FLORIDA DEPARTMENT OF HEALTH

Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task C.16

S&GW Test Facility Sample Event Report No. 2

Progress Report

September 2012

4423-001

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Environmental Engineers & Scientists

In association with

SCHOOL OF MINES 1874 COLORADO

AET
Applied Environmental Technology

OTIS ENVIRONMENTAL CONSULTANTS, LLC

Florida Onsite Sewage Nitrogen Reduction Strategies Study

TASK C.16
PROGRESS REPORT

S&GW Test Facility
Sample Event Report No. 2

Prepared for:

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S&GW Test Facility Monitoring Sample Event Report No. 2

1.0 Background

Task C of the Florida Onsite Sewage Nitrogen Reduction Strategies Study includes monitoring at field sites in Florida to evaluate nitrogen reduction in soil and groundwater, to assess groundwater impacts from various onsite wastewater systems, and to provide data for parameter estimation, verification, and validation of models developed in Task D. The controlled pilot-scale testing and field monitoring at the Gulf Coast Research and Education Center (GCREC) soil and groundwater (S&GW) test facility is being monitored for a range of operating conditions and to determine mechanisms critical for nitrogen reduction. The Task C.5 QAPP documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the GCREC S&GW test facility.

2.0 Purpose

This sample event report documents data collected from the second S&GW test facility monitoring and sampling event conducted August 20 through August 27, 2012. The monitoring event consisted of measurement of flowrates dosed to the system, measurement of groundwater elevations within the standpipe piezometers, measurement of field parameters, and collection of unsaturated and groundwater samples and their analyses by a NELAC certified laboratory.

3.0 Materials and Methods

3.1 Project Site

The S&GW test facility is located at the University of Florida Gulf Coast Research and Education Center (GCREC) in southeast Hillsborough County, Florida. The specially designed pilot-scale test areas are representative of typical mounded onsite sewage treatment and disposal systems and enables controlled testing and evaluation of nitrogen reduction in soil and groundwater. Each test area consists of the above ground mound system to which effluent is dosed. Four test areas were established, to which either septic tank effluent (STE) or aerobic treatment unit (ATU) effluent was delivered to the mound/soil system via a pressure dosed mound with a gravel trench or a mound with

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drip dispersal system (Table 1). In addition to the mound/soil systems, two in-situ passive nitrogen reduction stacked biofilter systems (PNRS II) are being tested specifically for wastewater treatment performance (Table 1 TA5 and TA6). The source of the influent wastewater is the septic tank effluent from the existing onsite wastewater system serving the GCREC (Figure 1). As shown in Figure 1, two separate feed systems supply the test areas with water, each system supplies either STE or nitrified effluent to 3 test areas. The nitrification unit preceding three of the units shown in Figure 1 is a 500 gpd aerobic treatment unit (ATU) with a continuous air supply. Details of the design and construction of the S&GW test facility were presented previously in Task C.6, C.7, C.8, C10, C.11, C.12, A.15 and A.17 documents.

Table 1
S&GW Test Facility Test Areas

Test Area ID	Effluent Quality	Design HLR (gpd/ft^2)	Soil Treatment Unit Design
TA1	STE	0.8	pressure dosed mound[1], gravel trench
TA2	ATU effluent	0.8	pressure dosed mound[1], gravel trench
TA3	STE	0.8	mound with drip dispersal
TA4	ATU effluent	0.8	mound with drip dispersal
TA5	in situ STE effluent (Task A PNRS II)	0.8	mounded drip dispersal over denitrification media
TA6	in situ ATU effluent (Task A PNRS II)	0.8	mounded drip dispersal over denitrification media

[1]pressure dosed via drip tubing in gravel trench to maintain uniform application along trench length.

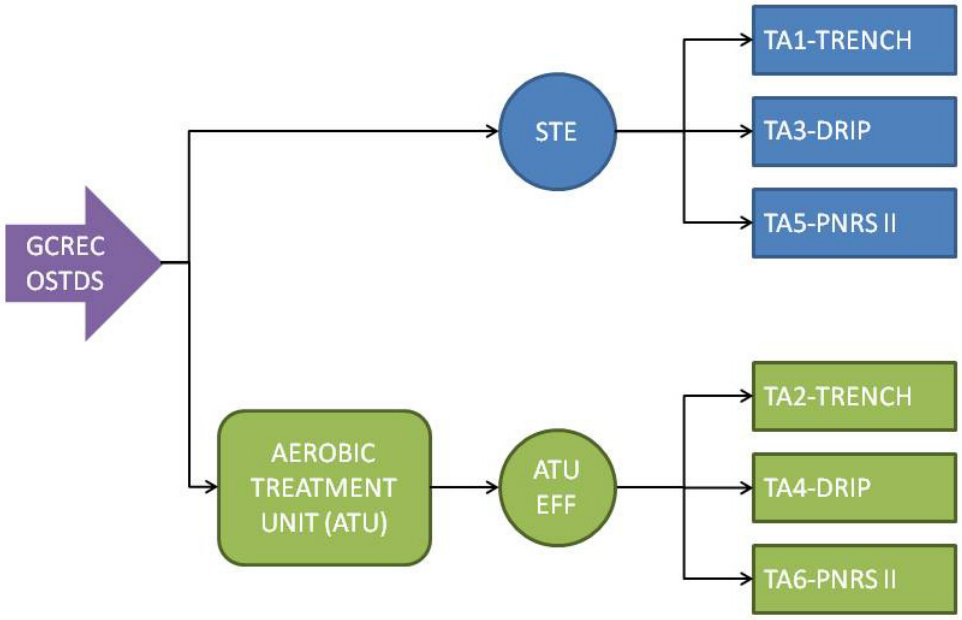

Figure 1
S&GW Test Facility System Schematic

3.2 Modifications to S&GW Test Facility

The results of Sample Event No. 1 and careful observation of the S&GW test facility were used to formulate recommendations for modifications to the test systems. The modifications that were made following Sample Event No. 1 are presented in this section.

3.2.1 Aerobic Treatment Unit (ATU)

Sample event No. 1 indicated incomplete nitrification in the ATU, utilized as the source of nitrified effluent. Therefore, the ATU was seeded with activated sludge from a wastewater treatment plant to promote the growth of nitrifying bacteria. The aeration chamber of the ATU was seeded with approximately 200 gallons of activated sludge from the Plant City WWTP on August 1, 2012. The aeration chamber was seeded with an additional 10 gallons of activated sludge from the Falkenburg AWTP on August 17, 2012. Based on nitrate/nitrite HACH test strips, nitrification then started to increase within the aeration chamber.

3.2.2 PNRS II Infiltrator Standpipe Piezometers

The standpipe piezometers installed downgradient of the infiltrator systems for both PNRS II test areas (TA5 and TA6) showed NOx-N concentrations were above 10 mg/L in first sample event. The background piezometers surrounding the test areas indicated

that there is potentially residual nitrogen from an unknown source. To better determine whether the nitrogen is wastewater derived within these piezometers, Splenda (sucralose) analyses were included in this sample event. If the source wastewater contains sucralose, then this parameter could prove useful in determining if background, or other sample point nitrogen concentrations, were impacted by wastewater sources.

3.3 Monitoring and Sampling Locations and Identification

Each test area is monitored for operational conditions, unsaturated and saturated nitrogen concentrations, soil properties, groundwater properties, and weather conditions. The PNRS II systems are monitored primarily for wastewater treatment performance, especially related to nitrogen reduction, and are not monitored as intensely for soil and groundwater parameters.

3.3.1 Unsaturated Zone Monitoring

The test areas are equipped with varying levels of unsaturated and shallow saturated zone monitoring instrumentation. The instrumentation includes suction lysimeters, stainless steel pan lysimeters, soil moisture probes, and tensiometers located at various depths below the bottom of the gravel or below the drip emitters. A complete list of all installed monitoring devices and associated sample identification is included in Appendix A.

3.3.2 Saturated Monitoring

Saturated zone monitoring will include groundwater quality, depth of groundwater table, and gradient (i.e. water level contours). A sampling network for groundwater screening was developed for each of the test areas as depicted in Figures 2 and 3. The general direction of groundwater flow is from the northeast to the southwest. Transect lines A through U are parallel to the northern edge of the mound and increase (higher letter identification) moving southward from the mound. Transect lines 0 through 20 (numbered from east to west) are perpendicular to the northern edge of the mound. Groundwater monitoring points were installed in November 2011, March 2012, and May 2012. Standpipe piezometers were installed using either hand or drilling methods. Standpipe piezometers consist of either ¾-in., 1-in., or 2-in. diameter PVC with 1-ft, 2.5-ft, 5-ft, or 10-ft long 0.010 slot PVC screens and PVC riser extending to the ground surface (refer to the Task C QAPP and Task C.10/C.11/C.12 Progress Report for additional detail).

3.3.3 Sample Locations and Identification

Each monitoring location has been assigned a unique identification indicating the type of monitoring point (LY = lysimeter, PZ = standpipe piezometer, T = tensiometer, SM = soil

moisture, OBS = observation port, etc.), grid location (self explanatory), and depth below ground surface (bottom of the well in feet; bottom of lysimeter in inches). For example TA1-PZ-11-J4 is a test area 1, standpipe piezometer sampler located 11' below natural ground surface on the grid at J4. Schematics of the STE and ATU effluent systems monitoring network are shown on the grids in Figures 2 and 3, in addition detailed schematics of the STE systems and ATU effluent systems are provided in Appendix A. Figure 4 depicts a typical schematic of the test area instrumentation. Figure 5 shows a photograph of the instrumented test area 3 with installed ¾-in. diameter PVC standpipe piezometers downgradient of the test area. A complete list of all installed monitoring devices is included in Appendix A.

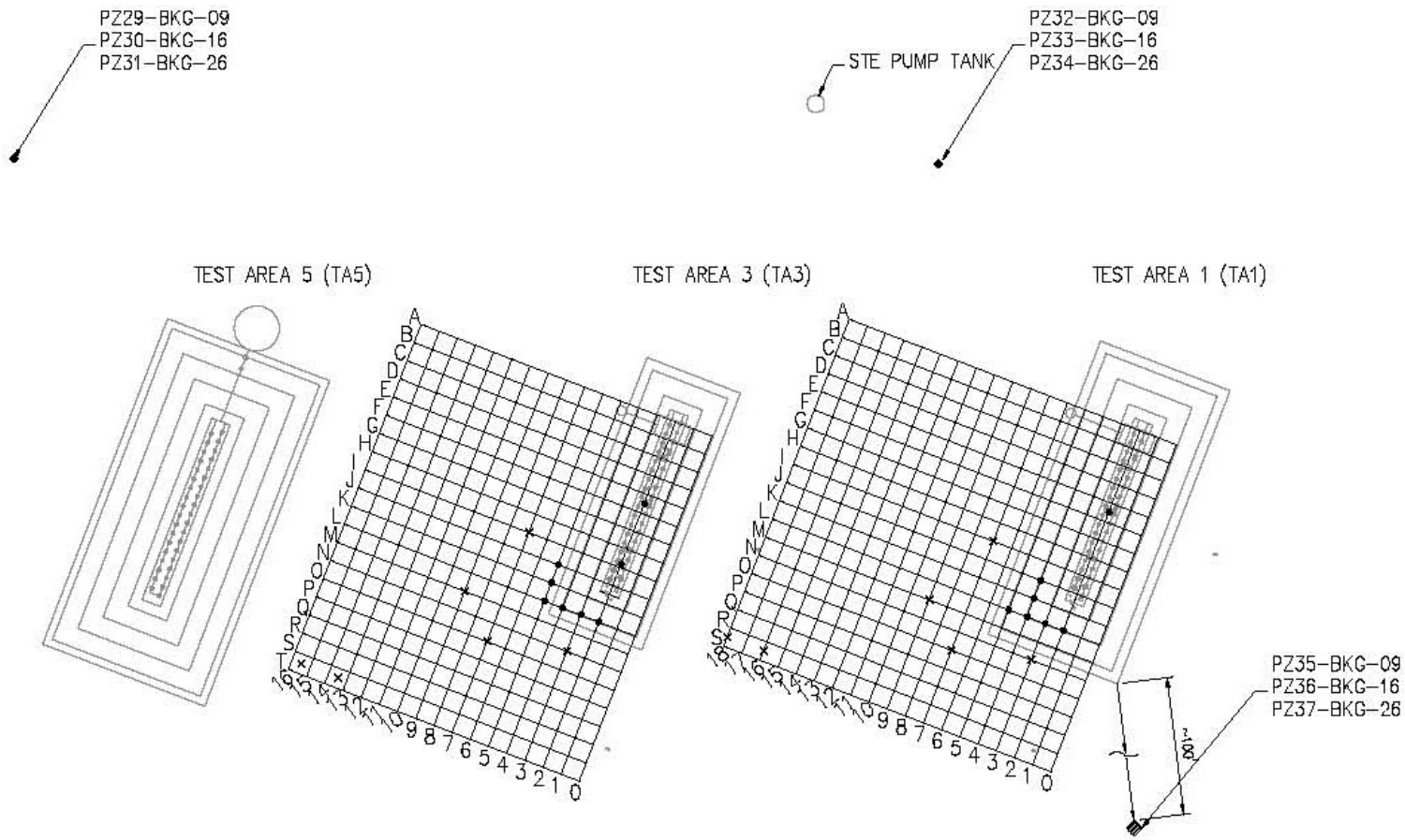

Figure 2
Schematic of STE System
S&GW Test Facility Monitoring Network

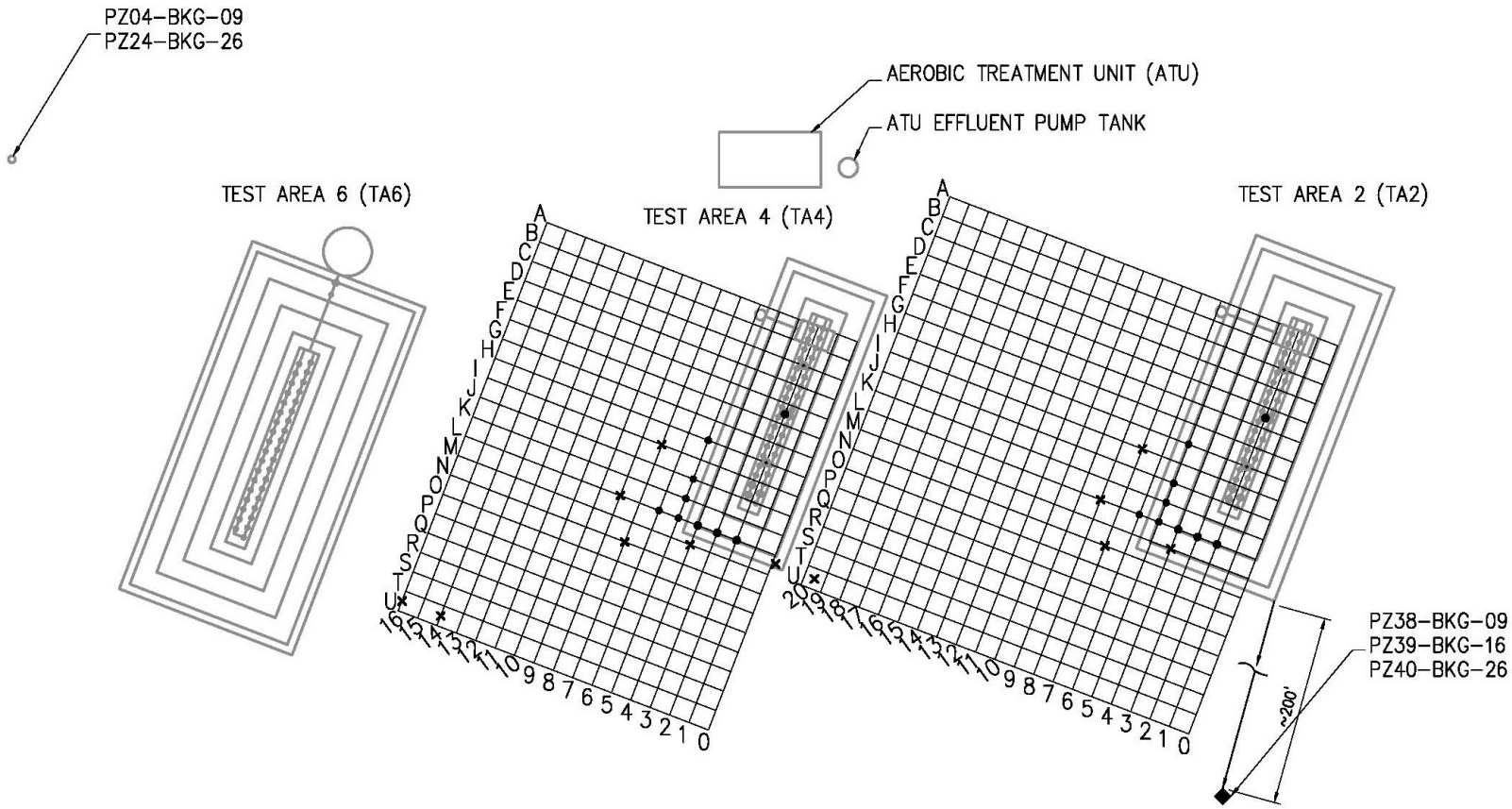

Figure 3
Schematic of ATU Effluent System
S&GW Test Facility Monitoring Network

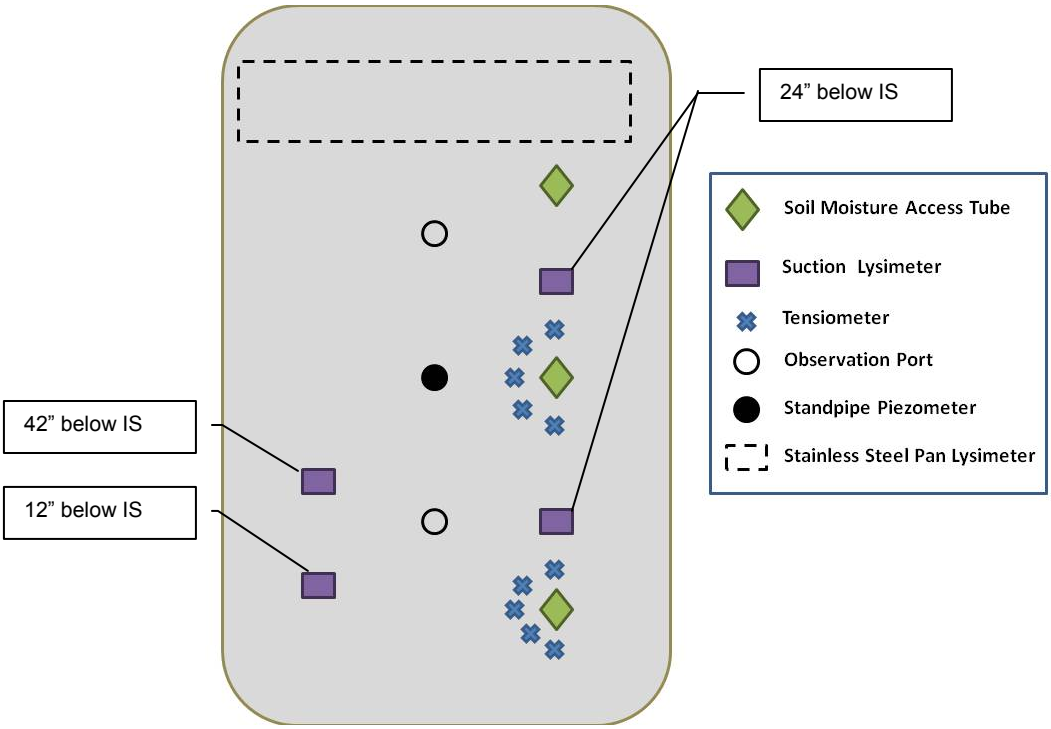

Figure 4
Typical Instrumentation of Test Area, Top View (example Test Area 3)

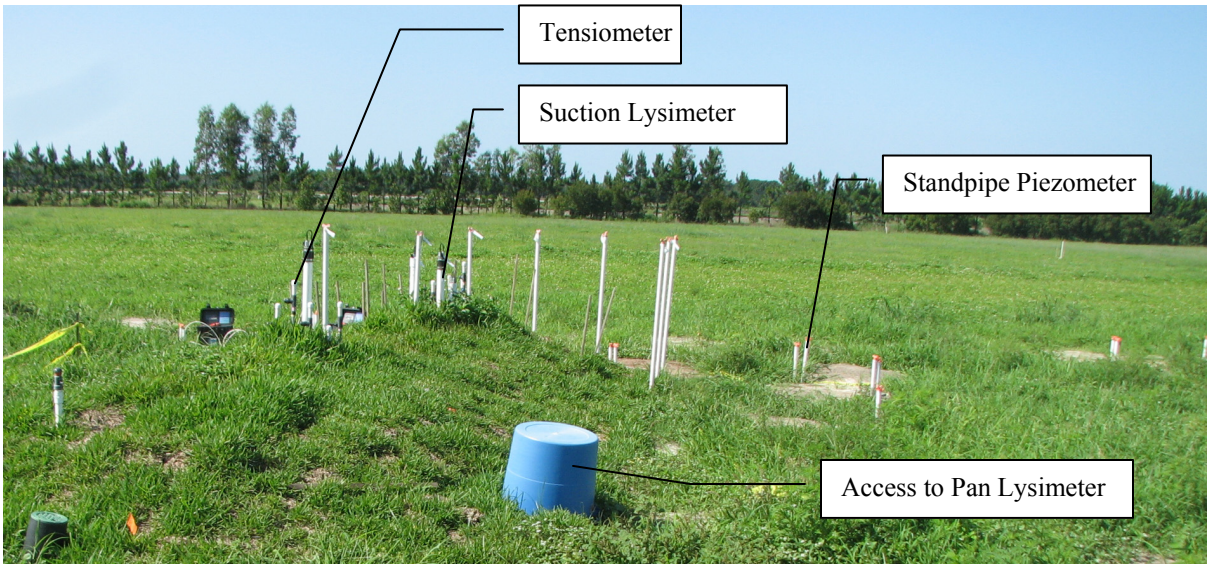

Figure 5
Photo of Instrumented Test Area 3

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3.4 Operational Monitoring

Operational monitoring conditions include effluent quality, calculation of the hydraulic loading rate to the soil, and ponding on the soil infiltrative surface or at the fill/natural soil interface.

3.4.1 Flow Monitoring

The feed and return flows were measured, recorded, and adjusted as necessary to maintain flow rates consistent with the experimental design following the sample event. In each of the two drip dispersal systems the wastewater flow is measured via two flow meters; one (1) flow meter located on the feed line to the three test areas, and; one (1) flow meter located on the return line to the dose tank. The flow meters were installed in November 2011. Table 2 summarizes the recorded wastewater flow data since start-up occurred May 9, 2012. The drip lines are automatically scoured (field flushed) every 25 dosing cycles. The field flush volume bypasses the return flow meter but not the feed flow meter; therefore the field flush volume must be accounted for when determining the dosed volume (Table 2).

The target dose volume to each of the test areas is 32 gallons per day which equates to 96 gallons per day for each drip dispersal system. The total recorded flow for the STE system was within the 15% operational target that is considered acceptable. The ATU system was within the operational target (-0.4%) following the change in dose cycle time from 15 minutes to 11.66 minutes prior to the sample event.

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Table 2
S&GW Test Facility Measured Wastewater Flow Data

	Flow Meter Totalized Feed to Mounds (gallons)	Flow Meter Totalized Return from Mounds (gallons)	Number of Field Flush Occurrences (#)	Average Recorded Flow (gpd)	RE% Measured/ Target (%)	Average Recorded Flow since start-up (gpd)
STE System						
5/9/12 2:35 PM	13,733.08	5,188.14	15[1]			
6/18/12 3:10 PM	20,987.62	8,620.71	24[1]	93.36	-2.8%	
7/18/12 9:42 AM	25535.66	10270.72	31[1]	95.11	-0.9%	94.10
8/20/12 2:15 PM	30410.69	11466.12	39[1]	108.58	13.1%	98.77
ATU System						
5/9/12 3:22 PM	38,415.90	33,861.96	25[2]			
6/18/12 3:05 PM	63,382.59	53,711.43	34[2]	121.15	26.2%	
7/18/12 9:35 AM	78364.51	65072.22	41[2]	114.51	19.3%	118.32
8/3/12 10:45 AM	86970.09	71635.06	45[2]	119.73	24.7%	118.58
August 3, 2012 at 11:00 am: Revised dose cycle time to 11.66 minutes from 15 minutes						
8/20/12 2:33 PM	94220.74	77093.73	50[3]	95.61	-0.4%	

[1]STE system additional field flush cycle volume is 9.5 gallons
[2]ATU system additional field flush cycle volume is 30.3 gallons
[3]ATU system additional field flush cycle volume following dose cycle time revision is 24.6 gallons

3.4.2 Meteorological Monitoring

A weather station is located at the GCREC facility with weather conditions recorded every minute and stored on a private website. Table 3 provides the recorded meteorological data daily averages leading up to and during the sample event. Appendix B provides a summary table of the average daily recorded meteorological data since the previous sample event.

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Table 3
Meteorological Data Daily Averages Measured August 15 through August 27, 2012

Date	Temp Avg 60 cm (°F)	Temp Avg 2m (°F)	Temp Avg 10 m (°F)	Temp Soil Avg -10 cm (°F)	Dewpoint Avg 2m (°F)	Relative Humidity Avg 2m (%)	Rain Total 2m (in)	Wind Speed Avg 10m (mph)	ET (in)
15-Aug-12	80.58	80.79	80.74	82.76	74.91	84	0	3.32	0.16
16-Aug-12	81.40	81.63	81.41	83.85	76.44	85	0.04	3.75	0.17
17-Aug-12	79.67	80.28	80.20	83.54	76.26	88	0	3.67	0.12
18-Aug-12	75.37	76.04	75.98	81.85	74.93	96	0.39	3.88	0.07
19-Aug-12	80.49	80.90	80.45	82.23	75.93	86	0.13	7.20	0.18
20-Aug-12	81.21	81.51	80.96	83.33	75.07	82	0.02	7.38	0.19
21-Aug-12	78.29	78.51	77.94	83.17	73.78	87	1.66	8.28	0.16
22-Aug-12	74.11	74.50	74.23	79.00	72.60	94	3.89	5.75	0.10
23-Aug-12	78.81	79.13	78.92	79.06	72.80	83	0	3.66	0.16
24-Aug-12	79.61	80.00	79.60	80.80	73.64	83	0	6.28	0.18
25-Aug-12	78.88	79.34	78.85	81.43	72.15	80	0	9.68	0.16
26-Aug-12	76.86	77.55	77.21	80.76	75.23	93	0.74	12.83	0.08
27-Aug-12	77.85	78.52	78.20	79.45	77.04	95	2.37	14.50	0.09

3.4.3 Soil Moisture Monitoring

In situ soil tension and soil moisture measurements are collected for model development in Task D. Soil moisture tension is monitored in two test areas (TA1 and TA3) in two locations (center and south side of the mound). Tensiometers are installed at 5 depths as specified in Appendix C. Tensiometers have a ceramic cup and tube assembly equipped with a pressure transducer. The pressure transducer allows for precise measurement of the soil water potential. The tensiometers are automated to enable recording of soil moisture tension at 15 minute intervals to evaluate short-term changes in soil moisture status associated with wastewater dosing events. The daily averages since the previous sample event are presented in Appendix C. Figures C.1 and C.2 display the 15 minute interval data for soil tension, rainfall and dose during this monitoring event for TA1 and TA3, respectively. The recorded tensiometer data provides a relative difference comparison between locations but is not a true value.

Soil moisture is measured through Sentek™ sensor access tubes. Volumetric soil moisture content is measured by responses to changes in the dielectric constant of the soil. Soil moisture content was collected periodically (Appendix D). No ponding was observed within the test area observation ports.

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3.5 Soil Characteristics

During the instrumentation of the S&GW test facility, soil cores were collected at two locations; MM (located between TA2 and TA5) and TT (north of the tracer test area). At location MM a continuous soil core was collected to the confining Hawthorn clay layer. The shallow soil cores will provide information on vadose zone properties, and the deep soil core will provide a general idea of the soil properties within the saturated zone. The information will be used when determining appropriate parameters to be used in model development. In addition, a test pit was dug south of the S&GW test facility and east of the GCREC mound into the spodic layer approximately 6 feet below ground surface (Figure 6).

