0-20.0	10YR 3/2	very dark grayish brown fine sand
	20.0-21.2	10YR 5/2	grayish brown fine sand
	21.2-21.8	10YR 5/2	grayish brown clayey fine sand
	21.8-23.0	10YR 5/1	gray clay
	23.0-30	10YR 6/2	light brownish gray fine sand
A09	0-1.0	10YR 5/2	grayish brown fine sand
	1.0-2.6	10YR 8/2	very pale brown very fine sand
	2.6-3.1	10YR 6/3	pale brown very fine sand
	3.1-4.3	10YR 5/1	gray fine sand
	4.3-5.7	10YR 2/2	very dark brown fine sand
	5.7-6.9	10YR 3/6	dark yellowish brown fine sand
	6.9-7.5	10YR 6/4	light yellowish brown fine sand
	7.5-8.5	10YR 4/4	dark yellowish brown fine sand
	8.5-15	10YR 3/3	dark brown fine sand w/black intermittent
	15-21.5	10YR 5/3	brown fine sand
	21.5-23.9	10YR 5/2	grayish brown clayey fine sand
	23.9-25.5	10YR 5/1	gray clay
	25.5-30	10YR 6/2	light brownish gray fine sand
B08	0-1.1	10YR 4/1	dark gray fine sand
	1.1-2.3	10YR 2/2	very dark brown fine sand
	2.3-3.5	10YR 3/6	dark yellowish brown fine sand
	3.5-7.5	10YR 5/3	brown fine sand
	7.5-13.7	10YR 3/2	very dark grayish brown fine sand

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Table B.1
Site C-HS2 Descriptions[1]

Location	Depth (ft bgs)	Munsell Soil Color	Description
B08	13.7-19.0	10YR 5/3	brown fine sand
	19.0-21.5	10YR 5/2	grayish brown clayey fine sand
	21.5-22.6	10YR 5/1	gray clay
	22.6-30	10YR 6/2	light brownish gray fine sand
C10	0-1.2	10YR 4/1	dark gray fine sand
	1.2-2.0	10YR 5/2	grayish brown fine sand
	2.0-3.9	10YR 3/2	very dark grayish brown fine sand
	3.9-4.9	10YR 3/3	dark brown fine sand
	4.9-6.4	10YR 5/3	brown fine sand
	6.4-6.9	10YR 2/1	black fine sand
	6.9-14.3	10YR 4/3	brown fine sand
	14.3-22.2	10YR 5/2	grayish brown clayey fine sand
	22.2-23.5	10YR 5/1	gray clay
	23.5-30	10YR 6/2	light brownish gray fine sand

[1]Soil samples collected from direct push intact soil cores and described in the field using the Munsell tools.

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Appendix C: Weather Station Data

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Table C.1
Monthly Recorded Meteorological Data
Sheffield in the Crossings, Longwood, FL

Period	Temp high (°F)	Temp avg (°F)	Temp low (°F)	Humidity high (%)	Humidity avg (%)	Humidity low (%)	Wind high (mph)	Wind avg (mph)	Rain max (in)	Rain total (in)
Jan-10	65	52	41	90	73	48	18	5	0.61	2.31
Feb-10	64	53	42	92	73	49	19	5	0.94	3.52
Mar-10	72	60	49	93	71	43	20	6	3.43	7.22
Apr-10	84	71	59	95	73	44	17	4	1.45	3.34
May-10	91	78	69	93	76	50	16	4	1.82	3.88
Jun-10	95	82	73	95	79	50	18	3	0.97	5.15
Jul-10	94	82	75	96	80	56	15	3	1.29	4.26
Aug-10	94	84	76	96	80	56	79	3	2.23	4.37
Sep-10	92	80	72	97	81	53	17	3	0.79	3.35
Oct-10	87	72	61	95	72	40	15	3	0.00	0.00
Nov-10	77	64	54	94	78	53	15	3	1.10	2.09
Dec-10	63	49	37	89	70	44	18	5	0.47	0.62
Jan-11	68	57	45	92	74	48	19	4	1.27	4.18
Feb-11	76	62	52	95	76	49	17	4	1.27	1.78
Mar-11	80	66	55	94	73	46	16	4	3.61	5.57
Apr-11	88	74	62	95	71	41	17	4	0.55	0.65
May-11	92	77	65	94	68	38	18	3	0.58	1.21
Jun-11	92	80	71	96	77	51	15	2	1.99	6.5
Jul-11	95	86	76	95	68	50	15	2	2.65	3.99

Source: www.wunderground.com

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Appendix D: Water Quality Analytical Results

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Table D.1
Water Quality Analytical Results
(July 25-27, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
STE Sample																		
C-HS2-STE	7/26/11 15:35	G	29.6	7	360	1.2	1028	0.05	20	130		80.1	80	45	35	0.1	35.1	8.3
C-HS2-STE-DUP	7/26/11 15:40	G	29.6	7	390	1.2	1028	0.05	18	120		78.12	78	44	34	0.12	34.12	8.2
Standpipe Piezometers																		
C-HS2-BKG01-7	7/25/11 9:07	G	26.5	4.9	9.9	0.8	248				86	2.2	1	0.79	0.21	1.2	1.41	0.081
C-HS2-BKG02-6	7/25/11 9:27	G	26.1	6.9	170	1.2	442				59	1.2	1.1	0.22	0.88	0.1	0.98	0.038
C-HS2-BKG03-7	7/26/11 13:33	G	27.5	5.7	30	0.1	436				65	9	2.4	2.336	0.064	6.6	6.664	0.029
C-HS2-BKG04-7	7/25/11 9:46	G	26.3	5.2	9.9	1.2	212				120	1.41	1.4	1.09	0.31	0.01	0.32	0.13
C-HS2-BKG06-12	7/25/11 10:00	G	26.7	6.1	50	1.3	425				63	7.7	1.8	1.45	0.35	5.9	6.25	1.3
C-HS2-BKG07-5	7/26/11 14:50	G	26.4	5.2	4.2	0.1	189				130	1.18	1.1	0.8	0.3	0.08	0.38	0.23
C-HS2-BKG07-7	7/26/11 15:07	G	25.4	5.7	8.3	0.2	182				31	0.74	0.71	0.4	0.31	0.03	0.34	0.1
C-HS2-BKG07-10	7/26/11 15:25	G	25.2	5.2	2.1	0.1	130				27	0.55	0.52	0.21	0.31	0.03	0.34	0.1
C-HS2-A07-6	7/25/11 10:51	G	26.1	6.3	69	0.9	701				170	20.6	3.6	3.3	0.3	17	17.3	0.26
C-HS2-A07-8	7/25/11 11:37	G	25.8	6	20	0.8	508				46	16.8	2.8	2.64	0.16	14	14.16	4.7
C-HS2-A07-11	7/25/11 12:17	G	24.7	5.8	9.9	0.3	140				42	0.93	0.77	-0.07	0.84	0.16	1	0.14
C-HS2-A09-7	7/25/11 14:58	G	29.2	6.1	69	0.1	482				110	11	2.7	2.636	0.064	8.3	8.364	0.34
C-HS2-A09-7-Dup	7/25/11 15:03	G	29.2	6.1	59	0.1	482				110	10.9	2.3	2.233	0.067	8.6	8.667	0.38
C-HS2-A09-9	7/25/11 16:00	G	27.7	6.1	40	0.1	238				67	1.02	0.62	0.41	0.21	0.4	0.61	0.22
C-HS2-A09-12	7/25/11 16:10	G	26.4	5.2	9.9	0.1	129				36	0.62	0.57	0.08	0.49	0.05	0.54	0.16
C-HS2-A10-7	7/25/11 12:55	G	28.3	6.8	350	0.3	809				100	15.06	15	4	11	0.06	11.06	0.2
C-HS2-A10-9	7/25/11 13:13	G	26.9	6.6	180	0.4	548				100	9.43	9.4	0.7	8.7	0.03	8.73	0.45
C-HS2-A10-12	7/25/11 13:28	G	25.9	5.7	40	0.3	134				34	0.63	0.6	0.18	0.42	0.03	0.45	0.1
C-HS2-A11-5	7/25/11 14:45	G	29.3	6.3	140	0.6	706				90	9.9	2.5	2.3	0.2	7.4	7.6	0.096
C-HS2-A11-7	7/25/11 14:13	G	27.8	6.3	320	0.3	509				98	11.4	8.7	1.9	6.8	2.7	9.5	0.078
C-HS2-A11-10	7/25/11 15:46	G	26.9	5.3	5.0	0.4	132				30	0.68	0.63	0.25	0.38	0.05	0.43	0.062
C-HS2-A13-5	7/25/11 15:11	G	29.6	5.8	79	0.1	252				92	1.98	1.7	1.59	0.11	0.28	0.39	0.072
C-HS2-A13-7	7/25/11 15:24	G	28.7	4.6	9.9	0.1	159				36	0.89	0.84	0.32	0.52	0.05	0.57	0.046
C-HS2-A13-10	7/25/11 15:35	G	27.9	4.7	4.9	0.1	125				26	0.65	0.62	0.24	0.38	0.03	0.41	0.022
C-HS2-B02-6	7/26/11 12:19	G	27.8	6.2	69	0.2	392				67	2.07	1.1	0.91	0.19	0.97	1.16	0.072
C-HS2-B02-8	7/26/11 12:30	G	26.9	6.5	170	0.2	654				42	1.32	1.3	0.68	0.62	0.02	0.64	0.049
C-HS2-B02-11	7/26/11 12:40	G	26.1	6	30	0.2	260				30	0.85	0.83	0.27	0.56	0.02	0.58	0.028
C-HS2-B06-6	7/26/11 10:17	G	25.4	6	30	0.1	275				110	2.2	1.1	0.94	0.16	1.1	1.26	1.6
C-HS2-B06-8	7/26/11 11:15	G	24.8	5.8	9.9	0.1	144				83	1.32	1.2	0.62	0.58	0.12	0.7	0.33
C-HS2-B06-11	7/26/11 11:31	G	24.3	5.7	9.9	0.1	130				44	0.89	0.79	0.28	0.51	0.1	0.61	0.11
C-HS2-B08-5	7/25/11 13:30	G	26.4	5.5	21	0.1	506				100	36.8	2.8	2.733	0.067	34	34.067	0.096
C-HS2-B08-7	7/25/11 13:50	G	26.5	5.9	38	0.1	518				46	11.4	2.4	2.362	0.038	9	9.038	0.23
C-HS2-B08-10	7/25/11 14:11	G	27	5.5	4.2	0.2	132				20	0.97	0.85	0.31	0.54	0.12	0.66	0.055

Table D.1 (con't)
Water Quality Analytical Results
(July 25-27, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-B10-5	7/25/11 11:10	G	27.4	6.5	140	0.1	452				94	10	7.5	0.9	6.6	2.5	9.1	0.092
C-HS2-B10-7	7/25/11 11:50	G	27.4	6.3	22	0.5	173				38	0.95	0.89	0.17	0.72	0.06	0.78	0.095
C-HS2-B10-10	7/25/11 12:28	G	26.7	5.4	2.0	0.1	123				22	0.48	0.42	0.03	0.39	0.06	0.45	0.069
C-HS2-B15-5	7/25/11 10:29	G	27.7	5.4	10	0.4	184				75	1	0.96	0.62	0.34	0.04	0.38	0.066
C-HS2-B15-7	7/25/11 11:30	G	26.9	5.5	9.9	0.5	140				36	0.73	0.68	0.23	0.45	0.05	0.5	0.08
C-HS2-B15-10	7/25/11 12:00	G	27	5.1	2.0	0.7	125				10	0.57	0.54	0.21	0.33	0.03	0.36	0.023
C-HS2-C00-5	7/26/11 11:44	G	27.6	4.4	31	0.1	291				77	1.08	1	0.81	0.19	0.08	0.27	0.058
C-HS2-C00-7	7/26/11 12:00	G	26.9	5.5	18	0.1	303				18	0.66	0.56	0.08	0.48	0.1	0.58	0.046
C-HS2-C00-7-Dup	7/26/11 12:05	G	26.9	5.5	17	0.1	303				15	0.69	0.64	0.12	0.52	0.05	0.57	0.034
C-HS2-C00-10	7/26/11 12:51	G	26.1	5.7	8.3	0.1	162				120	0.65	0.59	0.06	0.53	0.06	0.59	0.057
C-HS2-C04-5	7/25/11 7:53	G	26.3	5.8	31	0.8	289				140	8.4	2.9	2.19	0.71	5.5	6.21	0.34
C-HS2-C04-7	7/25/11 8:09	G	25.9	5.6	3.1	1.3	142				240	2.06	1.5	0.1	1.4	0.56	1.96	0.94
C-HS2-C04-10	7/25/11 8:20	G	25	5.4	3.1	1	136				22	0.84	0.55	0.1	0.45	0.29	0.74	0.32
C-HS2-C06-5	7/26/11 9:10	G	26.8	6.1	29	0.2	634				36	32.6	2.6	2.576	0.024	30	30.024	1.9
C-HS2-C06-5-Dup	7/26/11 9:15	G	26.8	6.4	27	0.2	634				48	32.7	2.7	2.676	0.024	30	30.024	1.8
C-HS2-C06-7	7/26/11 9:30	G	25.7	5.9	35	0.5	306				69	3.9	1.7	1.39	0.31	2.2	2.51	1.5
C-HS2-C06-10	7/26/11 9:48	G	24.7	5.1	4.2	0.1	141				26	0.53	0.46	-0.07	0.53	0.07	0.6	0.030
C-HS2-C08-5	7/26/11 9:59	G	27.2	6	48	0.1	558				98	9.2	2.8	2.754	0.046	6.4	6.446	0.14
C-HS2-C08-5-Dup	7/26/11 10:04	G	27.2	6	48	0.1	558				100	9.2	2.7	2.664	0.036	6.5	6.536	0.11
C-HS2-C08-7	7/26/11 10:27	G	26.6	6.1	55	0.1	576				59	7.4	2.1	2.036	0.064	5.3	5.364	0.12
C-HS2-C08-10	7/26/11 11:04	G	25.9	5.3	4.2	0.1	123				36	0.9	0.81	0.38	0.43	0.09	0.52	0.1
C-HS2-C10-6	7/26/11 7:53	G	26.9	5.1	15	0.1	264				94	11.9	2.7	2.39	0.31	9.2	9.51	0.11
C-HS2-C10-8	7/26/11 8:21	G	26.3	5.6	10	0.1	140				51	1.03	0.96	0.4	0.56	0.07	0.63	0.12
C-HS2-C10-12	7/26/11 9:40	G	25.7	5.2	3.1	0.1	124				51	0.58	0.57	0.24	0.33	0.01	0.34	0.061
C-HS2-C11-5	7/26/11 7:42	G	26.9	4.8	4.2	0.2	304				53	9.1	1.3	1.1	0.2	7.8	8	0.073
C-HS2-C11-7	7/26/11 8:30	G	26.1	5.3	6.2	0.1	190				72	1.15	0.9	0.49	0.41	0.25	0.66	0.13
C-HS2-C11-10	7/26/11 8:48	G	25.2	5	2.1	0.1	125				34	0.59	0.57	0.54	0.03	0.02	0.05	0.063
C-HS2-D04-5	7/26/11 10:47	G	26.6	5.8	32	0.1	478				93	9.5	2.5	2.38	0.12	7	7.12	0.93
C-HS2-D04-7	7/26/11 13:02	G	25.9	5.9	28	0.1	312				97	5.8	1.5	1.29	0.21	4.3	4.51	0.27
C-HS2-D04-10	7/26/11 14:04	G	25.3	5.7	10	0.1	144				84	0.79	0.57	0.489	0.081	0.22	0.301	0.31
C-HS2-D07-6	7/26/11 13:13	G	27.1	5.9	53	0.1	364				140	6.7	1.6	1.562	0.038	5.1	5.138	0.23
C-HS2-D07-6-Dup	7/26/11 13:18	G	27.1	5.9	52	0.1	364				180	6.8	1.6	1.567	0.033	5.2	5.233	0.23
C-HS2-D07-8	7/26/11 13:50	G	26.2	5.8	31	0.1	294				110	1.48	1.2	0.63	0.57	0.28	0.85	0.2
C-HS2-D07-11	7/26/11 14:37	G	25.8	6.2	15	0.1	147				51	1.03	0.98	0.6	0.38	0.05	0.43	0.076

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Table D.1 (con't)
Water Quality Analytical Results
(July 25-27, 2011)

Sample ID	Sample Date/Time	Sample Type	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
Storm Water Sample																		
C-HS2-SW-6 inch	7/26/11 8:52	G	28	5.9	40	3.4	284				40	2.2	1	0.55	0.45	1.2	1.65	0.029
C-HS2-SW-M	7/26/11 8:59	G	28.4	6.9	110	4.8	389				24	2.34	0.74	0.35	0.39	1.6	1.99	0.066
Blanks																		
EB	7/26/11 14:11	G	30.8	6.6	2.0	2	3				10	0.06	0.05	0.045	0.005	0.01	0.015	0.058
FB-DI	7/27/11 9:34	G	26	8.9	2.0	2	4				10	0.06	0.05	0.043	0.007	0.01	0.017	0.37
FB-Tap	7/26/11 14:25	G	29.9	6.9	120	5	325				10	0.06	0.05	0.045	0.005	0.01	0.015	0.3

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

EC: expanded clay, CL: clinoptilolite, PS: polystyrene, SU: elemental sulfur, LS: lignocellulosic, GL: glycerol, OS: oyster shell, NS: sodium sesquicarbonate, GR: gravel

D.O. - 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, value used for statistical analysis.

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Appendix E: Summary of Water Quality Data

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Table E.1
Summary of Water Quality Data

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
STE Sample																	
C-HS2-STE	n	1	1	1	1	1	1	1	1	0	0	1	0	1	1	0	1
	MEAN	29.6	7.0	360	1.2	1028	0.1	20.0	130.0			80.0		35.0	0.1		8.3
	STD. DEV.																
	MIN	29.6	7.0	360	1.2	1028	0.1	20.0	130.0			80.0		35.0	0.1		8.3
	MAX	29.6	7.0	360	1.2	1028	0.1	20.0	130.0			80.0		35.0	0.1		8.3
Standpipe Piezometers																	
C-HS2-BKG01-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.5	4.9	9.9	0.8	248				86		1.0		0.21	1.2		0.081
	STD. DEV.																
	MIN	26.5	4.9	9.9	0.8	248				86		1.0		0.21	1.2		0.081
	MAX	26.5	4.9	9.9	0.8	248				86		1.0		0.21	1.2		0.081
C-HS2-BKG02-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.1	6.9	170	1.2	442				59		1.1		0.88	0.10		0.038
	STD. DEV.																
	MIN	26.1	6.9	170	1.2	442				59		1.1		0.88	0.10		0.038
	MAX	26.1	6.9	170	1.2	442				59		1.1		0.88	0.10		0.038
C-HS2-BKG03-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.5	5.7	30	0.1	436				65		2.4		0.06	6.6		0.029
	STD. DEV.																
	MIN	27.5	5.7	30	0.1	436				65	0	2.4	0	0.06	6.6		0.029
	MAX	27.5	5.7	30	0.1	436				65	0	2.4	0	0.06	6.6		0.029
C-HS2-BKG04-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.3	5.2	9.9	1.2	212				120		1.4		0.31	0.01		0.13
	STD. DEV.																
	MIN	26.3	5.2	9.9	1.2	212				120		1.4		0.31	0.01		0.13
	MAX	26.3	5.2	9.9	1.2	212				120		1.4		0.31	0.01		0.13
C-HS2-PZ05	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN																
	STD. DEV.																
	MIN																
	MAX																
C-HS2-BKG06-12	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.7	6.1	50	1.3	425				63		1.8		0.35	5.9		1.3
	STD. DEV.																
	MIN	26.7	6.1	50	1.3	425				63		1.8		0.35	5.9		1.3
	MAX	26.7	6.1	50	1.3	425				63		1.8		0.35	5.9		1.3

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-BKG07-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.4	5.2	4.2	0.1	189				130		1.1		0.30	0.08		0.23
	STD. DEV.																
	MIN	26.4	5.2	4.2	0.1	189				130		1.1		0.30	0.08		0.23
	MAX	26.4	5.2	4.2	0.1	189				130		1.1		0.30	0.08		0.23
C-HS2-BKG07-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.4	5.7	8.3	0.2	182				31		0.71		0.31	0.03		0.10
	STD. DEV.																
	MIN	25.4	5.7	8.3	0.2	182				31		0.71		0.31	0.03		0.10
	MAX	25.4	5.7	8.3	0.2	182				31		0.71		0.31	0.03		0.10
C-HS2-BKG07-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.2	5.2	2.1	0.1	130				27		0.52		0.31	0.03		0.10
	STD. DEV.																
	MIN	25.2	5.2	2.1	0.1	130				27		0.52		0.31	0.03		0.10
	MAX	25.2	5.2	2.1	0.1	130				27		0.52		0.31	0.03		0.10
C-HS2-A07-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.1	6.3	69	0.9	701				170		3.6		0.3	17		0.26
	STD. DEV.																
	MIN	26.1	6.3	69	0.9	701				170		3.6		0.3	17		0.26
	MAX	26.1	6.3	69	0.9	701				170		3.6		0.3	17		0.26
C-HS2-A07-8	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.8	6.0	20	0.8	508				46		2.8		0.2	14		4.7
	STD. DEV.																
	MIN	25.8	6.0	20	0.8	508				46		2.8		0.2	14		4.7
	MAX	25.8	6.0	20	0.8	508				46		2.8		0.2	14		4.7
C-HS2-A07-11	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	24.7	5.8	9.9	0.3	140				42		0.77		0.84	0.16		0.14
	STD. DEV.																
	MIN	24.7	5.8	9.9	0.3	140				42		0.77		0.84	0.16		0.14
	MAX	24.7	5.8	9.9	0.3	140.0				42		0.77		0.84	0.16		0.14
C-HS2-A09-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	29.2	6.1	69	0.1	482				110		2.7		0.06	8.3		0.34
	STD. DEV.																
	MIN	29.2	6.1	69	0.1	482				110		2.7		0.06	8.3		0.34
	MAX	29.2	6.1	69	0.1	482				110		2.7		0.06	8.3		0.34
C-HS2-A09-9	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.7	6.1	40	0.1	238				67		0.62		0.21	0.4		0.22
	STD. DEV.																
	MIN	27.7	6.1	40	0.1	238				67		0.62		0.21	0.4		0.22
	MAX	27.7	6.1	40	0.1	238				67		0.62		0.21	0.4		0.22

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-A09-12	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.4	5.2	9.9	0.1	129				36		0.57		0.49	0.05		0.16
	STD. DEV.																
	MIN	26.4	5.2	9.9	0.1	129				36		0.57		0.49	0.05		0.16
	MAX	26.4	5.2	9.9	0.1	129				36		0.57		0.49	0.05		0.16
C-HS2-A10-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	28.3	6.8	350	0.3	809				100		15		11	0.1		0.2
	STD. DEV.																
	MIN	28.3	6.8	350	0.3	809				100		15		11	0.1		0.2
	MAX	28.3	6.8	350	0.3	809				100		15		11	0.1		0.2
C-HS2-A10-9	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	6.6	180	0.4	548				100		9.4		8.7	0.03		0.45
	STD. DEV.																
	MIN	26.9	6.6	180	0.4	548				100		9.4		8.7	0.03		0.45
	MAX	26.9	6.6	180	0.4	548				100		9.4		8.7	0.03		0.45
C-HS2-A10-12	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.9	5.7	40	0.3	134				34		0.6		0.42	0.03		0.10
	STD. DEV.																
	MIN	25.9	5.7	40	0.3	134				34		0.6		0.42	0.03		0.10
	MAX	25.9	5.7	40	0.3	134				34		0.6		0.42	0.03		0.10
C-HS2-A11-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	29.3	6.3	140	0.6	706				90		2.5		0.2	7.4		0.096
	STD. DEV.																
	MIN	29.3	6.3	140	0.6	706				90		2.5		0.2	7.4		0.096
	MAX	29.3	6.3	140	0.6	706				90		2.5		0.2	7.4		0.096
C-HS2-A11-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.8	6.3	320	0.3	509				98		8.7		6.8	2.7		0.078
	STD. DEV.																
	MIN	27.8	6.3	320	0.3	509				98		8.7		6.8	2.7		0.078
	MAX	27.8	6.3	320	0.3	509				98		8.7		6.8	2.7		0.078
C-HS2-A11-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	5.3	5.0	0.4	132				30		0.63		0.4	0.1		0.06
	STD. DEV.																
	MIN	26.9	5.3	5.0	0.4	132				30		0.63		0.4	0.1		0.06
	MAX	26.9	5.3	5.0	0.4	132				30		0.63		0.4	0.1		0.06
C-HS2-A13-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	29.6	5.8	79	0.1	252				92		1.7		0.11	0.28		0.07
	STD. DEV.																
	MIN	29.6	5.8	79	0.1	252				92		1.7		0.11	0.28		0.07
	MAX	29.6	5.8	79	0.1	252				92		1.7		0.11	0.28		0.07

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-A13-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	28.7	4.6	10	0.1	159				36		0.84		0.52	0.05		0.046
	STD. DEV.																
	MIN	28.7	4.6	10	0.1	159				36		0.84		0.52	0.05		0.046
	MAX	28.7	4.6	10	0.1	159				36		0.84		0.52	0.05		0.046
C-HS2-A13-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.9	4.7	4.9	0.1	125				26		0.62		0.38	0.03		0.022
	STD. DEV.																
	MIN	27.9	4.7	4.9	0.1	125				26		0.62		0.38	0.03		0.022
	MAX	27.9	4.7	4.9	0.1	125				26		0.62		0.38	0.03		0.022
C-HS2-B02-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.8	6.2	69	0.2	392				67		1.1		0.19	0.97		0.072
	STD. DEV.																
	MIN	27.8	6.2	69	0.2	392				67		1.1		0.19	0.97		0.072
	MAX	27.8	6.2	69	0.2	392				67		1.1		0.19	0.97		0.072
C-HS2-B02-8	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	6.5	170	0.2	654				42		1.3		0.62	0.02		0.049
	STD. DEV.																
	MIN	26.9	6.5	170	0.2	654				42		1.3		0.62	0.02		0.049
	MAX	26.9	6.5	170	0.2	654				42		1.3		0.62	0.02		0.049
C-HS2-B02-11	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.1	6.0	30	0.2	260				30		0.83		0.56	0.02		0.028
	STD. DEV.																
	MIN	26.1	6.0	30	0.2	260				30		0.83		0.56	0.02		0.028
	MAX	26.1	6.0	30	0.2	260				30		0.83		0.56	0.02		0.028
C-HS2-B06-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.4	6.0	30	0.1	275				110		1.1		0.16	1.1		1.6
	STD. DEV.																
	MIN	25.4	6.0	30	0.1	275				110		1.1		0.16	1.1		1.6
	MAX	25.4	6.0	30	0.1	275				110		1.1		0.16	1.1		1.6
C-HS2-B06-8	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	24.8	5.8	9.9	0.1	144				83		1.2		0.58	0.12		0.33
	STD. DEV.																
	MIN	24.8	5.8	9.9	0.1	144				83		1.2		0.58	0.12		0.33
	MAX	24.8	5.8	9.9	0.1	144				83		1.2		0.58	0.12		0.33
C-HS2-B06-11	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	24.3	5.7	9.9	0.1	130				44		0.79		0.51	0.10		0.11
	STD. DEV.																
	MIN	24.3	5.7	9.9	0.1	130				44		0.79		0.51	0.10		0.11
	MAX	24.3	5.7	9.9	0.1	130				44		0.79		0.51	0.10		0.11

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-B08-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.4	5.5	21	0.1	506				100		2.8		0.07	34		0.10
	STD. DEV.																
	MIN	26.4	5.5	21	0.1	506				100		2.8		0.07	34		0.10
	MAX	26.4	5.5	21	0.1	506				100		2.8		0.07	34		0.10
C-HS2-B08-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.5	5.9	38	0.1	518				46		2.4		0.038	9.0		0.23
	STD. DEV.																
	MIN	26.5	5.9	38	0.1	518				46		2.4		0.038	9.0		0.23
	MAX	26.5	5.9	38	0.1	518				46		2.4		0.038	9.0		0.23
C-HS2-B08-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.0	5.5	4.2	0.2	132				20		0.85		0.54	0.12		0.06
	STD. DEV.																
	MIN	27.0	5.5	4.2	0.2	132				20		0.85		0.54	0.12		0.06
	MAX	27.0	5.5	4.2	0.2	132				20		0.85		0.54	0.12		0.06
C-HS2-B10-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.4	6.5	140	0.1	452				94		7.5		6.6	2.5		0.092
	STD. DEV.																
	MIN	27.4	6.5	140	0.1	452				94		7.5		6.6	2.5		0.092
	MAX	27.4	6.5	140	0.1	452				94		7.5		6.6	2.5		0.092
C-HS2-B10-7	n	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MEAN	27.4	6.3	22	0.5	173				38		0.89		0.72	0.06		0.095
	STD. DEV.																
	MIN	27.4	6.3	22	0.5	173				38		0.89		0.72	0.06		0.095
	MAX	27.4	6.3	22	0.5	173				38		0.89		0.72	0.06		0.095
C-HS2-B10-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.7	5.4	2.0	0.1	123				22		0.420		0.39	0.06		0.069
	STD. DEV.																
	MIN	26.7	5.4	2.0	0.1	123				22		0.420		0.39	0.06		0.069
	MAX	26.7	5.4	2.0	0.1	123				22		0.420		0.39	0.06		0.069
C-HS2-B15-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.7	5.4	10	0.4	184				75		0.96		0.34	0.04		0.066
	STD. DEV.																
	MIN	27.7	5.4	10	0.4	184				75		0.96		0.34	0.04		0.066
	MAX	27.7	5.4	10	0.4	184				75		0.96		0.34	0.04		0.066
C-HS2-B15-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	5.5	9.9	0.5	140				36		0.68		0.45	0.05		0.08
	STD. DEV.																
	MIN	26.9	5.5	9.9	0.5	140				36		0.68		0.45	0.05		0.08
	MAX	26.9	5.5	9.9	0.5	140				36		0.68		0.45	0.05		0.08

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-B15-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.0	5.1	2.0	0.7	125				10		0.54		0.33	0.03		0.023
	STD. DEV.																
	MIN	27.0	5.1	2.0	0.7	125				10		0.54		0.33	0.03		0.023
	MAX	27.0	5.1	2.0	0.7	125				10		0.54		0.33	0.03		0.023
C-HS2-C00-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.6	4.4	31	0.1	291				77		1.0		0.19	0.08		0.058
	STD. DEV.																
	MIN	27.6	4.4	31	0.1	291				77		1.0		0.19	0.08		0.058
	MAX	27.6	4.4	31	0.1	291				77		1.0		0.19	0.08		0.058
C-HS2-C00-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	5.5	18	0.1	303				18		0.56		0.48	0.10		0.046
	STD. DEV.																
	MIN	26.9	5.5	18	0.1	303				18		0.56		0.48	0.10		0.046
	MAX	26.9	5.5	18	0.1	303				18		0.56		0.48	0.10		0.046
C-HS2-C00-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.1	5.7	8.3	0.1	162				120		0.59		0.53	0.06		0.057
	STD. DEV.																
	MIN	26.1	5.7	8.3	0.1	162				120		0.59		0.53	0.06		0.057
	MAX	26.1	5.7	8.3	0.1	162				120		0.59		0.53	0.06		0.057
C-HS2-C04-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.3	5.8	31	0.8	289				140		2.9		0.71	5.5		0.34
	STD. DEV.																
	MIN	26.3	5.8	31	0.8	289				140		2.9		0.71	5.5		0.34
	MAX	26.3	5.8	31	0.8	289				140		2.9		0.71	5.5		0.34
C-HS2-C04-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.9	5.6	3.1	1.3	142				240		1.5		1.4	0.56		0.94
	STD. DEV.																
	MIN	25.9	5.6	3.1	1.3	142				240		1.5		1.4	0.56		0.94
	MAX	25.9	5.6	3.1	1.3	142				240		1.5		1.4	0.56		0.94
C-HS2-C04-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.0	5.4	3.1	1.0	136				22		0.55		0.45	0.29		0.32
	STD. DEV.																
	MIN	25.0	5.4	3.1	1.0	136				22		0.55		0.45	0.29		0.32
	MAX	25.0	5.4	3.1	1.0	136				22		0.55		0.45	0.29		0.32
C-HS2-C06-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.8	6.1	29	0.2	634				36		2.6		0.024	30		1.9
	STD. DEV.																
	MIN	26.8	6.1	29	0.2	634				36		2.6		0.024	30		1.9
	MAX	26.8	6.1	29	0.2	634				36		2.6		0.024	30		1.9

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-C06-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.7	5.9	35	0.5	306				69		1.7		0.31	2.2		1.5
	STD. DEV.																
	MIN	25.7	5.9	35	0.5	306				69		1.7		0.31	2.2		1.5
	MAX	25.7	5.9	35	0.5	306				69		1.7		0.31	2.2		1.5
C-HS2-C06-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	24.7	5.1	4.2	0.1	141				26		0.46		0.53	0.07		0.030
	STD. DEV.																
	MIN	24.7	5.1	4.2	0.1	141				26		0.46		0.53	0.07		0.030
	MAX	24.7	5.1	4.2	0.1	141				26		0.46		0.53	0.07		0.030
C-HS2-C08-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.2	6.0	48	0.1	558				98		2.8		0.046	6.4		0.14
	STD. DEV.																
	MIN	27.2	6.0	48	0.1	558				98		2.8		0.046	6.4		0.14
	MAX	27.2	6.0	48	0.1	558				98		2.8		0.046	6.4		0.14
C-HS2-C08-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.6	6.1	55	0.1	576				59		2.1		0.06	5.3		0.12
	STD. DEV.																
	MIN	26.6	6.1	55	0.1	576				59		2.1		0.06	5.3		0.12
	MAX	26.6	6.1	55	0.1	576				59		2.1		0.06	5.3		0.12
C-HS2-C08-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.9	5.3	4.2	0.1	123				36		0.81		0.43	0.09		0.10
	STD. DEV.																
	MIN	25.9	5.3	4.2	0.1	123				36		0.81		0.43	0.09		0.10
	MAX	25.9	5.3	4.2	0.1	123				36		0.81		0.43	0.09		0.10
C-HS2-C10-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.9	5.1	15	0.1	264				94		2.7		0.31	9.2		0.11
	STD. DEV.																
	MIN	26.9	5.1	15	0.1	264				94		2.7		0.31	9.2		0.11
	MAX	26.9	5.1	15	0.1	264				94		2.7		0.31	9.2		0.11
C-HS2-C10-8	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.3	5.6	10	0.1	140				51		0.96		0.56	0.07		0.12
	STD. DEV.																
	MIN	26.3	5.6	10	0.1	140				51		0.96		0.56	0.07		0.12
	MAX	26.3	5.6	10	0.1	140				51		0.96		0.56	0.07		0.12
C-HS2-C10-11	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.7	5.2	3.1	0.1	124				51		0.57		0.33	0.01		0.061
	STD. DEV.																
	MIN	25.7	5.2	3.1	0.1	124				51		0.57		0.33	0.01		0.061
	MAX	25.7	5.2	3.1	0.1	124				51		0.57		0.33	0.01		0.061

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
C-HS2-D04-5	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.6	5.8	32	0.1	478				93		2.5		0.12	7.0		0.93
	STD. DEV.																
	MIN	26.6	5.8	32	0.1	478				93		2.5		0.12	7.0		0.93
	MAX	26.6	5.8	32	0.1	478				93		2.5		0.12	7.0		0.93
C-HS2-D04-7	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.9	5.9	28	0.1	312				97		1.5		0.21	4.3		0.27
	STD. DEV.																
	MIN	25.9	5.9	28	0.1	312				97		1.5		0.21	4.3		0.27
	MAX	25.9	5.9	28	0.1	312				97		1.5		0.21	4.3		0.27
C-HS2-D04-10	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.3	5.7	10	0.1	144				84		0.57		0.081	0.22		0.31
	STD. DEV.																
	MIN	25.3	5.7	10	0.1	144				84		0.57		0.081	0.22		0.31
	MAX	25.3	5.7	10	0.1	144				84		0.57		0.081	0.22		0.31
C-HS2-D07-6	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	27.1	5.9	53	0.1	364				140		1.6		0.038	5.1		0.23
	STD. DEV.																
	MIN	27.1	5.9	53	0.1	364				140		1.6		0.038	5.1		0.23
	MAX	27.1	5.9	53	0.1	364				140		1.6		0.038	5.1		0.23
C-HS2-D07-8	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.2	5.8	31	0.1	294				110		1.2		0.57	0.28		0.20
	STD. DEV.																
	MIN	26.2	5.8	31	0.1	294				110		1.2		0.57	0.28		0.20
	MAX	26.2	5.8	31	0.1	294				110		1.2		0.57	0.28		0.20
C-HS2-D07-11	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	25.8	6.2	15	0.1	147				51		0.98		0.38	0.05		0.076
	STD. DEV.																
	MIN	25.8	6.2	15	0.1	147				51		0.98		0.38	0.05		0.076
	MAX	25.8	6.2	15	0.1	147				51		0.98		0.38	0.05		0.076
Storm Water Sample																	
C-HS2-SW-6 inch	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	28.0	5.9	40	3.4	284				40		1.0		0.45	1.2		0.029
	STD. DEV.																
	MIN	28.0	5.9	40	3.4	284				40		1.0		0.45	1.2		0.029
	MAX	28.0	5.9	40	3.4	284				40		1.0		0.45	1.2		0.029
C-HS2-SW-M	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	28.4	6.9	110	4.8	389				24		0.74		0.39	1.6		0.066
	STD. DEV.																
	MIN	28.4	6.9	110	4.8	389				24		0.74		0.39	1.6		0.066
	MAX	28.4	6.9	110	4.8	389				24		0.74		0.39	1.6		0.066

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

Sample ID	Statistical Parameter	Temp (°C)	pH	Total Alkalinity (mg/L)	DO (mg/L)	Specific Conductance (µS)	TS (% by wt)	TSS (mg/L)	$CBOD_5$ (mg/L)	COD	TN (mg/L N)[1]	TKN (mg/L N)	Organic N (mg/L N)[2]	NH_3-N (mg/L N)	NOx (mg/L N)	TIN (mg/L N)[3]	TP (mg/L)
Blanks																	
FB-EB	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	30.8	6.6	2.0	2	3				10		0.05		0.005	0.010		0.058
	STD. DEV.																
	MIN	30.8	6.6	2.0	2	3				10		0.05		0.005	0.010		0.058
	MAX	30.8	6.6	2.0	2	3				10		0.05		0.005	0.010		0.058
FB-DI	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	26.0	8.9	2.0	2	4				10		0.05		0.007	0.010		0.37
	STD. DEV.																
	MIN	26.0	8.9	2.0	2	4				10		0.05		0.007	0.010		0.37
	MAX	26.0	8.9	2.0	2	4				10		0.05		0.007	0.010		0.37
FB-Tap	n	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1
	MEAN	29.9	6.9	120	5	325				10		0.05		0.005	0.010		0.30
	STD. DEV.																
	MIN	29.9	6.9	120	5	325				10		0.05		0.005	0.010		0.30
	MAX	29.9	6.9	120	5	325				10		0.05		0.005	0.010		0.30

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

EC: expanded clay, CL: clinoptilolite, PS: polystyrene, SU: elemental sulfur, LS: lignocellulosic, GL: glycerol, OS: oyster shell, NS: sodium sesquicarbonate, GR: gravel

D.O. - 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 analysis.