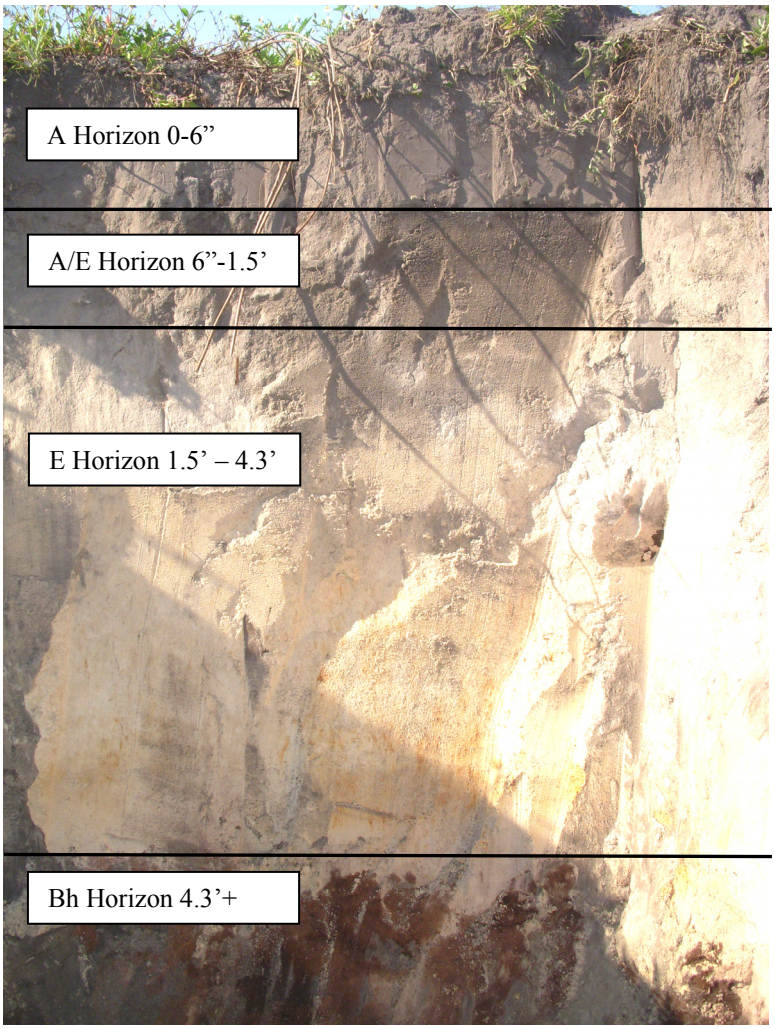

Figure 6
Photograph of Test Pit Soil Profile

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3.6 Groundwater Elevation Measurements

Groundwater level measurements are used to determine hydraulic gradients and direction of groundwater flow. Groundwater levels were measured by inserting into monitoring wells a hand-cranked steel tape graduated in feet, to the nearest 0.01 ft. These measurements are then converted to groundwater surface elevations by using the surveyed elevation of the top of the monitor well casing.

3.7 Water Quality Sample Collection and Analyses

Septic tank effluent, ATU effluent, groundwater, and soil moisture samples were collected August 20, 2012 through August 27, 2012 for water quality analysis. A peristaltic pump was used to collect STE and ATU effluent by placing the suction inlet tubing in the mid section of the clear liquid phase in the effluent holding tanks. Similarly, sample was collected from the PNRS II Tank 1, which supplies STE to the S&GW test facility nitrification unit and STE dose tank. The effluent was directed into the analysis-specific containers supplied by the analytical laboratory. Field parameters (temperature (Temp), pH, specific conductance (SC), oxidation-reduction potential (ORP) and dissolved oxygen (DO)) were measured using portable electronic probes with probe tips placed directly into the tanks.

Groundwater samples were obtained using a peristaltic pump and dedicated standpipe piezometer tubing. Prior to groundwater sample collection, the piezometer was micropurged using low-flow purging and sampling methods. Micropurging continued until water quality indicators (temp, pH, SC, DO and turbidity) were stabilized (three consecutive measurements within the limits). Groundwater sample was then collected into the analysis-specific containers.

Soil moisture samples from the suction lysimeters were also collected using a peristaltic pump and dedicated tubing. The tubing routed the samples directly into analysis-specific containers after sufficient flushing of the tubing had occurred. Field parameters (Temp, pH, SC, ORP, DO) were then recorded in an external reservoir.

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, provided in Appendix E, supplied by the laboratory.

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

All samples were analyzed by the laboratory for chloride, total Kjeldahl nitrogen (TKN-N), ammonia nitrogen (NH_3-N), and nitrate/nitrite nitrogen (NO_X-N). Additionally, for the effluent samples and some of the water samples total alkalinity, carbonaceous biochemical oxygen demand ($CBOD_5$), total phosphorus (TP), total solids (TS), total suspended solids (TSS), fecal coliform (fecal), anions and cations were included. At some of the water sample locations chemical oxygen demand (COD) and dissolved organic carbon (DOC) were included. For the two in-situ passive nitrogen reduction mounded systems (TA5 and TA6) samples sulfate and hydrogen sulfide were also included. To assist in determination of whether certain monitoring locations are impacted by wastewater, sucralose was included at 11 sample locations. All analyses were performed by an independent and fully NELAC certified analytical laboratory (Southern Analytical Laboratory and FDEP). Table 4 lists the analytical parameters, analytical methods, and detection limits for these analyses.

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Table 4
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	SM 4500P-E	0.01 mg/L
Carbonaceous Biological Oxygen Demand ($CBOD_5$)	SM 5210B	2 mg/L
Total Solids (TS)	EPA 160.3	0.01% by wt
Total Suspended Solids (TSS)	SM 2540D	1 mg/L
Total Organic Carbon (TOC)	SM 5310B	0.5 mg/L
Dissolved Organic Carbon (DOC)	SM 5310B	0.5 mg/L
Fecal Coliform (fecal)	SM 9222D	2 ct/100 mL
Anions		
Fluoride	EPA 300.0	0.01 mg/L
Chloride	EPA 300.0	0.05 mg/L
Nitrate-N	EPA 300.0	0.01 mg/L
Nitrite-N	EPA 300.0	0.01 mg/L
Orthophosphate-P	EPA 300.0	0.01 mg/L
Sulfate	EPA 300.0	0.20 mg/L
Cations		
Boron	EPA 200.7	0.05 mg/L
Calcium	EPA 200.7	0.01 mg/L
Iron	EPA 200.7	0.02 mg/L
Magnesium	EPA 200.7	0.01 mg/L
Manganese	EPA 200.7	0.001 mg/L
Potassium	EPA 200.7	0.01 mg/L
Sodium	EPA 200.7	0.01 mg/L
Hydrogen Sulfide (unionized)	SM 4550SF	0.01 mg/L
Sulfide	SM 4500SF	0.01 mg/L
Sucralose	EPA 8321B	0.01 µg/L

4.0 Results

Once analytical results are obtained from the laboratory, S&GW Test Facility Data Summary Report No. 2 (Task C17) will be prepared describing the results from this sampling event.

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4.1 Groundwater Flow and Gradient

Water levels were measured during the sample event as summarized in Table 5. Figure 7 illustrates the surficial groundwater contours as derived from measurements within the standpipe piezometers on August 20 through August 27, 2012representative of the second sample event. There was significant rain immediately proceeding and during the sample event which may partially explain the shape of the contour plot. By continued monitoring of the groundwater elevations, a clearer picture of the gradient at the site will be gained.

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Table 5
Standpipe Piezometer Groundwater Level Measured

Identification/ Location	Water Table Elevation[1,3] (ft)	Identification/ Location	Water Table Elevation[1,3] (ft)
	August 20 through 23, 2012		August 20 through 23, 2012
TA1-PZ-11-EF2	123.82	TA2-PZ-16-I7	123.22
TA1-PZ-11-J4	123.76	TA2-PZ-09-L8	123.20
TA1-PZ-11-K4	123.71	TA2-PZ-16-L8	123.15
TA1-PZ-11-L2	123.68	TA2-PZ-09-TU19	123.26
TA1-PZ-11-L3	123.72	TA2-PZ-16-TU19	123.28
TA1-PZ-11-L5	123.72	TA2-PZ-09-TU21	123.27
TA1-PZ-09-N3	123.69	TA2-PZ-16-TU21	123.18
TA1-PZ-16-N3	123.66	TA3-PZ-11-EF2	125.82
TA1-PZ-09-O7	123.17[2]	TA3-PZ-11-I2	125.76
TA1-PZ-16-O7	123.66	TA3-PZ-10-J5	125.74
TA1-PZ-09-M9	123.70	TA3-PZ-10-K5	125.69
TA1-PZ-16-M9	123.69	TA3-PZ-11-L2	126.05[2]
TA1-PZ-09-I7	124.77[2]	TA3-PZ-11-L3	125.71
TA1-PZ-16-I7	123.68	TA3-PZ-11-L4	125.68
TA1-PZ-09-RS16	123.52	TA3-PZ-10-L5	125.69
TA1-PZ-16-RS16	123.58	TA3-PZ-09-N3	125.70
TA1-PZ-09-RS18	123.51	TA3-PZ-16-N3	125.55
TA1-PZ-16-RS18	123.51	TA3-PZ-09-O7	125.58
TA2-PZ-10-H5	123.26	TA3-PZ-16-O7	125.54
TA2-PZ-10-J5	123.23	TA3-PZ-09-I7	125.72
TA2-PZ-10-K5	123.19	TA3-PZ-16-I7	125.66
TA2-PZ-10-L2	123.19	TA3-PZ-09-M9	125.68
TA2-PZ-10-L3	123.14	TA3-PZ-16-M9	125.64
TA2-PZ-10-L4	123.17	TA3-PZ-09-ST14	125.50
TA2-PZ-10-L5	123.19	TA3-PZ-16-ST14	125.49
TA2-PZ-10-L6	123.14	TA3-PZ-09-ST16	125.44
TA2-PZ-09-M4	123.17	TA3-PZ-16-ST16	125.47
TA2-PZ-16-M4	123.08	TA4-PZ-11-EF2	123.53
TA2-PZ-09-N7	123.18	TA4-PZ-10-H5	123.38
TA2-PZ-16-N7	123.06	TA4-PZ-10-J5	123.34
TA2-PZ-09-I7	123.45[1]	TA4-PZ-10-K5	123.32

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Table 5 (continued)
Standpipe Piezometer Groundwater Level Measured

Identification/ Location	Water Table Elevation[1,3] (ft)	Identification/ Location	Water Table Elevation[1,3] (ft)
	August 20 through 23, 2012		August 20 through 23, 2012
TA4-PZ-11-L2	125.19[2]	TA5-PZ-I	125.60
TA4-PZ-11-L3	123.33	TA6-PZ-I	125.03
TA4-PZ-11-L4	123.36	PZ01-BKG-09	126.48
TA4-PZ-11-L5	123.32	PZ04-BKG-09	125.45
TA4-PZ-11-L6	123.32	PZ24-BKG-26	125.00
TA4-PZ-09-M4	123.32	PZ29-BKG-09	125.72
TA4-PZ-16-M4	123.20	PZ30-BKG-16	125.70
TA4-PZ-09-N7	127.00[2]	PZ31-BKG-26	125.71
TA4-PZ-16-N7	123.46	PZ33-BKG-16	126.05
TA4-PZ-09-I7	123.41	PZ34-BKG-26	126.05
TA4-PZ-16-I7	123.65	PZ35-BKG-09	125.27
TA4-PZ-09-L8	123.02	PZ36-BKG-16	125.22
TA4-PZ-16-L8	123.12	PZ37-BKG-26	125.19
TA4-PZ-09-TU14	123.24	PZ38-BKG-09	123.77
TA4-PZ-16-TU14	123.26	PZ39-BKG-16	123.80
TA4-PZ-09-TU16	123.15	PZ40-BKG-26	123.85
TA4-PZ-16-TU16	123.20		

[1]Elevation above mean sea level based on NGVD 1929
[2]Most likely erroneous instrument reading
[3]During the period immediately preceding and during the sample event there was over 6 inches of rainfall

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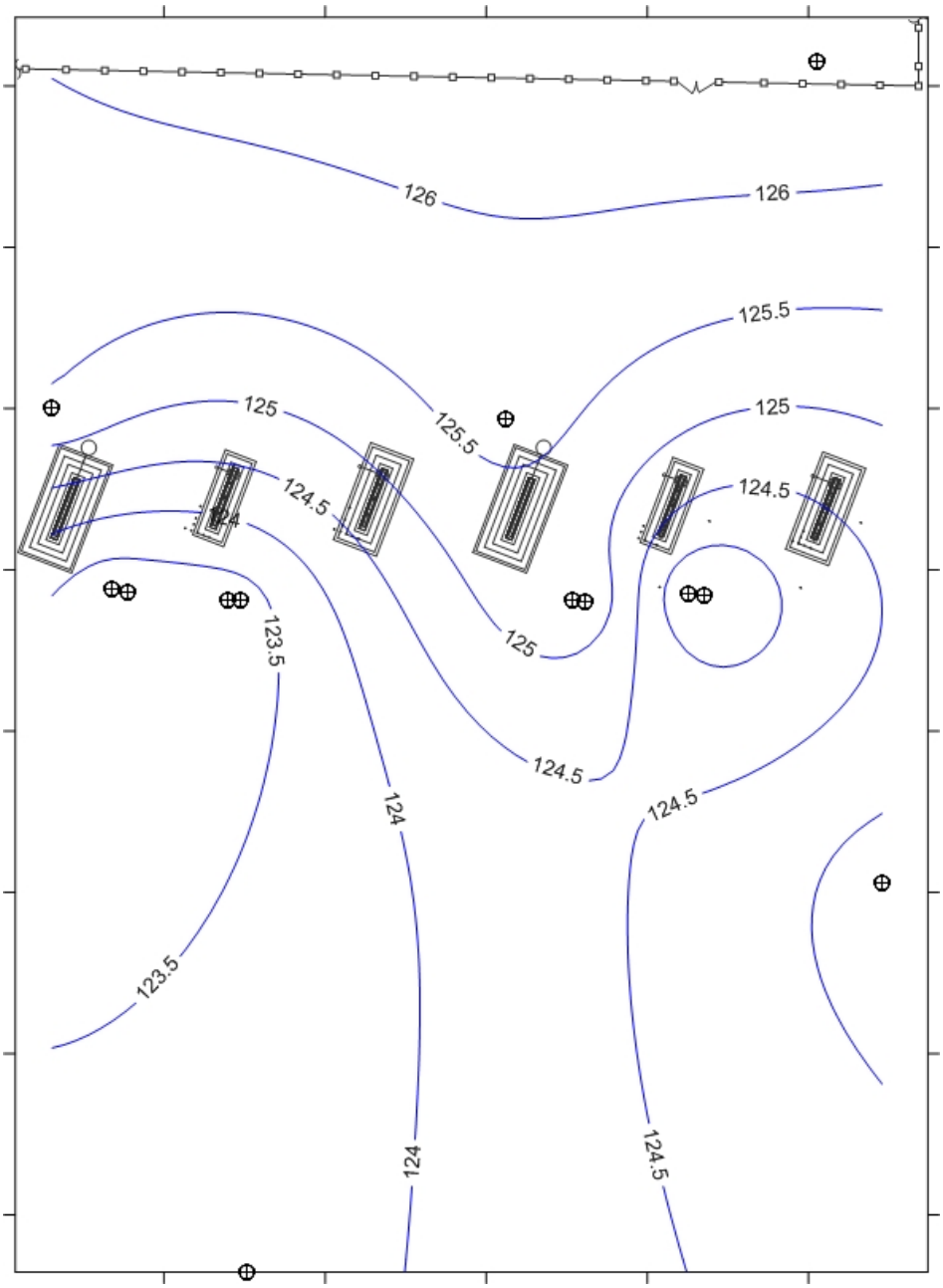

Figure 7
Surficial Groundwater Contours (Elev. ft above MSL)
August 20 through 27, 2012, representative of SE No. 2
⊕ denotes piezometers

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4.2 Water Quality Analyses

4.2.1 Field Parameters

Field parameters (temperature, pH, dissolved oxygen (DO), and specific conductivity) were measured at all the sampling locations during the August 2012 sampling event. The complete field parameter data set is included in Appendix F.

5.0 Summary

This Sample Event Report (C.16) provides documentation of the second S&GW test facility sample event which was conducted August 20 through 27, 2012. Once laboratory analyses are complete, the Data Summary Report (C.17) for this event will be prepared to summarize the results of the sampling and data collection from the monitoring described herein.

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Appendix A: S&GW Test Facility Sample Identification

Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
1	TA1-PAN-12-N	TA1	North				2' x 3.3' SST pan lysimeter
2	TA1-OBS-N	TA1	North	1244816.74	582859.20	132.50	4"D observation port with slots
3	TA1-OBS-S	TA1	South	1244807.75	582855.08	132.88	4"D observation port without slots
4	TA1-SM-39-N	TA1	North	1244817.38	582860.13	130.27	2"D soil moisture tube with 6" casing
5	TA1-SM-39-C	TA1	Center	1244812.80	582858.09	130.23	2"D soil moisture tube with 6" casing
6	TA1-SM-39-S	TA1	South	1244803.79	582854.15	130.24	2"D soil moisture tube with 6" casing
7	TA1-SM-BKG-S	TA1	South	1244778.23	582851.49	128.69	2"D soil moisture tube with 6" casing
8	TA1-SM-BKG-E	TA1	East	1244814.73	582868.76	129.29	2"D soil moisture tube with 6" casing
9	TA1-PZ-11-EF2	TA1	EF2	1244812.14	582857.35	133.59	1"D standpipe piezometer, 5' screen
10	TA1-LY-24-C	TA1	Center	1244811.87	582857.75	133.69	2"D suction lysimeter, 9" cup
11	TA1-LY-12-S	TA1	South	1244804.42	582853.25	132.60	2"D suction lysimeter, 9" cup
12	TA1-LY-24-S	TA1	South	1244804.42	582854.46	134.14	2"D suction lysimeter, 9" cup
13	TA1-LY-42-S	TA1	South	1244805.37	582853.79	132.66	2"D suction lysimeter, 9" cup
14	TA1-T-6-C	TA1	Center	1244813.56	582858.66	132.34	tensiometer
15	TA1-T-12-C	TA1	Center	1244813.75	582858.12	132.34	tensiometer
16	TA1-T-24-C	TA1	Center	1244813.77	582857.64	132.33	tensiometer
17	TA1-T-36-C	TA1	Center	1244813.80	582857.36	132.36	tensiometer
18	TA1-T-42-C	TA1	Center	1244813.34	582857.00	132.88	tensiometer
19	TA1-T-6-S	TA1	South	1244804.28	582853.77	132.32	tensiometer
20	TA1-T-12-S	TA1	South	1244803.87	582852.93	132.35	tensiometer
21	TA1-T-24-S	TA1	South	1244803.71	582852.77	132.36	tensiometer
22	TA1-T-36-S	TA1	South	1244803.49	582852.89	132.38	tensiometer
23	TA1-T-42-S	TA1	South	1244803.01	582853.26	132.80	tensiometer
24	TA1-PZ-11-J4	TA1	J4	1244805.79	582849.87	133.57	1"D standpipe piezometer, 5' screen
25	TA1-PZ-11-K4	TA1	K4	1244803.97	582849.03	133.58	1"D standpipe piezometer, 5' screen
26	TA1-PZ-11-L2	TA1	L2	1244800.25	582851.77	133.57	1"D standpipe piezometer, 5' screen
27	TA1-PZ-11-L3	TA1	L3	1244801.20	582849.94	133.57	1"D standpipe piezometer, 5' screen
28	TA1-PZ-11-L4	TA1	L4	1244802.21	582848.15	133.57	1"D standpipe piezometer, 5' screen
29	TA1-PZ-11-L5	TA1	L5	1244803.08	582846.26	133.57	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
30	TA1-PZ-09-N3	TA1	N3	1244798.01	582846.48	130.43	1"D standpipe piezometer, 5' screen
31	TA1-PZ-16-N3	TA1	N3	1244798.02	582846.37	130.44	1"D standpipe piezometer, 2.5' screen
32	TA1-PZ-09-O7	TA1	O7	1244798.67	582839.96	130.08	1"D standpipe piezometer, 5' screen
33	TA1-PZ-16-O7	TA1	O7	1244799.11	582839.97	130.30	1"D standpipe piezometer, 2.5' screen
34	TA1-PZ-09-M9	TA1	M9	1244804.22	582839.66	130.60	1"D standpipe piezometer, 5' screen
35	TA1-PZ-16-M9	TA1	M9	1244804.35	582839.62	130.64	1"D standpipe piezometer, 2.5' screen
36	TA1-PZ-09-I7	TA1	I7	1244810.91	582845.19	130.27	1"D standpipe piezometer, 5' screen
37	TA1-PZ-16-I7	TA1	I7	1244810.78	582845.02	130.33	1"D standpipe piezometer, 2.5' screen
38	TA1-PZ-09-RS16	TA1	RS16	1244792.19	582817.42	129.65	1"D standpipe piezometer, 5' screen
39	TA1-PZ-16-RS16	TA1	RS16	1244792.14	582817.50	129.72	1"D standpipe piezometer, 2.5' screen
40	TA1-PZ-09-RS18	TA1	RS18	1244792.34	582812.82	130.25	1"D standpipe piezometer, 5' screen
41	TA1-PZ-16-RS18	TA1	RS18	1244792.43	582812.72	130.25	1"D standpipe piezometer, 2.5' screen
42	TA2-PAN-12-N	TA2	North				2' x 3.3' SST pan lysimeter
43	TA2-OBS-N	TA2	North	1244818.77	582722.04	131.67	4"D observation port with slots
44	TA2-OBS-S	TA2	South	1244809.76	582718.30	132.27	4"D observation port without slots
45	TA2-SM-39-C	TA2	Center	1244814.95	582721.02	129.80	2"D soil moisture tube with 6" casing
46	TA2-PZ-10-EF2	TA2	EF2	1244814.23	582720.22	133.90	1"D standpipe piezometer, 5' screen
47	TA2-LY-24-C	TA2	Center	1244814.09	582720.59	132.60	2"D suction lysimeter, 9" cup
48	TA2-LY-12-S	TA2	South	1244806.60	582716.48	132.02	2"D suction lysimeter, 9" cup
49	TA2-LY-24-S	TA2	South	1244806.64	582717.52	132.62	2"D suction lysimeter, 9" cup
50	TA2-LY-42-S	TA2	South	1244807.39	582716.98	133.11	2"D suction lysimeter, 9" cup
51	TA2-PZ-10-H5	TA2	H5	1244810.74	582712.43	133.76	1"D standpipe piezometer, 5' screen
52	TA2-PZ-10-J5	TA2	J5	1244807.11	582710.94	133.73	1"D standpipe piezometer, 5' screen
53	TA2-PZ-10-K5	TA2	K5	1244805.14	582710.05	133.74	1"D standpipe piezometer, 5' screen
54	TA2-PZ-10-L2	TA2	L2	1244801.12	582714.87	133.74	1"D standpipe piezometer, 5' screen
55	TA2-PZ-10-L3	TA2	L3	1244801.83	582713.03	133.73	1"D standpipe piezometer, 5' screen
56	TA2-PZ-10-L4	TA2	L4	1244802.60	582711.25	133.52	1"D standpipe piezometer, 5' screen
57	TA2-PZ-10-L5	TA2	L5	1244803.37	582709.39	133.73	1"D standpipe piezometer, 5' screen
58	TA2-PZ-10-L6	TA2	L6	1244804.19	582707.50	133.72	1"D standpipe piezometer, 5' screen
59	TA2-PZ-09-M4	TA2	M4	1244800.19	582709.27	129.51	1"D standpipe piezometer, 5' screen
60	TA2-PZ-16-M4	TA2	M4	1244800.27	582709.49	129.50	1"D standpipe piezometer, 2.5' screen
61	TA2-PZ-09-N7	TA2	N7	1244801.15	582703.29	129.36	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
62	TA2-PZ-16-N7	TA2	N7	1244801.21	582703.43	129.37	1"D standpipe piezometer, 2.5' screen
63	TA2-PZ-09-I7	TA2	I7	1244810.20	582707.91	129.10	1"D standpipe piezometer, 5' screen
64	TA2-PZ-16-I7	TA2	I7	1244810.37	582707.66	129.52	1"D standpipe piezometer, 2.5' screen
65	TA2-PZ-09-L8	TA2	L8	1244806.27	582704.93	129.28	1"D standpipe piezometer, 5' screen
66	TA2-PZ-16-L8	TA2	L8	1244806.33	582704.81	129.27	1"D standpipe piezometer, 2.5' screen
67	TA2-PZ-09-TU19	TA2	TU19	1244790.44	582673.66	128.68	1"D standpipe piezometer, 5' screen
68	TA2-PZ-16-TU19	TA2	TU19	1244790.49	582673.49	128.62	1"D standpipe piezometer, 2.5' screen
69	TA2-PZ-09-TU21	TA2	TU21	1244790.32	582669.75	128.58	1"D standpipe piezometer, 5' screen
70	TA2-PZ-16-TU21	TA2	TU21	1244790.60	582669.40	128.98	1"D standpipe piezometer, 2.5' screen
71	TA3-PAN-12-N	TA3	North				2' x 3.3' SST pan lysimeter
72	TA3-OBS-N	TA3	North	1244817.49	582814.57	131.20	4"D observation port with slots
73	TA3-OBS-S	TA3	South	1244808.15	582811.07	131.11	4"D observation port without slots
74	TA3-SM-39-N	TA3	North	1244817.96	582815.53	130.59	2"D soil moisture tube with 6" casing
75	TA3-SM-39-C	TA3	Center	1244813.53	582813.63	130.60	2"D soil moisture tube with 6" casing
76	TA3-SM-39-S	TA3	South	1244804.15	582809.89	130.57	2"D soil moisture tube with 6" casing
77	TA3-SM-BKG-S	TA3	South	1244795.29	582807.19	129.32	2"D soil moisture tube with 6" casing
78	TA3-LY-24-C	TA3	Center	1244812.47	582813.21	133.45	2"D suction lysimeter, 9" cup
79	TA3-LY-12-S	TA3	South	1244804.97	582809.16	132.24	2"D suction lysimeter, 9" cup
80	TA3-LY-24-S	TA3	South	1244804.93	582810.17	132.90	2"D suction lysimeter, 9" cup
81	TA3-LY-42-S	TA3	South	1244805.73	582809.79	132.98	2"D suction lysimeter, 9" cup
82	TA3-T-6-C	TA3	Center	1244814.37	582813.76	132.19	tensiometer
83	TA3-T-12-C	TA3	Center	1244814.50	582813.46	132.70	tensiometer
84	TA3-T-24-C	TA3	Center	1244814.56	582813.15	132.23	tensiometer
85	TA3-T-36-C	TA3	Center	1244814.31	582812.76	131.70	tensiometer
86	TA3-T-42-C	TA3	Center	1244813.89	582812.49	132.20	tensiometer
87	TA3-T-6-S	TA3	South	1244805.33	582809.71	132.19	tensiometer
88	TA3-T-12-S	TA3	South	1244804.36	582809.00	132.69	tensiometer
89	TA3-T-24-S	TA3	South	1244803.69	582808.77	132.22	tensiometer
90	TA3-T-36-S	TA3	South	1244803.59	582808.72	131.71	tensiometer
91	TA3-T-42-S	TA3	South	1244803.27	582809.06	132.21	tensiometer
92	TA3-PZ-11-EF2	TA3	EF2	1244812.64	582812.80	133.82	1"D standpipe piezometer, 5' screen
93	TA3-PZ-11-I2	TA3	I2	1244806.39	582810.24	133.54	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
94	TA3-PZ-10-J5	TA3	J5	1244806.06	582803.49	133.49	1"D standpipe piezometer, 5' screen
95	TA3-PZ-10-K5	TA3	K5	1244804.12	582802.85	133.49	1"D standpipe piezometer, 5' screen
96	TA3-PZ-11-L2	TA3	L2	1244800.38	582808.17	133.51	1"D standpipe piezometer, 5' screen
97	TA3-PZ-11-L3	TA3	L3	1244800.93	582806.21	133.51	1"D standpipe piezometer, 5' screen
98	TA3-PZ-11-L4	TA3	L4	1244801.63	582804.23	133.50	1"D standpipe piezometer, 5' screen
99	TA3-PZ-10-L5	TA3	L5	1244802.21	582802.23	133.49	1"D standpipe piezometer, 5' screen
100	TA3-PZ-09-N3	TA3	N3	1244798.56	582803.29	129.88	1"D standpipe piezometer, 5' screen
101	TA3-PZ-16-N3	TA3	N3	1244798.87	582803.18	129.89	1"D standpipe piezometer, 2.5' screen
102	TA3-PZ-09-O7	TA3	O7	1244798.85	582797.09	130.06	1"D standpipe piezometer, 5' screen
103	TA3-PZ-16-O7	TA3	O7	1244798.94	582796.81	130.26	1"D standpipe piezometer, 2.5' screen
104	TA3-PZ-09-I7	TA3	I7	1244809.85	582798.46	130.06	1"D standpipe piezometer, 5' screen
105	TA3-PZ-16-I7	TA3	I7	1244810.00	582798.53	130.06	1"D standpipe piezometer, 2.5' screen
106	TA3-PZ-09-M9	TA3	M9	1244803.45	582796.14	130.18	1"D standpipe piezometer, 5' screen
107	TA3-PZ-16-M9	TA3	M9	1244803.44	582796.02	130.12	1"D standpipe piezometer, 2.5' screen
108	TA3-PZ-09-ST14	TA3	ST14	1244790.15	582780.80	129.88	1"D standpipe piezometer, 5' screen
109	TA3-PZ-16-ST14	TA3	ST14	1244790.27	582780.68	129.81	1"D standpipe piezometer, 2.5' screen
110	TA3-PZ-09-ST16	TA3	ST16	1244790.74	582776.81	129.54	1"D standpipe piezometer, 5' screen
111	TA3-PZ-16-ST16	TA3	ST16	1244790.24	582776.71	130.00	1"D standpipe piezometer, 2.5' screen
112	TA4-PAN-12-N	TA4	North				2' x 3.3' SST pan lysimeter
113	TA4-OBS-N	TA4	North	1244819.86	582676.19	129.91	4"D observation port with slots
114	TA4-OBS-S	TA4	South	1244810.58	582672.01	129.85	4"D observation port without slots
115	TA4-SM-39-C	TA4	Center	1244815.85	582674.87	129.25	2"D soil moisture tube with 6" casing
116	TA4-LY-24-C	TA4	Center	1244814.82	582674.46	132.10	2"D suction lysimeter, 9" cup
117	TA4-LY-12-S	TA4	South	1244807.65	582670.18	130.89	2"D suction lysimeter, 9" cup
118	TA4-LY-24-S	TA4	South	1244807.45	582671.38	132.75	2"D suction lysimeter, 9" cup
119	TA4-LY-42-S	TA4	South	1244808.40	582670.62	132.57	2"D suction lysimeter, 9" cup
120	TA4-PZ-11-EF2	TA4	EF2	1244815.06	582674.02	132.53	1"D standpipe piezometer, 5' screen
121	TA4-PZ-10-H5	TA4	H5	1244812.91	582666.75	132.48	1"D standpipe piezometer, 5' screen
122	TA4-PZ-10-J5	TA4	J5	1244809.21	582664.90	132.47	1"D standpipe piezometer, 5' screen
123	TA4-PZ-10-K5	TA4	K5	1244807.45	582664.07	132.47	1"D standpipe piezometer, 5' screen
124	TA4-PZ-11-L2	TA4	L2	1244803.06	582668.66	132.47	1"D standpipe piezometer, 5' screen
125	TA4-PZ-11-L3	TA4	L3	1244804.02	582666.85	132.48	1"D standpipe piezometer, 5' screen