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Appendix F: Laboratory Report

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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

August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-STE**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-01**						
Date/Time Collected		**07/26/11 15:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		07/26/11 15:35	SDH
Water Temperature	°C	29.6	DEP FT1400	0.1	0.1		07/26/11 15:35	SDH
Specific conductance	umhos/cm	1,028	DEP FT1200	0.1	0.1		07/26/11 15:35	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		07/26/11 15:35	SDH
Inorganics								
Ammonia as N	mg/L	35	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Carbonaceous BOD	mg/L	130	SM 5210B	2	2	07/27/11 09:13	08/01/11 15:57	MMF
Phosphorous - Total as P	mg/L	8.3	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	360	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	80	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Total Solids	% by wt	0.05	EPA 160.3/SM 2540G	0.01	0.01	07/28/11 15:30	07/29/11 15:24	JAG
Total Suspended Solids	mg/L	20	SM 2540D	1	1	07/28/11 09:59	07/29/11 09:13	JAG
Nitrate+Nitrite (N)	mg/L	0.10	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-STE-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-02**						
Date/Time Collected		**07/26/11 15:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	7.0	DEP FT1100	0.1	0.1		07/26/11 15:40	SDH
Water Temperature	°C	29.6	DEP FT1400	0.1	0.1		07/26/11 15:40	SDH
Specific conductance	umhos/cm	1,028	DEP FT1200	0.1	0.1		07/26/11 15:40	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		07/26/11 15:40	SDH
Inorganics								
Ammonia as N	mg/L	34	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Carbonaceous BOD	mg/L	120	SM 5210B	2	2	07/27/11 09:13	08/01/11 15:57	MMF
Phosphorous - Total as P	mg/L	8.2	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	390	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	78	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Total Solids	% by wt	0.05	EPA 160.3/SM 2540G	0.01	0.01	07/28/11 15:30	07/29/11 15:24	JAG
Total Suspended Solids	mg/L	18	SM 2540D	1	1	07/28/11 09:59	07/29/11 09:13	JAG

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Tampa, FL 33619

August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-STE-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-02**						
Date/Time Collected		**07/26/11 15:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Nitrate+Nitrite (N)	mg/L	0.12	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-SW-6 inch**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-03**						
Date/Time Collected		**07/26/11 08:52**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/26/11 08:52	SDH
Water Temperature	°C	28.0	DEP FT1400	0.1	0.1		07/26/11 08:52	SDH
Specific conductance	umhos/cm	284	DEP FT1200	0.1	0.1		07/26/11 08:52	SDH
Dissolved Oxygen	mg/L	3.4	DEP FT1500	0.1	0.1		07/26/11 08:52	SDH
Inorganics								
Ammonia as N	mg/L	0.45	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	40	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.029 I	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	40	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	1.2	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-SW-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-04**						
Date/Time Collected		**07/26/11 08:59**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		07/26/11 08:59	SDH
Water Temperature	°C	28.4	DEP FT1400	0.1	0.1		07/26/11 08:59	SDH
Specific conductance	umhos/cm	389	DEP FT1200	0.1	0.1		07/26/11 08:59	SDH
Dissolved Oxygen	mg/L	4.8	DEP FT1500	0.1	0.1		07/26/11 08:59	SDH
Inorganics								
Ammonia as N	mg/L	0.39	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	24 I	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.066	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD

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Tampa, FL 33619

August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-SW-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-04**						
Date/Time Collected		**07/26/11 08:59**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Total Alkalinity	mg/L	110	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	0.74	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	1.6	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-PZ01**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-05**						
Date/Time Collected		**07/25/11 09:07**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	4.9	DEP FT1100	0.1	0.1		07/25/11 09:07	SDH
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		07/25/11 09:07	SDH
Specific conductance	umhos/cm	248	DEP FT1200	0.1	0.1		07/25/11 09:07	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		07/25/11 09:07	SDH
Inorganics								
Ammonia as N	mg/L	0.21	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	86	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.081	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	1.2	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-PZ02**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-06**						
Date/Time Collected		**07/25/11 09:27**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		07/25/11 09:27	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		07/25/11 09:27	SDH
Specific conductance	umhos/cm	442	DEP FT1200	0.1	0.1		07/25/11 09:27	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		07/25/11 09:27	SDH
Inorganics								
Ammonia as N	mg/L	0.88	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD

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Sample Description		**C-HS2-PZ02**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-06**						
Date/Time Collected		**07/25/11 09:27**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Chemical Oxygen Demand	mg/L	59	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.038 I	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.10	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-PZ03**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-07**						
Date/Time Collected		**07/26/11 13:33**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/26/11 13:33	SDH
Water Temperature	°C	27.5	DEP FT1400	0.1	0.1		07/26/11 13:33	SDH
Specific conductance	umhos/cm	436	DEP FT1200	0.1	0.1		07/26/11 13:33	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 13:33	SDH
Inorganics								
Ammonia as N	mg/L	0.064	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	65	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.029 I	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	30	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	6.6	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-PZ04**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-08**						
Date/Time Collected		**07/25/11 09:46**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		07/25/11 09:46	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		07/25/11 09:46	SDH
Specific conductance	umhos/cm	212	DEP FT1200	0.1	0.1		07/25/11 09:46	SDH
Dissolved Oxygen	mg/L	1.2	DEP FT1500	0.1	0.1		07/25/11 09:46	SDH

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-PZ04**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-08**						
Date/Time Collected		**07/25/11 09:46**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.4	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-PZ06**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-09**						
Date/Time Collected		**07/25/11 10:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/25/11 10:00	SDH
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		07/25/11 10:00	SDH
Specific conductance	umhos/cm	425	DEP FT1200	0.1	0.1		07/25/11 10:00	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		07/25/11 10:00	SDH
Inorganics								
Ammonia as N	mg/L	0.35	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	63	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	1.3	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	50	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	1.8	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	5.9	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-A07-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-10**						
Date/Time Collected		**07/25/11 10:51**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		07/25/11 10:51	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		07/25/11 10:51	SDH

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-A07-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-10**						
Date/Time Collected		**07/25/11 10:51**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Specific conductance	umhos/cm	701	DEP FT1200	0.1	0.1		07/25/11 10:51	SDH
Dissolved Oxygen	mg/L	0.9	DEP FT1500	0.1	0.1		07/25/11 10:51	SDH
Inorganics								
Ammonia as N	mg/L	0.30	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	170	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.26	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	69	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	3.6	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	17	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-A07-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-11**						
Date/Time Collected		**07/25/11 11:37**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		07/25/11 11:37	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		07/25/11 11:37	SDH
Specific conductance	umhos/cm	508	DEP FT1200	0.1	0.1		07/25/11 11:37	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		07/25/11 11:37	SDH
Inorganics								
Ammonia as N	mg/L	0.16	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	4.7	SM 4500P-E	0.040	0.010	08/04/11 10:23	08/09/11 17:18	SMD
Total Alkalinity	mg/L	20	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	14	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-A07-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-12**						
Date/Time Collected		**07/25/11 12:17**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-A07-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-12**						
Date/Time Collected		**07/25/11 12:17**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
pH	SU	5.8	DEP FT1100	0.1	0.1		07/25/11 12:17	SDH
Water Temperature	°C	24.7	DEP FT1400	0.1	0.1		07/25/11 12:17	SDH
Specific conductance	umhos/cm	140	DEP FT1200	0.1	0.1		07/25/11 12:17	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		07/25/11 12:17	SDH
Inorganics								
Ammonia as N	mg/L	0.84	EPA 350.1	0.010	0.005		08/09/11 17:44	SMD
Chemical Oxygen Demand	mg/L	42	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	0.77	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.16	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-A09-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-13**						
Date/Time Collected		**07/25/11 14:58**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/25/11 14:58	SDH
Water Temperature	°C	29.2	DEP FT1400	0.1	0.1		07/25/11 14:58	SDH
Specific conductance	umhos/cm	482	DEP FT1200	0.1	0.1		07/25/11 14:58	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 14:58	SDH
Inorganics								
Ammonia as N	mg/L	0.064	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.34	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	69	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	8.3	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD

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Sample Description		**C-HS2-A09-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-14**						
Date/Time Collected		**07/25/11 15:03**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/25/11 15:03	SDH
Water Temperature	°C	29.2	DEP FT1400	0.1	0.1		07/25/11 15:03	SDH
Specific conductance	umhos/cm	482	DEP FT1200	0.1	0.1		07/25/11 15:03	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 15:03	SDH
Inorganics								
Ammonia as N	mg/L	0.067	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.38	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	59	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	2.3	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	8.6	EPA 353.2	0.04	0.01		08/10/11 10:27	SMD
Sample Description		**C-HS2-A09-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-15**						
Date/Time Collected		**07/25/11 16:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/25/11 16:00	SDH
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		07/25/11 16:00	SDH
Specific conductance	umhos/cm	238	DEP FT1200	0.1	0.1		07/25/11 16:00	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 16:00	SDH
Inorganics								
Ammonia as N	mg/L	0.21	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	67	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.22	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	40	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	0.62	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.40	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Sample Description		**C-HS2-A09-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-16**						
Date/Time Collected		**07/25/11 16:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		07/25/11 16:10	SDH
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		07/25/11 16:10	SDH
Specific conductance	umhos/cm	129	DEP FT1200	0.1	0.1		07/25/11 16:10	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 16:10	SDH
Inorganics								
Ammonia as N	mg/L	0.49	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	36	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.16	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD
Sample Description		**C-HS2-A10-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-17**						
Date/Time Collected		**07/25/11 12:55**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.8	DEP FT1100	0.1	0.1		07/25/11 12:55	SDH
Water Temperature	°C	28.3	DEP FT1400	0.1	0.1		07/25/11 12:55	SDH
Specific conductance	umhos/cm	809	DEP FT1200	0.1	0.1		07/25/11 12:55	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		07/25/11 12:55	SDH
Inorganics								
Ammonia as N	mg/L	11	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	100	EPA 410.4	25	10		07/28/11 08:00	ARM
Phosphorous - Total as P	mg/L	0.20	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	350	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	15	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.06	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Sample Description		**C-HS2-A10-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-18**						
Date/Time Collected		**07/25/11 13:13**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		07/25/11 13:13	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/25/11 13:13	SDH
Specific conductance	umhos/cm	548	DEP FT1200	0.1	0.1		07/25/11 13:13	SDH
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		07/25/11 13:13	SDH
Inorganics								
Ammonia as N	mg/L	8.7	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	100	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.45	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	180	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	9.4	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-A10-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-19**						
Date/Time Collected		**07/25/11 13:28**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/25/11 13:28	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		07/25/11 13:28	SDH
Specific conductance	umhos/cm	134	DEP FT1200	0.1	0.1		07/25/11 13:28	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		07/25/11 13:28	SDH
Inorganics								
Ammonia as N	mg/L	0.42	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	34	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	40	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	0.60	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-A11-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-20**						
Date/Time Collected		**07/25/11 14:45**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		07/25/11 14:45	SDH
Water Temperature	°C	29.3	DEP FT1400	0.1	0.1		07/25/11 14:45	SDH
Specific conductance	umhos/cm	706	DEP FT1200	0.1	0.1		07/25/11 14:45	SDH
Dissolved Oxygen	mg/L	0.6	DEP FT1500	0.1	0.1		07/25/11 14:45	SDH
Inorganics								
Ammonia as N	mg/L	0.20	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	90	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.096	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		08/01/11 16:18	MMF
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	7.4	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-A11-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-21**						
Date/Time Collected		**07/25/11 14:13**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		07/25/11 14:13	SDH
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		07/25/11 14:13	SDH
Specific conductance	umhos/cm	509	DEP FT1200	0.1	0.1		07/25/11 14:13	SDH
Dissolved Oxygen	mg/L	0.3	DEP FT1500	0.1	0.1		07/25/11 14:13	SDH
Inorganics								
Ammonia as N	mg/L	6.8	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	98	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.078	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	320	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	8.7	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	2.7	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-A11-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-22**						
Date/Time Collected		**07/25/11 15:46**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		07/25/11 15:46	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/25/11 15:46	SDH
Specific conductance	umhos/cm	132	DEP FT1200	0.1	0.1		07/25/11 15:46	SDH
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		07/25/11 15:46	SDH
Inorganics								
Ammonia as N	mg/L	0.38	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	30	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.062	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	5.0 I	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.63	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-A13-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-23**						
Date/Time Collected		**07/25/11 15:11**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		07/25/11 15:11	SDH
Water Temperature	°C	29.6	DEP FT1400	0.1	0.1		07/25/11 15:11	SDH
Specific conductance	umhos/cm	252	DEP FT1200	0.1	0.1		07/25/11 15:11	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 15:11	SDH
Inorganics								
Ammonia as N	mg/L	0.11	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	92	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.072	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	79	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.28	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-A13-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-24**						
Date/Time Collected		**07/25/11 15:24**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	4.6	DEP FT1100	0.1	0.1		07/25/11 15:24	SDH
Water Temperature	°C	28.7	DEP FT1400	0.1	0.1		07/25/11 15:24	SDH
Specific conductance	umhos/cm	159	DEP FT1200	0.1	0.1		07/25/11 15:24	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 15:24	SDH
Inorganics								
Ammonia as N	mg/L	0.52	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	36	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.046	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.84	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD
Sample Description		**C-HS2-A13-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-25**						
Date/Time Collected		**07/25/11 15:35**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	4.7	DEP FT1100	0.1	0.1		07/25/11 15:35	SDH
Water Temperature	°C	27.9	DEP FT1400	0.1	0.1		07/25/11 15:35	SDH
Specific conductance	umhos/cm	125	DEP FT1200	0.1	0.1		07/25/11 15:35	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 15:35	SDH
Inorganics								
Ammonia as N	mg/L	0.38	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.022 I	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	4.9 I	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.62	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B02-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-26**						
Date/Time Collected		**07/26/11 12:19**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		07/26/11 12:19	SDH
Water Temperature	°C	27.8	DEP FT1400	0.1	0.1		07/26/11 12:19	SDH
Specific conductance	umhos/cm	392	DEP FT1200	0.1	0.1		07/26/11 12:19	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 12:19	SDH
Inorganics								
Ammonia as N	mg/L	0.19	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	67	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.072	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	69	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.97	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B02-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-27**						
Date/Time Collected		**07/26/11 12:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		07/26/11 12:30	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/26/11 12:30	SDH
Specific conductance	umhos/cm	654	DEP FT1200	0.1	0.1		07/26/11 12:30	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 12:30	SDH
Inorganics								
Ammonia as N	mg/L	0.62	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	42	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.049	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	170	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B02-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-28**						
Date/Time Collected		**07/26/11 12:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		07/26/11 12:40	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		07/26/11 12:40	SDH
Specific conductance	umhos/cm	260	DEP FT1200	0.1	0.1		07/26/11 12:40	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 12:40	SDH
Inorganics								
Ammonia as N	mg/L	0.56	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	30	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.028 I	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	30	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.83	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B06-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-29**						
Date/Time Collected		**07/26/11 10:17**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		07/26/11 10:17	SDH
Water Temperature	°C	25.4	DEP FT1400	0.1	0.1		07/26/11 10:17	SDH
Specific conductance	umhos/cm	275	DEP FT1200	0.1	0.1		07/26/11 10:17	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		07/26/11 10:17	SDH
Inorganics								
Ammonia as N	mg/L	0.16	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	1.6	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	30	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	1.1	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B06-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-30**						
Date/Time Collected		**07/26/11 11:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		07/26/11 11:15	SDH
Water Temperature	°C	24.8	DEP FT1400	0.1	0.1		07/26/11 11:15	SDH
Specific conductance	umhos/cm	144	DEP FT1200	0.1	0.1		07/26/11 11:15	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 11:15	SDH
Inorganics								
Ammonia as N	mg/L	0.58	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	83	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.33	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.12	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B06-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-31**						
Date/Time Collected		**07/26/11 11:31**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/26/11 11:31	SDH
Water Temperature	°C	24.3	DEP FT1400	0.1	0.1		07/26/11 11:31	SDH
Specific conductance	umhos/cm	130	DEP FT1200	0.1	0.1		07/26/11 11:31	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		07/26/11 11:31	SDH
Inorganics								
Ammonia as N	mg/L	0.51	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	44	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.79	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.10	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B08-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-32**						
Date/Time Collected		**07/25/11 13:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		07/25/11 13:30	SDH
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		07/25/11 13:30	SDH
Specific conductance	umhos/cm	506	DEP FT1200	0.1	0.1		07/25/11 13:30	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 13:30	SDH
Inorganics								
Ammonia as N	mg/L	0.067	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	100	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	0.096	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	21	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	34	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-C06-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-33**						
Date/Time Collected		**07/26/11 09:15**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.4	DEP FT1100	0.1	0.1		07/26/11 09:15	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		07/26/11 09:15	SDH
Specific conductance	umhos/cm	634	DEP FT1200	0.1	0.1		07/26/11 09:15	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 09:15	SDH
Inorganics								
Ammonia as N	mg/L	0.024	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	48	EPA 410.4	25	10		07/29/11 08:30	ARM
Phosphorous - Total as P	mg/L	1.8	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	27	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	30	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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August 18, 2011
Work Order: 1106264