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Table A.1
S&GW Test Facility Sample Identification

ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
126	TA4-PZ-11-L4	TA4	L4	1244804.79	582665.10	132.46	1"D standpipe piezometer, 5' screen
127	TA4-PZ-11-L5	TA4	L5	1244805.65	582663.28	132.46	1"D standpipe piezometer, 5' screen
128	TA4-PZ-11-L6	TA4	L6	1244806.56	582661.46	132.46	1"D standpipe piezometer, 5' screen
129	TA4-PZ-09-M4	TA4	M4	1244802.46	582663.97	128.96	1"D standpipe piezometer, 5' screen
130	TA4-PZ-16-M4	TA4	M4	1244802.29	582664.28	129.54	1"D standpipe piezometer, 5' screen
131	TA4-PZ-09-N7	TA4	N7	1244807.44	582664.14	132.47	1"D standpipe piezometer, 5' screen
132	TA4-PZ-16-N7	TA4	N7	1244803.91	582657.76	128.94	1"D standpipe piezometer, 5' screen
133	TA4-PZ-09-I7	TA4	I7	1244812.68	582663.21	128.83	1"D standpipe piezometer, 5' screen
134	TA4-PZ-16-I7	TA4	I7	1244812.80	582663.08	129.25	1"D standpipe piezometer, 5' screen
135	TA4-PZ-09-L8	TA4	L8	1244807.67	582657.70	128.63	1"D standpipe piezometer, 5' screen
136	TA4-PZ-16-L8	TA4	L8	1244807.84	582657.44	128.92	1"D standpipe piezometer, 5' screen
137	TA4-PZ-09-TU14	TA4	TU14	1244793.10	582638.92	128.32	1"D standpipe piezometer, 5' screen
138	TA4-PZ-16-TU14	TA4	TU14	1244792.96	582639.30	129.06	1"D standpipe piezometer, 5' screen
139	TA4-PZ-09-TU16	TA4	TU16	1244794.18	582633.89	128.57	1"D standpipe piezometer, 5' screen
140	TA4-PZ-16-TU16	TA4	TU16	1244793.99	582634.17	128.70	1"D standpipe piezometer, 5' screen
141	TA5-OBS-N	TA5	North	1244817.64	582767.53	132.87	3"D observation port connected to collection pipe at bottom of sloped liner
142	TA5-OBS-S	TA5	South	1244810.89	582764.74	132.91	3"D observation port connected to collection pipe at bottom of sloped liner
143	TA5-PZ-I	TA5	South	1244802.11	582764.97	133.23	1"D standpipe piezometer, 5' screen south of infiltrator
144	TA5-LY-C	TA5	Center	1244814.05	582766.03	133.15	2"D suction lysimeter, 9" cup at mixture and sand interface
145	TA5-LINER-SP	TA5	North	1244827.69	582771.40	131.20	3"D sample port
146	TA5-CLEANOUT	TA5	North	1244829.07	582772.03	131.60	4"D clean-out
147	TA5-Denite Tank	TA5	North	1244831.25	582772.19	129.90	
148	TA5-OBS-I	TA5	Center	1244812.47	582770.36	132.52	4"D observation port, for infiltrator system
149	TA6-OBS-N	TA6	North	1244819.57	582628.85	131.94	3"D observation port connected to collection pipe at bottom of sloped liner
150	TA6-OBS-S	TA6	South	1244812.49	582625.84	132.28	3"D observation port connected to collection pipe at bottom of sloped liner
151	TA6-PZ-I	TA6	South	1244804.06	582626.81	133.43	1"D standpipe piezometer, 5' screen south of infiltrator
152	TA6-LY-C	TA6	Center	1244815.99	582627.26	132.41	2"D suction lysimeter, 9" cup at mixture and sand interface
153	TA6-LINER-SP	TA6	North	1244829.10	582632.72	130.89	3"D sample port
154	TA6-CLEANOUT	TA6	North	1244830.50	582633.21	130.48	4"D clean-out
155	TA6-Denite Tank	TA6	North	1244832.30	582633.85	128.98	

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ID #	Sample Identification	Test Area	Grid Location	Northing	Easting	Elev NGVD 29	Notes
156	TA6-OBS-I	TA6	Center	1244814.51	582630.94	131.40	4"D observation port, for infiltrator system
157	PZ01-BKG-09	BKG		1244957.50	582852.42	131.28	1.25”D standpipe piezometer, 5’ screen
158	LY01-BKG-24	BKG		1244957.82	582856.59	131.60	2"D suction lysimeter, 9" cup
159	LY02-BKG-42	BKG		1244960.88	582857.29	132.03	2"D suction lysimeter, 9" cup
160	BKG-SM-N	BKG		1244959.90	582854.52	130.62	2"D soil moisture tube with 6" casing
161	PZ04-BKG-09	BKG		1244850.25	582615.24	129.45	1.25”D standpipe piezometer, 5’ screen
162	PZ24-BKG-26	BKG		1244854.09	582614.74	132.38	2”D standpipe piezometer, 5’ screen
163	PZ29-BKG-09	BKG		1244846.58	582755.86	130.93	¾”D standpipe piezometer, 5’ screen
164	PZ30-BKG-16	BKG		1244845.66	582758.17	132.29	1"D standpipe piezometer, 5' screen
165	PZ31-BKG-26	BKG		1244845.87	582757.80	128.99	1"D standpipe piezometer, 5' screen
166	PZ32-BKG-09	BKG		1244843.82	582842.31	133.51	1"D standpipe piezometer, 5' screen
167	PZ33-BKG-16	BKG		1244844.30	582845.33	132.84	1"D standpipe piezometer, 5' screen
168	PZ34-BKG-26	BKG		1244843.73	582845.24	130.45	1"D standpipe piezometer, 5' screen
169	PZ35-BKG-09	BKG		1244702.71	582872.85	129.18	1"D standpipe piezometer, 5' screen
170	PZ36-BKG-16	BKG		1244702.63	582873.08	131.84	1"D standpipe piezometer, 5' screen
171	PZ37-BKG-26	BKG		1244702.80	582872.92	128.31	1"D standpipe piezometer, 5' screen
172	PZ38-BKG-09	BKG		1244582.29	582675.83	126.66	1"D standpipe piezometer, 5' screen
173	PZ39-BKG-16	BKG		1244582.30	582675.42	129.60	1"D standpipe piezometer, 5' screen
174	PZ40-BKG-26	BKG		1244582.13	582675.66	126.10	1"D standpipe piezometer, 5' screen
175	GCREC Pump Sta-tion	WW					GCREC mound lift station
176	PNRS II STE-Tank 1	WW					PNRS II Tank 1
177	STE Pump Tank	WW		1244840.78	582676.05	129.10	STE effluent dose tank
178	ATU Nitrification Unit	WW		1244841.16	582671.78	129.12	Nitrification unit aeration chamber
179	ATU Eff Pump Tank	WW		1244840.54	582681.28	129.16	Nitrified effluent dose tank

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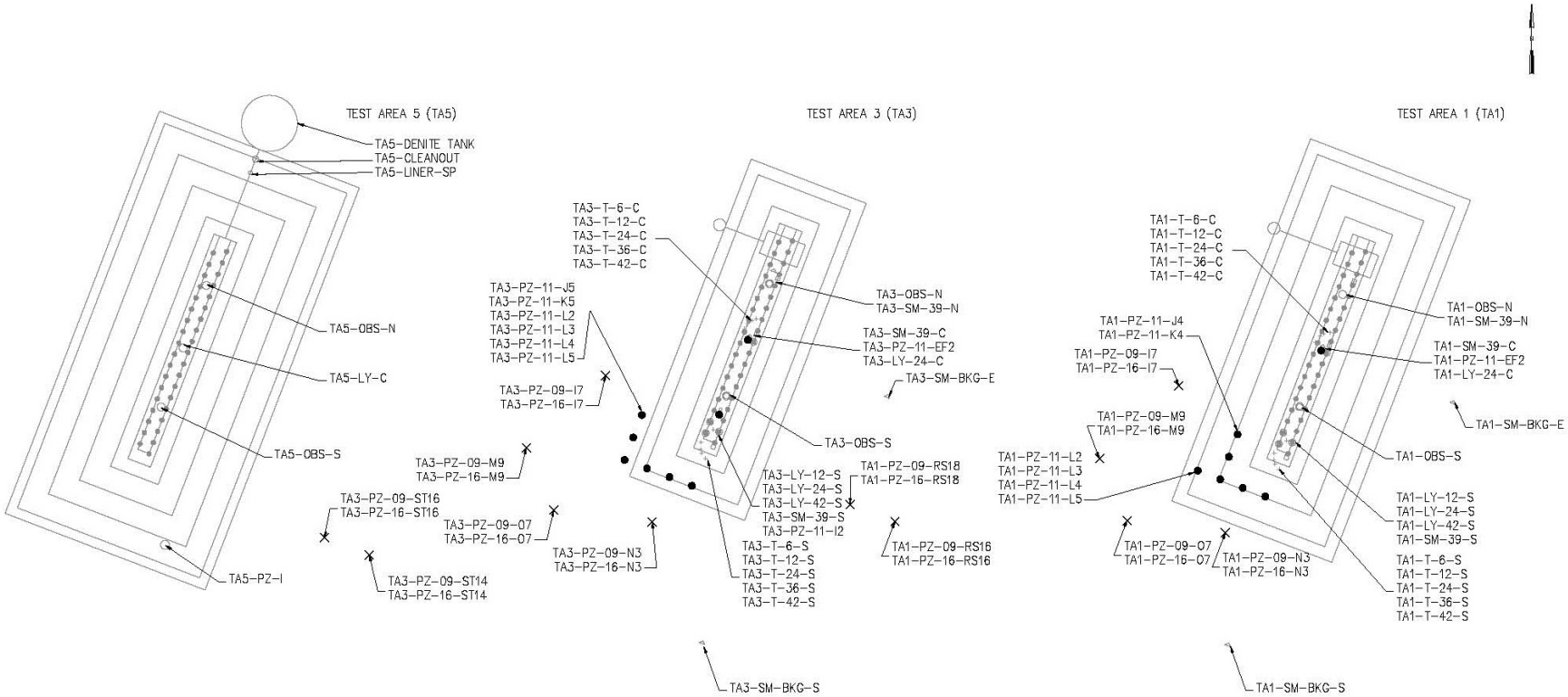

Figure A.1
S&GW Test Facility System Schematic of TA1, TA3, and TA5 (STE System)

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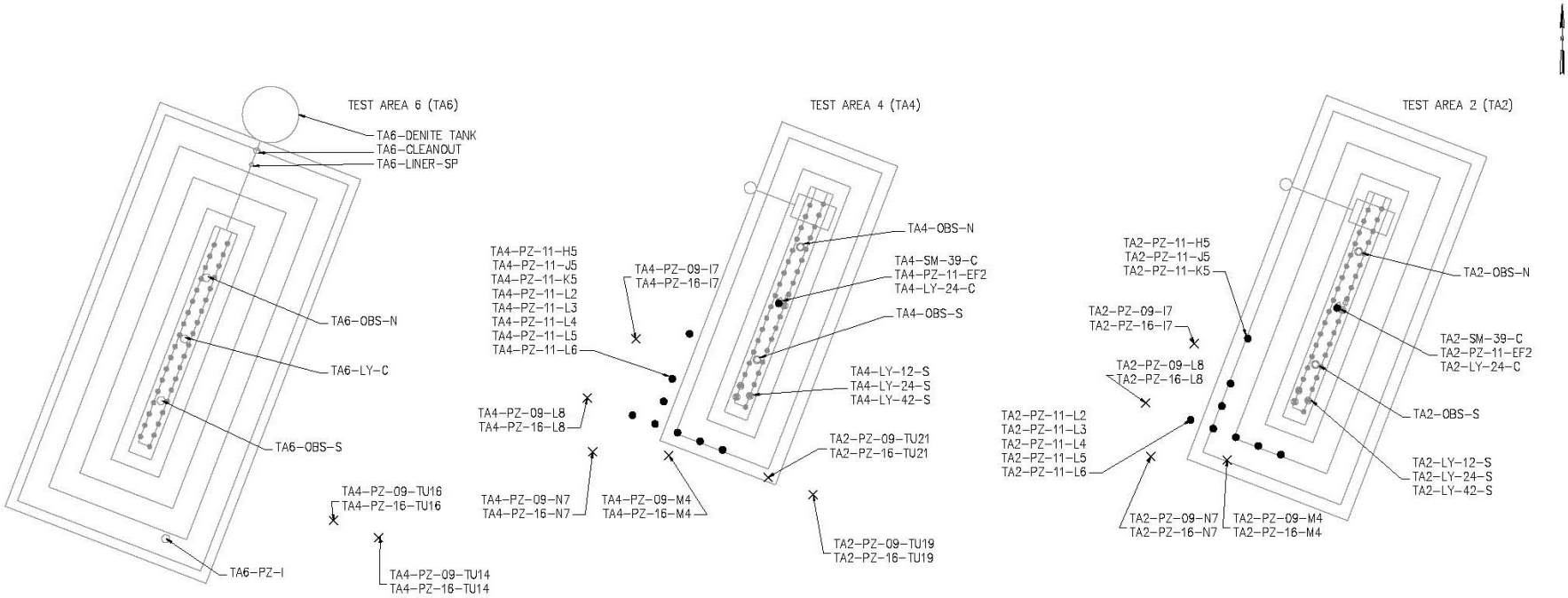

Figure A.2
S&GW Test Facility System Schematic of TA2, TA4, and TA6 (ATU Effluent System)

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Appendix B: GCREC Weather Station Data

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Table B.1
Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
21-Jun-12	77.40	72.23	88.74	80.44	79.32	81.79	74.29	89	0.13	0.13	7.61	0.60	20.77	0.14
22-Jun-12	77.25	72.79	87.55	80.55	79.47	81.72	74.76	91	0.40	0.15	6.26	0.20	20.27	0.13
23-Jun-12	75.58	72.01	79.57	79.47	79.02	80.02	75.02	96	0.25	0.06	7.57	2.57	18.70	0.07
24-Jun-12	75.09	72.28	78.08	77.48	76.89	79.23	75.08	97	4.37	0.56	16.64	4.93	39.20	0.04
25-Jun-12	76.85	74.23	83.03	77.01	75.94	78.01	75.47	93	3.55	0.66	17.90	5.07	40.57	0.10
26-Jun-12	78.30	75.42	81.82	77.81	77.07	78.82	76.14	90	0.33	0.06	16.66	4.30	37.40	0.11
27-Jun-12	78.37	72.66	86.56	79.00	77.25	81.36	73.94	86	0.04	0.02	7.56	1.13	26.20	0.17
28-Jun-12	78.96	67.69	90.86	80.19	77.81	82.87	68.40	71	0.00	0.00	4.07	0.00	12.00	0.20
29-Jun-12	78.17	64.72	90.05	80.81	78.01	83.73	70.11	77	0.00	0.00	4.27	0.07	14.33	0.20
30-Jun-12	78.25	66.76	88.61	81.34	78.84	84.00	71.44	80	0.00	0.00	5.03	0.00	17.63	0.20
1-Jul-12	79.59	67.26	90.64	81.78	79.16	84.43	73.27	81	0.00	0.00	4.60	0.13	14.90	0.20
2-Jul-12	80.83	70.68	92.14	82.65	80.29	85.14	73.79	80	0.00	0.00	4.61	0.00	15.87	0.21
3-Jul-12	81.28	68.70	92.62	83.19	80.91	85.53	72.57	76	0.00	0.00	3.73	0.00	15.57	0.19
4-Jul-12	79.72	70.56	94.42	83.43	81.57	85.50	72.70	80	0.00	0.00	3.76	0.00	22.33	0.17
5-Jul-12	79.34	68.90	93.31	83.00	81.07	84.87	72.54	80	0.16	0.11	3.84	0.00	18.13	0.17
6-Jul-12	80.40	70.74	94.06	83.21	80.98	85.64	72.25	78	0.00	0.00	4.36	0.07	21.53	0.21
7-Jul-12	82.12	70.61	93.85	83.96	81.70	86.27	72.71	75	0.00	0.00	4.61	0.07	18.67	0.21
8-Jul-12	82.05	70.03	94.95	84.47	82.35	86.67	72.99	75	0.00	0.00	4.57	0.13	18.13	0.20
9-Jul-12	82.07	71.71	93.40	84.67	83.01	86.45	74.65	79	0.00	0.00	4.15	0.00	17.77	0.19
10-Jul-12	78.07	70.12	92.61	84.43	82.96	86.23	73.08	85	0.21	0.12	4.18	0.13	21.07	0.15
11-Jul-12	75.49	69.71	88.54	82.98	81.75	84.40	73.06	92	0.07	0.02	4.79	0.10	20.17	N/A
12-Jul-12	78.22	69.89	88.12	82.24	80.80	83.64	73.59	86	0.00	0.00	4.25	0.00	19.00	0.15
13-Jul-12	78.43	72.12	89.44	82.62	81.25	84.15	74.26	87	0.00	0.00	6.38	0.07	24.53	0.15
14-Jul-12	79.48	71.11	90.01	82.58	81.01	83.93	73.88	83	0.00	0.00	7.73	1.27	24.73	0.17

Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
15-Jul-12	76.76	70.59	90.52	82.30	81.21	84.11	73.05	88	0.98	0.24	5.07	0.10	49.50	0.14
16-Jul-12	76.68	69.82	87.04	81.48	79.97	82.87	74.01	91	0.03	0.01	4.79	0.27	18.90	N/A
17-Jul-12	76.53	71.73	84.72	81.66	80.42	83.37	74.12	92	0.59	0.39	5.33	0.17	17.87	0.14
18-Jul-12	77.42	72.59	85.68	81.51	80.17	82.98	74.81	91	0.06	0.04	3.88	0.00	20.53	0.14
19-Jul-12	81.21	72.52	92.19	82.56	80.29	85.06	75.70	83	0.00	0.00	4.75	0.00	40.20	0.20
20-Jul-12	82.41	71.55	94.46	83.50	81.07	86.05	74.86	80	0.00	0.00	4.15	0.03	12.53	0.21
21-Jul-12	81.16	72.61	94.42	84.39	82.47	86.72	74.96	82	0.05	0.03	6.38	0.53	26.80	0.20
22-Jul-12	77.55	71.10	90.84	83.55	82.42	85.53	74.58	90	0.43	0.18	7.23	0.07	36.90	0.15
23-Jul-12	75.74	70.54	87.24	82.02	80.96	83.34	74.13	94	0.03	0.01	6.10	0.30	17.13	0.11
24-Jul-12	79.80	71.06	89.74	82.39	80.49	84.58	75.28	86	0.00	0.00	5.11	0.13	17.80	0.18
25-Jul-12	80.94	73.06	91.04	83.12	81.23	85.03	76.34	85	0.00	0.00	5.73	0.33	19.13	0.18
26-Jul-12	81.59	71.31	91.78	83.63	81.36	85.98	75.52	82	0.00	0.00	5.41	0.13	18.27	0.20
27-Jul-12	81.53	69.98	92.12	84.25	81.95	86.61	74.75	81	0.00	0.00	4.04	0.10	17.30	0.20
28-Jul-12	81.08	70.16	92.28	84.70	82.60	86.81	75.39	83	0.00	0.00	3.78	0.00	16.57	0.19
29-Jul-12	81.30	70.39	92.59	84.92	82.89	86.95	75.04	81	0.00	0.00	4.94	0.13	17.33	0.18
30-Jul-12	80.26	70.65	91.72	84.94	82.87	87.13	74.26	82	0.00	0.00	5.74	0.17	21.20	0.19
31-Jul-12	79.75	70.00	92.62	84.95	83.03	86.81	73.18	81	0.00	0.00	5.30	0.00	21.23	0.17
1-Aug-12	78.53	70.88	88.93	83.99	82.85	84.92	75.33	88	0.10	0.09	4.02	0.00	23.23	0.12
2-Aug-12	80.99	70.65	91.74	83.67	81.73	85.57	74.60	81	0.00	0.00	4.46	0.00	14.70	0.18
3-Aug-12	77.94	69.71	95.59	83.40	82.08	85.82	73.13	86	1.01	0.36	4.42	0.03	32.70	0.15
4-Aug-12	80.39	69.35	92.41	82.83	80.64	85.19	73.57	81	0.00	0.00	4.79	0.40	15.20	0.19
5-Aug-12	79.28	72.63	94.42	83.78	81.88	86.23	75.05	87	0.12	0.04	5.90	0.13	18.87	0.17

Table B.1 (continued)
Daily Recorded Meteorological Data

Period	60cm Temp avg (°F)	60cm Temp min (°F)	60cm Temp max (°F)	Tsoil avg – 10cm (°F)	Tsoil Min (avg) – 10cm (°F)	Tsoil Max (avg) – 10cm (°F)	2m DewPt avg (°F)	Relative Humidity avg 2m (%)	2m Rain total (in)	2m Rain max over 15min (in)	10m Wind avg (mph)	10m Wind min (mph)	10m Wind max (mph)	ET avg (in)
6-Aug-12	78.20	72.75	91.36	83.65	82.15	85.91	75.58	92	0.22	0.03	5.68	0.27	28.87	0.15
7-Aug-12	79.95	71.60	90.05	83.04	81.46	84.85	75.57	86	0.00	0.00	4.25	0.03	15.40	0.13
8-Aug-12	81.83	73.18	93.51	84.00	82.06	86.50	75.60	82	0.13	0.10	4.37	0.13	26.47	0.18
9-Aug-12	82.01	70.45	94.62	84.59	82.20	87.21	74.07	78	0.00	0.00	4.96	0.20	12.47	0.20
10-Aug-12	79.11	71.98	91.78	84.53	82.94	86.02	74.32	85	0.00	0.00	4.49	0.07	25.30	0.14
11-Aug-12	80.07	71.42	91.56	84.27	82.45	86.00	74.83	85	0.00	0.00	4.61	0.13	16.73	0.16
12-Aug-12	77.33	70.92	90.37	84.06	82.72	85.39	74.39	91	0.03	0.01	4.27	0.07	23.17	0.13
13-Aug-12	79.55	72.50	90.16	83.42	81.97	84.83	75.89	88	0.00	0.00	3.52	0.00	12.10	0.14
14-Aug-12	78.23	70.97	92.53	82.98	81.73	84.85	74.51	88	0.72	0.36	4.28	0.00	23.37	0.14
15-Aug-12	80.58	69.01	92.86	82.76	80.64	85.01	74.91	84	0.00	0.00	3.32	0.00	11.37	0.16
16-Aug-12	81.40	72.45	93.83	83.85	81.93	86.16	76.44	85	0.04	0.02	3.75	0.00	13.87	0.17
17-Aug-12	79.67	73.26	88.50	83.54	82.35	84.38	76.26	88	0.00	0.00	3.67	0.13	16.07	0.12
18-Aug-12	75.37	72.36	80.06	81.85	81.19	83.17	74.93	96	0.39	0.05	3.88	0.13	17.63	0.07
19-Aug-12	80.49	72.10	90.86	82.23	80.19	84.67	75.93	86	0.13	0.09	7.20	0.13	23.93	0.18
20-Aug-12	81.21	72.48	92.48	83.33	81.32	85.53	75.07	82	0.02	0.01	7.38	0.10	22.60	0.19
21-Aug-12	78.29	70.56	93.13	83.17	80.78	85.46	73.78	87	1.66	0.43	8.28	0.27	26.50	0.16
22-Aug-12	74.11	70.50	89.01	79.00	75.25	82.42	72.60	94	3.89	0.68	5.75	0.40	32.27	0.10
23-Aug-12	78.81	68.16	90.91	79.06	76.84	81.64	72.80	83	0.00	0.00	3.66	0.00	15.50	0.16
24-Aug-12	79.61	70.03	91.27	80.80	78.85	82.99	73.64	83	0.00	0.00	6.28	0.93	19.73	0.18
25-Aug-12	78.88	71.24	89.20	81.43	80.02	82.94	72.15	80	0.00	0.00	9.68	2.97	22.80	0.16
26-Aug-12	76.86	73.02	82.90	80.76	79.86	81.63	75.23	93	0.74	0.12	12.83	3.83	39.97	0.08
27-Aug-12	77.85	73.80	83.75	79.45	78.24	80.62	77.04	95	2.37	0.29	14.50	3.93	32.57	0.09

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Appendix C: S&GW Test Facility Tensiometer Data

Table C.1
S&GW Test Facility Test Area 3
Daily Average Tensiometer Data (mbar)

	TA3-Center					TA3-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
06/21/12	NEG	151.648	182.270	199.361	-62.350	109.632	147.257	247.431	212.299	91.828
06/22/12	NEG	151.055	172.063	190.934	-62.350	109.394	141.441	237.936	203.872	86.131
06/23/12	NEG	154.259	174.199	190.934	-62.350	113.193	145.120	233.663	199.005	84.232
06/24/12	NEG	149.630	164.704	183.813	-62.350	109.038	137.999	247.906	193.190	98.831
06/25/12	NEG	132.539	139.067	161.499	-62.350	96.339	122.213	227.728	164.229	114.973
06/26/12	NEG	140.847	141.678	151.055	-62.943	100.849	130.403	221.319	100.849	221.319
06/27/12	NEG	205.296	202.329	195.563	-63.656	155.921	191.409	227.372	166.722	NAN
06/28/12	NEG	156.989	155.802	149.630	-63.062	108.326	144.052	181.558	125.062	-155.403
06/29/12	NEG	163.873	171.469	165.772	-62.706	115.922	154.141	205.415	157.345	-117.066
06/30/12	NEG	161.855	178.235	173.606	-62.350	115.922	153.784	208.501	168.739	-89.649
07/01/12	NEG	159.719	180.846	180.371	-62.350	114.498	152.716	207.195	174.437	-93.328
07/02/12	NEG	159.719	184.169	186.662	-62.350	115.210	153.191	217.402	180.252	-96.414
07/03/12	NEG	159.838	185.949	189.985	-62.469	115.210	152.954	216.690	183.101	-103.654
07/04/12	NEG	159.838	188.205	193.071	-62.113	116.278	155.090	223.930	189.629	-83.833
07/05/12	NEG	158.295	188.917	195.207	-62.231	114.973	153.428	222.625	192.596	NAN
07/06/12	NEG	156.396	187.255	196.869	-62.231	114.379	150.461	207.788	195.089	-74.100
07/07/12	NEG	158.295	187.611	198.649	-62.350	115.922	150.817	206.839	197.106	-74.812
07/08/12	NEG	173.368	193.902	201.735	-62.113	128.741	162.093	209.213	200.430	-80.510
07/09/12	NEG	209.213	206.958	206.483	-62.231	156.396	240.072	217.402	203.634	-81.459
07/10/12	NEG	207.788	216.690	209.925	-62.350	143.340	359.593	223.337	206.483	-81.459
07/11/12	NEG	141.203	194.495	208.738	-62.231	107.139	151.173	226.779	207.195	-77.305
07/12/12	NEG	143.102	163.873	198.056	-62.350	104.409	135.031	200.786	198.175	-66.267
07/13/12	NEG	149.986	170.164	200.904	-62.350	110.581	143.102	185.593	208.145	-68.759
07/14/12	NEG	146.663	169.808	200.667	-62.350	108.564	141.915	184.288	202.922	-67.335
07/15/12	NEG	-84.901	55.034	84.113	-65.792	-10.839	30.466	70.820	86.725	-69.827
07/16/12	NAN	-631.825	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
07/17/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
07/18/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
07/19/12	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN	NAN
07/20/12	166.959	139.660	140.135	141.678	141.678	146.070	144.171	145.595	142.153	147.969
07/21/12	110.225	90.167	90.285	89.692	91.591	93.015	92.540	92.540	90.048	95.033
07/22/12	126.367	111.293	109.394	109.157	110.937	112.006	112.718	112.362	110.225	114.379
07/23/12	145.476	129.453	127.079	127.317	129.334	130.046	131.827	130.403	129.690	133.132
07/24/12	NAN	NAN	NAN	NAN	NAN	133.370	NAN	NAN	NAN	136.456
07/25/12	222.981	198.531	198.768	199.955	201.142	201.379	202.685	201.260	202.210	202.685
07/26/12	231.764	215.266	214.435	215.029	217.046	216.809	220.251	217.996	218.352	218.827
07/27/12	241.852	227.016	226.898	227.847	228.322	230.696	232.595	230.577	229.509	231.883
07/28/12	231.052	218.233	218.352	218.589	219.539	221.082	223.099	221.438	220.488	222.625
07/29/12	104.291	97.051	96.576	96.339	97.051	96.813	98.238	98.000	97.407	97.882
07/30/12	65.004	60.969	60.019	59.307	59.545	58.358	59.545	59.189	59.307	58.595
07/31/12	57.290	53.135	53.135	51.474	52.423	50.406	52.067	51.236	51.474	50.643