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B08-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-34**						
Date/Time Collected		**07/25/11 13:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/25/11 13:50	SDH
Water Temperature	°C	26.5	DEP FT1400	0.1	0.1		07/25/11 13:50	SDH
Specific conductance	umhos/cm	518	DEP FT1200	0.1	0.1		07/25/11 13:50	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 13:50	SDH
Inorganics								
Ammonia as N	mg/L	0.038	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	46	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.23	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	38	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.4	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	9.0	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B08-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-35**						
Date/Time Collected		**07/25/11 14:11**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		07/25/11 14:11	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		07/25/11 14:11	SDH
Specific conductance	umhos/cm	132	DEP FT1200	0.1	0.1		07/25/11 14:11	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/25/11 14:11	SDH
Inorganics								
Ammonia as N	mg/L	0.54	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	20 I	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.055	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.85	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	0.12	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B10-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-36**						
Date/Time Collected		**07/25/11 11:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.5	DEP FT1100	0.1	0.1		07/25/11 11:10	SDH
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		07/25/11 11:10	SDH
Specific conductance	umhos/cm	452	DEP FT1200	0.1	0.1		07/25/11 11:10	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 11:10	SDH
Inorganics								
Ammonia as N	mg/L	6.6	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	94	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.092	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	140	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	7.5	EPA 351.2	0.20	0.05	08/03/11 09:16	08/08/11 11:23	SMD
Nitrate+Nitrite (N)	mg/L	2.5	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B10-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-37**						
Date/Time Collected		**07/25/11 11:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.3	DEP FT1100	0.1	0.1		07/25/11 11:50	SDH
Water Temperature	°C	27.4	DEP FT1400	0.1	0.1		07/25/11 11:50	SDH
Specific conductance	umhos/cm	173	DEP FT1200	0.1	0.1		07/25/11 11:50	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		07/25/11 11:50	SDH
Inorganics								
Ammonia as N	mg/L	0.72	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	38	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.095	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	22	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.89	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.06	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B10-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-38**						
Date/Time Collected		**07/25/11 12:28**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		07/25/11 12:28	SDH
Water Temperature	°C	26.7	DEP FT1400	0.1	0.1		07/25/11 12:28	SDH
Specific conductance	umhos/cm	123	DEP FT1200	0.1	0.1		07/25/11 12:28	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/25/11 12:28	SDH
Inorganics								
Ammonia as N	mg/L	0.39	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	22 I	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.069	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.42	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.06	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-B15-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-39**						
Date/Time Collected		**07/25/11 10:29**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		07/25/11 10:29	SDH
Water Temperature	°C	27.7	DEP FT1400	0.1	0.1		07/25/11 10:29	SDH
Specific conductance	umhos/cm	184	DEP FT1200	0.1	0.1		07/25/11 10:29	SDH
Dissolved Oxygen	mg/L	0.4	DEP FT1500	0.1	0.1		07/25/11 10:29	SDH
Inorganics								
Ammonia as N	mg/L	0.34	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	75	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.066	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	10	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.04	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-B15-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-40**						
Date/Time Collected		**07/25/11 11:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		07/25/11 11:30	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/25/11 11:30	SDH
Specific conductance	umhos/cm	140	DEP FT1200	0.1	0.1		07/25/11 11:30	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		07/25/11 11:30	SDH
Inorganics								
Ammonia as N	mg/L	0.45	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	36	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.080	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	9.9	SM 2320B	8.0	2.0	08/02/11 12:45	08/02/11 14:55	MMF
Total Kjeldahl Nitrogen	mg/L	0.68	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD
Sample Description		**C-HS2-B15-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-41**						
Date/Time Collected		**07/25/11 12:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		07/25/11 12:00	SDH
Water Temperature	°C	27.0	DEP FT1400	0.1	0.1		07/25/11 12:00	SDH
Specific conductance	umhos/cm	125	DEP FT1200	0.1	0.1		07/25/11 12:00	SDH
Dissolved Oxygen	mg/L	0.7	DEP FT1500	0.1	0.1		07/25/11 12:00	SDH
Inorganics								
Ammonia as N	mg/L	0.33	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.023 I	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.54	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C00-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-42**						
Date/Time Collected		**07/26/11 11:44**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	4.4	DEP FT1100	0.1	0.1		07/26/11 11:44	SDH
Water Temperature	°C	27.6	DEP FT1400	0.1	0.1		07/26/11 11:44	SDH
Specific conductance	umhos/cm	291	DEP FT1200	0.1	0.1		07/26/11 11:44	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 11:44	SDH
Inorganics								
Ammonia as N	mg/L	0.19	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	77	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.058	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.0	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.08	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD
Sample Description		**C-HS2-C00-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-43**						
Date/Time Collected		**07/26/11 12:00**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		07/26/11 12:00	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/26/11 12:00	SDH
Specific conductance	umhos/cm	303	DEP FT1200	0.1	0.1		07/26/11 12:00	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 12:00	SDH
Inorganics								
Ammonia as N	mg/L	0.48	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	18 I	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.046	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	18	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.56	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.10	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C00-M-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-44**						
Date/Time Collected		**07/26/11 12:05**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.5	DEP FT1100	0.1	0.1		07/26/11 12:05	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/26/11 12:05	SDH
Specific conductance	umhos/cm	303	DEP FT1200	0.1	0.1		07/26/11 12:05	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 12:05	SDH
Inorganics								
Ammonia as N	mg/L	0.52	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	15 I	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.034 I	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	17	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.64	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-C00-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-45**						
Date/Time Collected		**07/26/11 12:51**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/26/11 12:51	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		07/26/11 12:51	SDH
Specific conductance	umhos/cm	162	DEP FT1200	0.1	0.1		07/26/11 12:51	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 12:51	SDH
Inorganics								
Ammonia as N	mg/L	0.53	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	120	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.057	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	8.3	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.59	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.06	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C04-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-46**						
Date/Time Collected		**07/25/11 07:53**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		07/25/11 07:53	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		07/25/11 07:53	SDH
Specific conductance	umhos/cm	289	DEP FT1200	0.1	0.1		07/25/11 07:53	SDH
Dissolved Oxygen	mg/L	0.8	DEP FT1500	0.1	0.1		07/25/11 07:53	SDH
Inorganics								
Ammonia as N	mg/L	0.71	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	140	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.34	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.9	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	5.5	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD
Sample Description		**C-HS2-C04-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-47**						
Date/Time Collected		**07/25/11 08:09**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		07/25/11 08:09	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		07/25/11 08:09	SDH
Specific conductance	umhos/cm	142	DEP FT1200	0.1	0.1		07/25/11 08:09	SDH
Dissolved Oxygen	mg/L	1.3	DEP FT1500	0.1	0.1		07/25/11 08:09	SDH
Inorganics								
Ammonia as N	mg/L	1.4	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	240	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.94	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	3.1 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.56	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C04-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-48**						
Date/Time Collected		**07/25/11 08:20**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.4	DEP FT1100	0.1	0.1		07/25/11 08:20	SDH
Water Temperature	°C	25.0	DEP FT1400	0.1	0.1		07/25/11 08:20	SDH
Specific conductance	umhos/cm	136	DEP FT1200	0.1	0.1		07/25/11 08:20	SDH
Dissolved Oxygen	mg/L	1.0	DEP FT1500	0.1	0.1		07/25/11 08:20	SDH
Inorganics								
Ammonia as N	mg/L	0.45	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	22 I	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	0.32	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	3.1 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.55	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.29	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-C06-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-49**						
Date/Time Collected		**07/26/11 09:10**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/26/11 09:10	SDH
Water Temperature	°C	26.8	DEP FT1400	0.1	0.1		07/26/11 09:10	SDH
Specific conductance	umhos/cm	634	DEP FT1200	0.1	0.1		07/26/11 09:10	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 09:10	SDH
Inorganics								
Ammonia as N	mg/L	0.024	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	36	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	1.9	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	29	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.6	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	30	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C06-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-50**						
Date/Time Collected		**07/26/11 09:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/26/11 09:30	SDH
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		07/26/11 09:30	SDH
Specific conductance	umhos/cm	306	DEP FT1200	0.1	0.1		07/26/11 09:30	SDH
Dissolved Oxygen	mg/L	0.5	DEP FT1500	0.1	0.1		07/26/11 09:30	SDH
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	69	EPA 410.4	25	10	08/01/11 09:00	08/01/11 15:35	MMF
Phosphorous - Total as P	mg/L	1.5	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	35	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.7	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	2.2	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-C06-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-51**						
Date/Time Collected		**07/26/11 09:48**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		07/26/11 09:48	SDH
Water Temperature	°C	24.7	DEP FT1400	0.1	0.1		07/26/11 09:48	SDH
Specific conductance	umhos/cm	141	DEP FT1200	0.1	0.1		07/26/11 09:48	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 09:48	SDH
Inorganics								
Ammonia as N	mg/L	0.53	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	26	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.030 I	SM 4500P-E	0.040	0.010	08/10/11 14:32	08/10/11 15:10	SMD
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.46	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.07	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C08-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-52**						
Date/Time Collected		**07/26/11 09:59**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		07/26/11 09:59	SDH
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		07/26/11 09:59	SDH
Specific conductance	umhos/cm	558	DEP FT1200	0.1	0.1		07/26/11 09:59	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 09:59	SDH
Inorganics								
Ammonia as N	mg/L	0.046	EPA 350.1	0.010	0.005		08/09/11 17:58	SMD
Chemical Oxygen Demand	mg/L	98	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.14	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	48	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.8	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	6.4	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

Sample Description		**C-HS2-C08-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-53**						
Date/Time Collected		**07/26/11 10:04**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.0	DEP FT1100	0.1	0.1		07/26/11 10:04	SDH
Water Temperature	°C	27.2	DEP FT1400	0.1	0.1		07/26/11 10:04	SDH
Specific conductance	umhos/cm	558	DEP FT1200	0.1	0.1		07/26/11 10:04	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 10:04	SDH
Inorganics								
Ammonia as N	mg/L	0.036	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	100	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	48	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	6.5	EPA 353.2	0.04	0.01		08/10/11 11:15	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C08-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-54**						
Date/Time Collected		**07/26/11 10:27**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.1	DEP FT1100	0.1	0.1		07/26/11 10:27	SDH
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		07/26/11 10:27	SDH
Specific conductance	umhos/cm	576	DEP FT1200	0.1	0.1		07/26/11 10:27	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 10:27	SDH
Inorganics								
Ammonia as N	mg/L	0.064	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	59	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	55	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.1	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	5.3	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-C08-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-55**						
Date/Time Collected		**07/26/11 11:04**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		07/26/11 11:04	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		07/26/11 11:04	SDH
Specific conductance	umhos/cm	123	DEP FT1200	0.1	0.1		07/26/11 11:04	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 11:04	SDH
Inorganics								
Ammonia as N	mg/L	0.43	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	36	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.81	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.09	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C10-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-56**						
Date/Time Collected		**07/26/11 07:53**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.1	DEP FT1100	0.1	0.1		07/26/11 07:53	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/26/11 07:53	SDH
Specific conductance	umhos/cm	264	DEP FT1200	0.1	0.1		07/26/11 07:53	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		07/26/11 07:53	SDH
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	94	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.11	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.7	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	9.2	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-C10-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-57**						
Date/Time Collected		**07/26/11 08:21**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.6	DEP FT1100	0.1	0.1		07/26/11 08:21	SDH
Water Temperature	°C	26.3	DEP FT1400	0.1	0.1		07/26/11 08:21	SDH
Specific conductance	umhos/cm	140	DEP FT1200	0.1	0.1		07/26/11 08:21	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 08:21	SDH
Inorganics								
Ammonia as N	mg/L	0.56	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	51	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.12	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	10	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.96	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.07	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C10-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-58**						
Date/Time Collected		**07/26/11 09:40**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		07/26/11 09:40	SDH
Water Temperature	°C	25.7	DEP FT1400	0.1	0.1		07/26/11 09:40	SDH
Specific conductance	umhos/cm	124	DEP FT1200	0.1	0.1		07/26/11 09:40	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 09:40	SDH
Inorganics								
Ammonia as N	mg/L	0.33	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	51	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.061	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	3.1 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.01 I	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-C11-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-59**						
Date/Time Collected		**07/26/11 07:42**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	4.8	DEP FT1100	0.1	0.1		07/26/11 07:42	SDH
Water Temperature	°C	26.9	DEP FT1400	0.1	0.1		07/26/11 07:42	SDH
Specific conductance	umhos/cm	304	DEP FT1200	0.1	0.1		07/26/11 07:42	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 07:42	SDH
Inorganics								
Ammonia as N	mg/L	0.20	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	53	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.073	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.3	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	7.8	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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August 18, 2011
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Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-C11-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-60**						
Date/Time Collected		**07/26/11 08:30**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.3	DEP FT1100	0.1	0.1		07/26/11 08:30	SDH
Water Temperature	°C	26.1	DEP FT1400	0.1	0.1		07/26/11 08:30	SDH
Specific conductance	umhos/cm	190	DEP FT1200	0.1	0.1		07/26/11 08:30	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 08:30	SDH
Inorganics								
Ammonia as N	mg/L	0.41	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	72	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.13	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	6.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.90	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.25	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-C11-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-61**						
Date/Time Collected		**07/26/11 08:48**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.0	DEP FT1100	0.1	0.1		07/26/11 08:48	SDH
Water Temperature	°C	25.2	DEP FT1400	0.1	0.1		07/26/11 08:48	SDH
Specific conductance	umhos/cm	125	DEP FT1200	0.1	0.1		07/26/11 08:48	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 08:48	SDH
Inorganics								
Ammonia as N	mg/L	0.030	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	34	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.063	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.02 I	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-D04-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-62**						
Date/Time Collected		**07/26/11 10:47**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		07/26/11 10:47	SDH
Water Temperature	°C	26.6	DEP FT1400	0.1	0.1		07/26/11 10:47	SDH
Specific conductance	umhos/cm	478	DEP FT1200	0.1	0.1		07/26/11 10:47	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 10:47	SDH
Inorganics								
Ammonia as N	mg/L	0.12	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	93	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.93	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	32	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	2.5	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	7.0	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-D04-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-63**						
Date/Time Collected		**07/26/11 13:02**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/26/11 13:02	SDH
Water Temperature	°C	25.9	DEP FT1400	0.1	0.1		07/26/11 13:02	SDH
Specific conductance	umhos/cm	312	DEP FT1200	0.1	0.1		07/26/11 13:02	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 13:02	SDH
Inorganics								
Ammonia as N	mg/L	0.21	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	97	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.27	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	28	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.5	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	4.3	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-D04-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-64**						
Date/Time Collected		**07/26/11 14:04**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/26/11 14:04	SDH
Water Temperature	°C	25.3	DEP FT1400	0.1	0.1		07/26/11 14:04	SDH
Specific conductance	umhos/cm	144	DEP FT1200	0.1	0.1		07/26/11 14:04	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 14:04	SDH
Inorganics								
Ammonia as N	mg/L	0.081	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	84	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.31	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	10	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.57	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.22	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-D07-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-65**						
Date/Time Collected		**07/26/11 13:13**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/26/11 13:13	SDH
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		07/26/11 13:13	SDH
Specific conductance	umhos/cm	364	DEP FT1200	0.1	0.1		07/26/11 13:13	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 13:13	SDH
Inorganics								
Ammonia as N	mg/L	0.038	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	140	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.23	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	53	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	5.1	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-D07-S-DUP**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-66**						
Date/Time Collected		**07/26/11 13:18**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.9	DEP FT1100	0.1	0.1		07/26/11 13:18	SDH
Water Temperature	°C	27.1	DEP FT1400	0.1	0.1		07/26/11 13:18	SDH
Specific conductance	umhos/cm	364	DEP FT1200	0.1	0.1		07/26/11 13:18	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 13:18	SDH
Inorganics								
Ammonia as N	mg/L	0.033	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	180	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.23	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	52	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.6	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	5.2	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD
Sample Description		**C-HS2-D07-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-67**						
Date/Time Collected		**07/26/11 13:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.8	DEP FT1100	0.1	0.1		07/26/11 13:50	SDH
Water Temperature	°C	26.2	DEP FT1400	0.1	0.1		07/26/11 13:50	SDH
Specific conductance	umhos/cm	294	DEP FT1200	0.1	0.1		07/26/11 13:50	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 13:50	SDH
Inorganics								
Ammonia as N	mg/L	0.57	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	110	EPA 410.4	25	10	08/02/11 08:40	08/02/11 16:22	MMF
Phosphorous - Total as P	mg/L	0.20	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	31	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.2	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.28	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-D07-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-68**						
Date/Time Collected		**07/26/11 14:37**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.2	DEP FT1100	0.1	0.1		07/26/11 14:37	SDH
Water Temperature	°C	25.8	DEP FT1400	0.1	0.1		07/26/11 14:37	SDH
Specific conductance	umhos/cm	147	DEP FT1200	0.1	0.1		07/26/11 14:37	SDH
Dissolved Oxygen	mg/L	0.1 U	DEP FT1500	0.1	0.1		07/26/11 14:37	SDH
Inorganics								
Ammonia as N	mg/L	0.38	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	51	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.076	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	15	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.98	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.05	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-BKG-S**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-69**						
Date/Time Collected		**07/26/11 14:50**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		07/26/11 14:50	SDH
Water Temperature	°C	26.4	DEP FT1400	0.1	0.1		07/26/11 14:50	SDH
Specific conductance	umhos/cm	189	DEP FT1200	0.1	0.1		07/26/11 14:50	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		07/26/11 14:50	SDH
Inorganics								
Ammonia as N	mg/L	0.30	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	130	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.23	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	4.2 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	1.1	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.08	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**C-HS2-BKG-M**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-70**						
Date/Time Collected		**07/26/11 15:07**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.7	DEP FT1100	0.1	0.1		07/26/11 15:07	SDH
Water Temperature	°C	25.4	DEP FT1400	0.1	0.1		07/26/11 15:07	SDH
Specific conductance	umhos/cm	182	DEP FT1200	0.1	0.1		07/26/11 15:07	SDH
Dissolved Oxygen	mg/L	0.2	DEP FT1500	0.1	0.1		07/26/11 15:07	SDH
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	31	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	8.3	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.71	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**C-HS2-BKG-D**						
Matrix		**Groundwater**						
SAL Sample Number		**1106264-71**						
Date/Time Collected		**07/26/11 15:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	5.2	DEP FT1100	0.1	0.1		07/26/11 15:25	SDH
Water Temperature	°C	25.2	DEP FT1400	0.1	0.1		07/26/11 15:25	SDH
Specific conductance	umhos/cm	130	DEP FT1200	0.1	0.1		07/26/11 15:25	SDH
Dissolved Oxygen	mg/L	0.1	DEP FT1500	0.1	0.1		07/26/11 15:25	SDH
Inorganics								
Ammonia as N	mg/L	0.31	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	27	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.10	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	2.1 I	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.52	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.03 I	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**FB-Tap**						
Matrix		**Drinking Water**						
SAL Sample Number		**1106264-72**						
Date/Time Collected		**07/26/11 14:25**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.9	DEP FT1100	0.1	0.1		07/26/11 14:25	SDH
Water Temperature	°C	29.9	DEP FT1400	0.1	0.1		07/26/11 14:25	SDH
Specific conductance	umhos/cm	325	DEP FT1200	0.1	0.1		07/26/11 14:25	SDH
Dissolved Oxygen	mg/L	5.0	DEP FT1500	0.1	0.1		07/26/11 14:25	SDH
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.30	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	120	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