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Table C.1 (continued)
S&GW Test Facility Test Area 3
Daily Average Tensiometer Data (mbar)

	TA3-Center					TA3-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
08/01/12	52.423	49.693	48.388	48.269	47.201	47.082	46.489	47.320	46.251	46.489
08/02/12	100.018	96.576	95.152	94.083	93.965	92.303	93.371	92.659	93.015	91.591
08/03/12	76.517	72.007	70.583	70.939	70.701	69.989	71.176	71.414	71.058	70.345
08/04/12	70.345	67.022	66.310	65.242	65.004	64.055	64.292	64.411	63.699	63.580
08/05/12	61.681	57.290	56.340	55.865	55.747	55.034	55.628	56.103	55.390	55.272
08/06/12	62.156	60.019	58.358	58.239	57.171	56.696	56.815	56.815	56.577	55.628
08/07/12	91.947	87.437	86.013	85.182	85.656	83.520	85.775	84.826	85.656	83.876
08/08/12	75.568	71.888	68.921	70.108	68.921	68.446	69.515	70.108	69.989	68.446
08/09/12	41.860	40.554	38.774	38.655	37.824	36.994	37.468	36.994	37.468	35.925
08/10/12	27.973	24.650	25.125	23.582	23.819	22.513	22.988	22.869	22.276	22.395
08/11/12	25.006	23.938	22.513	22.988	21.683	21.683	21.089	21.683	20.970	20.614
08/12/12	31.890	29.279	28.685	27.973	27.617	26.668	27.024	27.024	26.668	26.193
08/13/12	41.504	39.486	38.537	38.062	37.468	36.519	36.875	36.637	36.400	35.569
08/14/12	56.221	53.254	52.067	51.474	51.118	49.812	50.762	50.762	50.643	49.575
08/15/12	53.491	51.118	49.931	49.337	49.100	47.676	48.625	48.150	48.269	46.845
08/16/12	1.505	-0.156	-0.631	-1.106	-1.106	-1.937	-1.343	-1.581	-1.581	-2.174
08/17/12	51.711	49.100	48.150	47.438	47.320	46.133	46.963	46.607	46.607	45.658
08/18/12	76.280	72.363	72.363	70.820	71.532	69.515	71.058	70.227	70.345	69.515
08/19/12	171.469	165.891	163.636	162.686	162.330	160.550	162.211	162.330	162.330	161.143
08/20/12	61.562	55.865	55.272	55.628	56.103	55.272	57.052	56.933	56.815	55.865
08/21/12	56.459	53.373	52.423	51.830	51.711	50.762	51.474	51.355	51.355	50.999
08/22/12	67.616	65.004	64.055	62.749	63.224	61.444	63.105	61.444	62.631	60.969
08/23/12	125.655	121.026	118.771	118.652	118.415	117.584	118.771	118.296	118.890	117.703
08/24/12	53.966	47.794	47.913	46.963	47.913	47.201	48.269	48.388	48.032	48.506
08/25/12	36.994	34.976	33.789	33.314	33.077	32.246	32.721	32.127	32.365	31.652
08/26/12	47.557	45.302	43.640	43.521	42.572	42.572	42.216	42.572	42.097	41.979
08/27/12	119.483	114.498	113.430	111.412	112.124	109.869	111.650	110.344	111.056	109.988

NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).

NR indicates no reading occurred.

EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.

NEG indicates negative soil tensiometer readings were recorded which is being investigated

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Table C.2
S&GW Test Facility Test Area 1
Daily Average Tensiometer Data (mbar)

	TA1-Center					TA1-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
06/21/12	NAN	156.396	48.981	241.022	263.810	132.895	NEG	NEG	NEG	NEG
06/22/12	NAN	149.986	50.643	238.410	262.742	130.046	NEG	NEG	NEG	NEG
06/23/12	NAN	147.494	51.236	234.968	260.012	130.996	NEG	NEG	NEG	NEG
06/24/12	NAN	143.933	49.931	230.340	256.926	127.317	NEG	NEG	NEG	NEG
06/25/12	NAN	127.198	47.676	215.741	244.701	116.635	NEG	NEG	NEG	NEG
06/26/12	NAN	127.673	45.539	182.389	198.293	119.483	NEG	NEG	NEG	NEG
06/27/12	NAN	189.866	93.727	211.468	222.387	176.454	NEG	NEG	NEG	NEG
06/28/12	NAN	143.696	44.946	167.315	176.810	127.317	NEG	NEG	NEG	NEG
06/29/12	NAN	155.446	44.115	181.083	193.664	135.269	NEG	NEG	NEG	NEG
06/30/12	NAN	158.057	44.234	189.391	202.210	134.675	NEG	NEG	NEG	NEG
07/01/12	NAN	157.227	41.741	195.801	208.738	132.776	NEG	NEG	NEG	NEG
07/02/12	NAN	157.939	22.988	200.904	214.672	133.489	NEG	NEG	NEG	NEG
07/03/12	NAN	156.633	29.160	204.703	218.352	134.913	NEG	NEG	NEG	NEG
07/04/12	NAN	157.583	36.875	210.281	222.269	135.150	NEG	NEG	NEG	NEG
07/05/12	NAN	157.939	40.198	213.604	225.117	134.201	NEG	NEG	NEG	NEG
07/06/12	NAN	156.633	42.928	215.503	227.610	131.946	NEG	NEG	NEG	NEG
07/07/12	NAN	157.227	38.299	216.097	230.221	134.082	NEG	NEG	NEG	NEG
07/08/12	NAN	161.974	33.670	221.438	233.188	142.984	NEG	NEG	NEG	NEG
07/09/12	-106.740	173.368	34.264	222.269	235.206	151.648	NEG	NEG	NEG	NEG
07/10/12	148.206	180.965	32.365	225.473	237.461	154.141	NEG	NEG	NEG	NEG
07/11/12	NAN	178.353	30.703	228.797	239.716	127.435	NEG	NEG	NEG	NEG
07/12/12	NAN	157.464	31.296	228.084	240.072	122.213	NEG	NEG	NEG	NEG
07/13/12	124.587	142.628	34.145	230.577	246.837	126.842	NEG	NEG	NEG	NEG
07/14/12	122.450	138.948	32.365	231.526	246.007	125.062	NEG	NEG	NEG	NEG
07/15/12	6.015	27.142	-86.325	119.246	132.183	7.914	NEG	NEG	NEG	NEG
07/16/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/17/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/18/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/19/12	NAN	NAN	NAN	NAN	NAN	NAN	NEG	NEG	NEG	NEG
07/20/12	148.681	146.782	147.969	147.019	147.494	146.900	NEG	NEG	NEG	NEG
07/21/12	95.626	86.250	98.594	94.558	93.727	93.727	NEG	NEG	NEG	NEG
07/22/12	116.397	102.629	119.602	116.041	114.973	114.498	NEG	NEG	NEG	NEG
07/23/12	135.862	121.145	139.423	135.506	133.845	133.370	NEG	NEG	NEG	NEG
07/24/12	138.711	121.857	145.832	137.168	135.862	135.031	NEG	NEG	NEG	NEG
07/25/12	205.415	197.225	208.382	203.278	202.566	202.922	NEG	NEG	NEG	NEG
07/26/12	222.862	214.316	224.049	221.319	220.370	220.607	NEG	NEG	NEG	NEG
07/27/12	235.087	227.135	236.630	234.019	233.663	232.951	NEG	NEG	NEG	NEG
07/28/12	225.355	218.352	226.304	224.642	224.168	223.930	NEG	NEG	NEG	NEG
07/29/12	100.018	94.083	100.255	99.068	98.950	98.594	NEG	NEG	NEG	NEG
07/30/12	60.257	56.459	59.545	59.189	59.307	59.189	NEG	NEG	NEG	NEG
07/31/12	51.474	49.693	50.406	51.236	50.406	51.355	NEG	NEG	NEG	NEG

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Table C.2 (continued)
S&GW Test Facility Test Area 1
Daily Average Tensiometer Data (mbar)

	TA1-Center					TA1-South				
Depth below IS:	6"	12"	24"	36"	42"	6"	12"	24"	36"	42"
Date	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar	mbar
08/01/12	46.370	45.777	45.777	45.777	46.133	45.539	NEG	NEG	NEG	NEG
08/02/12	92.659	90.760	91.591	91.472	91.591	91.710	NEG	NEG	NEG	NEG
08/03/12	72.482	67.497	72.363	71.176	71.532	70.701	NEG	NEG	NEG	NEG
08/04/12	63.580	63.105	62.749	63.343	62.987	63.105	NEG	NEG	NEG	NEG
08/05/12	56.221	53.610	55.628	55.747	55.628	55.390	NEG	NEG	NEG	NEG
08/06/12	56.459	55.153	55.747	55.034	55.747	55.153	NEG	NEG	NEG	NEG
08/07/12	86.250	83.045	84.707	84.826	84.826	85.063	NEG	NEG	NEG	NEG
08/08/12	71.414	67.022	70.345	68.921	70.701	69.040	NEG	NEG	NEG	NEG
08/09/12	37.231	35.569	36.637	35.688	36.519	35.807	NEG	NEG	NEG	NEG
08/10/12	21.445	22.395	20.970	22.276	20.970	21.920	NEG	NEG	NEG	NEG
08/11/12	20.614	20.021	20.377	19.546	20.258	19.309	NEG	NEG	NEG	NEG
08/12/12	26.074	25.955	25.599	25.837	25.599	25.718	NEG	NEG	NEG	NEG
08/13/12	35.688	35.094	35.094	34.857	34.857	34.738	NEG	NEG	NEG	NEG
08/14/12	50.287	49.219	49.693	49.693	49.931	49.812	NEG	NEG	NEG	NEG
08/15/12	47.557	46.133	46.963	46.726	46.845	46.726	NEG	NEG	NEG	NEG
08/16/12	-2.055	-2.412	-2.412	-2.412	-2.530	-2.412	NEG	NEG	NEG	NEG
08/17/12	46.133	44.946	45.539	45.539	45.421	45.539	NEG	NEG	NEG	NEG
08/18/12	69.752	69.040	69.040	69.871	68.921	69.752	NEG	NEG	NEG	NEG
08/19/12	162.449	160.669	161.618	161.974	162.449	162.568	NEG	NEG	NEG	NEG
08/20/12	57.290	53.610	57.527	56.815	56.696	56.340	NEG	NEG	NEG	NEG
08/21/12	51.355	50.524	50.880	51.118	50.999	51.118	NEG	NEG	NEG	NEG
08/22/12	62.393	60.850	61.562	61.444	61.325	61.800	NEG	NEG	NEG	NEG
08/23/12	119.720	116.397	119.483	118.534	119.364	118.771	NEG	NEG	NEG	NEG
08/24/12	48.744	47.320	48.625	49.456	48.506	49.100	NEG	NEG	NEG	NEG
08/25/12	32.365	31.296	31.890	31.652	31.652	31.652	NEG	NEG	NEG	NEG
08/26/12	42.453	41.385	41.979	41.504	42.216	41.504	NEG	NEG	NEG	NEG
08/27/12	111.056	109.394	109.988	110.463	109.988	110.937	NEG	NEG	NEG	NEG

NAN (not-a-number) indicates an exceptional occurrence in datalogger function or processing occurred (an invalid measurement).
NR indicates no reading occurred.
EM indicates an equipment malfunction occurred. We are in the process of troubleshooting the problem.
NEG indicates negative soil tensiometer readings were recorded which is being investigated

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Figure C.1
TA1 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval

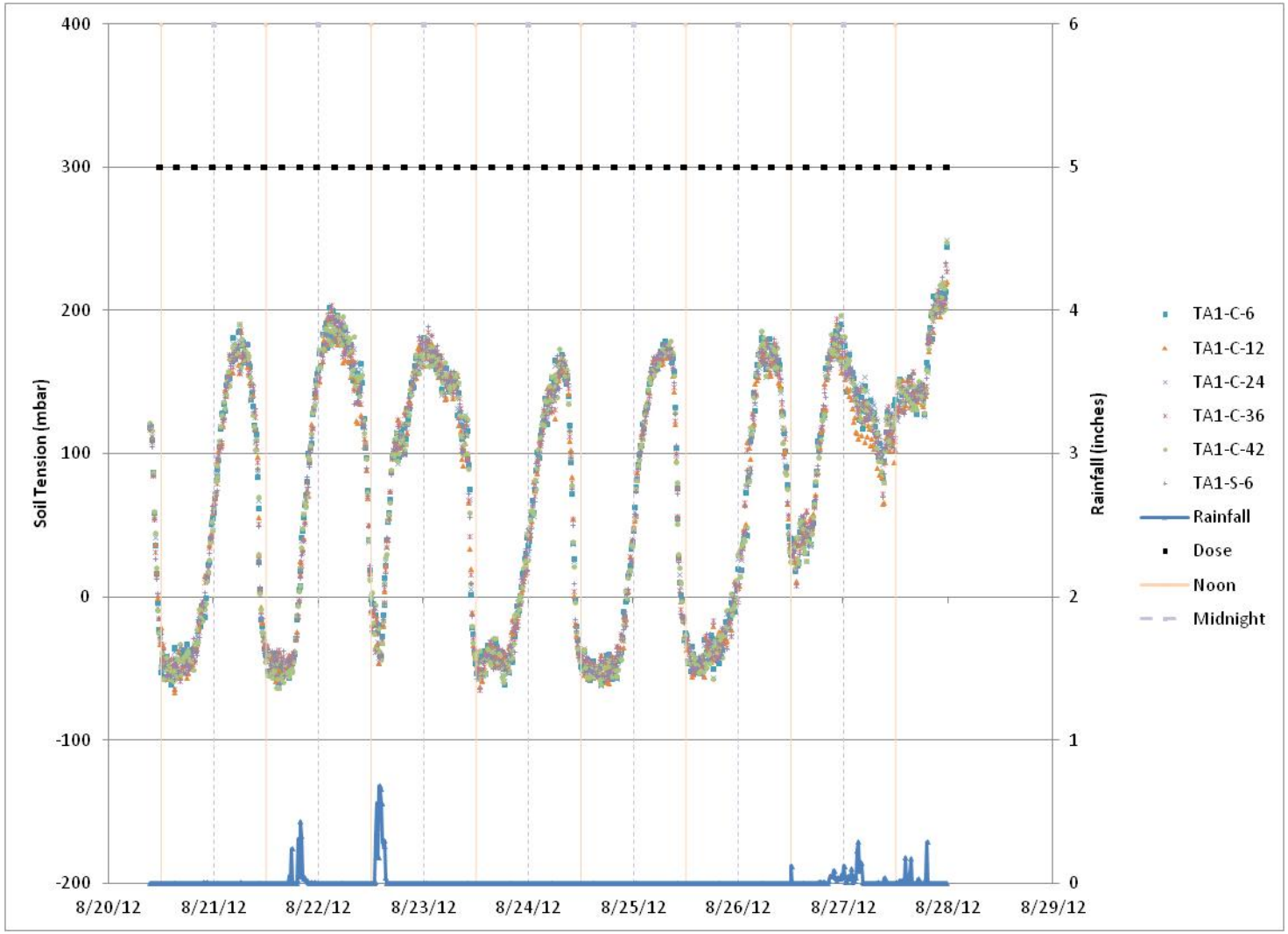

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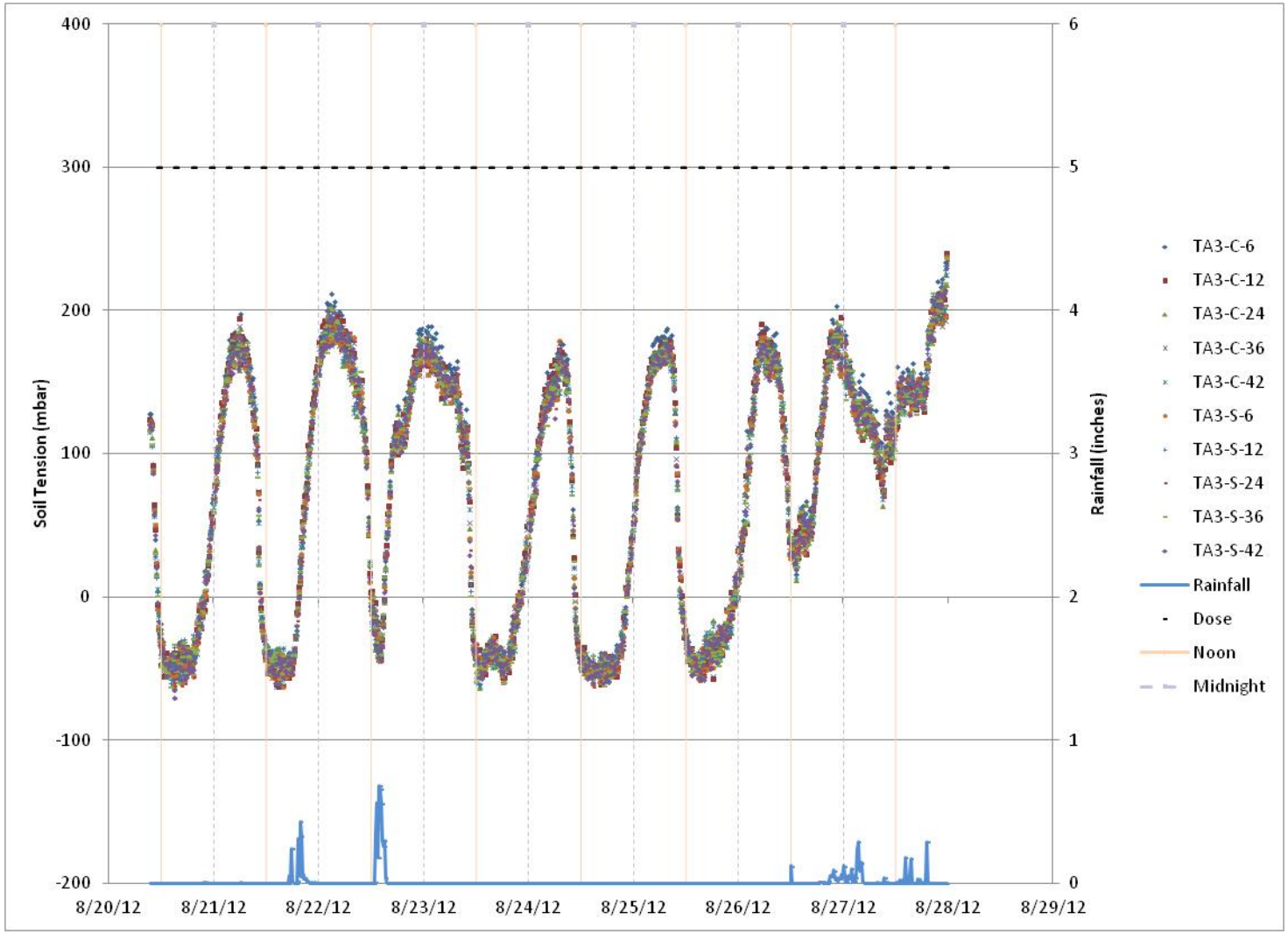
Figure C.2
TA3 S&GW Test Facility
Soil Tension (mbar), Rainfall (inches) and Dose
15 Minute Interval



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Appendix D: S&GW Test Facility Soil Moisture Data

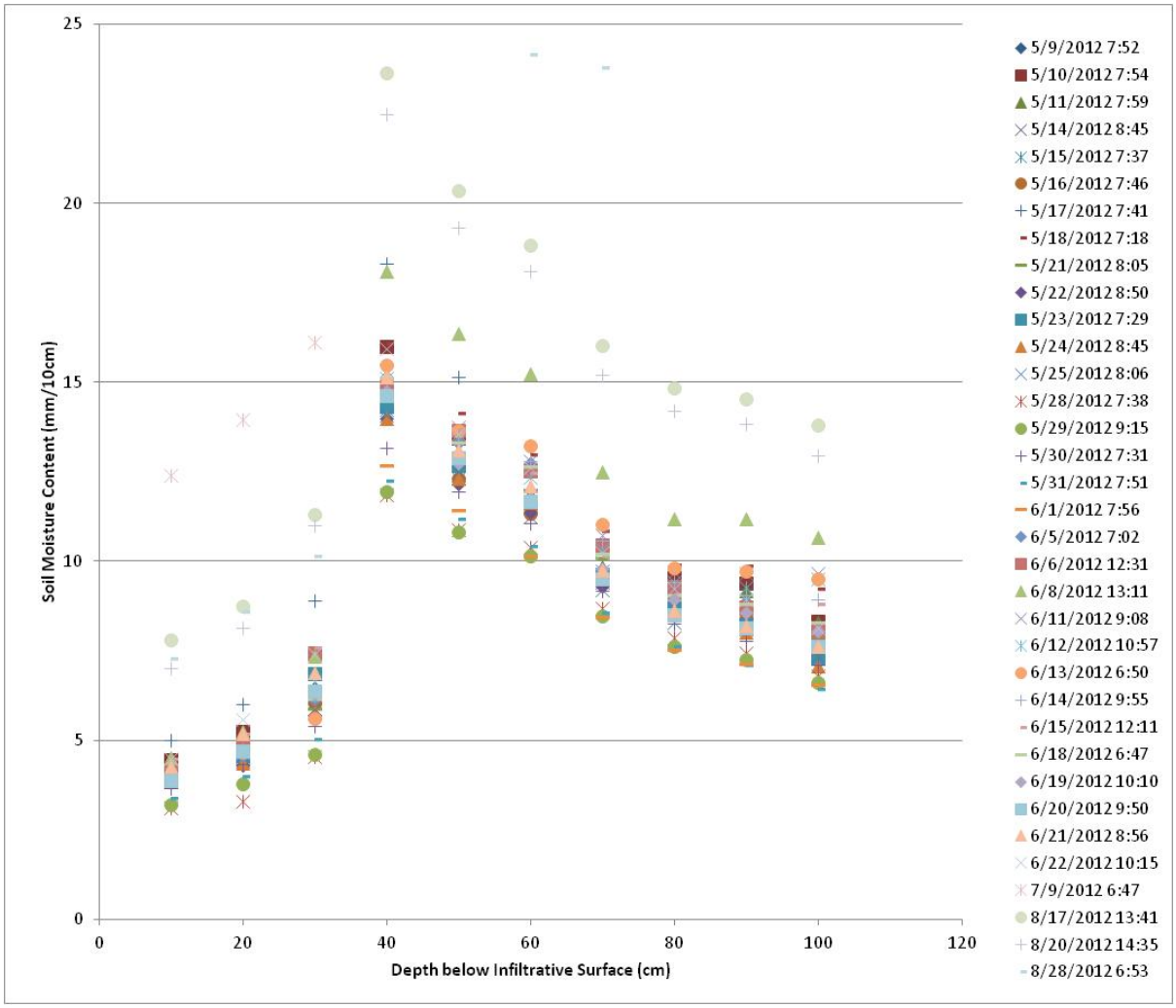

Figure D.1

Soil Moisture Test Area 1 North

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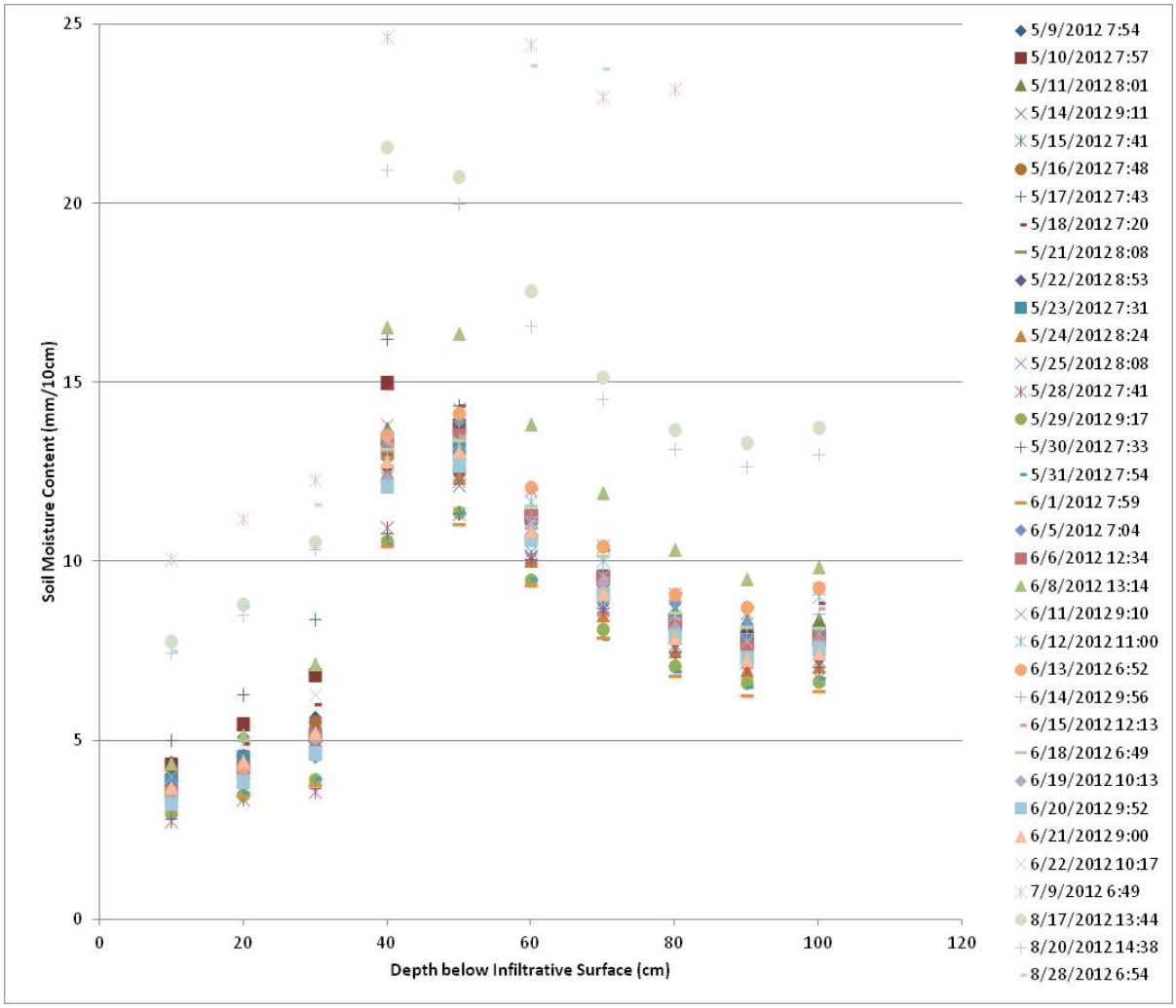