Sample Description		**FB-DI**						
Matrix		**Reagent Water**						
SAL Sample Number		**1106264-73**						
Date/Time Collected		**07/27/11 09:34**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	8.9	DEP FT1100	0.1	0.1		07/27/11 09:34	SDH
Water Temperature	°C	26.0	DEP FT1400	0.1	0.1		07/27/11 09:34	SDH
Specific conductance	umhos/cm	4	DEP FT1200	0.1	0.1		07/27/11 09:34	SDH
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		07/27/11 09:34	SDH
Inorganics								
Ammonia as N	mg/L	0.007 I	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.37	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

SOUTHERN ANALYTICAL LABORATORIES, INC.
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Tampa, FL 33619

August 18, 2011
Work Order: 1106264

Laboratory Report

Project Name **Seminole County C-HS2**

Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	By
Sample Description		**EB**						
Matrix		**Reagent Water**						
SAL Sample Number		**1106264-74**						
Date/Time Collected		**07/26/11 14:11**						
Collected by		**Sean Harmon**						
Date/Time Received		**07/27/11 10:22**						
Field Parameters								
pH	SU	6.6	DEP FT1100	0.1	0.1		07/26/11 14:11	SDH
Water Temperature	°C	30.8	DEP FT1400	0.1	0.1		07/26/11 14:11	SDH
Specific conductance	umhos/cm	3	DEP FT1200	0.1	0.1		07/26/11 14:11	SDH
Dissolved Oxygen	mg/L	2.0	DEP FT1500	0.1	0.1		07/26/11 14:11	SDH
Inorganics								
Ammonia as N	mg/L	0.005 U	EPA 350.1	0.010	0.005		08/10/11 13:56	SMD
Chemical Oxygen Demand	mg/L	10 U	EPA 410.4	25	10	08/02/11 11:30	08/02/11 16:27	MMF
Phosphorous - Total as P	mg/L	0.058	SM 4500P-E	0.040	0.010	08/10/11 17:26	08/12/11 10:32	SMD
Total Alkalinity	mg/L	2.0 U	SM 2320B	8.0	2.0		07/30/11 09:45	KTC
Total Kjeldahl Nitrogen	mg/L	0.05 U	EPA 351.2	0.20	0.05	08/05/11 11:05	08/09/11 10:30	SMD
Nitrate+Nitrite (N)	mg/L	0.01 U	EPA 353.2	0.04	0.01		08/12/11 11:05	SMD

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BG12716 - BOD										
Blank (BG12716-BLK1)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	2 U	2	2	mg/L						
Blank (BG12716-BLK2)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	2 U	2	2	mg/L						
LCS (BG12716-BS1)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	186	2	2	mg/L	200		93	85-115		
LCS (BG12716-BS2)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	176	2	2	mg/L	200		88	85-115		
LCS Dup (BG12716-BSD1)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	189	2	2	mg/L	200		95	85-115	2	200
LCS Dup (BG12716-BSD2)					Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	178	2	2	mg/L	200		89	85-115	1	200
Duplicate (BG12716-DUP1)		**Source: 1106221-01**			Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	79	2	2	mg/L		84			6	25
Duplicate (BG12716-DUP2)		**Source: 1106622-03**			Prepared: 07/27/11 Analyzed: 08/01/11					
Carbonaceous BOD	2 U	2	2	mg/L		ND				25
Batch BG12809 - COD prep										
Blank (BG12809-BLK1)					Prepared & Analyzed: 07/28/11					
Chemical Oxygen Demand	10 U	25	10	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 BG12809 - COD prep										
LCS (BG12809-BS1)					Prepared & Analyzed: 07/28/11					
Chemical Oxygen Demand	46	25	10	mg/L	50		92	90-110		
Matrix Spike (BG12809-MS1)		**Source: 1106264-04**			Prepared & Analyzed: 07/28/11					
Chemical Oxygen Demand	73	25	10	mg/L	50	24	98	85-115		
Matrix Spike Dup (BG12809-MSD1)		**Source: 1106264-04**			Prepared & Analyzed: 07/28/11					
Chemical Oxygen Demand	69	25	10	mg/L	50	24	90	85-115	6	32
Batch BG12810 - TSS prep										
Blank (BG12810-BLK1)					Prepared: 07/28/11 Analyzed: 07/29/11					
Total Suspended Solids	1 U	1	1	mg/L						
LCS (BG12810-BS1)					Prepared: 07/28/11 Analyzed: 07/29/11					
Total Suspended Solids	46.0	1	1	mg/L	50		92	85-115		
Duplicate (BG12810-DUP1)		**Source: 1106264-01**			Prepared: 07/28/11 Analyzed: 07/29/11					
Total Suspended Solids	18.5	1	1	mg/L		20.0			8	30
Duplicate (BG12810-DUP2)		**Source: 1106264-02**			Prepared: 07/28/11 Analyzed: 07/29/11					
Total Suspended Solids	19.5	1	1	mg/L		18.5			5	30
Batch BG12922 - COD prep										
Blank (BG12922-BLK1)					Prepared & Analyzed: 07/29/11					
Chemical Oxygen Demand	10 U	25	10	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 BG12922 - COD prep										
LCS (BG12922-BS1)					Prepared & Analyzed: 07/29/11					
Chemical Oxygen Demand	46	25	10	mg/L	50		92	90-110		
Matrix Spike (BG12922-MS1)		**Source: 1106264-28**			Prepared & Analyzed: 07/29/11					
Chemical Oxygen Demand	75	25	10	mg/L	50	30	90	85-115		
Matrix Spike Dup (BG12922-MSD1)		**Source: 1106264-28**			Prepared & Analyzed: 07/29/11					
Chemical Oxygen Demand	75	25	10	mg/L	50	30	90	85-115	0	32
Batch BG12931 - TS prep										
Blank (BG12931-BLK1)					Prepared: 07/28/11 Analyzed: 07/29/11					
Total Solids	0.01 U	0.01	0.01	% by wt						
Duplicate (BG12931-DUP1)		**Source: 1106587-01**			Prepared: 07/28/11 Analyzed: 07/29/11					
Total Solids	1.95	0.01	0.01	% by wt		1.96			0.5	10
Batch BG13002 - alkalinity										
Blank (BG13002-BLK2)					Prepared & Analyzed: 07/30/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
Blank (BG13002-BLK3)					Prepared & Analyzed: 07/30/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BG13002-BS1)					Prepared & Analyzed: 07/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	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 BG13002 - alkalinity										
LCS (BG13002-BS2)					Prepared & Analyzed: 07/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		100	90-110		
Matrix Spike (BG13002-MS1)		**Source: 1106264-74**			Prepared & Analyzed: 07/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120		
Matrix Spike (BG13002-MS2)		**Source: 1106264-60**			Prepared & Analyzed: 07/30/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	6.2	103	80-120		
Matrix Spike Dup (BG13002-MSD1)		**Source: 1106264-74**			Prepared & Analyzed: 07/30/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	ND	100	80-120	0	26
Matrix Spike Dup (BG13002-MSD2)		**Source: 1106264-60**			Prepared & Analyzed: 07/30/11					
Total Alkalinity	140	8.0	2.0	mg/L	120	6.2	103	80-120	0	26
Batch BH10135 - COD prep										
Blank (BH10135-BLK1)					Prepared & Analyzed: 08/01/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH10135-BS1)					Prepared & Analyzed: 08/01/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BH10135-MS1)		**Source: 1106264-41**			Prepared & Analyzed: 08/01/11					
Chemical Oxygen Demand	57	25	10	mg/L	50	ND	114	85-115		
Matrix Spike Dup (BH10135-MSD1)		**Source: 1106264-41**			Prepared & Analyzed: 08/01/11					
Chemical Oxygen Demand	55	25	10	mg/L	50	ND	110	85-115	4	32

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH10136 - alkalinity										
Blank (BH10136-BLK1)					Prepared & Analyzed: 08/01/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH10136-BS1)					Prepared & Analyzed: 08/01/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH10136-MS1)		**Source: 1106264-20**			Prepared & Analyzed: 08/01/11					
Total Alkalinity	270	8.0	2.0	mg/L	120	140	103	80-120		
Matrix Spike Dup (BH10136-MSD1)		**Source: 1106264-20**			Prepared & Analyzed: 08/01/11					
Total Alkalinity	270	8.0	2.0	mg/L	120	140	103	80-120	0	26
Batch BH10223 - alkalinity										
Blank (BH10223-BLK1)					Prepared & Analyzed: 08/02/11					
Total Alkalinity	2.0 U	8.0	2.0	mg/L						
LCS (BH10223-BS1)					Prepared & Analyzed: 08/02/11					
Total Alkalinity	120	8.0	2.0	mg/L	120		95	90-110		
Matrix Spike (BH10223-MS1)		**Source: 1106264-40**			Prepared & Analyzed: 08/02/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	9.9	87	80-120		
Matrix Spike Dup (BH10223-MSD1)		**Source: 1106264-40**			Prepared & Analyzed: 08/02/11					
Total Alkalinity	120	8.0	2.0	mg/L	120	9.9	87	80-120	0	26
Batch BH10224 - COD prep										
Blank (BH10224-BLK1)					Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	10 U	25	10	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 BH10224 - COD prep										
LCS (BH10224-BS1)					Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BH10224-MS1)		**Source: 1106264-74**			Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	48	25	10	mg/L	50	ND	96	85-115		
Matrix Spike Dup (BH10224-MSD1)		**Source: 1106264-74**			Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	53	25	10	mg/L	50	ND	106	85-115	10	32
Batch BH10225 - COD prep										
Blank (BH10225-BLK1)					Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	10 U	25	10	mg/L						
LCS (BH10225-BS1)					Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	53	25	10	mg/L	50		106	90-110		
Matrix Spike (BH10225-MS1)		**Source: 1106264-51**			Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	71	25	10	mg/L	50	26	90	85-115		
Matrix Spike Dup (BH10225-MSD1)		**Source: 1106264-51**			Prepared & Analyzed: 08/02/11					
Chemical Oxygen Demand	75	25	10	mg/L	50	26	98	85-115	5	32
Batch BH10304 - Digestion for TKN by EPA 351.2										
Blank (BH10304-BLK1)					Prepared: 08/03/11 Analyzed: 08/08/11					
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 BH10304 - Digestion for TKN by EPA 351.2										
Blank (BH10304-BLK2)					Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH10304-BS1)					Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	2.28	0.20	0.05	mg/L	2.5		90	90-110		
LCS (BH10304-BS2)					Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	2.27	0.20	0.05	mg/L	2.5		90	90-110		
Matrix Spike (BH10304-MS1)		**Source: 1106264-01**			Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	82.1	0.20	0.05	mg/L	2.5	79.7	94	80-120		
Matrix Spike (BH10304-MS2)		**Source: 1106264-19**			Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	2.67	0.20	0.05	mg/L	2.5	0.600	82	80-120		
Matrix Spike Dup (BH10304-MSD1)		**Source: 1106264-01**			Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	82.4	0.20	0.05	mg/L	2.5	79.7	106	80-120	0.4	20
Matrix Spike Dup (BH10304-MSD2)		**Source: 1106264-19**			Prepared: 08/03/11 Analyzed: 08/08/11					
Total Kjeldahl Nitrogen	2.70	0.20	0.05	mg/L	2.5	0.600	83	80-120	1	20
Batch BH10409 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BH10409-BLK1)					Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BH10409-BLK2)					Prepared & Analyzed: 08/04/11					
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 BH10409 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BH10409-BS1)					Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.537	0.040	0.010	mg/L	0.50		107	90-110		
LCS (BH10409-BS2)					Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.537	0.040	0.010	mg/L	0.50		107	90-110		
Matrix Spike (BH10409-MS1)		**Source: 1106293-07**			Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.516	0.040	0.010	mg/L	0.50	0.119	79	75-125		
Matrix Spike (BH10409-MS2)		**Source: 1106581-07**			Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.485	0.040	0.010	mg/L	0.50	0.0547	86	75-125		
Matrix Spike Dup (BH10409-MSD1)		**Source: 1106293-07**			Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.536	0.040	0.010	mg/L	0.50	0.119	83	75-125	4	25
Matrix Spike Dup (BH10409-MSD2)		**Source: 1106581-07**			Prepared & Analyzed: 08/04/11					
Phosphorous - Total as P	0.484	0.040	0.010	mg/L	0.50	0.0547	86	75-125	0.3	25
Batch BH10510 - Digestion for TKN by EPA 351.2										
Blank (BH10510-BLK1)					Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
Blank (BH10510-BLK2)					Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	0.05 U	0.20	0.05	mg/L						
LCS (BH10510-BS1)					Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		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 BH10510 - Digestion for TKN by EPA 351.2										
LCS (BH10510-BS2)					Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	2.62	0.20	0.05	mg/L	2.5		103	90-110		
Matrix Spike (BH10510-MS1)		**Source: 1106264-37**			Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	3.38	0.20	0.05	mg/L	2.5	0.889	98	80-120		
Matrix Spike (BH10510-MS2)		**Source: 1106264-74**			Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	2.04	0.20	0.05	mg/L	2.5	ND	80	80-120		
Matrix Spike Dup (BH10510-MSD1)		**Source: 1106264-37**			Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	3.72	0.20	0.05	mg/L	2.5	0.889	112	80-120	10	20
Matrix Spike Dup (BH10510-MSD2)		**Source: 1106264-74**			Prepared: 08/05/11 Analyzed: 08/09/11					
Total Kjeldahl Nitrogen	2.19	0.20	0.05	mg/L	2.5	ND	86	80-120	7	20
Batch BH10938 - Ammonia by SEAL										
Blank (BH10938-BLK1)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BH10938-BS1)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.54	0.010	0.005	mg/L	0.50		109	90-110		
Matrix Spike (BH10938-MS1)		**Source: 1106581-07**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.55	0.010	0.005	mg/L	0.50	0.094	92	90-110		
Matrix Spike Dup (BH10938-MSD1)		**Source: 1106581-07**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.57	0.010	0.005	mg/L	0.50	0.094	96	90-110	3	10

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH10939 - Nitrate 353.2 by seal										
Blank (BH10939-BLK1)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BH10939-BLK2)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BH10939-BLK3)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BH10939-BLK4)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH10939-BS1)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.838	0.04	0.01	mg/L	0.80		105	90-110		
LCS (BH10939-BS2)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.866	0.04	0.01	mg/L	0.80		108	90-110		
LCS (BH10939-BS3)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.842	0.04	0.01	mg/L	0.80		105	90-110		
LCS (BH10939-BS4)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0		101	90-110		
Matrix Spike (BH10939-MS1)		**Source: 1106558-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.982	0.04	0.01	mg/L	1.0	ND	98	77-119		
Matrix Spike (BH10939-MS2)		**Source: 1106559-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.02	0.04	0.01	mg/L	1.0	ND	102	77-119		

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH10939 - Nitrate 353.2 by seal										
Matrix Spike (BH10939-MS3)		**Source: 1106560-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.07	0.04	0.01	mg/L	1.0	0.0475	102	77-119		
Matrix Spike (BH10939-MS4)		**Source: 1106293-07**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.01	0.04	0.01	mg/L	1.0	ND	101	77-119		
Matrix Spike Dup (BH10939-MSD1)		**Source: 1106558-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.911	0.04	0.01	mg/L	1.0	ND	91	77-119	8	20
Matrix Spike Dup (BH10939-MSD2)		**Source: 1106559-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	6	20
Matrix Spike Dup (BH10939-MSD3)		**Source: 1106560-06**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.00	0.04	0.01	mg/L	1.0	0.0475	96	77-119	6	20
Matrix Spike Dup (BH10939-MSD4)		**Source: 1106293-07**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	6	20
Batch BH11010 - Ammonia by SEAL										
Blank (BH11010-BLK1)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
Blank (BH11010-BLK2)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.005 U	0.010	0.005	mg/L						
LCS (BH11010-BS1)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.51	0.010	0.005	mg/L	0.50		102	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 BH11010 - Ammonia by SEAL										
LCS (BH11010-BS2)					Prepared & Analyzed: 08/09/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50		100	90-110		
Matrix Spike (BH11010-MS1)		**Source: 1106264-19**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.90	0.010	0.005	mg/L	0.50	0.42	97	90-110		
Matrix Spike (BH11010-MS2)		**Source: 1106264-39**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.81	0.010	0.005	mg/L	0.50	0.34	95	90-110		
Matrix Spike Dup (BH11010-MSD1)		**Source: 1106264-19**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.92	0.010	0.005	mg/L	0.50	0.42	100	90-110	1	10
Matrix Spike Dup (BH11010-MSD2)		**Source: 1106264-39**			Prepared & Analyzed: 08/09/11					
Ammonia as N	0.82	0.010	0.005	mg/L	0.50	0.34	98	90-110	1	10
Batch BH11030 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BH11030-BLK1)					Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.0151 I	0.040	0.010	mg/L						
Blank (BH11030-BLK2)					Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH11030-BS1)					Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.514	0.040	0.010	mg/L	0.50		103	90-110		
LCS (BH11030-BS2)					Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.533	0.040	0.010	mg/L	0.50		107	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 BH11030 - Digestion for TP by EPA 365.2/SM4500PE										
Matrix Spike (BH11030-MS1)		**Source: 1106264-12**			Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.689	0.040	0.010	mg/L	0.50	0.137	110	75-125		
Matrix Spike (BH11030-MS2)		**Source: 1106264-32**			Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.654	0.040	0.010	mg/L	0.50	0.0955	112	75-125		
Matrix Spike Dup (BH11030-MSD1)		**Source: 1106264-12**			Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.670	0.040	0.010	mg/L	0.50	0.137	107	75-125	3	25
Matrix Spike Dup (BH11030-MSD2)		**Source: 1106264-32**			Prepared & Analyzed: 08/10/11					
Phosphorous - Total as P	0.647	0.040	0.010	mg/L	0.50	0.0955	110	75-125	1	25
Batch BH11034 - Ammonia by SEAL										
Blank (BH11034-BLK1)					Prepared & Analyzed: 08/10/11					
Ammonia as N	0.008 I	0.010	0.005	mg/L						
Blank (BH11034-BLK2)					Prepared & Analyzed: 08/10/11					
Ammonia as N	0.008 I	0.010	0.005	mg/L						
LCS (BH11034-BS1)					Prepared & Analyzed: 08/10/11					
Ammonia as N	0.48	0.010	0.005	mg/L	0.50		95	90-110		
LCS (BH11034-BS2)					Prepared & Analyzed: 08/10/11					
Ammonia as N	0.49	0.010	0.005	mg/L	0.50		97	90-110		
Matrix Spike (BH11034-MS1)		**Source: 1106264-73**			Prepared & Analyzed: 08/10/11					
Ammonia as N	0.50	0.010	0.005	mg/L	0.50	0.007	99	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 BH11034 - Ammonia by SEAL										
Matrix Spike (BH11034-MS2)		**Source: 1106264-74**			Prepared & Analyzed: 08/10/11					
Ammonia as N	0.46	0.010	0.005	mg/L	0.50	ND	92	90-110		
Matrix Spike Dup (BH11034-MSD1)		**Source: 1106264-73**			Prepared & Analyzed: 08/10/11					
Ammonia as N	0.52	0.010	0.005	mg/L	0.50	0.007	102	90-110	2	10
Matrix Spike Dup (BH11034-MSD2)		**Source: 1106264-74**			Prepared & Analyzed: 08/10/11					
Ammonia as N	0.47	0.010	0.005	mg/L	0.50	ND	94	90-110	1	10
Batch BH11045 - Digestion for TP by EPA 365.2/SM4500PE										
Blank (BH11045-BLK1)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BH11045-BLK2)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BH11045-BLK3)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
Blank (BH11045-BLK4)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.010 U	0.040	0.010	mg/L						
LCS (BH11045-BS1)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.503	0.040	0.010	mg/L	0.50		101	90-110		
LCS (BH11045-BS2)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.502	0.040	0.010	mg/L	0.50		100	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 BH11045 - Digestion for TP by EPA 365.2/SM4500PE										
LCS (BH11045-BS3)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.515	0.040	0.010	mg/L	0.50		103	90-110		
LCS (BH11045-BS4)					Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.503	0.040	0.010	mg/L	0.50		101	90-110		
Matrix Spike (BH11045-MS1)		**Source: 1106264-74**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.498	0.040	0.010	mg/L	0.50	0.0583	88	75-125		
Matrix Spike (BH11045-MS2)		**Source: 1106264-72**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.530	0.040	0.010	mg/L	0.30	0.302	76	75-125		
Matrix Spike (BH11045-MS3)		**Source: 1106264-73**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.912	0.040	0.010	mg/L	0.50	0.369	109	75-125		
Matrix Spike (BH11045-MS4)		**Source: 1106622-07**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.510	0.040	0.010	mg/L	0.50	ND	102	75-125		
Matrix Spike Dup (BH11045-MSD1)		**Source: 1106264-74**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.512	0.040	0.010	mg/L	0.50	0.0583	91	75-125	3	25
Matrix Spike Dup (BH11045-MSD2)		**Source: 1106264-72**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.461	0.040	0.010	mg/L	0.30	0.302	53	75-125	14	25
Matrix Spike Dup (BH11045-MSD3)		**Source: 1106264-73**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.954	0.040	0.010	mg/L	0.50	0.369	117	75-125	5	25
Matrix Spike Dup (BH11045-MSD4)		**Source: 1106622-07**			Prepared: 08/10/11 Analyzed: 08/12/11					
Phosphorous - Total as P	0.462	0.040	0.010	mg/L	0.50	ND	92	75-125	10	25