Figure D.2
Soil Moisture Test Area 1 Center

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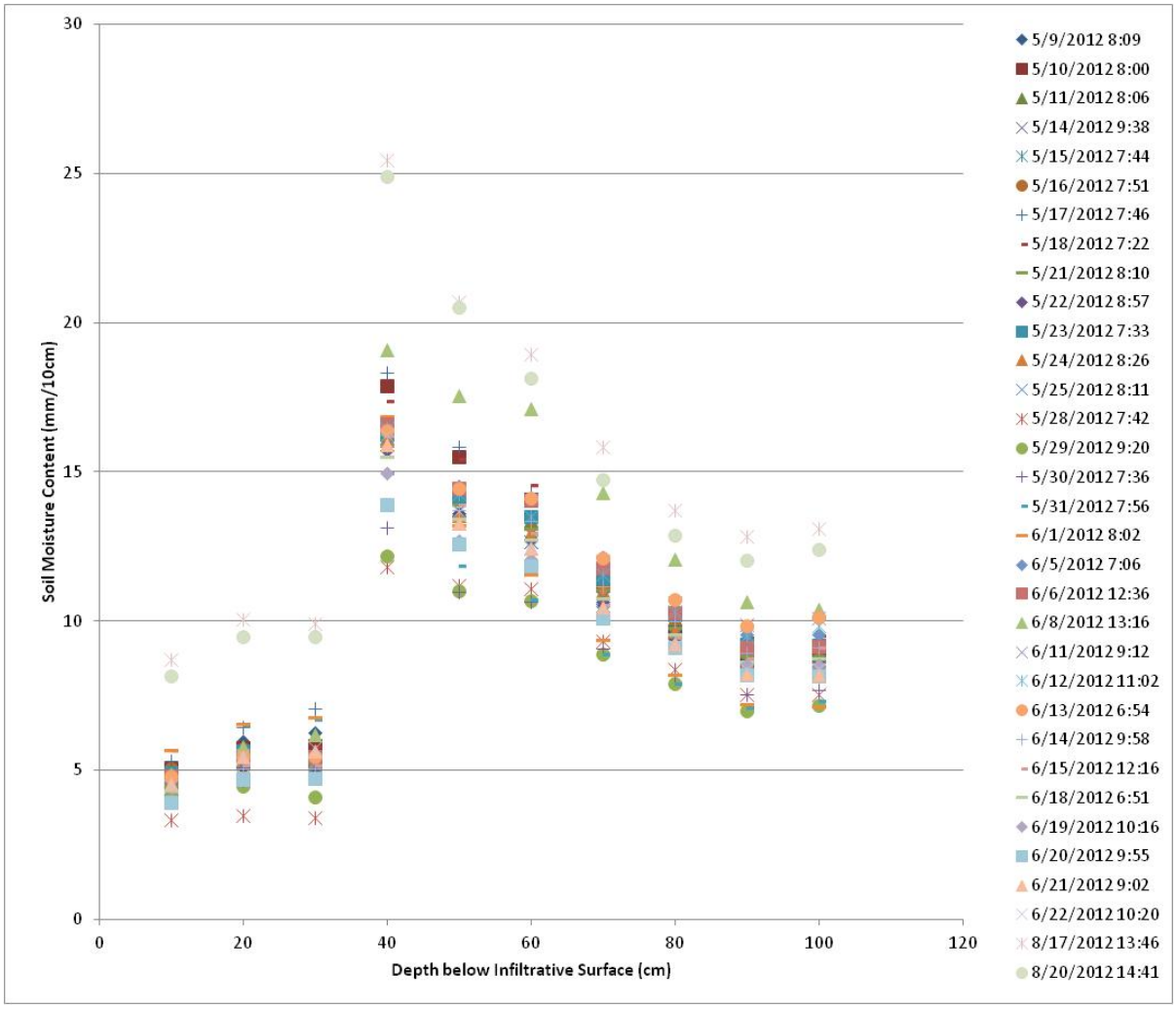

Figure D.3
Soil Moisture Test Area 1 South

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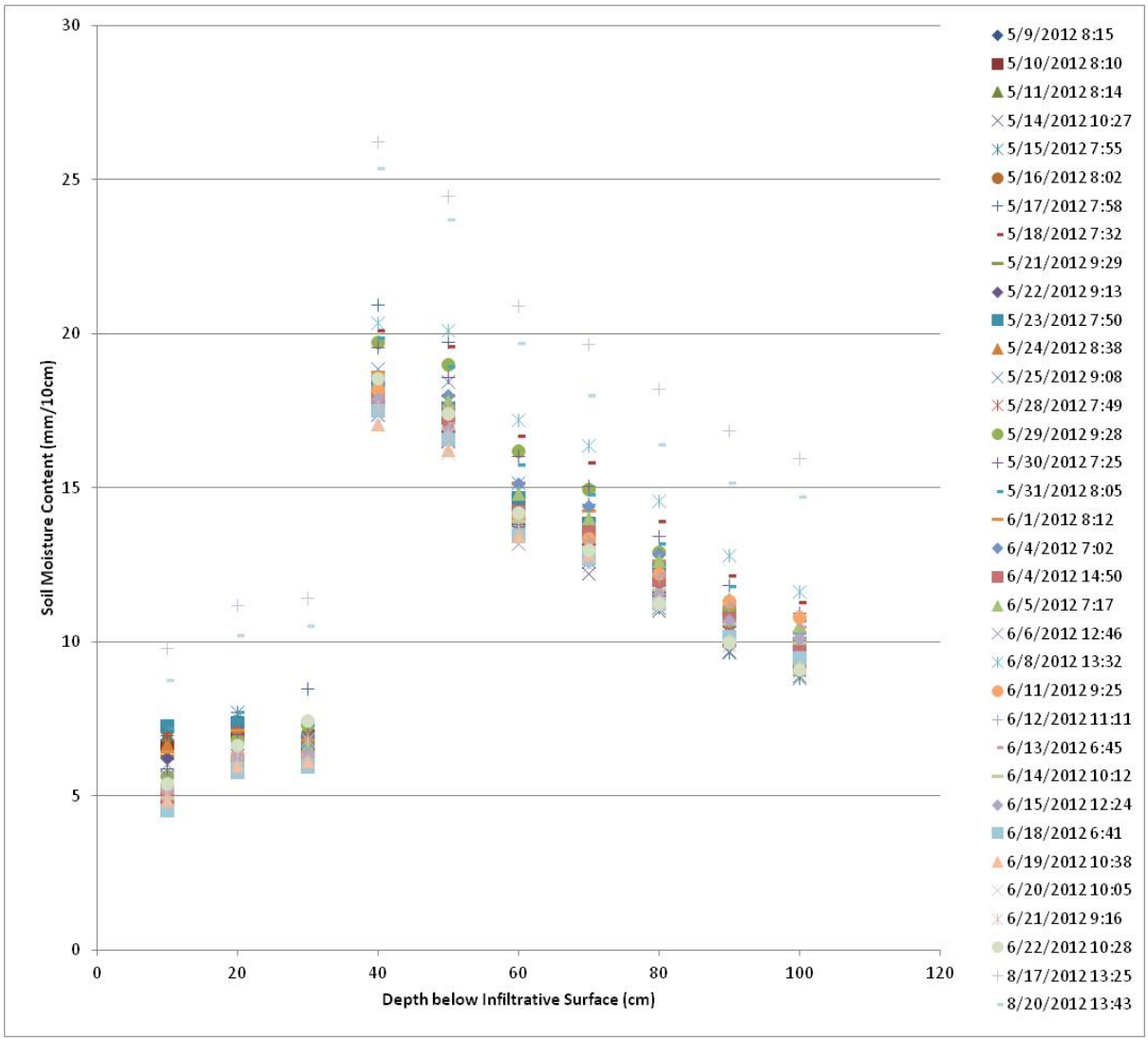

Figure D.4
Soil Moisture Test Area 2 Center

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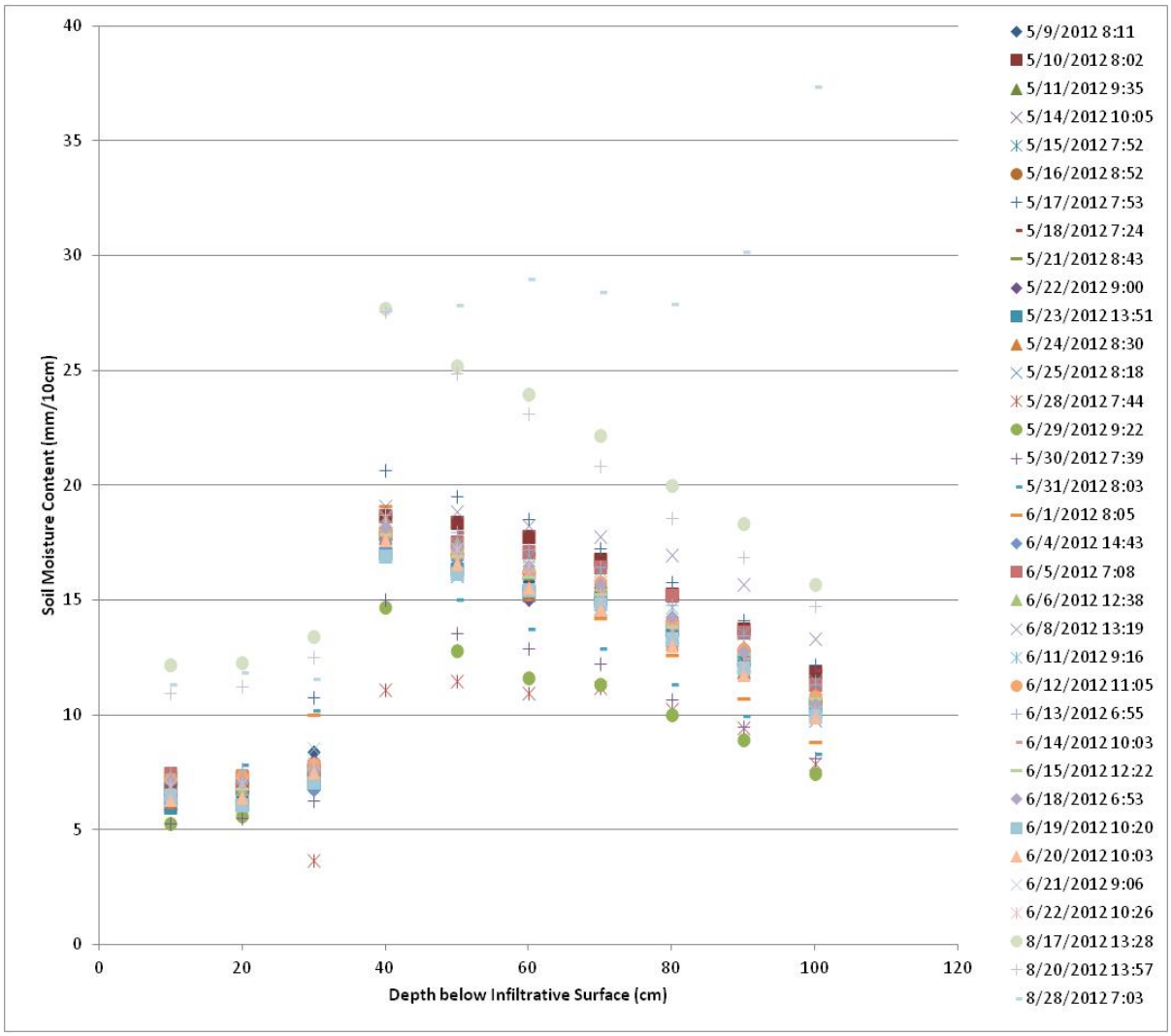

Figure D.5
Soil Moisture Test Area 3 North

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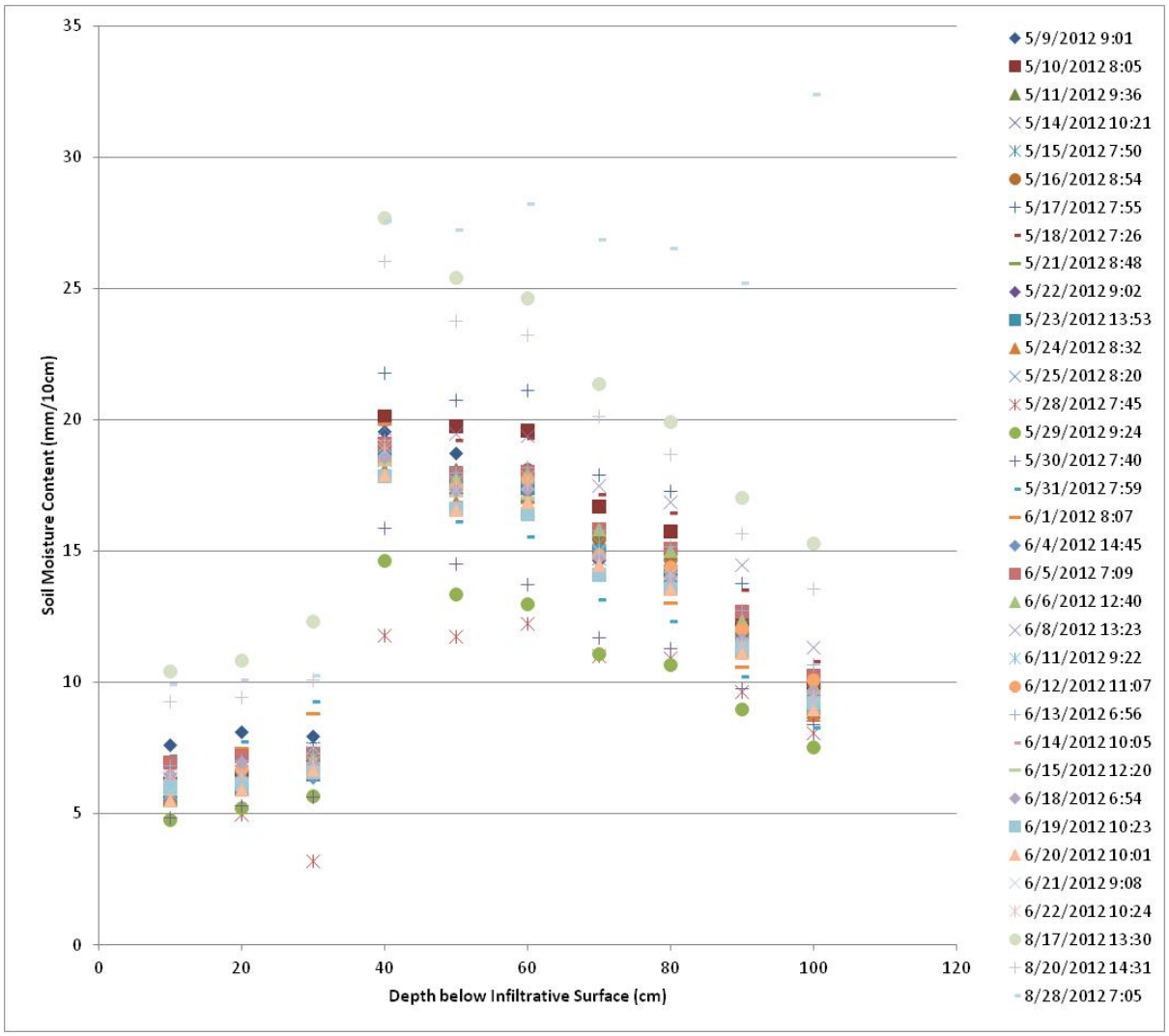

Figure D.6
Soil Moisture Test Area 3 Center

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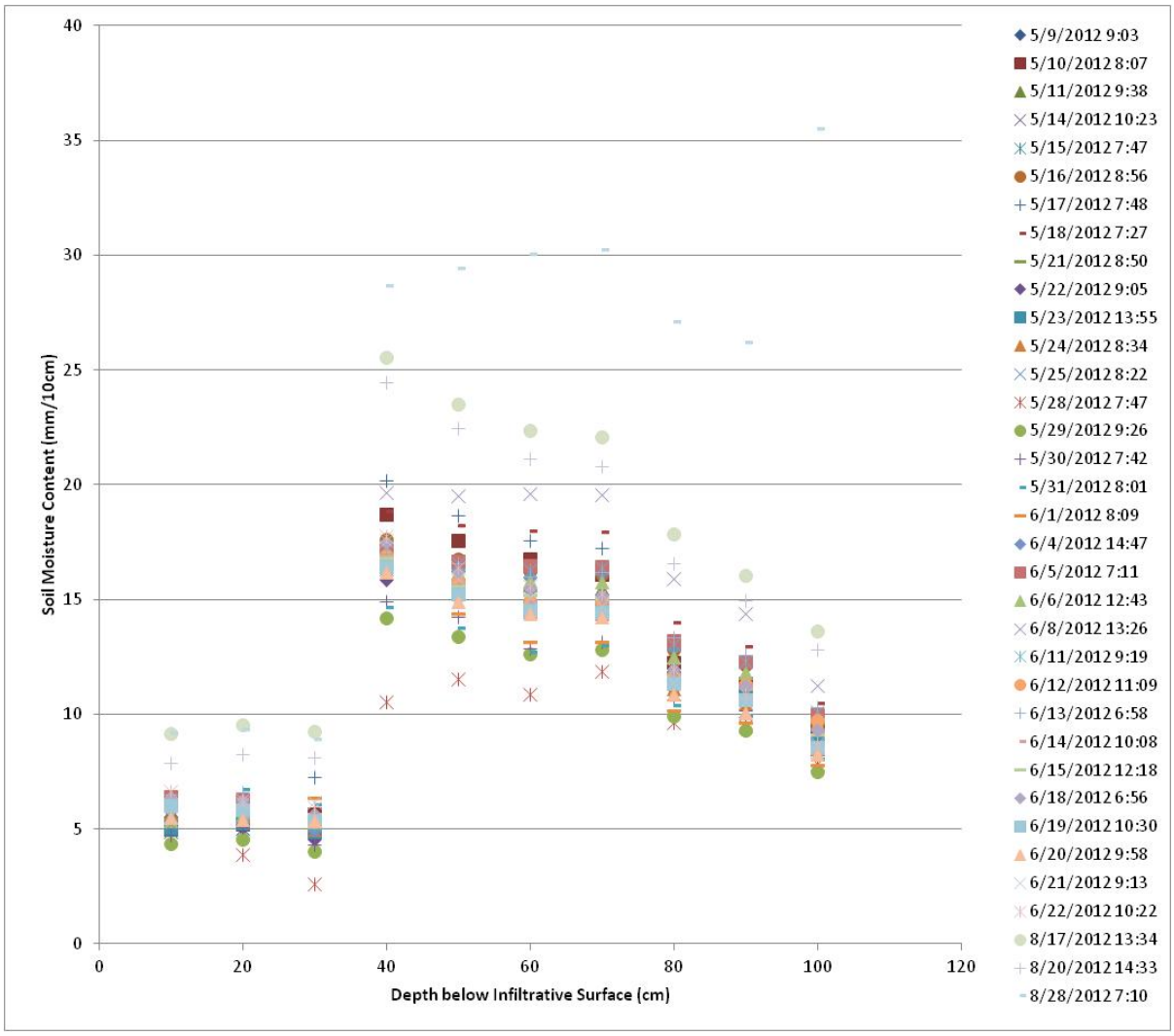

Figure D.7
Soil Moisture Test Area 3 South

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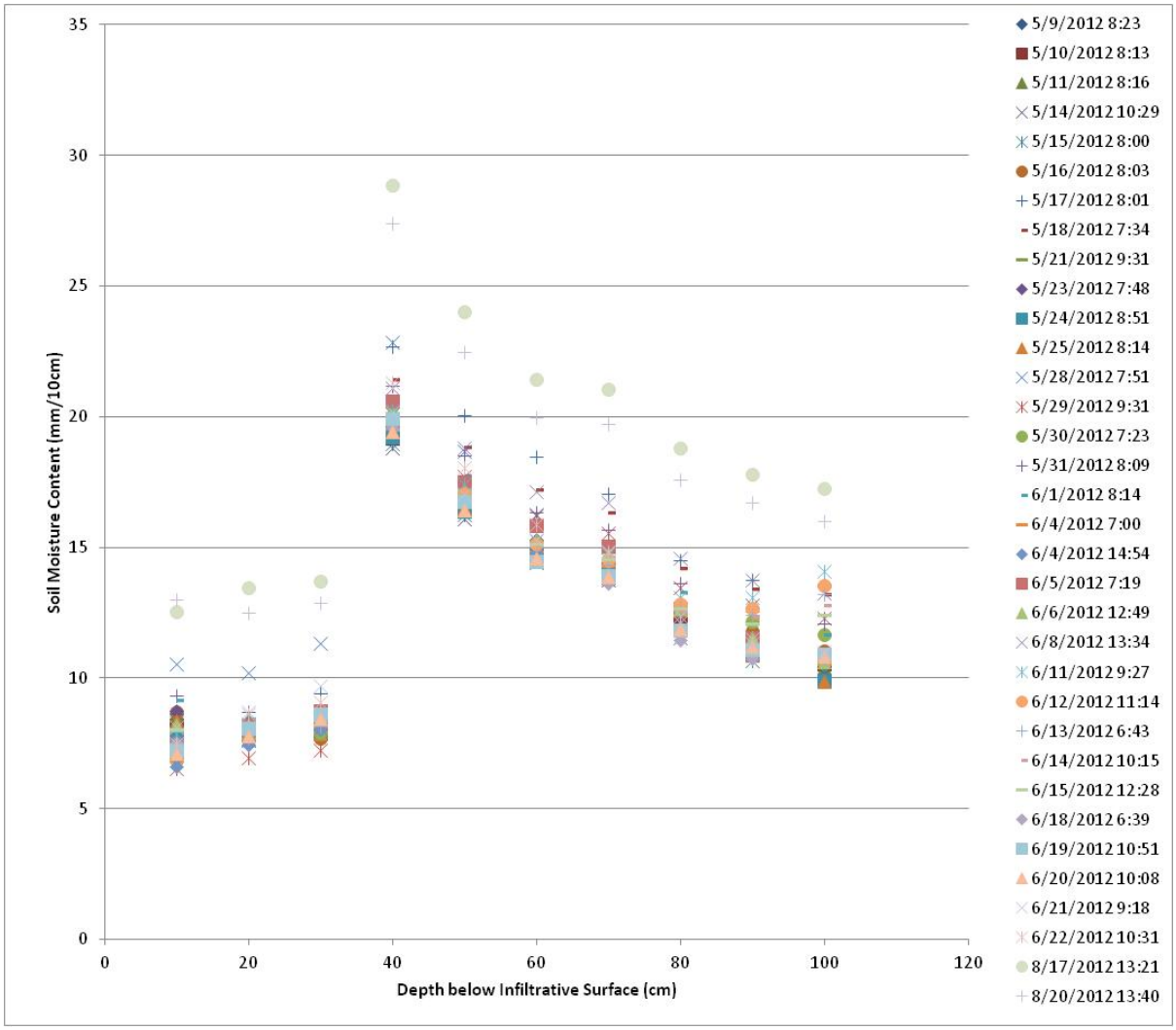

Figure D.8
Soil Moisture Test Area 4 Center

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Appendix E: Chain of Custody Forms

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1208986

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, TP	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS	125mL P, $Na_2S_2O_3$ FC-MF	1LP, Cool Cl, Alkalinity, CBOD, TS, TSS, SO_4	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl, CBOD, TS, TSS	1LP, Cool Cl, SO_4, Alkalinity, CBOD, TS, TSS, F, NO_3, OP	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na			DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	PNRS II STE - Tank 1	082312	0955	WW		X	1	1	2								0.26	7.0	1052	27.2	
02	STE Pump Tank		1055	WW		X	1		2	1							0.15	7.6	1077	28.5	
03	STE Pump Tank - DUP		1100	WW		X	1		2	1							0.15	7.6	1077	28.5	
04	NO3 ~~Aeration Chamber~~ Clarifier		1045	WW		X					1	1					0.19	7.7	8802	27.7	
05	NO3 Pump Tank		1030	WW		X	1		2				1	1			0.34	7.7	882	27.7	
06	NO3 Pump Tank - DUP		1035	WW		X	1		2				1	1			0.34	7.7	882	27.7	

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished: B Bowling	1935 8/18/12	Received:	1935 08/18/12
Relinquished:	1300 082312	Received: K Mudmouth	8/23/12 1300
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._____	(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

1208986

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. 1208987

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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 Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA1-PAN-12-N	8-24-12	1135	GW		X	1	1										6.7	686	29.0	
02	TA1-LY-24-C	08/20/12	0840	GW		X	1	1									6.52	6.4	839	28.0	2
03	TA1-LY-12-S	08/20/12	0900	GW		X	1	1									6.7	6.9	661	28.7	2
04	TA1-LY-24-S	08/20/12	0915	GW		X			1	1							6.1	6.4	868	28.9	2
05	TA1-LY-42-S	08/20/12	0925	GW		X			1	1							5.9	5.7	893	29.1	2

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
	8/18/12 1900		08/19/12 1900
Relinquished:	Date/Time: 08/20/12 1510	Received:	Date/Time: 08-20-12 1510
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_____	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

1208987

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. 1208988

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H2SO4 TKN, Nox, NH4	1LP, Cool Cl	250mL P, H2SO4 TKN, Nox, NH4, COD, TP	1LP, Cool Cl, Alkalinty	1LP, Cool Cl, Alkalinity, F, NO3, OP, SO4	250mLaG, Cool DOC	250mL P, HNO3 B, Ca, Fe, Mg, Mn, K, Na				DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA2-PAN-12-N	08-24-12	11:15	GW		X	1	1									5.5	6.8	430	32.9	
02	TA2-LY-24-C	8/20/12	11:10	GW		X	1	1									5.5	6.1	868	30.7	2
03	TA2-LY-12-S	"	11:20	GW		X	1	1									6.5	6.8	905	30.0	2
04	TA2-LY-24-S	"	11:30	GW		X			1	1							4.6	6.2	936	32.3	2
05	TA2-LY-42-S	"		GW		X			1		1	1	1				5.9	5.7	839	31.3	4

Containers Prepared/ Relinquished: Bowling	Date/Time: 1930 8/18/12	Received:	Date/Time: 1930 08/18/12
Relinquished:	Date/Time: 1510 08 20 12	Received:	Date/Time: 1510 08-20-12
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_____	(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

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1208997

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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 Lab Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mLaG, Cool DOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na				DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA3-PAN-12-N	08-24-12	1125	GW		X	1	1									4.0	5.9	324	29.1	
02	TA3-LY-24-C	8/20/12	0950	GW		X	1	1									5.9	5.7	893	29.1	2
03	TA3-LY-12-S	8/20/12	1000	GW		X			1	1							7.0	7.1	626	28.9	2
04	TA3-LY-12-S - DUP	8/20/12	1005	GW		X			1	1							7.0	7.1	426	28.9	2
05	TA3-LY-24-S	8/20/12	1015	GW		X			1		1	1	1				6.2	6.3	549	29.4	4
06	TA3-LY-42-S	8/20/12	1030	GW		X	1	1									7.4	3.4	744	30.1	2

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	1930 8/18/12		1930 081812
Relinquished:	1510 082012	Received:	1510 08-20-12
Relinquished:		Received:	
Relinquished:		Received:	
Relinquished:		Received:	

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

1208997

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1209002

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mLaG, Cool DOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na				DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA4-PAN-12-N	08-24-12	10:25	GW		X	1	1									4.0	6.5	331	27.7	
02	TA4-LY-24-C	8/20/12	12:00	GW		X			1	1							4.6	6.6	744	32.3	2
03	TA4-LY-12-S		12:10	GW		X			1		1	1	1				6.4	6.4	267	35.2	4
04	TA4-LY-12-S DUP		12:15	GW		X			1		1	1	1				6.4	6.4	267	35.2	4
05	TA4-LY-24-S		12:40	GW		X	1	1									5.5	6.5	724	33.5	2
06	TA4-LY-42-S		12:50	GW		X	1	1									5.5	6.4	808	30.7	2

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
Bowling	1900 8/18/12		1900 081812
Relinquished:	Date/Time:	Received:	Date/Time:
	1510 082012		
Relinquished:	Date/Time:	Received:	Date/Time:
—			1510 08-20-12
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_____	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

1209002

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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. 1209006

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, SO_4, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA5-LY-C	8/20/12	13:30	GW		X	1	1	1	2							5.9	6.4	653	35.3	5
02	TA5-LINER-SP	082012	1145	WW		X	1	1	1	2							3.3	6.6	986	33.2	
03	TA5-Denite Tank		1050	WW		X	1	1	1	2							0.1	7.0	909	28.4	
04	TA5-Denite Tank DUP		1055	WW		X	1	1	1	2							0.1	7.0	909	28.4	

NO Sample

Containers Prepared/ Relinquished:	Date/Time: 1915 8/18/12	Received:	Date/Time: 1915 081812
Relinquished:	Date/Time: 1510 082012	Received:	Date/Time: 1510 08-20-12
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_____	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

1209006

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1209007

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, SO_4, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA6-LY-C	08-20-12	1310	GW		X	1	1	1	2											
02	TA6-LINER-SP	8/24/12	No sample	WW		X	1	1	1	2											
03	TA6-Denite Tank	8/24/12	10:00	WW		X	1	1	1	2							0.7	6.8	853	28.0	5

Containers Prepared/ Relinquished: JBowling	Date/Time: 1715 8/18/12	Received:	Date/Time: 1915 081812
Relinquished:	Date/Time: 1330 082412	Received:	Date/Time: 1330 08-24-12
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_____	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

1209007

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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. 1209008

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H2SO4 TKN, Nox, NH4	1LP, Cool Cl, Alkalinity	250mL P, H2SO4 TKN, Nox, NH4, COD	1LP, Cool Cl, SO4, Alkalinity, F, NO3, OP, SO4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO3 B, Ca, Fe, Mg, Mn, K, Na				DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	FB-Tap	08/20/12	0745	DW		X	1	1									2.90	6.34	550	27.6	
02	FB-DI	08/20/12	0735	R		X	1	1									3.74	6.8	2.0	29.5	
03	EB	08/20/12	0730	R		X			1	1	1	2	1				3.74	6.8	2.0	24.5	

Containers Prepared/ Relinquished: Bowling	Date/Time: 1930 8/18/12	Received:	Date/Time: 1930 08/18/12
Relinquished:	Date/Time: 1510 08/20/12	Received:	Date/Time: 1510 08-20-12
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_____	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

1209008

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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. 1209013

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	1LP, Cool Cl, Alkalinity	250mL P, H_2SO_4 TKN, NH_4, NOx	1LP, Cool Cl			DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA1-PZ-11-EF2	082012	0815	GW		X	1	1	1	2	1						0.82	4.2	324.5	27.0	
02	TA1-PZ-11-EF2 DUP		0820	GW		X	1	1	1	2	1						0.82	4.2	324.5	27.0	
03	TA1-PZ-11-J4		1225	GW		X	1					1					0.40	4.5	236.2	27.9	
04	TA1-PZ-11-K4		1241	GW		X	1					1					0.40	4.3	244.1	27.4	
05	TA1-PZ-11-L2		1148	GW		X	1	1	1	2	1						0.50	4.2	782	27.7	
06	TA1-PZ-11-L3		1207	GW		X	1					1					0.48	4.5	332.4	27.7	
07	TA1-PZ-11-L4	082312	1040	GW		X	1					1									
08	TA1-PZ-11-L4 DUP		1045	GW		X	1					1									
09	TA1-PZ-11-L5	082012	1258	GW		X	1					1					0.33	4.4	275.0	27.5	
10	TA1-PZ-09-N3		1113	GW		X							1	1			1.09	6.5	635	28.2	
11	TA1-PZ-16-N3		1130	GW		X							1	1			0.52	5.0	2804	26.4	
12	TA1-PZ-09-O7		1022	GW		X	1					1					0.70	5.4	344.3	27.6	

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	8/18/12 1800		081812 1800
Relinquished:	082012 1510		08-20-12 1510
Relinquished:	8/23/12 1300	K Mudmond	8/23/12 1300
Relinquished:			
Relinquished:			

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

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SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1209013

Client Name	Contact / Phone:
Hazen and Sawyer	
Project Name / Location: S&GW Test Facility SE#2	
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 Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	250mL P, H_2SO_4 TKN, NH_4, NOx	1LP, Cool Cl							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	TA1-PZ-16-O7	082012	1043	GW		X	1	1									0.24	5.0	371.9	26.5	
14	TA1-PZ-09-M9		0938	GW		X			1	1							0.80	5.4	232.6	27.1	
15	TA1-PZ-16-M9		0954	GW		X			1	1							0.78	4.9	298.8	26.4	
16	TA1-PZ-09-I7		0856	GW		X			1	1							0.80	5.5	264.0	27.0	
17	TA1-PZ-16-I7		0911	GW		X			1	1							0.89	5.0	281.0	26.4	
18	TA1-PZ-09-RS16	082112	0736	GW		X			1	1							0.52	5.7	303.6	25.8	
19	TA1-PZ-16-RS16		0756	GW		X			1	1							0.40	5.1	296.5	25.6	
20	TA1-PZ-09-RS18		0814	GW		X			1	1							0.32	5.5	362.2	26.6	
21	TA1-PZ-16-RS18		0832	GW		X			1	1							0.28	5.4	275.2	26.0	

	Date/Time:		Date/Time:
Containers Prepared/ Relinquished: PBowling	1800 8/18/12	Received:	1800 081812
Relinquished:	1510 082012	Received:	1510 08-20-12
Relinquished:	1510 8-20-12	Received:	1510 082012
Relinquished:	1440 082112	Received:	1440 08-21-12
Relinquished:		Received:	

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

1209013

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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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-EF2	Sample ID	01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	~~0.75~~ ~~1.00~~ 2"	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.77	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.201	1/4 WELL VOLUME		3 WELL VOLUMES	0.603	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	0814	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	10.00	4.4	26.9	339.1	1.45	37.6	CLOUDY	NONE
0805	0.30	0.60			4.3	26.9	339.7	1.04	52.8		
0808	0.30	0.90			4.2	27.0	334.5	0.92	14.0		
0811	0.30	1.20			4.2	27.0	330.6	0.90	10.71		
0814	0.30	1.50			4.2	27.0	324.5	0.82	9.01		

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	0815	SAMPLING ENDED	0816	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, 77°						
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		SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-EF2-DUP	Sample ID	02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.77	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	18.80	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	0.201	1/4 WELL VOLUME		3 WELL VOLUMES	0.603	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	0814	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-~~65~~-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	10.00	4.4	26.9	339.1	1.45	37.6	CLOUDY	NONE
0805	0.30	0.60			4.3	26.9	339.7	1.04	52.8		
0808	0.30	0.90			4.2	27.0	334.5	0.92	14.0	CLEAR	
0811	0.30	1.20			4.2	27.0	330.6	0.90	10.71		
0814	0.30	1.50			4.2	27.0	324.5	0.82	9.01		

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	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, 77°								
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-J4	Sample ID	03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.81	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.198	1/4 WELL VOLUME		3 WELL VOLUMES	0.596	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	1215	PURGE TIME END	1224	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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)
1218	0.30	0.30	0.10	9.92	4.5	27.9	234.6	1.04	18.5	CLEAR	NONE
1221	0.30	0.60	|	|	4.5	27.8	235.8	0.78	16.0	|	
1224	0.30	0.90	|	|	4.5	27.9	236.2	0.40	11.3	|	

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:	[signature]		
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT	SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)		
SAMPLING INITIATED	1225	SAMPLING ENDED	1226	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, 88°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-K4	Sample ID	04	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.87	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.196	1/4 WELL VOLUME		3 WELL VOLUMES	0.589	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	1231	PURGE TIME END	1240	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1234	0.30	0.30	0.10	10.20	4.3	27.5	239.9	0.70	11.4	CLEAR	NONE
1237	0.30	0.60	|	|	4.3	27.4	240.2	0.52	9.42	|	
1240	0.30	0.90	|	|	4.3	27.4	244.1	0.40	6.86	|	

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)	SAC			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	1241	SAMPLING ENDED	1242	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, 88°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-L2	Sample ID	05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.89	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.195	1/4 WELL VOLUME		3 WELL VOLUMES	0.586	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	1138	PURGE TIME END	1147	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
TIME	VOLUME PURGED (Gallons)	TOTAL VOLUME PURGED (Gallons)	PURGE RATE (gpm)	Depth to Water (Feet)	pH (SU) (Δ <0.2)	TEMP (oC) (Δ <0.2)	SP COND (uS/cm) (Δ <5%)	DO (mg/L) (% SAT <20)	TURBIDITY (NTUs) (<20 NTU)	COLOR (Describe)	ODOR (Describe)
1141	0.30	0.30	0.10	10.25	4.2	27.7	780	0.68	18.4	CLEAR	NONE
1144	0.30	0.60	|	|	4.2	27.7	782	0.60	17.0	|	|
1147	0.30	0.90	|	|	4.2	27.7	782	0.50	16.2	|	|

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	1148	SAMPLING ENDED	1149	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, 85°								
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	08/2012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-L3	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	9.85	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.74	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	0.195	1/4 WELL VOLUME		3 WELL VOLUMES	0.586	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	1157	PURGE TIME END	1206	TOTAL PURGED	0.90
INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1200	0.30	0.30	0.10	9.90	4.4	27.6	330.2	0.56	13.6	CLEAR	NONE
1203	0.30	0.60	|	|	4.5	27.7	330.8	0.51	9.82	|	
1206	0.30	0.90	|	|	4.5	27.7	332.4	0.48	7.50	|	

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	1207	SAMPLING ENDED	1208	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, 87°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-11-L5	Sample ID	09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.85	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.196	1/4 WELL VOLUME		3 WELL VOLUMES	0.588	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	1248	PURGE TIME END	1257	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1251	0.30	0.30	0.10	10.02	4.3	27.5	274.1	0.55	10.2	CLEAR	NONE
1254	0.30	0.60	/	/	4.3	27.5	275.0	0.48	6.26	/	/
1257	0.30	0.90	/	/	4.4	27.5	275.0	0.33	5.40	/	/

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	1258	SAMPLING ENDED	1259	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, 90°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-N3	Sample ID	10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.124	1/4 WELL VOLUME		3 WELL VOLUMES	0.373	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	1057	PURGE TIME END	1112	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1100	0.30	0.30	0.10	6.92	6.5	28.0	682	2.05	MAX	BROWN	NONE
1103	0.30	0.60		6.92	6.5	28.0	642	1.78	MAX		
1106	0.30	0.90			6.5	28.1	640	1.40	MAX		
1109	0.30	1.20			6.5	28.1	634	1.12	MAX		
1112	0.30	1.50			6.5	28.2	635	1.09	MAX		

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	1113	SAMPLING ENDED	1114	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, 84°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-N3	Sample ID	11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.78	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	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	0.418	1/4 WELL VOLUME		3 WELL VOLUMES	1.25	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	1114	PURGE TIME END	1129	TOTAL PURGED	3.00

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	X	X	X	X	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	X	X
1117	0.60	0.60	0.20	7.42	5.50	27.2	283.5	1.02	MAX	BROWN	NONE
1120	0.60	1.20			5.2	26.6	281.5	0.80	671		
1123	0.60	1.80			5.1	26.5	280.4	0.70	351	CLOUDY	
1126	0.60	2.40			5.1	26.5	280.4	0.61	192		
1129	0.60	3.00			5.0	26.4	280.4	0.52	131		

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	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, 84°						
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	082012	SAL Project #	1209017	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-07	Sample ID	12	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.91	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.84	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	0.117	1/4 WELL VOLUME		3 WELL VOLUMES	0.351	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	1000	PURGE TIME END	1021	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1009	0.30	0.30	0.10	7.85	5.2	27.7	337.8	1.42	MAX	BROWN	NONE
1012	0.30	0.60			5.2	27.7	338.7	1.02	441		
1015	0.30	0.90			5.3	27.7	340.0	0.78	329	CLOUDY	
1018	0.30	1.20			5.3	27.7	342.3	0.75	310		
1021	0.30	1.50			5.4	27.6	344.3	0.70	211		

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	1022	SAMPLING ENDED	1023	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, 80°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-O7	Sample ID	13	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.64	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	0.425	1/4 WELL VOLUME		3 WELL VOLUMES	1.27	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	1027	PURGE TIME END	1042	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1030	0.60	0.60	0.20	6.80	5.0	26.5	303.4	0.80	MAX	BROWN	NONE
1033	0.60	1.20			5.0	26.5	302.0	0.54	268	CLOUDY	
1036	0.60	1.80			5.0	26.5	302.0	0.40	158		
1039	0.60	2.40			5.0	26.5	302.0	0.37	98.2		
1042	0.60	3.00			5.0	26.5	301.9	0.24	33.7	CLEAR	

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

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

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1043	SAMPLING ENDED	1044	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, 82°						
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	082012	SAL Project #	1209017	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-M9	Sample ID	14	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.90	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.118	1/4 WELL VOLUME		3 WELL VOLUMES	0.354	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	0922	PURGE TIME END	0937	TOTAL PURGED	1.50

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-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
0925	0.30	0.30	0.10	7.08	5.4	27.3	284.8	1.25	MAX	BROWN	NONE
0928	0.30	0.60			5.4	27.2	270.2	1.14	658		
0931	0.30	0.90			5.4	27.2	244.5	1.02	368		
0934	0.30	1.20			5.4	27.2	240.3	0.84	780		
0937	0.30	1.50			5.4	27.1	232.6	0.80	613		

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	0938	SAMPLING ENDED	0939	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, 80°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-M9	Sample ID	15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.95	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	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	0.414	1/4 WELL VOLUME		3 WELL VOLUMES	1.24	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	0944	PURGE TIME END	0953	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0947	0.60	0.60	0.20	7.22	5.0	26.5	290.2	1.08	19.7	CLEAR	NONE
0950	0.60	1.20	/	/	4.9	26.4	294.5	0.82	14.7	/	/
0953	0.60	1.50	/	/	4.9	26.4	298.4	0.78	15.0	CLEAR	/

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

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

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0954	SAMPLING ENDED	0955	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	08 20 12	SAL Project #	12-09013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-I7	Sample ID	16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.174	1/4 WELL VOLUME		3 WELL VOLUMES	0.522	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	0840	PURGE TIME END	0855	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0843	0.30	0.30	0.10	5.62	5.4	26.9	295.1	1.25	MAX	BROWN	NONE
0846	0.30	0.60			5.4	27.0	292.8	1.20	MAX		
0849	0.30	0.90			5.4	27.0	281.5	1.10	MAX		
0852	0.30	1.20			5.4	27.0	265.9	0.89	MAX		
0855	0.30	1.50			5.5	27.0	264.0	0.80	994		

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	0855	SAMPLING ENDED	0857	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, 78°						
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	082012	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-I7	Sample ID	I7	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.65	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.12	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	0.418	1/4 WELL VOLUME		3 WELL VOLUMES	1.25	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	0901	PURGE TIME END	0910	TOTAL PURGED	1.80
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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)
0904	0.60	0.60	0.20	7.11	5.0	26.6	288.0	1.12	19.0	CLEAR	NONE
0907	0.60	1.20	|	|	5.0	26.5	288.2	1.04	18.2	|	|
0910	0.60	1.80	|	|	5.0	26.4	291.0	0.89	17.7	|	|

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	0911	SAMPLING ENDED	0912	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, 80°						
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	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-RS16	Sample ID	18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.13	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.148	1/4 WELL VOLUME		3 WELL VOLUMES	0.446	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	0720	PURGE TIME END	0735	TOTAL PURGED	1.50
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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)
0723	0.30	0.30	0.10	6.42	5.7	25.8	305.7	1.48	MAX	BROWN	NONE
0726	0.30	0.60			5.7	25.9	305.1	1.32			
0729	0.30	0.90			5.7	25.9	304.8	1.02			
0732	0.30	1.20			5.7	25.8	303.9	0.74			
0735	0.30	1.50			5.7	25.8	303.6	0.52		BROWN	

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	0736	SAMPLING ENDED	0737	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, 75°						
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	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-RS16	Sample ID	19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.14	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	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	0.444	1/4 WELL VOLUME		3 WELL VOLUMES	1.33	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	0740	PURGE TIME END	0755	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0743	0.60	0.60	0.20	6.25	5.2	25.7	291.4	1.09	505	CLOUDY	NONE
0746	0.60	1.20			5.2	25.7	294.8	0.80	364		
0749	0.60	1.80			5.2	25.6	295.0	0.72	225		
0752	0.60	2.40			5.1	25.6	295.8	0.59	139		
0755	0.60	3.00			5.1	25.6	296.5	0.40	42.0		

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	0756	SAMPLING ENDED	0757	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, 75°						
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	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-09-RS18	Sample ID	20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.07	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0758	PURGE TIME END	0813	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0801	0.30	0.30	0.10	6.92	5.6	26.6	360.4	0.85	704	BROWN	NONE
0804	0.30	0.60			5.6	26.6	361.2	0.70	MAX		
0807	0.30	0.90			5.5	26.6	363.6	0.48	MAX		
0810	0.30	1.20			5.5	26.6	363.2	0.39	659		
0813	0.30	1.50			5.5	26.6	363.2	0.32	521		

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	0814	SAMPLING ENDED	0815	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, 77°						
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	082112	SAL Project #	1209013	Project Name	S&GW Test Facility SE #2
Well Number	TA1-PZ-16-RS18	Sample ID	21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.74	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.18	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	0.417	1/4 WELL VOLUME		3 WELL VOLUMES	1.25	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	0816	PURGE TIME END	0831	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-01	SAL-SAM-01	

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)
0819	0.60	0.60	0.20	6.92	5.3	26.0	280.1	0.90	435	CLOUDY	NONE
0822	0.60	1.20			5.3	26.0	279.0	0.82	535		
0825	0.60	1.80			5.4	26.0	274.9	0.60	502		
0828	0.60	2.40			5.4	26.0	275.6	0.34	490		
0831	0.60	3.00			5.4	26.0	275.2	0.28	478		

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	0832	SAMPLING ENDED	0833	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, 78°						
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

SAL Project No. 120901

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NH_4, NOx, COD, TP	1LP, Cool Cl, Alkalinity	250mLaG, Cool DOC	40mLaV, HCl TOC	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl			DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA2-PZ-10-H5	08/18/12	1140	GW		X	1	1									0.35	4.3	315.4	27.3	
02	TA2-PZ-10-H5 DUP		1145	GW		X	1	1									0.35	4.3	315.4	27.3	
03	TA2-PZ-10-J5		1121	GW		X	1	1									0.48	4.3	512	27.7	
04	TA2-PZ-10-K5		1102	GW		X	1	1									0.41	4.3	523	27.6	
05	TA2-PZ-10-L2		0930	GW		X	1	1									0.40	4.2	289.0	26.9	
06	TA2-PZ-10-L3		0943	GW		X	1	1									0.40	4.2	283.2	26.9	
07	TA2-PZ-10-L4		1001	GW		X	1		1	2	1	1					0.18	4.3	548	27.1	
08	TA2-PZ-10-L5		1019	GW		X	1	1									0.80	4.2	504	27.4	
09	TA2-PZ-10-L6		1038	GW		X	1	1									0.72	4.3	461.1	27.5	
10	TA2-PZ-10-L6 DUP		1043	GW		X	1	1									0.72	4.3	461.1	27.5	
11	TA2-PZ-09-M4		0853	GW		X							1	1			0.72	5.4	508.7	26.5	
12	TA2-PZ-16-M4		0911	GW		X							1	1			0.40	5.4	277.5	26.2	

Containers Prepared/ Relinquished: Bowling	Date/Time: 1830 8/18/12	Received:	Date/Time: 1830 08/18/12
Relinquished:	Date/Time: 1435 08/21/12	Received:	Date/Time: 1435 08-21-12
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:
Relinquished:	Date/Time:	Received:	Date/Time:

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

1209014

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. 1209014

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl									DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	TA2-PZ-09-N7	082112	1320	GW		X	1	1									0.34	5.4	252.6	27.7	
14	TA2-PZ-16-N7		1333	GW		X	1	1									0.45	5.4	210.6	26.7	
15	TA2-PZ-09-I7		1204	GW		X	1	1									0.30	5.2	277.7	27.7	
16	TA2-PZ-16-I7		1223	GW		X	1	1									0.22	5.2	214.2	26.9	
17	TA2-PZ-09-L8		1242	GW		X	1	1									0.58	5.9	919.1	27.7	
18	TA2-PZ-16-L8		1301	GW		X	1	1									0.20	5.6	272.8	27.3	
19	TA2-PZ-09-TU19	082212	0727	GW		X	1	1									1.06	7.2	195.9	26.8	
20	TA2-PZ-16-TU19		0746	GW		X	1	1									0.52	5.2	206.9	25.7	
21	TA2-PZ-09-TU21		0809	GW		X	1	1									0.42	4.4	149.9	26.8	
22	TA2-PZ-16-TU21		0823	GW		X	1	1									0.64	5.0	192.5	25.9	

Containers Prepared/ Relinquished: Bowling	Date/Time: 1830 8/18/12	Received:	Date/Time: 1830 08/18/12
Relinquished:	Date/Time: 1435 082112	Received:	Date/Time: 1435 08-21-12
Relinquished:	Date/Time: 1435 08-21-12	Received:	Date/Time: 1435 08212
Relinquished:	Date/Time: 1500 082212	Received:	Date/Time: 1500 08-22-12
Relinquished:	Date/Time:	Received:	Date/Time:

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

1209014

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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-~~[illegible]~~ SS 145	Sample ID	01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.172	1/4 WELL VOLUME			3 WELL VOLUMES	0.516		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	1124	PURGE TIME END	1139		TOTAL PURGED	1.50
INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1127	0.30	0.30	0.10	10.68	4.3	27.5	318.8	1.28	260	CLOUDY	NONE
1130	0.30	0.60			4.3	27.5	316.2	0.78	224		
1133	0.30	0.90			4.3	27.4	315.0	0.60	114		
1136	0.30	SS ~~0.~~ 1.20			4.3	27.3	315.2	0.49	87.8		
1139	0.30	1.50			4.3	27.3	315.4	0.35	29.2		
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	1140	SAMPLING ENDED	1141	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, 84°								
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-H5 DUP	Sample ID	02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.172	1/4 WELL VOLUME		3 WELL VOLUMES	0.516	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	1124	PURGE TIME END	1139	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1127	0.30	0.30	0.10	10.68	4.3	27.5	318.8	1.28	760	CLOUDY	NONE
1130 ~~1130~~	0.30	0.60			4.3	27.5	316.2	0.78	224		
1133	0.30	0.90			4.3	27.4	315.0	0.60	114		
1136	0.30	1.20			4.3	27.3	315.2	0.49	87.8		
1139	0.30	1.50			4.3	27.3	315.4	0.35	29.2		

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	1145	SAMPLING ENDED	1146	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, 84°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-J5	Sample ID	03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.172	1/4 WELL VOLUME		3 WELL VOLUMES	0.516	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	1120	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-03	SAL-SAM-01		
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	10.72	4.3	27.8	516	1.04	287	CLOUDY	NONE
1111	0.30	0.60			4.3	27.8	514	0.80	212		
1114	0.30	0.90			4.3	27.7	513	0.72	142		
1117	0.30	1.20			4.3	27.7	512	0.58	128		
1120	0.30	1.50			4.3	27.7	512	0.48	108		

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	1121	SAMPLING ENDED	1122	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, 84°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-K5	Sample ID	04	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.55	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.51	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	1046	PURGE TIME END	1101	TOTAL PURGED	1.50
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1049	0.30	0.30	0.10	10.70	4.3	27.6	529	1.28	236	CLOUDY	NONE
1052	0.30	0.60			4.3	27.6	528	0.84	174		
1055	0.30	0.90			4.3	27.6	527	0.70	98.4		
1058	0.30	1.20			4.3	27.6	525	0.62	76.8		
1101	0.30	1.50			4.3	27.6	523	0.41	55.0		

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	1102	SAMPLING ENDED	1103	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, 84°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-~~10~~ S3 L2	Sample ID	05	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.55	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.169	1/4 WELL VOLUME		3 WELL VOLUMES	0.507	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	0914	PURGE TIME END	0929	TOTAL PURGED	1.50

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
0917	0.30	0.30	0.10	11.04	4.4	27.0	284.8	0.90	134	CLOUDY	NONE
0920	0.30	0.60			4.4	27.0	285.0	0.71	122		
0923	0.30	0.90			4.3	26.9	285.6	0.60	78.4		
0926	0.30	1.20			4.3	26.9	287.2	0.52	29.8		
0929	0.30	1.50			4.2	26.9	289.0	0.40	18.6	CLEAR	

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

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

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL					SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)				SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	0830	SAMPLING ENDED	0831	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, 78°								
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-L3	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.59	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.168	1/4 WELL VOLUME		3 WELL VOLUMES	0.505	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	0933	PURGE TIME END	0942	TOTAL PURGED	0.90
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-9	SAL-SAM-55-02	SAL-SAM-01	

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)
0936	0.30	0.30	0.10	11.09	4.2	26.9	278.4	0.78	10.4	CLEAR	NONE
0939	0.30	0.60	|	|	4.2	26.9	280.6	0.62	10.8	|	|
0942	0.30	0.90	|	|	4.2	26.9	283.2	0.40	10.9	|	|

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	0943	SAMPLING ENDED	0944	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, 80°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-L4	Sample ID	07	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.35	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	12.10	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

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

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

ONE WELL VOLUME	0.07	1/4 WELL VOLUME		3 WELL VOLUMES	0.21	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	0945	PURGE TIME END	1000	TOTAL PURGED	1.50
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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)
0848	0.30	0.30	0.10	10.48	4.3	26.9	546	1.08	132	CLOUDY	NONE
0851	0.30	0.60			4.3	27.0	547	0.72	254		
0954	0.30	0.90			4.3	27.0	549	0.58	77.4		
0957	0.30	1.20			4.3	27.0	547	0.30	50.9		
1000	0.30	1.50			4.3	27.1	548	0.18	13.0	CLEAR	

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

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

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT			SAMPLE TUBING LEGNTH IN WELL (FEET)		SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1001	SAMPLING ENDED	1009	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, 80						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-L5	Sample ID	08	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	10.52	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	1003	PURGE TIME END	1018	TOTAL PURGED	1.50
INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1006	0.30	0.30	0.10	10.78	4.2	27.4	500	1.60	198	CLOUDY	NONE
1009	0.30	0.60			4.2	27.4	501	1.24	170		
1012	0.30	0.90			4.2	27.4	502	0.98	162		
1015	0.30	1.20			4.2	27.4	504	0.88	124		
1018	0.30	1.50			4.2	27.4	504	0.80	111		

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	1019	SAMPLING ENDED	1020	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, 82°								
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-L6	Sample ID	09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	10.58	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.168	1/4 WELL VOLUME		3 WELL VOLUMES	0.506	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	1022	PURGE TIME END	1037	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1025	0.30	0.30	0.10	10.70	4.3	27.5	470.8	1.08	148	CLOUDY	NONE
1028	0.30	0.60			4.3	27.5	468.4	0.84	108		
1031	0.30	0.90			4.3	27.5	465.4	0.80	95.2		
1034	0.30	1.20			4.3	27.5	463.0	0.77	80.6		
1037	0.30	1.50			4.3	27.5	461.1	0.72	65.7		

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	1038	SAMPLING ENDED	1039	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, 82°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-10-L6 DUP	Sample ID	10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	10.58	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.80	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	0.168	1/4 WELL VOLUME		3 WELL VOLUMES	0.506	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	1022	PURGE TIME END	1037	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1025	0.30	0.30	0.10	10.70	4.3	27.5	470.8	1.08	148	CLOUDY	NONE
1028	0.30	0.60			4.3	27.5	468.4	0.84	108		
1031	0.30	0.90			4.3	27.5	465.4	0.80	95.2		
1034	0.30	1.20			4.3	27.5	463.0	0.77	80.6		
1037	0.30	1.50			4.3	27.5	461.1	0.72	65.7		

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	1043	SAMPLING ENDED	1044	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, 82°						
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	08/11/12	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-M4	Sample ID	11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.34	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0837	PURGE TIME END	0852	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0840	0.30	0.30	0.10	6.80	5.4	26.5	512.4	1.00	MAX	BROWN	NONE
0843	0.30	0.60			5.4	26.5	510.2	1.42			
0846	0.30	0.90			5.3	26.5	509.0	1.20			
0849	0.30	1.20			5.3	26.5	508.2	0.98			
0852	0.30	1.50			5.4	26.5	508.7	0.72			

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	0853	SAMPLING ENDED	0854	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, 78°								
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	08/2/12	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-M4	Sample ID	12	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	6.42	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)				TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	0.434	1/4 WELL VOLUME		3 WELL VOLUMES	1.30	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	0855	PURGE TIME END	0910	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0858	0.60	0.60	0.20	6.58	5.2	26.2	220.4	0.32	94.2	CLOUDY	NONE
0901	0.60	1.20			5.2	26.2	224.8	0.72	149.4		
0904	0.60	1.80			5.3	26.2	225.1	0.51	292		
0907	0.60	2.40			5.3	26.2	227.0	0.44	458		
0910	0.60	3.00			5.4	26.2	227.5	0.40	672		

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	0911	SAMPLING ENDED	0912	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, 78°								
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-N7	Sample ID	13	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.18	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.146	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	1304	PURGE TIME END	1319	TOTAL PURGED	1.50

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1307	0.30	0.30	0.10	6.40	5.4	27.6	245.8	1.08	MAX	BROWN	NONE
1310	0.30	0.60			5.4	27.7	247.0	1.02			
1313	0.30	0.90			5.4	27.7	249.4	0.78			
1316	0.30	1.20			5.4	27.7	250.7	0.52			
1319	0.30	1.50			5.4	27.7	252.6	0.34			

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)	S/AL			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	1320	SAMPLING ENDED	1321	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, 87°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-N7	Sample ID	14	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.31	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	
Purge Technique: q Submerged Screen (1,1/4,1/4 Well) q Submerged Screen (1EQ Volume, 3, 3 Minutes) q Partially Submerged Screen (1 Well, 3,3 minutes)										
WELL VOLUME = (TOTAL DEPTH - STATIC DEPTH) x WELL CAPICITY =										
ONE WELL VOLUME	0.438	1/4 WELL VOLUME		3 WELL VOLUMES	1.31		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	1323	PURGE TIME END	1332	TOTAL PURGED	1.80	
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		

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	0.60	0.60	0.20	6.42	5.3	26.7	212.7	0.84	19.7	CLEAR	NONE
1329	0.60	1.20	|	|	5.3	26.7	210.9	0.70	18.3	|	|
1332	0.60	1.80	|	|	5.4	26.7	210.6	0.65	15.3	|	|