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Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH11101 - Nitrate 353.2 by seal										
Blank (BH11101-BLK1)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
Blank (BH11101-BLK2)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH11101-BS1)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.02	0.04	0.01	mg/L	1.0		102	90-110		
LCS (BH11101-BS2)					Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.09	0.04	0.01	mg/L	1.0		109	90-110		
Matrix Spike (BH11101-MS1)		**Source: 1106264-15**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.401	81	77-119		
Matrix Spike (BH11101-MS2)		**Source: 1106264-19**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.26	0.04	0.01	mg/L	1.0	0.0320	122	77-119		
Matrix Spike Dup (BH11101-MSD1)		**Source: 1106264-15**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.22	0.04	0.01	mg/L	1.0	0.401	82	77-119	0.6	20
Matrix Spike Dup (BH11101-MSD2)		**Source: 1106264-19**			Prepared & Analyzed: 08/10/11					
Nitrate+Nitrite (N)	1.04	0.04	0.01	mg/L	1.0	0.0320	101	77-119	19	20
Batch BH11208 - Nitrate 353.2 by seal										
Blank (BH11208-BLK1)					Prepared & Analyzed: 08/12/11					
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 BH11208 - Nitrate 353.2 by seal										
Blank (BH11208-BLK2)					Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	0.01 U	0.04	0.01	mg/L						
LCS (BH11208-BS1)					Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	0.858	0.04	0.01	mg/L	0.80		107	90-110		
LCS (BH11208-BS2)					Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	0.848	0.04	0.01	mg/L	0.80		106	90-110		
LCS (BH11208-BS3)					Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	0.859	0.04	0.01	mg/L	0.80		107	90-110		
LCS (BH11208-BS4)					Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	0.917	0.04	0.01	mg/L	1.0		92	90-110		
Matrix Spike (BH11208-MS1)		**Source: 1106335-10**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.18	0.04	0.01	mg/L	1.0	ND	118	77-119		
Matrix Spike (BH11208-MS2)		**Source: 1106340-01**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.12	0.04	0.01	mg/L	1.0	ND	112	77-119		
Matrix Spike (BH11208-MS3)		**Source: 1106335-01**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.11	0.04	0.01	mg/L	1.0	ND	111	77-119		
Matrix Spike (BH11208-MS4)		**Source: 1106264-74**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119		
Matrix Spike Dup (BH11208-MSD1)		**Source: 1106335-10**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119	12	20

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Inorganics - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BH11208 - Nitrate 353.2 by seal										
Matrix Spike Dup (BH11208-MSD2)		**Source: 1106340-01**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.07	0.04	0.01	mg/L	1.0	ND	107	77-119	4	20
Matrix Spike Dup (BH11208-MSD3)		**Source: 1106335-01**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.08	0.04	0.01	mg/L	1.0	ND	108	77-119	3	20
Matrix Spike Dup (BH11208-MSD4)		**Source: 1106264-74**			Prepared & Analyzed: 08/12/11					
Nitrate+Nitrite (N)	1.05	0.04	0.01	mg/L	1.0	ND	105	77-119	3	20

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

Hazen and Sawyer
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Work Order: 1106264

* 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.

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
01	C-HS2-STE	72611	1535	GW		X	1	1					29.6	7.0	1028	1.25					
02	C-HS2-STE-DUP	72611	1540	GW		X	1	1					29.6	7.0	1028	1.25					
03	C-HS2-SW-6 inch	72611	0852	GW		X			1	1			28.0	5.4	264.5	3.37					
04	C-HS2-SW-M	72611	0859	GW		X			1	1			28.4	6.9	388.8	4.78					
05	C-HS2-PZ01	72511	0907	GW		X			1	1			26.5	4.9	247.8	0.78					
06	C-HS2-PZ02	72511	0927	GW		X			1	1			26.1	6.4	441.8	1.20					
07	C-HS2-PZ03	72611	1333	GW		X			1	1			27.5	5.7	435.7	0.04					
08	C-HS2-PZ04	72511	0946	GW		X			1	1			26.3	5.2	212.4	1.17					
09	C-HS2-PZ06	72511	1000	GW		X			1	1			26.7	6.1	425.1	1.26					
10	C-HS2-A07-S	72511	1051	GW		X			1	1			26.1	6.3	701	0.88					
11	C-HS2-A07-M	72511	1131	GW		X			1	1			25.8	6.0	508	0.83					
12	C-HS2-A07-D	72511	1217	GW		X			1	1			24.7	5.8	1402	0.26					

Containers Prepared/ Relinquished:	Date/Time: 1440 7-21-11	Received:	Date/Time: 1530 7211 11
Relinquished:	Date/Time: 1022 72711	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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 0.0 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:

1106264

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. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
13	C-HS2-A09-S	07/25/11	1458	GW		X			1	1			29.2	6.1	482	0.01					
14	C-HS2-A09-S-DUP	↓	1505	GW		X			1	1			↓	↓	↓	↓					
15	C-HS2-A09-M		1600	GW		X			1	1			27.7	6.1	237.5	0.01					
16	C-HS2-A09-D		1610	GW		X			1	1			26.4	5.2	129.2	0.00					
17	C-HS2-A10-S		1255	GW		X			1	1			28.3	6.8	809	0.28					
18	C-HS2-A10-M		1313	GW		X			1	1			26.9	6.6	548	0.41					
19	C-HS2-A10-D		1320	GW		X			1	1			25.4	5.7	134.5	0.24					
20	C-HS2-A11-S		1445	GW		X			1	1			29.3	6.3	706	0.55					
21	C-HS2-A11-M		1413	GW		X			1	1			27.8	6.3	509	0.35					
22	C-HS2-A11-D		1546	GW		X			1	1			26.9	5.3	131.7	0.38					
23	C-HS2-A13-S		1511	GW		X			1	1			29.6	5.8	251.9	0.03					
24	C-HS2-A13-M	↓	1524	GW		X			1	1			28.7	4.6	154.3	0.05					

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
HH	1440 7-21-11		1530 7/21/11
Relinquished:	Date/Time: 1022 7/22/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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? (Y) Temp 0.0 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:

1106264

Chain of Custody.xls
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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. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
25	C-HS2-A13-D	72611	1535	GW		X			1	1			27.9	4.7	124.9	0.0[illegible]					
26	C-HS2-B02-S	72611	1219	GW		X			1	1			27.8	6.2	392.5	0.17					
27	C-HS2-B02-M	72611	1230	GW		X			1	1			26.9	6.5	654	0.19					
28	C-HS2-B02-D	72611	1240	GW		X			1	1			26.1	6.0	266.5	0.22					
29	C-HS2-B06-S	72611	1617	GW		X			1	1			25.4	6.0	274.7	0.13					
30	C-HS2-B06-M	72611	1115	GW		X			1	1			24.8	5.8	1438	0.09					
31	C-HS2-B06-D	72611	1131	GW		X			1	1			24.3	5.7	129.7	0.11					
32	C-HS2-B08-S	72511	1330	GW		X			1	1			26.4	5.5	506	0.04					
33	~~C-HS2-B08-S-DUP~~ CHS2-C06-S-Dup	7611	0915	GW		X			1	1			26.8	6.1	1.34	0.21					
34	C-HS2-B08-M	72511	1350	GW		X			1	1			26.5	5.9	51.8	0.0[illegible]					
35	C-HS2-B08-D	72511	1411	GW		X			1	1			27.0	5.5	131.5	0.23					
36	C-HS2-B10-S	72511	1110	GW		X			1	1			27.4	6.5	452.4	0.10					

Relinquished:	Date/Time:	Received:	Date/Time:
Containers Prepared/ Relinquished: HH	Date/Time: 1440 7-21-11	Received:	Date/Time: 1530 72111
Relinquished:	Date/Time: 1022 72711	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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. 0.0	(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:

1106264

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
37	C-HS2-B10-M	7/25/11	1150	GW		X			1	1			27.4	6.3	172.6	0.54					
38	C-HS2-B10-D		1228	GW		X			1	1			26.7	5.4	123.2	0.61					
39	C-HS2-B15-S		1629	GW		X			1	1			27.7	5.4	184.0	0.41					
40	C-HS2-B15-M		1130	GW		X			1	1			26.9	5.5	140.0	0.49					
41	C-HS2-B15-D	7/25/11	1200	GW		X			1	1			27.0	5.1	125.4	0.69					
42	C-HS2-C00-S	7/26/11	1144	GW		X			1	1		SH	28.6	4.4	290.9	0.01					
43	C-HS2-C00-M	7/26/11	1200	GW		X			1	1		SH	26.9	5.5	303.0	0.03					
44	C-HS2-C00-M-DUP	7/26/11	1205	GW		X			1	1			26.9	5.5	303.0	0.03					
45	C-HS2-C00-D	7/26/11	1251	GW		X			1	1			26.1	5.7	162.5	0.00					
46	C-HS2-C04-S	7/25/11	0753	GW		X			1	1			26.3	5.8	288.6	0.77					
47	C-HS2-C04-M		0809	GW		X			1	1			25.9	5.6	141.9	1.26					
48	C-HS2-C04-D		0820	GW		X			1	1			25.0	5.4	136.0	0.97					

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
HH	1440 7-21-11		1530 7/21/11
Relinquished:	Date/Time: 1022 7/27/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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 0.0	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:

1106264

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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. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
49	C-HS2-C06-S	072611	0910	GW		X			1	1			26.8	6.1	654	0.21					
50	C-HS2-C06-M		0930	GW		X			1	1			25.7	5.4	305.7	0.50					
51	C-HS2-C06-D		0948	GW		X			1	1			24.7	5.1	140.9	0.02					
52	C-HS2-C08-S		0959	GW		X			1	1			27.2	6.0	557.7	0.02					
53	C-HS2-C08-S-DUP		1004	GW		X			1	1			27.2	6.0	557.7	0.02					
54	C-HS2-C08-M		1027	GW		X			1	1			26.6	6.1	576	0.03					
55	C-HS2-C08-D		1104	GW		X			1	1			25.9	5.3	122.6	-0.03					
56	C-HS2-C10-S		0753	GW		X			1	1			26.9	5.1	263.5	0.13					
57	C-HS2-C10-M		0821	GW		X			1	1			26.3	5.6	140.5	0.04					
58	C-HS2-C10-D		0940	GW		X			1	1			25.7	5.2	123.9	0.05					
59	C-HS2-C11-S		0742	GW		X			1	1			26.9	4.8	304.1	0.15					
60	C-HS2-C11-M		0830	GW		X			1	1			26.1	5.3	189.5	0.01					

Containers Prepared/ Relinquished:	Date/Time: 1440 7-21-11	Received:	Date/Time: 1530 72111
Relinquished:	Date/Time: 1022 72711	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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? (Y) Temp [illegible] (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:

1106264

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
61	C-HS2-C11-D	7/21/11	0846	GW		X			1	1			25.2	5.0	125.1	0.08					
62	C-HS2-D04-S		1047	GW		X			1	1			26.6	5.8	478.4	0.08	Tem	Ph		Con	do
63	C-HS2-D04-M		~~1356~~ 1302	GW		X			1	1			~~26.2~~	~~5.8~~	~~294.3~~	~~0.01~~	25.4	5.9		311.9	0.07
64	C-HS2-D04-D		1404	GW		X			1	1			25.3	5.7	144.4	0.02					
65	C-HS2-D07-S		1313	GW		X			1	1			27.1	5.9	363.6	0.06					
66	C-HS2-D07-S-DUP		1318	GW		X			1	1			27.1	5.9	363.6	0.06					
67	C-HS2-D07-M		1350	GW		X			1	1			26.2	5.8	294.3	0.01					
68	C-HS2-D07-D		1437	GW		X			1	1			25.8	6.2	147.3	0.02					
69	C-HS2-BKG-S		1450	GW		X			1	1			26.4	5.2	188.6	0.14					
70	C-HS2-BKG-M		1507	GW		X			1	1			25.4	5.7	181.6	0.16					
71	C-HS2-BKG-D		1525	GW		X			1	1			25.2	5.2	130.5	0.11					
72	FB-Tap		1425	DW		X			1	1			24.4	6.4	325.3	4.98					

Relinquished	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: HH	Date/Time: 1440 7-21-11	Received:	Date/Time: 1530 7/21/11
Relinquished:	Date/Time: 1022 7/21/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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 0.1	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:

1106264

Chain of Custody.xls
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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. 1106264

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: Seminole County C-HS2

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	1LP, Cool Total Alkalinity, TSS, TS, CBOD	250mL P, H_2SO_4 TKN, NH3, NOx, TP	1LP, Cool TotalAlkalinity	250mL P, H_2SO_4 COD, TKN, NH3, NOx, TP			Field Temperature	Field pH	Field Conductivity	Field DO					
73	FB-DI	7/27/11	0934	R		X			1	1			26.0	8.9	4.5	1.99					
74	EB	7/26/11	1411	R		X			1	1			30.2	6.6	2.6	1.99					

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
HH	1440 7-29-11		7/27/11 1530
Relinquished:	Date/Time: 1022 7/27/11	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	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 1.0 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:

1106264

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:	
				Phone:	
Date Sampled	C72611	SAL Project #	110C264-01	Project Name	Seminole Co
Well Number	C-HS2-STE	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	N/A	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)		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	N/A	1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	SH 1530	PURGE TIME END	SH 1540	TOTAL PURGED	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
SH 1530	N/A	—		—	7.0	29.6	1028	1.25	29.9	clear	Septic

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	SH 1535	SAMPLING ENDED	CLP 1540	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	cloudy								
COMMENTS	Grab from Septic Tank.								

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:	1106264	Contact:	
				Phone:	
Date Sampled	07261	SAL Project #	02	Project Name	Seminole Co
Well Number	C-HS2-STDup	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	N/A	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		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	N/A	1/4 WELL VOLUME			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)		FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START	1530	PURGE TIME END	1540	TOTAL PURGED	
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02	

TIME 24	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)
1540	N/A	—			7.0	29.6	1028	1.25	29.9	clear	Septic

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1540	SAMPLING ENDED	1540	FIELD CLEANED	Y N	CLEANING STEPS			
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	Cloudy								
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:

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:	
				Phone:	
Date Sampled	07261	SAL Project #	11C6264-C3	Project Name	Seminole Co
Well Number	C-HS2-SW-6 inch	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		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		1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	N/A	PURGE TIME END	N/A	TOTAL PURGED	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-5	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)
0852					5.9	28.0	285.4	3.37	7.69	clear	None

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0852	SAMPLING ENDED	0852	FIELD CLEANED	(Y) N	CLEANING STEPS			
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	clear								
COMMENTS	Surface Water back from storm drain. SH								

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:	
				Phone:	
Date Sampled	07261	SAL Project #	11C6264-C4	Project Name	Seminole Co
Well Number	C-HS2-SW-M	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		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		1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0859					6.9	28.4	388.8	4.78	4.45		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0859	SAMPLING ENDED	0859	FIELD CLEANED	(Y) N	CLEANING STEPS			
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	Clear								
COMMENTS	Surface water Grab from storm drain.								