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	1333	SAMPLING ENDED	1334	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, 88°								
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-I7	Sample ID	15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.65	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.168	1/4 WELL VOLUME		3 WELL VOLUMES	0.504	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	1148	PURGE TIME END	1203	TOTAL PURGED	1.50	
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	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)
1151	0.30	0.30	0.10	5.80	5.3	27.7	270.6	0.98	MAX	BROWN	NONE
1154	0.30	0.60	/	/	5.2	27.7	271.2	0.72	MAX	/	/
1157	0.30	0.90	/	/	5.2	27.7	273.0	0.43	MAX	/	/
1200	0.30	1.20	/	/	5.2	27.7	273.6	0.35	708	/	/
1203	0.30	1.50	/	/	5.2	27.7	~~519~~ 273.7 SS	0.30	642	/	/

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	1204	SAMPLING ENDED	1205	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, 85°						
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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-I7	Sample ID	16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.30	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.25	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	0.438	1/4 WELL VOLUME		3 WELL VOLUMES	1.314	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	1222	TOTAL PURGED	3.00
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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	0.60	0.60	0.20	6.48	5.2	26.9	217.8	0.80	75.8	CLOUDY	NONE
1213	0.60	1.20			5.2	26.9	219.4	0.72	60.6		
1216	0.60	1.80			5.2	26.9	213.0	0.48	48.4		
1219	0.60	2.40			5.2	26.9	214.8	0.35	45.2		
1222	0.60	3.00			5.2	26.9	214.2	0.22	46.0		

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	1223	SAMPLING ENDED	1224	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	082112	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-L8	Sample ID	17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.08	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	1226	PURGE TIME END	1241	TOTAL PURGED	1.50

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1229	0.30	0.30	0.10	6.40	5.8	27.8	372.4	0.74	97.1	CLOUDY	NONE
1232	0.30	0.60			5.8	27.8	380.4	0.75	108		
1235	0.30	0.90			5.9	27.7	392.7	0.69	207		
1238	0.30	1.20			5.9	27.7	410.4	0.62	242		
1241	0.30	1.50			5.9	27.7	419.1	0.58	275		

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	1242	SAMPLING ENDED	1243	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, 85°						
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	08 21 12	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-L8	Sample ID	18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.12	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

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

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

ONE WELL VOLUME	0.446	1/4 WELL VOLUME		3 WELL VOLUMES	1.33	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	1300	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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	0.60	0.60	0.20	6.35	5.6	27.3	226.2	0.62	588	BROWN	NONE
1251	0.60	1.20			5.6	27.3	228.7	0.48	587		
1254	0.60	1.80			5.6	27.3	229.9	0.50	589		
1257	0.60	2.40			5.6	27.3	230.8	0.35	591		
1300	0.60	3.00			5.6	27.3	232.8	0.20	590		

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	1301	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, 87°						
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	082712	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-TU19	Sample ID	19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.42	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.177	1/4 WELL VOLUME		3 WELL VOLUMES	0.531	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	0711	PURGE TIME END	0726	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0714	0.30	0.30	0.10	6.10	4.2	26.6	178.7	3.21	MAX	BROWN	NONE
0717	0.30	0.60			4.2	26.6	180.2	2.72	MAX		
0720	0.30	0.90			4.2	26.8	184.8	2.50	MAX		
0723	0.30	1.20			4.2	26.8	185.8	2.20	MAX		
0726	0.30	1.50			4.2	26.8	185.8	1.06	535		

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	0727	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, 74°						
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	082212	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-TU19	Sample ID	20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.18	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	0.473	1/4 WELL VOLUME		3 WELL VOLUMES	1.42	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	0730	PURGE TIME END	0745	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0733	0.60	0.60	0.20	5.90	5.1	25.9	197.8	2.65	MAX	BROWN	NONE
0736	0.60	1.20			5.1	25.9	199.5	2.42	MAX		
0739	0.60	1.80			5.2	25.7	202.4	1.40	292		
0742	0.60	2.40			5.2	25.7	205.4	0.86	112	CLOUDY	
0745	0.60	3.00			5.2	25.7	206.0	0.52	34.3		

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	0746	SAMPLING ENDED	0747	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, 74°						
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	082212	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-09-TU21	Sample ID	21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.31	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.181	1/4 WELL VOLUME		3 WELL VOLUMES	0.544	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	0753	PURGE TIME END	0808	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0756	0.30	0.30	0.10	5.54	4.4	26.2	175.2	2.16	MAX	BROWN	NONE
0759	0.30	0.60			4.4	26.7	168.2	0.77	MAX		
0802	0.30	0.90			4.3	26.8	169.0	0.62	MAX		
0805	0.30	1.20			4.4	26.8	169.5	0.49	432		
0808	0.30	1.50			4.4	26.8	169.9	0.42	184	CLOUDY	

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		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, 75°						
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	082212	SAL Project #	1209014	Project Name	S&GW Test Facility SE #2
Well Number	TA2-PZ-16-TU21	Sample ID	22	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	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	0.46	1/4 WELL VOLUME		3 WELL VOLUMES	1.38	5 WELL VOLUMES	

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

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0813	PURGE TIME END	0822	TOTAL PURGED	1.80

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0816	0.60	0.60	0.20	6.10	5.0	26.0	191.1	0.80	4.0	CLOUDY	NONE
0819	0.60	1.20	/	/	5.0	26.0	191.6	0.86	44.0	/	/
0822	0.60	1.80	/	/	5.0	25.9	192.5	0.64	44.7	/	/

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	0823	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, 75°						
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

SAL Project No. 1209015

Client Name	Contact / Phone:
Hazen and Sawyer	
Project Name / Location: S&GW Test Facility SE#2	
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

Lab No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	1LP, Cool Cl, Alkalinity	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl			DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA3-PZ-11-EF2	082312	0848	GW		X	1	1	1	2	1						5.03	4.9	269	27.4	
02	TA3-PZ-11-I2		0910	GW		X	1	1	1	2	1						3.08	4.3	273	27.4	
03	TA3-PZ-10-J5		1020	GW		X	1					1					2.05	4.3	308	26.9	
04	TA3-PZ-10-J5 DUP		1025	GW		X	1					1					2.05	4.3	308	26.9	
05	TA3-PZ-10-K5		1056	GW		X	1					1					1.88	4.4	324	27.0	
06	TA3-PZ-11-L2	082312	1546	GW		X	1	1	1	2	1						1.10	4.5	359.9	27.7	
07	TA3-PZ-11-L3		1605	GW		X	1					1					1.30	4.3	353.2	27.4	
08	TA3-PZ-11-L4	082312	0936	GW		X	1					1					2.25	4.4	356	27.2	
09	TA3-PZ-10-L5	082312	0957	GW		X	1					1					2.45	4.5	346	27.1	
10	TA3-PZ-09-N3		1513	GW		X							1	1			0.72	6.4	535	27.5	
11	TA3-PZ-16-N3		1533	GW		X							1	1			0.27	5.5	309.4	26.0	
12	TA3-PZ-09-O7	082412	0736	GW		X							1	1			0.73	6.6	488	26.7	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
O Bowling	8/18/12 1930		08/18/12 1930
Relinquished:	Date/Time:	Received:	Date/Time:
	08 24 12 1330		08-24-12 1330
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_____	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

1209015

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. 1209015

Client Name	Contact / Phone:
Hazen and Sawyer	
Project Name / Location: S&GW Test Facility SE#2	
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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl									DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	TA3-PZ-16-O7	082912	0755	GW		X	1	1									0.47	5.3	481.4	25.8	
14	TA3-PZ-09-I7	082312	0734	GW		X	1	1									3.31	7.0	892	26.6	
15	TA3-PZ-16-I7		0753	GW		X	1	1									0.43	5.9	293.6	25.7	
16	TA3-PZ-09-M9	082312	1628	GW		X	1	1									1.01	6.4	456	27.4	
17	TA3-PZ-16-M9		1647	GW		X	1	1									0.29	5.4	286.5	26.4	
18	TA3-PZ-09-ST14	082912	0819	GW		X	1	1									0.48	4.6	218.0	26.9	
19	TA3-PZ-16-ST14		0832	GW		X	1	1									0.38	5.1	272.7	25.9	
20	TA3-PZ-09-ST16		0852	GW		X	1	1									1.53	5.7	382.8	27.1	
21	TA3-PZ-16-ST16		0916	GW		X	1	1									0.35	5.2	262.5	25.9	

Containers Prepared/ Relinquished:	Date/Time: 1930 8/18/12	Received:	Date/Time: 1930 08/18/12
Relinquished:	Date/Time: 1300 082312	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_____	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

1209015

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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-11-L2	Sample ID	06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	7.46	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.292	1/4 WELL VOLUME		3 WELL VOLUMES	0.878	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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	8.02	4.7	27.7	349.3	1.17	19.2	CLEAR	NONE
1542	0.30	0.60	|	|	4.5	27.6	356.5	1.10	18.8	|	|
1545	0.30	0.90	|	|	4.5	27.7	359.8	1.10	18.7	|	|

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

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

SAMPLING DATA

SAMPLED BY / COMPANY (PRINT)	SAL			SAMPLER(S) SIGNATURES:			
TUBING MATERIAL CODE (CIRCLE ONE)	PP PE NP (TL) TT		SAMPLE TUBING LEGNTH IN WELL (FEET)			SAMPLE PUMP FLOW RATE (mL/min)	
SAMPLING INITIATED	1546	SAMPLING ENDED	1547	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, 90°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-11-L3	Sample ID	07	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	7.80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.278	1/4 WELL VOLUME		3 WELL VOLUMES	0.834	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	1558	PURGE TIME END	1604	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1558	0.30	0.30	0.10	8.04	4.3	27.5	350.6	1.42	15.8	CLEAR	NONE
1601	0.30	0.60	|	|	4.3	27.5	351.9	1.34	14.2	|	|
1604	0.30	0.90	|	|	4.3	27.4	353.2	1.30	13.7	|	|

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	1605	SAMPLING ENDED	1606	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, 90°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-N3	Sample ID	10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.18	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.226	1/4 WELL VOLUME		3 WELL VOLUMES	0.680	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	1512	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	5.90	6.5	29.0	622	0.90	MAX	BROWN	NONE
1503	0.30	0.60			6.5	28.5	617	0.95	MAX		
1506	0.30	0.90			6.5	27.9	596	0.89	673		
1509	0.30	1.20			6.4	27.7	565	0.80	515		
1512	0.30	1.50			6.4	27.5	555	0.72	496		

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	1513	SAMPLING ENDED	1514	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, 87°						
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		SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-N3	Sample ID	11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	4.34	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	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	0.518	1/4 WELL VOLUME		3 WELL VOLUMES	1.55	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	1517	PURGE TIME END	1532	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1520	0.60	0.60	0.20	6.56	6.0	26.9	324.4	0.41	MAX	BROWN	NONE
1523	0.60	1.20			5.5	26.2	309.7	0.32	MAX		
1526	0.60	1.80			5.5	26.1	309.8	0.31	MAX		
1529	0.60	2.40			5.5	26.0	310.0	0.29	453		
1532	0.60	3.00			5.5	26.0	309.4	0.27	172	CLOUDY	

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	1533	SAMPLING ENDED	1534	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, 90°						
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:	1209015	Contact:	
				Phone:	
Date Sampled	082412	SAL Project #	~~1209015~~	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-O7	Sample ID	12	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.48	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.214	1/4 WELL VOLUME		3 WELL VOLUMES	0.644	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	0720	PURGE TIME END	0735	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0723	0.30	0.30	0.10	6.04	7.5	26.2	453.9	1.25	MAX	BROWN	NONE
0726	0.30	0.60			7.0	26.4	445.2	1.10	MAX		
0729	0.30	0.90			6.6	26.7	490	0.94	MAX		
0732	0.30	1.20			6.6	26.7	495	0.91	643		
0735	0.30	1.50			6.6	26.7	488	0.93	468		

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	0756	SAMPLING ENDED	0737	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, 75°						
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	082412	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-07	Sample ID	13	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.72	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	0.502	1/4 WELL VOLUME		3 WELL VOLUMES	1.50	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	0739	PURGE TIME END	0754	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0742	0.60	0.60	0.20	6.02	6.0	26.2	306.2	1.11	MAX	BROWN	NONE
0745	0.60	1.20			5.7	25.9	293.8	0.59	MAX		
0748	0.60	1.80			5.5	25.8	291.9	0.53	511	CLOUDY	
0751	0.60	2.40			5.4	25.8	291.5	0.50	124		
0754	0.60	3.00			5.3	25.8	291.4	0.47	55.7		

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	0755	SAMPLING ENDED	0756	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, 75°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-I7	Sample ID	14	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.34	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.2202	1/4 WELL VOLUME		3 WELL VOLUMES	0.6661	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	0718	PURGE TIME END	0733	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-a	SAL-SAM-6501	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0721	0.30	0.30	0.10	7.08	7.8	26.0	1400	2.42	MAX	BROWN	NONE
0724	0.30	0.60			7.5	26.3	1452	2.68	MAX		
0727	0.30	0.90			7.3	26.4	1306	3.14	MAX		
0730	0.30	1.20			7.0	26.6	1032	3.47	164 ~~MAX~~		
0733	0.30	1.50			7.0	26.6	882	3.31	83.0 ~~MAX~~		

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	0734	SAMPLING ENDED	0735	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, 75°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-I7	Sample ID	15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.40	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.25	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	0.514	1/4 WELL VOLUME		3 WELL VOLUMES	1.542	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	0737	PURGE TIME END	0752	TOTAL PURGED	3.00
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-03	SAL-SAM-01

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)
0740	0.60	0.60	0.20	6.02	6.5	26.2	335.6	1.74	MAX	BROWN	NONE
0743	0.60	1.20	/	/	6.2	25.9	316.3	0.78	511	/	/
0746	0.60	1.80	/	/	6.1	25.7	305.1	0.73	316	CLOUDY	/
0749	0.60	2.40	/	/	6.0	25.7	297.2	0.46	99.8	/	/
0752	0.60	3.00	/	/	5.9	25.7	293.6	0.43	51.6	/	/

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	0753	SAMPLING ENDED	0754	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, 75°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-M9	Sample ID	16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK	To	UNK	Static Depth to Water (Feet)	4.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.214	1/4 WELL VOLUME		3 WELL VOLUMES	0.642	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	1612	PURGE TIME END	1627	TOTAL PURGED	1.50

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1615	0.30	0.30	0.10	6.09	6.0	27.8	467.5	1.15	MAX	BROWN	NONE
1618	0.30	0.60			6.2	27.6	485	1.08	MAX		
1621	0.30	0.90			6.2	27.5	490	1.08	MAX		
1624	0.30	1.20			6.3	27.5	472	1.02	MAX		
1627	0.30	1.50			6.4	27.4	456	1.01	910		

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	1628	SAMPLING ENDED	1629	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, 88°						
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	082312	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-M9	Sample ID	17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.48	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	~~0.55~~ 0.512	1/4 WELL VOLUME		3 WELL VOLUMES	1.536	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	1631	PURGE TIME END	1646	TOTAL PURGED	3.00

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	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	X	X
~~0~~ 1634	0.60	0.60	0.20	6.20	5.7	26.6	289.1	0.40	891	BROWN	NONE
1637	0.60	1.20	|	|	5.6	26.6	288.5	0.39	520	|	|
1640	0.60	1.80	|	|	5.5	26.4	287.4	0.32	213	|	|
1643	0.60	2.40	|	|	5.4	26.4	286.9	0.30	103	CLOUDY	|
1646	0.60	3.00	|	|	5.4	26.4	286.5	0.29	68.4	|	|

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	1647	SAMPLING ENDED	1648	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, 88°						
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	082412	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-ST14	Sample ID	18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.38	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.218	1/4 WELL VOLUME		3 WELL VOLUMES	0.656	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	0803	PURGE TIME END	0818	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0806	0.30	0.30	0.10	6.20	4.6	26.2	233.4	0.80	MAX	BROWN	NONE
0809	0.30	0.60			4.5	26.8	222.5	0.53	MAX		
0812	0.30	0.90			4.6	26.9	219.8	0.52	590		
0815	0.30	1.20			4.6	26.9	218.7	0.48	291	CLOUDY	
0818	0.30	1.50			4.6	26.9	218.0	0.48	114		

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	0819	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, 76°						
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	082412	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-ST14	Sample ID	19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.32	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.15	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	0.513	1/4 WELL VOLUME		3 WELL VOLUMES	1.53	5 WELL VOLUMES	

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

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0822	PURGE TIME END	0831	TOTAL PURGED	1.80
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
0825	0.60	0.60	0.20	6.24	5.1	26.0	270.9	0.49	123	CLOUDY	NONE
0828	0.60	1.20	|	|	5.1	25.9	272.1	0.42	123	|	|
0831	0.60	1.80	|	|	5.1	25.9	272.7	0.38	121	|	|

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	0832	SAMPLING ENDED	0833	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, 77°						
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	08241r	SAL Project #	1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-09-ST16	Sample ID	20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	4.10	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.23	1/4 WELL VOLUME		3 WELL VOLUMES	0.69	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	0836	PURGE TIME END	0851	TOTAL PURGED	1.50
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-001

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)
0839	0.30	0.30	0.10	6.00	5.6	27.0	335.8	1.55	808	BROWN	NONE
0842	0.30	0.60			5.6	27.0	332.4	1.50	695		
0845	0.30	0.90			5.6	27.0	330.4	1.51	520		
0848	0.30	1.20			5.6	27.1	320.7	1.51	408		
0851	0.30	1.50			5.7	27.1	312.8	1.53	194		

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	0853	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, 77°						
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	082412	SAL Project #	~~1209020~~ 1209015	Project Name	S&GW Test Facility SE #2
Well Number	TA3-PZ-16-ST16	Sample ID	21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.53	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.30	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	0.51	1/4 WELL VOLUME		3 WELL VOLUMES	1.53	5 WELL VOLUMES	

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

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	0900	PURGE TIME END	0915	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	0.60	0.60	0.20	6.12	5.4	26.2	263.1	0.66	725	BROWN	NONE
0906	0.60	~~0~~ 55 1.20			5.3	26.0	263.2	0.47	518		
0909	0.60	1.80			5.2	26.0	262.4	0.39	54.8	CLOUDY	
0912	0.60	2.40			5.2	26.0	262.3	0.37	35.4		
0915	0.60	3.00			5.2	25.9	262.5	0.35	23.3		

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	0916	SAMPLING ENDED	0917	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, 78°						
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

SAL Project No. 1209016

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	1LP, Cool Cl, Alkalinity, F, NO_3, OP, SO_4	250mLaG, Cool DOC	40mLaV, HCl TOC	250mL P, HNO_3 B, Ca, Fe, Mg, Mn, K, Na	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl			DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA4-PZ-11-EF2	082212	1425	GW		X	1	1									1.58	4.2	186.7	27.8	
02	TA4-PZ-10-H5		1056	GW		X	1	1									1.43	4.3	235.1	27.2	
03	TA-PZ-10-J5		1044	GW		X	1	1									2.14	4.3	351.5	27.2	
04	TA4-PZ-10-K5		1029	GW		X	1		1	1	2	1					1.70	4.2	388.7	27.1	
05	TA4-PZ-11-L2	082312	1615	GW		X	1		1	1	2	1					2.3	4.7	282	29.1	
06	TA4-PZ-11-L3	082212	0932	GW		X	1	1									1.08	4.2	249.0	26.8	
07	TA4-PZ-11-L4		0946	GW		X	1		1	1	2	1					1.56	4.2	338.8	26.8	
08	TA4-PZ-11-L5		1004	GW		X	1	1									1.54	4.2	358.9	26.9	
09	TA4-PZ-11-L6		1016	GW		X	1	1									1.69	4.3	367.7	27.1	
10	TA4-PZ-09-M4		0953	GW		X							1	1			0.55	6.6	522	26.7	
11	TA4-PZ-16-M4		0912	GW		X							1	1			0.32	5.3	232.5	25.8	
12	TA4-PZ-09-N7		1235	GW		X							1	1			1.29	5.6	317.2	27.4	

	Date/Time	Received	Date/Time
Containers Prepared/ Relinquished:	1945 8/18/12		1945 081812
Relinquished:	1500 082212		08-22-12 1500
Relinquished:		Received:	
Relinquished:		Received:	
Relinquished:		Received:	

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

1209016

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. 1209016

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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 Sample No.	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl									DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	TA4-PZ-16-N7	082212	1254	GW		X	1	1									0.40	5.2	252.3	26.2	
14	TA4-PZ-09-I7		1120	GW		X	1	1									1.14	5.3	325.7	27.7	
15	TA4-PZ-16-I7		1139	GW		X	1	1									0.56	5.1	231.4	26.2	
16	TA4-PZ-09-L8		1158	GW		X	1	1									1.82	6.2	362.7	27.6	
17	TA4-PZ-16-L8		1217	GW		X	1	1									0.67	5.3	230.7	26.4	
18	TA4-PZ-09-TU14		1351	GW		X	1	1									0.67	4.7	159.4	27.6	
19	TA4-PZ-16-TU14		1410	GW		X	1	1									0.34	5.2	226.5	26.5	
20	TA4-PZ-09-TU16		1313	GW		X	1	1									0.85	5.0	270.9	27.5	
21	TA4-PZ-16-TU16		1332	GW		X	1	1									0.31	5.1	236.9	26.3	

Containers Prepared/ Relinquished:	Date/Time:	Received:	Date/Time:
J Bowling	1935 8/18/12	[signature]	1945 081812
[signature]	1500 082212	[signature]	1500 08-22-12

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

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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	08 22 12	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-EF2	Sample ID	01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.00	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.23	1/4 WELL VOLUME		3 WELL VOLUMES	0.69	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	1415	PURGE TIME END	1424	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1418	0.30	0.30	0.10	9.56	4.2	27.7	188.0	1.52	18.6	CLEAR	NONE
1421	0.30	0.60	/	/	4.2	27.8	187.8	1.49	18.9	/	/
1424	0.30	0.90	/	/	4.2	27.8	186.7	1.48	19.4	/	/

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	1425	SAMPLING ENDED	1426	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, 87°				
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-10-H5	Sample ID	02	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.105	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.226	1/4 WELL VOLUME		3 WELL VOLUMES	0.678	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	1046	PURGE TIME END	1055	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1049	0.30	0.30	0.10	9.62	4.3	27.2	236.8	1.68	17.5	CLEAR	NONE
1052	0.30	0.60	|	|	4.3	27.3	237.2	1.50	17.4	|	|
1055	0.30	0.90	|	|	4.3	27.2	235.1	1.43	17.2	|	|

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	1056	SAMPLING ENDED	1057	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, 80°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-10-J5	Sample ID	03	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.13	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.224	1/4 WELL VOLUME		3 WELL VOLUMES	0.674	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	1034	PURGE TIME END	1043	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1037	0.30	0.30	0.10	9.59	4.4	27.4	384.5	2.40	13.9	CLEAR	NONE
1040	0.30	0.60	/	/	4.4	27.3	382.9	2.24	12.9	/	/
1043	0.30	0.90	/	/	4.3	27.2	381.5	2.14	12.6	/	/

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	1044	SAMPLING ENDED	1045	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, 80°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-10-K5	Sample ID	04	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.15	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.224	1/4 WELL VOLUME		3 WELL VOLUMES	0.672	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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	9.58	4.2	27.1	390.2	1.81	19.8	CLEAR	NONE
1025	0.30	0.60	|	|	4.2	27.1	389.6	1.76	18.0	|	|
1028	0.30	0.90	|	|	4.2	27.1	388.7	1.70	18.2	|	|

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	1029	SAMPLING ENDED	1030	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, 79°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-L3		06	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.15	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.224	1/4 WELL VOLUME		3 WELL VOLUMES	0.672	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	0916	PURGE TIME END	0931	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0919	0.30	0.30	0.10	10.02	4.3	26.7	241.0	1.59	178	CLOUDY	NONE
0922	0.30	0.60			4.3	26.7	240.7	1.35	50.4		
0925	0.30	0.90			4.3	26.8	240.3	1.20	19.9		
0928	0.30	1.20			4.3	26.8	243.9	1.10	8.93	CLEAR	
0931	0.30	1.50			4.2	26.8	249.0	1.08	4.90		

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	0932	SAMPLING ENDED	0933	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, 77°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-L4		07	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	SS ~~0~~ 1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	9.10	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.78	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	0.227	1/4 WELL VOLUME		3 WELL VOLUMES	0.681	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

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0939	0.30	0.30	0.10	9.80	4.2	26.8	330.7	1.80	10.4	CLEAR	NONE
0942	0.30	0.60	|	|	4.2	26.8	335.2	1.72	9.78	|	|
0945	0.30	0.90	|	|	4.2	26.8	338.8	1.56	6.72	|	|

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	0947	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, 77°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-L5		08	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.14	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.224	1/4 WELL VOLUME		3 WELL VOLUMES	0.673	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	0957	PURGE TIME END	1003	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0957	0.30	0.30	0.10	9.52	4.2	26.9	388.2	1.62	18.0	CLEAR	NONE
1000	0.30	0.60	|	|	4.2	26.9	389.5	1.57	17.9	|	|
1003	0.30	0.90	|	|	4.2	26.9	388.8	1.54	17.6	|	|

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	1004	SAMPLING ENDED	1005	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, 78°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-11-L6		09	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	9.14	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.75	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	0.224	1/4 WELL VOLUME		3 WELL VOLUMES	0.673	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	1006	PURGE TIME END	1015	TOTAL PURGED	0.90
INST. ID	X	X	X	X	SAL-SAM-63-9	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1009	0.30	0.30	0.10	9.46	4.3	27.1	365.4	1.70	19.0	CLEAR	NONE
1012	0.30	0.60	/	/	4.3	27.1	366.0	1.68	18.8	/	/
1015	0.30	0.90	/	/	4.3	27.1	367.7	1.69	18.8	/	/
~~10~~											

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	~~08~~ 1016	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, 78°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-M4		10	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.64	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.95	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	0.168	1/4 WELL VOLUME		3 WELL VOLUMES	0.505	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	0837	PURGE TIME END	0852	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0840	0.30	0.30	0.10	5.85	6.2	26.6	700	1.91	MAX	BROWN	NONE
0843	0.30	0.60			6.5	26.7	638	0.67	235	CLOUDY	
0846	0.30	0.90			6.5	26.7	610	0.58	82.8		
0849	0.30	1.20			6.6	26.7	544	0.54	36.7		
0852	0.30	1.50			6.6	26.7	522	0.55	21.2		

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	0853	SAMPLING ENDED	0854	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, 75°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-M4		11	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	6.34	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.25	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		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	0856	PURGE TIME END	0911	TOTAL PURGED	3.00
INST. ID				SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01	

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	0.60	0.60	0.20	6.55	6.3	26.4	258.5	1.36	141	CLOUDY	NONE
0902	0.60	1.20			5.5	26.0	237.0	0.49	88.7		
0905	0.60	1.80			5.4	25.9	234.6	0.41	35.5		
0908	0.60	2.40			5.3	25.9	232.9	0.33	18.1	CLEAR	
0911	0.60	3.00			5.3	25.8	232.5	0.32	12.9		

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	0912	SAMPLING ENDED	0913	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, 75°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-N7		12	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.47	PURGE PUMP CODE: PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.175	1/4 WELL VOLUME		3 WELL VOLUMES	0.525	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	1219	PURGE TIME END	1234	TOTAL PURGED	1.50
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1222	0.30	0.30	0.10	5.90	5.5	27.4	346.8	1.52	MAX	BROWN	NONE
1225	0.30	0.60			5.4	27.4	332.6	1.43	MAX		
1228	0.30	0.90			5.5	27.4	329.8	1.38	MAX		
1231	0.30	1.20			5.6	27.4	320.4	1.30	MAX		
1234	0.30	1.50			5.6	27.4	317.2	1.29	MAX		

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	1235	SAMPLING ENDED	1236	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, 82°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-N7		13	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	10	WELL CAPACITY (gal/ft)	ES 0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.48	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)		TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	0.472	1/4 WELL VOLUME		3 WELL VOLUMES	1.41	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	1238	PURGE TIME END	1253	TOTAL PURGED	3.00

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1241	0.60	0.60	0.20	5.85	5.1	26.3	264.7 ~~252.7~~	0.86	740	BROWN	NONE
1244	0.60	1.20			5.1	26.2	260.8	0.72	556		
1247	0.60	1.80			5.2	26.2	259.8	0.50	432		
1250	0.60	2.40			5.2	26.2	255.4	0.42	339		
1253	0.60	3.00			5.2	26.2	252.3	0.40	262		

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	1254	SAMPLING ENDED	1255	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, 82°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-I7		14	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.92	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.177	1/4 WELL VOLUME		3 WELL VOLUMES	0.531	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	1104	PURGE TIME END	1119	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1107	0.30	0.30	0.10	5.65	5.3	27.4	352.4	2.74	MAX	BROWN	NONE
1110	0.30	0.60			5.3	27.4	350.7	2.24	MAX		
1113	0.30	0.90			5.3	27.3	338.2	1.80	MAX		
1116	0.30	1.20			5.3	27.2	330.9	1.50	MAX		
1119	0.30	1.50			5.3	27.2	325.7	1.14	MAX		

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	1120	SAMPLING ENDED	1121	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, 80°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-I7		15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)		Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.90	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.27	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	0.454	1/4 WELL VOLUME		3 WELL VOLUMES	1.36	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	1123	PURGE TIME END	1138	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-03	SAL-SAM-01		
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)
1126	0.60	0.60	0.20	6.35	5.0	26.4	239.8	1.08	MAX	BROWN	NONE
1129	0.60	1.20			5.0	26.3	238.6	0.72	MAX		
1132	0.60	1.80			5.1	26.2	235.7	0.65	MAX		
1135	0.60	2.40			5.1	26.2	232.9	0.54	824		
1138	0.60	3.00			5.1	26.2	231.4	0.56	516		

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	1139	SAMPLING ENDED	1140	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, 80°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-L8		16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.61	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.169	1/4 WELL VOLUME		3 WELL VOLUMES	0.508	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	1142	PURGE TIME END	1157	TOTAL PURGED	1.50
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1145	0.30	0.30	0.10	5.82	6.4	27.6	395.8	2.08	MAX	BROWN	NONE
1148	0.30	0.60	/	/	6.3	27.6	390.2	1.70	712	/	/
1151	0.30	0.90	/	/	6.2	27.6	378.8	1.80	686	/	/
1154	0.30	1.20	/	/	6.2	27.6	367.2	1.84	694	/	/
1157	0.30	1.50	/	/	6.2	27.6	362.7	1.82	496	/	/

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	1158	SAMPLING ENDED	1159	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, 82°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-L8		17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.80	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)

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

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

ONE WELL VOLUME	0.459	1/4 WELL VOLUME		3 WELL VOLUMES	1.37	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	1201	PURGE TIME END	1216	TOTAL PURGED	3.00
INST. ID	X	X	X	X	SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01

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)
1204	0.60	0.60	0.20	5.96	5.5	26.6	252.9	0.72	MAX	BROWN	NONE
1207	0.60	1.20			5.5	26.5	250.8	0.59	MAX		
1210	0.60	1.80			5.4	26.5	239.6	0.68	MAX		
1213	0.60	2.40			5.3	26.5	234.5	0.66	812		
1216	0.60	3.00			5.3	26.4	230.7	0.67	749		

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	1218	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, 82°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-TU14		18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.08	PURGE PUMP CODE (PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.19	1/4 WELL VOLUME		3 WELL VOLUMES	0.572	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	1335	PURGE TIME END	1350	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1338	0.30	0.30	0.10	5.40	4.7	27.8	168.4	1.09	MAX	BROWN	NONE
1341	0.30	0.60			4.7	27.6	161.9	0.80	MAX		
1344	0.30	0.90			4.7	27.6	159.4	0.65	MAX		
1347	0.30	1.20			4.7	27.6	159.5	0.65	MAX		
1350	0.30	1.50			4.7	27.6	159.4	0.67	MAX		

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	1351	SAMPLING ENDED	1352	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, 85°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-TU14		19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.08	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	0.451	1/4 WELL VOLUME		3 WELL VOLUMES	1.35	5 WELL VOLUMES	

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

PUMP VOLUME		TUBING LEGNTH		FLOW CELL VOLUME		EQUIPMENT VOLUME	

INITIAL TUBING LEGNTH IN WELL (FEET)		FINAL TUBING LEGNTH IN WELL (FEET)		PURGE TIME START	1354	PURGE TIME END	1409	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	0.60	0.60	0.20	6.04	5.1	26.6	226.7	0.40	MAX	BROWN	NONE
1400	0.60	1.20			5.2	26.6	226.3	0.38	MAX		
1403	0.60	1.80			5.2	26.6	226.4	0.36	MAX		
1406	0.60	2.40			5.2	26.6	226.6	0.35	694		
1409	0.60	3.00			5.2	26.5	226.5	0.34	514		

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	1410	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							
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-09-TU16		20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.42	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.177	1/4 WELL VOLUME		3 WELL VOLUMES	0.531	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	1257	PURGE TIME END	1312	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1300	0.30	0.30	0.10	5.70	5.0	27.5	263.8	1.74	MAX	BROWN	NONE
1303	0.30	0.60			5.0	27.5	269.2	0.98	MAX		
1306	0.30	0.90			5.0	27.5	269.5	0.90	MAX		
1309	0.30	1.20			5.0	27.5	270.8	0.91	MAX		
1312	0.30	1.50			5.0	27.5	270.9	0.85	MAX		

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	1314	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, 84°						
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	082212	SAL Project #	1209016	Project Name	S&GW Test Facility SE #2
Well Number	TA4-PZ-16-TU16		21	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	5.50	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	17.28	REFERENCE ELEVATION (NGVD)		GROUND WATER ELEVATION (REFERENCE-STATIC)			TUBING DIAMETER (Inches)		TUBING CAPACITY (gal/ft)	

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

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

ONE WELL VOLUME	0.471	1/4 WELL VOLUME		3 WELL VOLUMES	1.41	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	1316	PURGE TIME END	1331	TOTAL PURGED	3.00

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1319	0.60	0.60	0.20	5.88	5.1	26.3	235.8	0.48	MAX	BROWN	NONE
1322	0.60	1.20			5.1	26.3	236.0	0.39	MAX		
1325	0.60	1.80			5.1	26.3	236.4	0.35	730		
1328	0.60	2.40			5.1	26.3	236.6	0.33	524		
1331	0.60	3.00			5.1	26.3	236.9	0.31	488		

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	1332	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, 85°						
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

SAL Project No. 1209017

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, Nox, NH4, COD, TP	1LP, Cool Cl, Alkalinity, CBOD, TSS	1LP, NaOH, Zn Acetate H_2S	125mL P, $Na_2S_2O_3$ FC-MF							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	TA5-PZ-I	082312	0843	GW		X	1	1	1	2							1.11	4.7	311.7	26.7	

Containers Prepared/ Relinquished: BBowling	Date/Time: 1835 8/18/12	Received:	Date/Time: 1835 081812
Relinquished:	Date/Time: 1300 082312	Received: HHam	Date/Time: 1300 08.23.12
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_____	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

1209017

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Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

GROUNDWATER SAMPLING LOG

Client Name:	Hazen and Sawyer	Location:		Contact:	
				Phone:	
Date Sampled	082312	SAL Project #	1209017	Project Name	S&GW Test Facility SE #5
Well Number	TA5-PZ-I		01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	7.63	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	14.76	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	0.285	1/4 WELL VOLUME		3 WELL VOLUMES	0.855	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	0832	PURGE TIME END	0842	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0835	0.30	0.30	0.10	8.09	4.8	26.6	312.5	0.96	14.2	CLEAR	NONE
0838	0.30	0.60	|	|	4.7	26.7	311.8	1.19	15.2	|	|
0842	0.30	0.90	|	|	4.7	26.7	311.7	1.11	11.7	|	|

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	0843	SAMPLING ENDED	0844	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, 77°						
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

SAL Project No. 1209020

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4	1LP, Cool Cl	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity							DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
01	PZ01-BKG-09	082412	1148	GW		X	1	1									4.32	4.9	48.3	28.5	
02	LY01-BKG-24	8/22/12	8:30	GW		X	1	1									6.6	6.3	236	26.3	2
03	LY02-BKG-42	8/22/12	8:40	GW		X	1	~~1~~									6.6	6.5	532	26.4	1
04	PZ04-BKG-09	082412	0830	GW		X	1	1									4.5	5.1	167	27.6	
05	PZ04-BKG-09 DUP		0835	GW		X	1	1									4.5	5.1	167	27.6	
06	PZ24-BKG-26		0930	GW		X			1	1							1.9	5.0	294	25.8	
07	PZ24-BKG-26 DUP		0935	GW		X			1	1							1.9	5.0	294	25.8	
08	PZ-29-BKG09	082312	1135	GW		X			1	1							1.6	5.5	211	29.8	
09	PZ30-BKG-16		1245	GW		X			1	1							1.5	5.3	305	28.0	
10	PZ31-BKG-26		1330	GW		X			1	1							1.2	5.0	316	26.7	
11	PZ31-BKG-26 DUP		1335	GW		X			1	1							1.2	5.0	316	26.7	
12	PZ32-BKG09		1415	GW		X			1	1							2.2	4.4	249	28.6	

Containers Prepared/ Relinquished: JBowling	Date/Time: 1630 8/18/12	Received:	Date/Time: 1630 081812
Relinquished:	Date/Time: 1330 082412	Received:	Date/Time: 1330 08-24-12
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_____	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

1209020

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Rev.Date 11/19/01

Chain of Custody

SOUTHERN ANALYTICAL LABORATORIES, INC.

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

SAL Project No. 1209020

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: S&GW Test Facility SE#2

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

	Sample Description	Date	Time	Matrix	Composite	Grab	250mL P, H_2SO_4 TKN, NOx, NH_4, COD, TP	1LP, Cool Cl, Alkalinity	250mL P, H_2SO_4 TKN, NOx, NH_4								DO	pH	Conductivity	Temperature	No. of Containers (Total per each location)
13	PZ33-BKG-16	082312	1500	GW		X	1	1									0.95	4.9	276	27.4	
14	PZ34-BKG-26			GW		X	1	1									1.80	5.2	318	26.4	
15	PZ35-BKG09	082412	0952	GW		X		1	1								1.63	6.6	564	26.8	
16	PZ36-BKG-16		1006	GW		X		1	1								0.36	5.3	251.1	26.1	
17	PZ37-BKG-26		1028	GW		X	1	1									0.36	5.0	302.5	25.4	
18	PZ38-BKG09		1049	GW		X		1	1								0.45	6.1	246.0	26.6	
19	PZ39-BKG-16		1104	GW		X		1	1								0.40	6.0	276.8	25.9	
20	PZ40-BKG-26		1126	GW		X		1	1								0.32	5.2	296.4	25.0	

Containers Prepared/ Relinquished: J Bowling	Date/Time: 1830 8/18/12	Received:	Date/Time: 1830 081812
Relinquished:	Date/Time: 1330 082412	Received:	Date/Time: 1830 08.24-12
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_____	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

1209020

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	08 24 12	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ01-BKG-09		01	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.25	WELL CAPACITY (gal/ft)	0.06	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	4.80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.20	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	0.264	1/4 WELL VOLUME		3 WELL VOLUMES	0.792	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	1138	PURGE TIME END	1147	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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1141	0.30	0.30	0.10	5.25	5.0	28.5	48.4	4.31	8.91	CLEAR	NONE
1144	0.30	0.60	/	/	4.9	28.4	48.4	4.34	3.13	/	/
1147	0.30	0.90	/	/	4.9	28.5	48.3	4.32	2.85	/	/

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	1148	SAMPLING ENDED	1149	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, 88°						
COMMENTS	Organic material in well, (Roots)						

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	08/24/12	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ35-BKG09		15	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	3.91	PURGE PUMP CODE	PP GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.237	1/4 WELL VOLUME		3 WELL VOLUMES	0.712	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	0951	TOTAL PURGED	1.50

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-06		
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)
0939	0.30	0.30	0.10	4.90	6.5	26.8	801	0.86	MAX	BROWN	NONE
0942	0.30	0.60			6.5	26.8	792	0.70	MAX		
0945	0.30	0.90			6.5	26.8	729	1.09	MAX		
0948	0.30	1.20			6.6	26.8	671	1.49	986		
0952	0.30	1.50			6.6	26.8	564	1.63	509		

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	0952	SAMPLING ENDED	0953	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, 80°						
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	082412	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ36-BKG-16		16	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	6.62	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	19.78	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	0.526	1/4 WELL VOLUME		3 WELL VOLUMES	1.57	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	0956	PURGE TIME END	1005	TOTAL PURGED	1.80

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
0959	0.60	0.60	0.20	7.14	5.5	26.1	254.8	0.72	73.4	CLOUDY	NONE
1002	0.60	~~0~~ SS 1.20	/	/	5.5	26.1	252.6	0.47	72.0	/	/
1005	0.60	1.80	/	/	5.3	26.1	251.1	0.36	70.7	/	/

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	1006	SAMPLING ENDED	1007	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, 80°				
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	082412	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ37-BKG-26		17	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	3.12	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	24.85	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	0.869	1/4 WELL VOLUME		3 WELL VOLUMES	2.60	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	1010	PURGE TIME END	1027	TOTAL PURGED	4.25

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1015	1.25	1.25	0.25	6.08	5.1	25.8	298.3	0.58	820	CLOUDY	NONE
1018	0.75	2.00			5.0	25.5	302.9	0.44	509		
1021	0.75	2.75			5.0	25.4	303.4	0.40	312		
1024	0.75	3.50			5.0	25.4	302.9	0.38	144		
1027	0.75	4.25			5.0	25.4	302.5	0.36	75.6		

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	1028	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, 82°						
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	082412	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ38-BKG-09		18	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK		Static Depth to Water (Feet)	2.89	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	9.85	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	0.278	1/4 WELL VOLUME		3 WELL VOLUMES	0.835	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	1039	PURGE TIME END	1048	TOTAL PURGED	0.90

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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)
1042	0.30	0.30	0.10	5.58	6.1	26.8	250.8	0.62	85.8	CLOUDY	NONE
1045	0.30	0.60	|	|	6.1	26.7	248.7	0.49	84.6	|	|
1048	0.30	0.90	|	|	6.1	26.6	246.0	0.45	82.2	|	|

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	1049	SAMPLING ENDED	1050	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, 82°				
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	082412	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ39-BKG-16		19	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	5.80	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	19.80	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	0.56	1/4 WELL VOLUME		3 WELL VOLUMES	1.68	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	1.80

INST. ID					SAL-SAM-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
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	0.60	0.60	0.20	6.08	6.0	26.1	230.8	0.62	14.8	CLEAR	NONE
1100	0.60	1.20	/	/	6.0	25.9	234.9	0.51	13.6	/	/
1103	0.60	1.80	/	/	6.0	25.9	236.8	0.40	12.5	/	/

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	1104	SAMPLING ENDED	1105	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, 84°						
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	082402	SAL Project #	1209020	Project Name	S&GW Test Facility SE #2
Well Number	PZ40-BKG26		20	GPS LAT	
				GPS LONG	

PURGING DATA

WELL DIAMETER (Inches)	SC ~~1.0~~ 1.0	WELL CAPACITY (gal/ft)	0.04	Screen Interval (Feet)	UNK To UNK	Static Depth to Water (Feet)	2.25	PURGE PUMP CODE	(PP) GP IBP
TOTAL WELL DEPTH (Feet)	24.78	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	0.901	1/4 WELL VOLUME		3 WELL VOLUMES	2.703	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	1109	PURGE TIME END	1125	TOTAL PURGED	4.00

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-63-01	SAL-SAM-65-01	SAL-SAM-63-01	SAL-SAM-55-02	SAL-SAM-01		
1113	1.00	1.00	0.25	4.56	5.3	25.1	291.9	0.48	343	CLOUDY	NONE
1116	0.75	1.75			5.3	25.1	293.0	0.45	209		
1119	0.75	2.50			5.3	25.0	294.7	0.38	151		
1122	0.75	3.25			5.2	25.0	296.1	0.34	45.7		
1125	0.75	4.00			5.2	25.0	296.4	0.32	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	1126	SAMPLING ENDED	1127	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, 85°						
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

Appendix F: Field Parameter Analyses

Table F.1
S&GW Test Facility Field Parameter Results
(August 20 through August 27, 2012)

Sample ID	Sample Date/Time	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)
Effluent samples					
PNRS II STE - Tank 1	8/23/12 9:55	28.2	7.0	1,052	0.3
STE Pump Tank	8/23/12 10:55	28.5	7.6	1,077	0.2
STE Pump Tank - DUP	8/23/12 11:00	28.5	7.6	1,077	0.2
NO3 Clarifier	8/23/12 10:45	27.8	7.7	870	0.2
NO3 Pump Tank	8/23/12 10:30	27.7	7.7	892	0.3
NO3 Pump Tank - DUP	8/23/12 10:35	27.7	7.7	892	0.3
Soil moisture samples					
TA1-LY-12-S	8/20/12 9:00	28.7	6.9	661	6.7
TA1-LY-24-C	8/20/12 8:40	28.0	6.4	839	6.5
TA1-LY-24-S	8/20/12 9:15	28.9	6.4	868	6.1
TA1-LY-42-S	8/20/12 9:25	29.1	5.7	893	5.9
TA2-LY-12-S	8/20/12 11:20	30.0	6.8	905	6.5
TA2-LY-24-C	8/20/12 11:10	30.7	6.1	868	5.5
TA2-LY-24-S	8/20/12 11:30	32.3	6.2	936	4.6
TA2-LY-42-S	8/20/12 11:40	31.3	5.7	839	5.9
TA3-LY-12-S	8/20/12 10:00	28.9	7.1	626	7.0
TA3-LY-12-S DUP	8/20/12 10:05	28.9	7.1	626	7.0
TA3-LY-24-C	8/20/12 9:50	29.1	5.7	893	5.9
TA3-LY-24-S	8/20/12 10:15	29.4	6.3	549	6.2
TA3-LY-42-S	8/20/12 10:30	30.1	3.4	744	7.4
TA4-LY-12-S	8/20/12 12:10	35.2	6.4	267	6.4
TA4-LY-12-S DUP	8/20/12 12:15	35.2	6.4	267	6.4
TA4-LY-24-C	8/20/12 12:00	32.3	6.6	744	4.6
TA4-LY-24-S	8/20/12 12:40	33.5	6.5	724	5.5
TA4-LY-42-S	8/20/12 12:50	30.7	6.4	808	5.5
LY01-BKG-24	8/22/12 8:30	26.3	6.3	236	6.6
LY02-BKG-42	8/22/12 8:40	26.4	6.5	532	6.6

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Table F.1
S&GW Test Facility Field Parameter Results
(August 20 through August 27, 2012)

Sample ID	Sample Date/Time	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)
TA1-PAN-12-N	8/24/12 11:35	29.0	6.2	686	NR
TA2-PAN-12-N	8/24/12 11:15	32.9	6.8	430	5.5
TA3-PAN-12-N	8/24/12 11:25	29.1	5.9	324	4.0
TA4-PAN-12-N	8/24/12 10:25	27.7	6.5	331	4.0
Groundwater samples					
TA1-PZ-09-I7	8/20/12 8:56	27.0	5.5	264	0.8
TA1-PZ-09-M9	8/20/12 9:38	27.1	5.4	233	0.8
TA1-PZ-09-N3	8/20/12 11:13	28.2	6.5	635	1.1
TA1-PZ-09-O7	8/20/12 10:22	27.6	5.4	344	0.7
TA1-PZ-09-RS16	8/21/12 7:36	25.8	5.7	304	0.5
TA1-PZ-09-RS18	8/21/12 8:14	26.6	5.5	363	0.3
TA1-PZ-11-EF2	8/20/12 8:15	27.0	4.2	324	0.8
TA1-PZ-11-EF2 DUP	8/20/12 8:20	27.0	4.2	324	0.8
TA1-PZ-11-J4	8/20/12 12:25	27.9	4.5	236	0.4
TA1-PZ-11-K4	8/20/12 12:41	27.4	4.3	244	0.4
TA1-PZ-11-L2	8/20/12 11:48	27.7	4.2	782	0.5
TA1-PZ-11-L3	8/20/12 12:07	27.7	4.5	332	0.5
TA1-PZ-11-L4	8/23/12 10:40	NR	4.5	255	2.3
TA1-PZ-11-L4 DUP	8/23/12 10:45	NR	4.5	255	2.3
TA1-PZ-11-L5	8/20/12 12:58	27.5	4.4	275	0.3
TA1-PZ-16-I7	8/20/12 9:11	26.4	5.0	291	0.9
TA1-PZ-16-M9	8/20/12 9:54	26.4	4.9	298	0.8
TA1-PZ-16-N3	8/20/12 11:30	26.4	5.0	280	0.5
TA1-PZ-16-O7	8/20/12 10:43	26.5	5.0	302	0.2
TA1-PZ-16-RS16	8/21/12 7:56	25.6	5.1	296	0.4
TA1-PZ-16-RS18	8/21/12 8:32	26.0	5.4	275	0.3
TA2-PZ-09-I7	8/21/12 12:04	27.7	5.2	274	0.3
TA2-PZ-09-L8	8/21/12 12:42	27.7	5.9	419	0.6
TA2-PZ-09-M4	8/21/12 8:53	26.5	5.4	509	0.7
TA2-PZ-09-N7	8/21/12 13:20	27.7	5.4	253	0.3
TA2-PZ-09-TU19	8/22/12 7:27	26.8	4.2	186	1.1

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Table F.1
S&GW Test Facility Field Parameter Results
(August 20 through August 27, 2012)

Sample ID	Sample Date/Time	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)
TA2-PZ-09-TU21	8/22/12 8:09	26.8	4.4	170	0.4
TA2-PZ-10-H5	8/21/12 11:40	27.3	4.3	315	0.4
TA2-PZ-10-H5 DUP	8/21/12 11:45	27.3	4.3	315	0.4
TA2-PZ-10-J5	8/21/12 11:21	27.7	4.3	512	0.5
TA2-PZ-10-K5	8/21/12 11:02	27.6	4.3	523	0.4
TA2-PZ-10-L2	8/21/12 9:30	26.9	4.2	289	0.4
TA2-PZ-10-L3	8/21/12 9:43	26.9	4.2	283	0.4
TA2-PZ-10-L4	8/21/12 10:01	27.1	4.3	548	0.2
TA2-PZ-10-L5	8/21/12 10:19	27.4	4.2	504	0.8
TA2-PZ-10-L6	8/21/12 10:38	27.5	4.3	461	0.7
TA2-PZ-10-L6 DUP	8/21/12 10:43	27.5	4.3	461	0.7
TA2-PZ-16-I7	8/21/12 12:23	26.9	5.2	214	0.2
TA2-PZ-16-L8	8/21/12 13:01	27.3	5.6	223	0.2
TA2-PZ-16-M4	8/21/12 9:11	26.2	5.4	228	0.4
TA2-PZ-16-N7	8/21/12 13:33	26.7	5.4	211	0.6
TA2-PZ-16-TU19	8/22/12 7:46	25.7	5.2	206	0.5
TA2-PZ-16-TU21	8/22/12 8:23	25.9	5.0	192	0.6
TA3-PZ-09-I7	8/23/12 7:34	26.6	7.0	882	3.3
TA3-PZ-09-M9	8/23/12 16:28	27.4	6.4	456	1.0
TA3-PZ-09-N3	8/23/12 15:13	27.5	6.4	535	0.7
TA3-PZ-09-O7	8/24/12 7:36	26.7	6.6	488	0.9
TA3-PZ-09-ST14	8/24/12 8:19	26.9	4.6	218	0.5
TA3-PZ-09-ST16	8/24/12 8:52	27.1	5.7	313	1.5
TA3-PZ-10-J5	8/23/12 10:20	26.9	4.3	308	2.1
TA3-PZ-10-J5 DUP	8/23/12 10:25	26.9	4.3	308	2.1
TA3-PZ-10-K5	8/23/12 10:56	27.0	4.4	324	1.9
TA3-PZ-10-L5	8/23/12 9:57	27.1	4.5	346	1.5
TA3-PZ-11-EF2	8/23/12 8:48	27.4	4.9	269	5.0
TA3-PZ-11-I2	8/23/12 9:10	27.4	4.3	373	3.1
TA3-PZ-11-L2	8/23/12 15:46	27.7	4.5	360	1.1
TA3-PZ-11-L3	8/23/12 16:05	27.4	4.3	353	1.3

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Table F.1
S&GW Test Facility Field Parameter Results
(August 20 through August 27, 2012)

Sample ID	Sample Date/Time	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)
TA3-PZ-11-L4	8/23/12 9:36	27.2	4.4	356	2.3
TA3-PZ-16-I7	8/23/12 7:53	25.7	5.9	294	0.4
TA3-PZ-16-M9	8/23/12 16:47	26.4	5.4	286	0.3
TA3-PZ-16-N3	8/23/12 15:33	26.0	5.5	309	0.3
TA3-PZ-16-O7	8/24/12 7:55	25.8	5.3	291	0.5
TA3-PZ-16-ST14	8/24/12 8:32	25.9	5.1	273	0.4
TA3-PZ-16-ST16	8/24/12 9:16	25.9	5.2	262	0.4
TA4-PZ-09-I7	8/22/12 11:20	27.7	5.3	326	1.1
TA4-PZ-09-L8	8/22/12 11:58	27.6	6.2	363	1.8
TA4-PZ-09-M4	8/22/12 8:53	26.7	6.6	552	0.6
TA4-PZ-09-N7	8/22/12 12:35	27.4	5.6	317	1.3
TA4-PZ-09-TU14	8/22/12 13:51	27.6	4.7	159	0.7
TA4-PZ-09-TU16	8/22/12 13:13	27.5	5.0	271	0.8
TA4-PZ-10-H5	8/22/12 10:56	27.2	4.3	235	1.4
TA4-PZ-10-J5	8/22/12 10:44	27.2	4.3	382	2.1
TA4-PZ-10-K5	8/22/12 10:29	27.1	4.2	389	1.7
TA4-PZ-11-EF2	8/22/12 14:25	27.8	4.2	187	1.5
TA4-PZ-11-L2	8/23/12 16:15	29.1	4.7	282	2.3
TA4-PZ-11-L3	8/22/12 9:32	26.8	4.2	249	1.1
TA4-PZ-11-L4	8/22/12 9:46	26.8	4.2	339	1.6
TA4-PZ-11-L5	8/22/12 10:04	26.9	4.2	389	1.5
TA4-PZ-11-L6	8/22/12 10:16	27.1	4.3	368	1.7
TA4-PZ-16-I7	8/22/12 11:39	26.2	5.1	231	0.6
TA4-PZ-16-L8	8/22/12 12:17	26.4	5.3	231	0.7
TA4-PZ-16-M4	8/22/12 9:12	25.8	5.3	232	0.3
TA4-PZ-16-N7	8/22/12 12:54	26.2	5.2	252	0.4
TA4-PZ-16-TU14	8/22/12 14:10	26.5	5.2	226	0.3
TA4-PZ-16-TU16	8/22/12 13:32	26.3	5.1	237	0.3
PZ01-BKG-09	8/24/12 11:48	28.5	4.9	48	4.3
PZ04-BKG-09	8/24/12 8:30	27.6	5.1	167	4.5
PZ04-BKG-09 DUP	8/24/12 8:35	27.6	5.1	167	4.5

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Table F.1
S&GW Test Facility Field Parameter Results
(August 20 through August 27, 2012)

Sample ID	Sample Date/Time	Temp (°C)	pH	Specific Conductance (µS)	DO (mg/L)
PZ24-BKG-26	8/24/12 9:30	25.8	5.0	294	1.9
PZ24-BKG-26 DUP	8/24/12 9:35	25.8	5.0	294	1.9
PZ-29-BKG09	8/23/12 11:35	29.8	5.5	211	1.6
PZ-30-BKG-16	8/23/12 12:45	26.7	5.3	305	1.5
PZ-31-BKG-26	8/23/12 13:30	26.7	5.0	316	1.2
PZ-31-BKG-26 DUP	8/23/12 13:35	26.7	5.0	316	1.2
PZ32-BKG09	8/23/12 14:15	28.6	4.4	249	2.2
PZ33-BKG-16	8/23/12 15:00	27.4	4.9	276	1.0
PZ34-BKG-26	8/23/12 15:00	26.4	5.2	318	1.8
PZ35-BKG09	8/24/12 9:52	26.8	6.6	564	1.6
PZ36-BKG-16	8/24/12 10:06	26.1	5.3	251	0.4
PZ37-BKG-26	8/24/12 10:28	25.4	5.0	302	0.4
PZ38-BKG09	8/24/12 10:29	26.6	6.1	246	0.4
PZ39-BKG-16	8/24/12 11:04	25.9	6.0	237	0.4
PZ40-BKG-26	8/24/12 11:26	25.0	5.2	296	0.3
PNRS II samples					
TA5-Denite Tank	8/24/12 10:50	28.4	7.0	909	0.1
TA5-Denite Tank DUP	8/24/12 10:55	28.4	7.0	909	0.1
TA5-LINER-SP	8/24/12 11:45	33.2	6.6	786	3.3
TA5-LINER-SP	8/27/12 8:45	27.0	6.4	810	2.7
TA5-LY-C	8/20/12 13:30	35.3	6.4	653	5.9
TA5-PZ-I	8/23/12 8:43	26.7	4.7	312	1.1
TA6-Denite Tank	8/24/12 10:00	28.0	6.8	853	0.7
TA6-LINER-SP	8/27/12 8:30	27.0	6.4	719	3.0
TA6-LY-C	8/20/12 13:10	32.3	6.2	529	5.3
TA6-PZ-I	8/23/12 9:20	26.9	5.4	374	2.0
Blanks					
EB	8/20/12 7:30	24.5	6.8	2	3.7
FB-DI	8/20/12 7:35	24.5	6.8	2	3.7
FB-Tap	8/20/12 7:45	27.6	6.3	5	2.9

NR = no reading

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