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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106244-05	Project Name	Seminole Co
Well Number	C-HS2-PZ01	Sample ID		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)	7.61	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.08	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0850	PURGE TIME END	0906	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0900	0.30	0.30	0.10		4.9	26.5	248.2	0.89	38.5	clear	none
0903	0.30	0.60	|		4.9	26.5	247.9	0.83	33.6	|	|
0906	0.30	0.90	|		4.9	26.5	247.8	0.78	20.3	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0907	SAMPLING ENDED	0907	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	116264-06	Project Name	Seminole Co
Well Number	C-HS2-PZ02	Sample ID		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)	0.09	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.42	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	0.12	1/4 WELL VOLUME	0.031	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0917	PURGE TIME END	0926	TOTAL PURGED	0.90

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
0920	0.30	0.30	0.10		6.8	26.2	439.8	1.52	9.28	clear	None
0923		0.60			6.8	26.2	440.3	1.38	6.23		
0926		0.90			6.9	26.1	441.8	1.20	4.86		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0927	SAMPLING ENDED	0927	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	Polk	Contact:	
				Phone:	
Date Sampled	72611	SAL Project #	110 6264 - 02	Project Name	Seminole Co
Well Number	~~C-HS2-STDup~~ SH	Sample ID	07	GPS LAT	
				GPS LONG	

P203

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	1.71	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	SH 7.3	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	0.111	1/4 WELL VOLUME		3 WELL VOLUMES	0.335	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	1313	PURGE TIME END	1332	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1326	0.30	0.30	0.10		5.8	27.5	437.7	0.46	12.1	clear	None
1329	|	0.60	|		5.8	27.5	437.5	0.18	10.7	|	|
1332	|	0.90	|		5.7	27.5	435.7	0.04	9.90	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1333	SAMPLING ENDED	1333	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	1106264-08	Project Name	Seminole Co
Well Number	C-HS2-PZ04	Sample ID		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)	1.34	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.25	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	0.11	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0936	PURGE TIME END	0945	TOTAL PURGED	0.90

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
0939	0.30	0.30	0.10		5.3	26.4	213.5	1.45	19.9	Tanic	None
0942		0.60			5.3	26.3	212.6	1.34	16.3		
0945		0.90			5.2	26.3	212.4	1.17			

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0946	SAMPLING ENDED	0946	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7 25 11	SAL Project #	1106264-09	Project Name	Seminole Co
Well Number	C-HS2-PZ06	Sample ID		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)	5.95	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.8	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	0.11	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0950	PURGE TIME END	0959	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0953	0.30	0.30	0.10		6.1	26.8	421.1	1.40	15.7	clear	none
0956	|	0.60	|		6.1	26.7	422.8	1.35	13.9	|	|
0959	|	0.90	|		6.1	26.7	425.1	1.26	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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1000	SAMPLING ENDED	1000	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7-7-11	SAL Project #	1106264-10	Project Name	Seminole Co
Well Number	C-HS2-A07-S	Sample ID		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)	4.02	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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	0.03	1/4 WELL VOLUME	0.01	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1041	PURGE TIME END	1050	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1044	0.30	0.30	0.10		6.3	26.1	699	1.11	64.3	Tannic	None
1047		0.6			6.3	26.1	699	0.96	62.6		
1050		0.9			6.3	26.1	701	0.88	59.5		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1051	SAMPLING ENDED	1051	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	1106264-11	Project Name	Seminole Co
Well Number	C-HS2-A07-M	Sample ID		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)	7.01	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	8.0	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	0.07	1/4 WELL VOLUME	0.01	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1127	PURGE TIME END	1136	TOTAL PURGED	0.9

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1130	0.30	0.3	0.10		6.0	25.9	509	1.10	29.1	clear	none
1133		0.6			6.0	25.9	507	0.96	28.3		
1136		0.9			6.0	25.8	508	0.83	27.4		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1137	SAMPLING ENDED	1137	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106264-12	Project Name	Seminole Co
Well Number	C-HS2-A07-D	Sample ID		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)	4.08	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.13	1/4 WELL VOLUME		3 WELL VOLUMES	0.41	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	1207	PURGE TIME END	1216	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1210	0.30	0.30	0.10		5.8	24.7	141.1	0.43	43.8	Tannic	None
1213		0.60			5.8	24.7	140.9	0.31	39.6		
1216		0.90			5.8	24.7	140.2	0.26	38.2		

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)		SAMPLE PUMP FLOW RATE (mL/min)	

SAMPLING INITIATED	1217	SAMPLING ENDED	1217	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	11C0264-13	Project Name	Seminole Co
Well Number	C-HS2-A09-S	Sample ID		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)	4.89	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.04	1/4 WELL VOLUME		3 WELL VOLUMES	0.12	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	1418	PURGE TIME END	1457	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1451	0.30	0.30	0.10		6.1	29.2	483	0.09	128.	Brown	None
1454		0.60			6.1	29.2	482	0.03	125		
1457		0.90			6.1	29.2	482	0.01	122		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1458	SAMPLING ENDED	1455	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	12311	SAL Project #	110064-14	Project Name	Seminole Co
Well Number	C-HS2-A09-S-Dup	Sample ID		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)	4.34	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.01	1/4 WELL VOLUME		3 WELL VOLUMES	0.12	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	1448	PURGE TIME END	1457	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1451	0.30	0.30	0.10		6.1	29.2	483	0.09	123	Brown	None
1454	1	0.60	1		6.1	29.2	482	0.03	123	1	1
1457	1	0.90	1		6.1	29.2	482	0.01	122	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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1503 ~~1450~~	SAMPLING ENDED	1503 ~~1453~~	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	Clear						
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	110624-15	Project Name	Seminole Co
Well Number	C-HS2-A09-M	Sample ID		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)	4.88	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.0	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	0.08	1/4 WELL VOLUME		3 WELL VOLUMES	0.24	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	1550	PURGE TIME END	1559	TOTAL PURGED	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1553	0.30	0.30	0.10		6.0	27.7	237.3	0.08	49.8	Tan, c	none
1556	|	0.60	|		6.0	27.7	237.3	0.04	49.6	|	|
1559	|	0.90	|		6.1	27.7	237.5	0.01	49.2	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1600	SAMPLING ENDED	1600	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106-264-16	Project Name	Seminole Co
Well Number	C-HS2-A09-D	Sample ID		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)	1.90	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	12.0	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	0.142	1/4 WELL VOLUME		3 WELL VOLUMES	0.426	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	1600	PURGE TIME END	1610	TOTAL PURGED	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1603	0.30	0.36	0.10		5.2	26.4	130.1	0.03	49.2	Brown	None
1606		0.66			5.2	26.4	129.6	0.01	110		
1609		0.90			5.2	26.4	129.2	0.00	79.6		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1610	SAMPLING ENDED	1610	FIELD CLEANED	Y N	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	110C264-17	Project Name	Seminole Co
Well Number	C-HS2-A10-S	Sample ID		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)	4.24	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	0.11	1/4 WELL VOLUME		3 WELL VOLUMES	0.34	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	1245	PURGE TIME END	1254	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1248	0.30	0.3	0.10		6.8	28.2	812	0.30	7.32	clear	none
1251	|	0.6	|		6.8	28.2	811	0.29	5.56	|	|
1254	|	0.9	|		6.6	28.3	809	0.28	4.5	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1255	SAMPLING ENDED	1155	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	11C0264-18	Project Name	Seminole Co
Well Number	C-HS2-A10-M	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.27	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.0	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	0.09	1/4 WELL VOLUME	~~0.28~~	3 WELL VOLUMES	0.28	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	1303	PURGE TIME END	1312	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1306	0.30	0.30	0.10		6.7	27.1	553	0.56	10.5	Tannic	None
1309	↓	0.60	↓		6.6	26.9	553	0.44	7.38	↓	↓
1312	↓	0.90	↓		6.6	26.9	548	0.41	5.21	↓	↓

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1313	SAMPLING ENDED	1313	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/23/11	SAL Project #	110624-F1	Project Name	Seminole Co
Well Number	C-HS2-A10-D	Sample ID		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)	4.30 ~~1318~~	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.0	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	0.15	1/4 WELL VOLUME		3 WELL VOLUMES	0.46	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	1318	PURGE TIME END	1327	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-~~3~~	SAL-SAM-65-~~1~~	SAL-SAM-63-~~4~~	SAL-SAM-55-3	SAL-SAM-0-~~2~~		
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)
1321	0.30	0.30	0.16		5.7	25.9	135.6	0.91	28.6	Tannic	none
1324	|	0.60	|		5.7	25.8	134.9	0.36	27.9	|	|
1327	|	0.90	|		5.7	25.9	134.5	0.29	24.3	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1328	SAMPLING ENDED	1338	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	SH	Contact:	
				Phone:	
Date Sampled	7-25-11	SAL Project #	110-0264-20	Project Name	Seminole Co
Well Number	C-HS2-A11-~~M~~ S	Sample ID		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)	3.10	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.038	1/4 WELL VOLUME		3 WELL VOLUMES	0.114	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	1435	PURGE TIME END	1444	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1438	0.30	0.30	0.10		6.2	29.3	706	0.65	8.12	clear	none
1441	|	0.60	|		6.3	29.3	707	0.56	6.39	|	|
1444	|	0.90	|		6.3	29.3	706	0.55	5.24	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1445	SAMPLING ENDED	1445	FIELD CLEANED	Y N	CLEANING STEPS			
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									
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:	SH	Contact:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	110626-4-2021	Project Name	Seminole Co
Well Number	C-HS2-A11-~~S~~M	Sample ID		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)	3.13	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	~~5.0~~ SH 7.0	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	0.03	1/4 WELL VOLUME		3 WELL VOLUMES	0.114	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	1403	PURGE TIME END	1412	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1406	0.30	0.30	0.10		6.3	27.8	512	0.38	27.0	Turbid	None
1409	|	0.60	|		6.3	27.8	510	0.33	25.1	|	|
1412	|	0.90	|		6.3	27.8	509	0.33	22.5	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1413	SAMPLING ENDED	1413	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	022511	SAL Project #	11C6264-22	Project Name	Seminole Co
Well Number	C-HS2-A11-D	Sample ID		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)	3.13	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	0.13	1/4 WELL VOLUME		3 WELL VOLUMES	0.41	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	1536	PURGE TIME END	1545	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1539	0.30	0.30	0.10		5.3	27.1	131.7	1.00	21.7	tanic	none
1542		0.60			5.3	26.4	132.0	0.54	16.8		
1545		0.90			5.3	26.9	131.7	0.38	10.2		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1546	SAMPLING ENDED	1546	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7 25 11	SAL Project #	11C0264.03	Project Name	Seminole Co
Well Number	C-HS2-A13-S	Sample ID		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)	7.41	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.15	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	1501	PURGE TIME END	1510	TOTAL PURGED	0.10

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
1504	0.30	0.30	0.10		5.8	29.6	251.3	0.00	17.0	clear	none
1507		0.60			5.8	29.6	252.0	0.03	14.6		
1510		0.90			5.8	29.6	251.9	0.03	12.2		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1511	SAMPLING ENDED	1511	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106264-24	Project Name	Seminole Co
Well Number	C-HS2-A13-M	Sample ID		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)	2.42	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	1/4 WELL VOLUME	~~0.27~~	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	1514	PURGE TIME END	1523	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1517	0.30	0.30	0.10		4.8	28.6	162.3	0.14	21.8	clear	none
1520		0.60			4.7	28.6	161.0	0.08	9.97		
1523		0.90			4.6	28.7	159.3	0.05	7.62		

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1524	SAMPLING ENDED	1524	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	110C264-25	Project Name	Seminole Co
Well Number	C-HS2-A13-D	Sample ID		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)	2.41	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	0.15	1/4 WELL VOLUME		3 WELL VOLUMES	0.45	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	1525	PURGE TIME END	1534	TOTAL PURGED	0.90

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
1528	0.30	0.30	0.10		4.8	28.0	125.3	0.53	31.8	clear	none
1531		0.60			4.8	27.9	124.7	0.06	14.31		
1534		0.90			4.7	27.9	124.9	0.05	7.08		

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)						SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)		PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1535	SAMPLING ENDED	1535	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7261	SAL Project #	1106264.76	Project Name	Seminole Co
Well Number	C-HS2-B02-S	Sample ID		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)	3.25	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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	0.055	1/4 WELL VOLUME		3 WELL VOLUMES	0.165	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	1209	PURGE TIME END	1218	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1212	0.30	0.30	0.10		6.2	27.1	392.6	0.18	24.3		
1215		0.60			6.3	27.6	392.4	0.17	22.3		
1218		0.90			6.2	27.8	392.5	0.17	21.4		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1219	SAMPLING ENDED	1219	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7261	SAL Project #	110626-27	Project Name	Seminole Co
Well Number	C-HS2-B02-M	Sample ID		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)	3.75	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	8.0	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	0.095	1/4 WELL VOLUME		3 WELL VOLUMES	0.285	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	1220	PURGE TIME END	1229	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2		
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)
1223	0.30	0.30	0.10		6.5	27.0	648	0.32	5.85		
1226	1	0.60	1		6.5	27.0	657	0.20	3.43		
1229	1	0.90	1		6.5	26.9	654	0.19	2.90		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1230	SAMPLING ENDED	1230	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	11C6264-03	Project Name	Seminole Co
Well Number	C-HS2-B02-D	Sample ID		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)	3.24	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.155	1/4 WELL VOLUME		3 WELL VOLUMES	0.465	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	1230	PURGE TIME END	1239	TOTAL PURGED 0.90

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
1233	0.30	0.30	0.10		6.0	26.0	260.6	0.22	33.4	clear	none
1236	|	0.60	|		6.0	26.1	259.9	0.21	27.0	|	|
1239	|	0.90	|		6.0	26.1	260.5	0.22	20.3	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1240	SAMPLING ENDED	1240	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7261	SAL Project #	1106264-29	Project Name	Seminole Co
Well Number	C-HS2-B06-S	Sample ID		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)	3.01	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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		1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1017	PURGE TIME END	1016	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1010	0.30	0.30	0.10		6.07	25.4	275.4	0.13	125	cloudy	none
1013		0.60			6.0	25.4	275.7	0.12	126		
1016		0.90			6.0	25.4	274.7	0.13	129		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1017	SAMPLING ENDED	1017	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-30	Project Name	Seminole Co
Well Number	C-HS2-B06-M	Sample ID		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)	3.02	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	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	0.099	1/4 WELL VOLUME		3 WELL VOLUMES	0.298		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	1105	PURGE TIME END	1114	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1108	0.30	0.30	0.10		5.8	24.8	144.3	0.10	144	Brown	None
1111		0.60			5.8	24.8	144.3	0.10	139		
1114		0.90			5.8	24.8	143.8	0.09	134		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1115	SAMPLING ENDED	1115	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-31	Project Name	Seminole Co
Well Number	C-HS2-B06-D	Sample ID		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)	3.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.16	1/4 WELL VOLUME		3 WELL VOLUMES	0.48	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	1121	PURGE TIME END	1130	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1124	0.30	0.30	0.10		5.6	24.3	128.9	0.20	79.0	Tannic	none
1127	|	0.60	|		5.5	24.4	129.9	0.15	72.9	|	|
1130	|	0.90	|		5.7	24.3	129.7	0.11	67.1	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1131	SAMPLING ENDED	1131	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/25	SAL Project #	1106264-37	Project Name	Seminole Co
Well Number	C-HS2-B08-S	Sample ID		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)	2.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.15	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	1320	PURGE TIME END	1324	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1323	0.30	0.30	0.10		5.5	26.5	509	0.09	59.0	clear	none
1326		0.60			5.5	26.5	507	0.05	51.2		
1329		0.90			5.5	26.4	506	0.04	44.5		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1330	SAMPLING ENDED	1330	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	07/6/11	SAL Project #	11C6264-33	Project Name	Seminole Co
Well Number	~~CHS2-B08-S-Dup~~	Sample ID		GPS LAT	
				GPS LONG	

CHS2 C06-5 DUP

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)	0.02	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.17	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	0900	PURGE TIME END	0909	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2	

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)
0903	0.30	0.30	0.10		6.2	26.8	635	0.41	3.86	clear	none
0906	|	0.60	|		6.2	26.8	634	0.35	7.69	|	|
0909	|	0.90	|		6.1	26.8	634	0.21	7.62	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0915	SAMPLING ENDED	0915	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	7/2/11	SAL Project #	110626-4-34	Project Name	Seminole Co
Well Number	C-HS2-B08-M	Sample ID		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)	2.48	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	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	1340	PURGE TIME END	1349	TOTAL PURGED	0.90		
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2			
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)
1343	0.30	0.30	0.10	6.0	~~5.45~~	26.7	521	0.19	23.6		
1346	0.30	0.60			5.9	26.6	519	0.07	22.6		
1349	0.30	0.90			5.9	26.5	518	0.05	21.9		
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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1350	SAMPLING ENDED	1350	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	1106264-35	Project Name	Seminole Co
Well Number	C-HS2-B08-D	Sample ID		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)	7.31	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	0.14	1/4 WELL VOLUME		3 WELL VOLUMES	0.44	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	1401	PURGE TIME END	1410	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-5	SAL-SAM-0 2		
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)
1404	0.30	0.30	0.10		5.6	26.8	131.4	0.47	44.3	Tannic	None
1407		0.60			5.5	26.9	130.1	0.24	39.9		
1410		0.90			5.5	27.0	131.5	0.23	38.3		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1411	SAMPLING ENDED	1411	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	072511	SAL Project #	1100264-36	Project Name	Seminole Co
Well Number	C-HS2-B10-S	Sample ID		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)	7.35	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.053	1/4 WELL VOLUME	0.01	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1100	PURGE TIME END	1109	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2

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)
1103	0.30	0.30	0.10		6.5	27.4	451.9	0.47	40.7	clear	none
1106	|	0.60	|		6.5	27.5	452.0	0.22	40.2	|	|
1109	|	0.90	|		6.5	27.4	452.4	0.10	40.5	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1110	SAMPLING ENDED	1110	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	072511	SAL Project #	1106264-37	Project Name	Seminole Co
Well Number	C-HS2-B10-M	Sample ID		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)	7.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1140	PURGE TIME END	1149	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1143	0.30	0.30	0.10		6.3	27.3	175.9	0.83	45.1	Tannic	None
1146		0.60			6.3	27.3	173.4	0.64	38.9		
1149		0.90			6.3	27.4	172.6	0.54	33.6		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1150	SAMPLING ENDED	1150	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/23/11	SAL Project #	1106264-38	Project Name	Seminole Co
Well Number	C-HS2-B10-D	Sample ID		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)	2.33	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	0.15	1/4 WELL VOLUME		3 WELL VOLUMES	0.46	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	1218	PURGE TIME END	1227	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1221	0.30	0.30	0.10		5.4	26.7	123.9	0.13	88.6	Tannic	None
1224		0.60			5.4	26.7	123.7	0.09	55.5		
1227		0.90			5.4	26.7	123.2	0.01	37.8		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1228	SAMPLING ENDED	1228	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106764-39	Project Name	Seminole Co
Well Number	C-HS2-B15-S	Sample ID		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)	7.09	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME	0.01	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1019	PURGE TIME END	1028	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1022	0.30	0.30	0.10		5.4	27.7	184.6	0.39	16.2	clear	None
1025	|	0.60	|		5.4	27.7	183.7	0.41	14.7	|	|
1028	|	0.90	|		5.4	27.7	184.0	0.41	10.8	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1029	SAMPLING ENDED	1029	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	11C6264-40	Project Name	Seminole Co
Well Number	C-HS2-B15-M	Sample ID		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)	7.12	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1120	PURGE TIME END	1129	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-4	SAL-SAM-0-4

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)
1123	0.30	0.3	0.10		5.5	26.9	140.2	0.64	45.1	Tannic	None
1126	|	0.6	|		5.5	26.9	140.3	0.63	39.3	|	|
1129	|	0.9	|		5.5	26.9	140.0	0.49	32.0	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1130	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
FIELD FILTERED?	Y (N)	FILTER SIZE (μm)		DUPLICATE	Y (N)	VOC COLLECTED BY REVERSE FLOW?	Y N (N/A)
PRESERVATION CHECKED IN FIELD?	(Y) N N/A	LIST PRESERVATIVES ADDED				SEMI-VOLS COLLECTED THROUGH TRAP?	Y N (N/A)
WEATHER CONDITIONS	Clear						
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:	
				Phone:	
Date Sampled	072511	SAL Project #	110(2(4)-41	Project Name	Seminole Co
Well Number	C-HS2-B15-D	Sample ID		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)	7.07	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	0.15	1/4 WELL VOLUME	0.03	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)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1150	PURGE TIME END	1159	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1153	0.30	0.30	0.10		5.0	27.0	127.4	0.73	26.7	clear	none
1156		0.60			5.1	27.0	127.5	0.68	08.72		
1159		0.90			5.1	27.0	125.4	0.69	5.89		

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1200	SAMPLING ENDED	1200	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-42	Project Name	Seminole Co
Well Number	C-HS2-C00-S	Sample ID		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)	2.39	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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	0.052	1/4 WELL VOLUME		3 WELL VOLUMES	0.156	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	1134	PURGE TIME END	1143	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1137	0.30	0.30	0.10		4.5	27.5	289.0	0.01	33.8	Tannic clear	None
1140	|	0.60	|		4.4	27.6	288.8	0.00	31.3	|	|
1143	|	0.90	|		4.4	27.6	290.9	0.01	30.9	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1144	SAMPLING ENDED	1144	FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	072611	SAL Project #	11C0241.43	Project Name	Seminole Co
Well Number	C-HS2-C00-M	Sample ID		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)	2.40	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.092	1/4 WELL VOLUME		3 WELL VOLUMES	0.276	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	1150	PURGE TIME END	1159	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2	

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)
1153	0.30	0.30	0.10		5.6	26.9	305.2	0.04	35.9	clear	none
1156	|	0.60	|		5.5	26.9	305.2	0.00	23.2	|	|
1159	|	0.90	|		5.5	26.9	305.0	0.03	19.0	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1200	SAMPLING ENDED	1200	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	1100209-44	Project Name	Seminole Co
Well Number	C-HS2-C00-M-Dup	Sample ID		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)	7.40	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.092	1/4 WELL VOLUME		3 WELL VOLUMES	0.276	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	1150	PURGE TIME END	1159	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1153	0.30	0.30	0.10		5.6	26.9	305.8	0.04	35.9	clear	none
1156		0.60			5.5	26.9	303.2	0.00	23.2		
1159		0.90			5.5	26.9	303.0	0.03	19.0		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1205	SAMPLING ENDED	1205	FIELD CLEANED	Y (N)	CLEANING STEPS			
FIELD FILTERED?	Y N	FILTER SIZE (μm)		DUPLICATE	(Y) ~~N~~ SH	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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	11C6264-45	Project Name	Seminole Co
Well Number	C-HS2-C00-D	Sample ID		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)	2.39	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	0.1522	1/4 WELL VOLUME		3 WELL VOLUMES	0.4566	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	1241	PURGE TIME END	1250	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1244	0.30	0.30	0.10		5.8	26.1	162.3	0.12	35.1	Tannic clear	none
1247	|	0.60	|		5.8	26.1	162.3	0.02	33.1	|	|
1250	|	0.90	|		5.7	26.1	162.5	0.00	~~33.1~~	|	|
									32.6		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1251	SAMPLING ENDED	1251	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	72511	SAL Project #	1106264-46	Project Name	Seminole Co
Well Number	C-HS2-C04-S	Sample ID		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)	7.18	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.056	1/4 WELL VOLUME	0.014	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0746	PURGE TIME END	0752	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2		
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)
0746	0.30	0.30	0.10		5.9	26.3	289.9	0.89		Brown	None
0749	0.30	0.60	|		5.9	26.3	289.7	0.82		|	|
0752	0.30	0.90	|		5.8	26.3	288.6	0.77	248	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0753	SAMPLING ENDED	0753	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7-22-11	SAL Project #	1106704-47	Project Name	Seminole Co
Well Number	C-HS2-C04-M	Sample ID		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)	7.21	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	1/4 WELL VOLUME	0.02	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0759	PURGE TIME END	0808	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0802	0.30	0.30	0.10		5.7	26.1	140.5	1.77		Brown	None
0805	|	0.60	|		5.6	26.0	140.3	1.46			
0808	|	0.90	|		5.6	25.9	141.9	1.26	622		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0809	SAMPLING ENDED	0809	FIELD CLEANED	Y N	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/25/11	SAL Project #	1106264-48	Project Name	Seminole Co
Well Number	C-HS2-C04-D	Sample ID		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)	7.21	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	0.15	1/4 WELL VOLUME	0.03	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0810	PURGE TIME END	0819	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0813	0.30	0.30	0.10		5.5	25.2	136.8	1.20		Brown	None
0816	|	0.60	|		5.4	25.1	136.7	1.06		|	|
0819	|	0.90	|		5.4	25.0	136.0	0.97	883	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0820	SAMPLING ENDED	0820	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	11C0264-49	Project Name	Seminole Co
Well Number	C-HS2-C06-S	Sample ID		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)	2.12	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.17	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	0900	PURGE TIME END	0909	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0903	0.30	0.30	0.10		6.20	26.8	635	0.41	8.86	clear	none
0906		0.60			6.2	26.8	634	0.35	7.69		
0909		0.90			6.1	26.8	634	0.21	7.62		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0910	SAMPLING ENDED	0910	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
COMMENTS	Added Duplicate								

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:	
				Phone:	
Date Sampled	072611	SAL Project #	110764-15C	Project Name	Seminole Co
Well Number	C-HS2-C06-M	Sample ID		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)	7.15	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.09	1/4 WELL VOLUME		3 WELL VOLUMES	0.29	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	0920	PURGE TIME END	0929	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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		5.4	76.6	308.4	0.96	70.5	clear	none
0926		0.60			5.4	75.7	309.0	0.57	36.1		
0929		0.90			5.4	75.7	305.7	0.50	27.4		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0930	SAMPLING ENDED	0930	FIELD CLEANED	Y N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7-26-11	SAL Project #	110264-51	Project Name	Seminole Co
Well Number	C-HS2-C06-D	Sample ID		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)	2.12	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.17	1/4 WELL VOLUME		3 WELL VOLUMES	0.53	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0938	PURGE TIME END	0947	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0941	0.30	0.30	0.10		5.1	24.7	140.9	0.07	33.0	clear	none
0944		0.60			5.1	24.7	140.9	0.06	31.0		
0947		0.90			5.1	24.7	140.9	0.02	27.1		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0948	SAMPLING ENDED	0948	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	11C0264-52	Project Name	Seminole Co
Well Number	C-HS2-C08-S	Sample ID		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)	2.71	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.04	1/4 WELL VOLUME		3 WELL VOLUMES	0.13	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	0949	PURGE TIME END	0958	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0952	0.30	0.30	0.10		5.9	27.1	556.4	0.07	66.9	cloudy	None
0955	|	0.60	|		6.0	27.2	557.7	0.02	65.3	|	|
0958		0.90			6.0	27.2	557.7	0.02	64.5	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0959	SAMPLING ENDED	0959	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	11C0264-53	Project Name	Seminole Co
Well Number	C-HS2-C08-S-Dup	Sample ID		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)		PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	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		1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0949	PURGE TIME END	0952	TOTAL PURGED	0.90	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0952	0.30	0.30	0.10		5.9	27.1	556.4	0.07	66.9	cloudy	none
0955		0.60			6.0	27.2	557.7	0.02	65.3		
0958		0.90			6.0	27.2	557.7	0.02	64.5		

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)	GAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1004	SAMPLING ENDED	1004	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-54	Project Name	Seminole Co
Well Number	C-HS2-C08-M	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	7.78	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.08	1/4 WELL VOLUME		3 WELL VOLUMES	0.25	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	1017	PURGE TIME END	1026	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1020	0.30	0.30	0.10		6.0	26.5	588	0.67	50.8	clear	none
1023		0.60			6.0	26.5	577	0.14	48.1		
1026		0.90			6.1	26.6	576	0.03	45.6		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1027	SAMPLING ENDED	1027	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-55	Project Name	Seminole Co
Well Number	C-HS2-C08-D	Sample ID		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)	2.73	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	0.14	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1054	PURGE TIME END	1103	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2		
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)
1057	0.30	0.30	0.10		5.3	25.9	124.4	0.01	84.3	Tannic	None
1100		0.60			5.3	26.0	123.0	0.00	80.5		
1103		0.90			5.3	25.9	122.6	-0.03	77.3		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1104	SAMPLING ENDED	1104	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-56	Project Name	Seminole Co
Well Number	C-HS2-C10-S	Sample ID		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)	3.22	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.16	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	0743	PURGE TIME END	0752	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0746	0.30	0.30	0.10		5.1	26.9	264.7	0.30	57.2		
0749	|	0.60	|		5.1	26.9	263.2	0.14	58.0		
0752	|	0.90	|		5.1	26.9	263.5	0.13	58.3		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0753	SAMPLING ENDED	0753	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1106264-57	Project Name	Seminole Co
Well Number	C-HS2-C10-M	Sample ID		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)	3.26	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	8.0	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	0.09	1/4 WELL VOLUME		3 WELL VOLUMES	0.28	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	0811	PURGE TIME END	0820	TOTAL PURGED	0.90

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)
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-02		
0817	0.30	0.30	0.10		5.6	26.3	140.9	0.04	78.2		
0819		0.60			5.6	26.3	140.7	0.03	77.3		
0820		0.90			5.6	26.3	140.5	0.04	76.5		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0821	SAMPLING ENDED	0821	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7 2 6 11	SAL Project #	1106764.55	Project Name	Seminole Co
Well Number	C-HS2-C10-D	Sample ID		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)	3.21	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.15	1/4 WELL VOLUME		3 WELL VOLUMES	0.46	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	0930	PURGE TIME END	0939	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0933	0.30	0.30	0.10		5.4	25.7	123.9	0.13	60.9		
0936		0.60			5.4	25.7	1238	0.07	62.1		
0939		0.90			5.2	25.7	1239	0.05	57.9		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0940	SAMPLING ENDED		FIELD CLEANED	Y (N)	CLEANING STEPS	
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	clear						
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:	
				Phone:	
Date Sampled	7-26-11	SAL Project #	11C0264-59	Project Name	Seminole Co
Well Number	C-HS2-C11-S	Sample ID		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)	7.73	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.04	1/4 WELL VOLUME		3 WELL VOLUMES	0.13	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	0732	PURGE TIME END	0741	TOTAL PURGED	0.90	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0735	0.30	0.30	0.10		4.8	26.9	304.4	0.17	43.2	clear	none
0738	|	0.60	|		4.8	26.9	303.1	0.16	28.6	|	|
0741	|	0.90	|		4.8	26.9	304.1	0.15	27.2	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	0742	SAMPLING ENDED	0742	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7 2 11	SAL Project #	11C6264-60	Project Name	Seminole Co
Well Number	C-HS2-C11-M	Sample ID		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)	2.64	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.02	1/4 WELL VOLUME		3 WELL VOLUMES	0.75	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	0820	PURGE TIME END	0829	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2		
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)
0823	0.30	0.30	0.10		5.3	26.1	190.0	0.05	56.7	Tannic clear	None
0826	|	0.60	|		5.3	26.1	189.6	0.03	59.1	|	|
0829	|	0.90	|		5.3	26.1	189.5	0.01	59.4	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0830	SAMPLING ENDED	0830	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	07 26 11	SAL Project #	110-0264-01	Project Name	Seminole Co
Well Number	C-HS2-C11-D	Sample ID		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)	2.70	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	0.14	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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0838	PURGE TIME END	0847	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
0841	0.30	0.30	0.10		4.9	25.2	125.5	0.16	45.3	clear	None
0844	|	0.60	|		5.0	25.2	125.4	0.09	39.6	|	|
0847	|	0.90	|		5.0	25.2	125.1	0.08	37.9	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0848	SAMPLING ENDED	0848	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7261	SAL Project #	110264.60	Project Name	Seminole Co
Well Number	C-HS2-D04-S	Sample ID		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)	2.16	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.05	1/4 WELL VOLUME		3 WELL VOLUMES	0.17	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	1037	PURGE TIME END	1046	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1040	0.30	0.30	0.10		5.7	26.6	480.5	0.76	78.1	Tangie	None
1043	|	0.60	|		5.8	26.6	480.5	0.16	75.4	|	|
1046	|	0.90	|		5.8	26.6	478.4	0.08	75.8	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1047	SAMPLING ENDED	1047	FIELD CLEANED	Y N	CLEANING STEPS	
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	Clear						
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:	
				Phone:	
Date Sampled	7261	SAL Project #	11C0364-03	Project Name	Seminole Co
Well Number	C-HS2-D04-M	Sample ID		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)	2.10	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.098	1/4 WELL VOLUME		3 WELL VOLUMES	0.294	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	1252	PURGE TIME END	1301	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1255	0.30	0.30	0.10	5.9	~~5.49~~ 5.4	25.9	312.5	0.14	200	Brown	none
1255		0.60		5.9	~~5.49~~ 5.4	25.9	311.8	0.14	200		
1301		0.90			~~0.98~~ 5.4	25.9	311.9	0.07	199		
					5.9						

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1302	SAMPLING ENDED	1302	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	07/26/11	SAL Project #	11C6264-64	Project Name	Seminole Co
Well Number	C-HS2-D04-D	Sample ID		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)	2.11	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	0.157	1/4 WELL VOLUME		3 WELL VOLUMES	0.473	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	1354	PURGE TIME END	1403	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-43	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1357	0.30	0.30	0.10		5.8	25.3	144.6	0.04	324	Brown	None
1400		0.60			5.7	25.3	144.8	0.02	314		
1403		0.90			5.7	25.3	144.4	0.02	308		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1404	SAMPLING ENDED	1404	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	1100264-65	Project Name	Seminole Co
Well Number	C-HS2-D07-S	Sample ID		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)	3.36	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	6.0	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	0.0528	1/4 WELL VOLUME		3 WELL VOLUMES	0.1584	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	1303 ~~1303~~	PURGE TIME END	1312	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1306	0.30	0.30	0.10		5.4	27.0	364.0	0.67	299	Brown	None
1309		0.60			5.9	27.0	363.4	0.35	296		
1312		0.90			5.9	27.1	363.6	0.06	294		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1313	SAMPLING ENDED	1313	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	72611	SAL Project #	11CL0264-66	Project Name	Seminole Co
Well Number	C-HS2-D07-S-Dup	Sample ID		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)	3.36	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	60	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	0.0528	1/4 WELL VOLUME		3 WELL VOLUMES	0.1584		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	1303	PURGE TIME END	1312	TOTAL PURGED	0.90
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)
1306	0.30	0.30	0.10		5.9	27.0	364.0	0.67	299	Brown	none
1309	|	0.60	|		5.9	27.0	363.4	0.35	296	|	|
1312	|	0.90	|		5.9	27.1	363.6	0.06	294	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1318	SAMPLING ENDED	1318	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7-26-11	SAL Project #	110626-4-60	Project Name	Seminole Co
Well Number	C-HS2-D07-M	Sample ID		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)	3.34	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	8.0	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		1/4 WELL VOLUME		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)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1340	PURGE TIME END	1349	TOTAL PURGED	0.90	
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1343	0.30	0.30	0.10		5.8	26.2	294.6	0.02	199	Brown	None
1346		0.60			5.8	26.2	294.9	0.01	200		
1349		0.90			5.8	26.2	294.3	0.01	202		

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1350	SAMPLING ENDED	1350	FIELD CLEANED	Y (N)	CLEANING STEPS			
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									
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:	
				Phone:	
Date Sampled	72611	SAL Project #	1106264-65	Project Name	Seminole Co
Well Number	C-HS2-D07-D	Sample ID		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)	3.39	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	11.0	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	0.152	1/4 WELL VOLUME		3 WELL VOLUMES	0.456	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	1427	PURGE TIME END	1436	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2		
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)
1430	0.30	0.30	0.10		6.4	26.0	151.4	0.77	88.1		
1433	1	0.60	1		6.4	25.8	147.0	0.06	84.2		
1436	1	0.90	1		6.2	25.8	147.3	0.02	82.4		

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1437	SAMPLING ENDED	1437	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	7/26/11	SAL Project #	11C0264-GC	Project Name	Seminole Co
Well Number	C-HS2-BKG-S	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	0.75	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	1.95	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	5.0	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	0.061	1/4 WELL VOLUME		3 WELL VOLUMES	0.183	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	1440	PURGE TIME END	1449	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1443	0.30	0.30	0.16		5.4	26.4	188.4	0.20	207	Brown	None
1446	|	0.60	|		5.2	26.4	188.6	0.17	194	|	|
1449	|	0.90	|		5.2	26.4	188.6	0.14	161	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1450	SAMPLING ENDED	1450	FIELD CLEANED	Y (N)	CLEANING STEPS			
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									
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:	
				Phone:	
Date Sampled	12611	SAL Project #	110624-70	Project Name	Seminole Co
Well Number	C-HS2-BKG-M	Sample ID		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)	1.96	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	7.0	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	0.100	1/4 WELL VOLUME		3 WELL VOLUMES	0.302	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	1457	PURGE TIME END	1506	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1500	0.30	0.30	0.10		5.7	25.4	181.6	0.16	130	Cloudy Tannic	None
1503	|	0.60	|		5.7	25.4	181.6	0.16	82.1	|	|
1506	|	0.90	|		5.7	25.4	181.6	0.16	62.8	|	|

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1507	SAMPLING ENDED	1507	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	Clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	1106264-71	Project Name	Seminole Co
Well Number	C-HS2-BKG-D	Sample ID		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)	1.97	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	16.0	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	0.16	1/4 WELL VOLUME		3 WELL VOLUMES	0.48	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	1515	PURGE TIME END	1524	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	SAL-SAM-0-2	

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)
1518	0.30	0.30	0.16		5.2	25.2	130.9	0.11	60.0	Tannic	none
1521	|	0.60	|		5.2	25.2	130.3	0.11	41.4	|	|
1524	|	0.90	|		5.2	25.2	130.5	0.11	35.6	|	|

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1525	SAMPLING ENDED	1525	FIELD CLEANED	Y (N)	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	11C6264-72	Project Name	Seminole Co
Well Number	FB-Tap	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	N/A	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		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	N/A		1/4 WELL VOLUME		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)			FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1420	PURGE TIME END	1425	TOTAL PURGED	N/A
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1425					6.9	24.9	325.3	4.98	0.77	Clear None	None

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)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1425	SAMPLING ENDED	1425	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	Clear								
COMMENTS	house Tap Purged five min. took sample.								

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:	
				Phone:	
Date Sampled	7/27/11	SAL Project #	110604-73	Project Name	Seminole Co
Well Number	FB-DI	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)		WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)		PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)		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			1/4 WELL VOLUME			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)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START	N/A	PURGE TIME END	N/A	TOTAL PURGED
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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					8.9	26.6	4.5	1.99	.40	clear	none

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)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0934	SAMPLING ENDED		FIELD CLEANED	(Y) N	CLEANING STEPS			
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	clear								
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:	
				Phone:	
Date Sampled	072611	SAL Project #	110626 4-74	Project Name	Seminole Co
Well Number	EB	Sample ID		GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	—	WELL CAPACITY (gal/ft)	—	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)		PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)		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			1/4 WELL VOLUME		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)			FINAL TUBING LEGNTH IN WELL (FEET)			PURGE TIME START		PURGE TIME END		TOTAL PURGED	
INST. ID					SAL-SAM-63-4	SAL-SAM-65-4	SAL-SAM-63-4	SAL-SAM-55-3	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)
1411					6.6	30.8	2.6	1.99	0.44	NONE	NONE

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)				SAMPLE PUMP FLOW RATE (mL/min)			
SAMPLING INITIATED	1411	SAMPLING ENDED	1411	FIELD CLEANED	(Y) N	CLEANING STEPS	DI x 2				
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		clear									
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