# Florida Onsite Sewage Nitrogen Reduction Strategies Study

Task B.7

**B-HS4 Field System Monitoring Report No. 5**

**Progress Report**

June 2014

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In association with:

AET

Otis Environmental Consultants, LLC

# Florida Onsite Sewage Nitrogen Reduction Strategies Study

## TASK B.7
## PROGRESS REPORT

## B-HS4 Field System Monitoring Report No. 5

**Prepared for:**

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Bureau of Environmental Health
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**June 2014**

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# B-HS4 Field System Monitoring Report No. 5

## 1.0 Background

Task B of the Florida Onsite Sewage Nitrogen Reduction Strategies Study (FOSNRS) includes performing field experiments to critically evaluate the performance of nitrogen removal technologies that were identified in FOSNRS Task A.9 and pilot tested in Task A.26. To meet this objective, full scale treatment systems are being installed at various residential sites in Florida and monitored over an extended timeframe under actual onsite conditions. The Task B Quality Assurance Project Plan (Task B.5) documents the objectives, monitoring framework, sample frequency and duration, and analytical methods to be used at the home sites. This report documents the fifth sample event of the passive nitrogen reduction system at home site B-HS4 in Seminole County, Florida.

## 2.0 Purpose

Operation of the B-HS4 system was initiated on July 9, 2013. This monitoring report documents data collected from the fifth B-HS4 monitoring and sampling event conducted on May 29, 2014 (Experimental Day 324). This monitoring event consisted of conducting flow measurements from the household water use meter, recording electricity use, monitoring of field parameters, collection of water samples from nine points in the treatment system, and chemical analyses of water samples by a NELAC certified laboratory.

## 3.0 Materials and Methods

### 3.1 Project Site

The B-HS4 field site is located in Seminole County, FL. The nitrogen reducing onsite treatment system for the single family residence was installed in June 2013. Design and construction details were presented previously in the Task B.6 document. Figure 1 is a system schematic showing the system components and layout of the installation. A flow schematic of the system is shown in Figure 2. Prior to the installation of the nitrogen removal system, the property had two existing onsite sewage treatment and disposal systems. The pre-existing 1,200 gallon concrete septic tank, located on the west side of the property, continues to provide primary treatment, now as part of the

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PNRS system. The pre-existing 900 gallon septic tank, located on the northeast side of the property, was converted to a lift station. In the new configuration, it pumps the raw sewage from that system to the head end of the new gravity flow PNRS. All subsequent flow is by gravity. The passive nitrogen reduction system consists of an addition of two tanks and a new drainfield to the existing permitted systems. The B-HS4 tankage includes a 2,800 gallon concrete Stage 1 unsaturated media biofilter and 1,500 gallon two chamber concrete Stage 2 saturated media biofilter. Based on measured average wastewater flow and tank volumes, there is over a ten day transit time through the treatment system prior to dispersal. The treated effluent from the Stage 2 biofilter is discharged into the soil via the new drainfield (EQ36-LP™ chambers).

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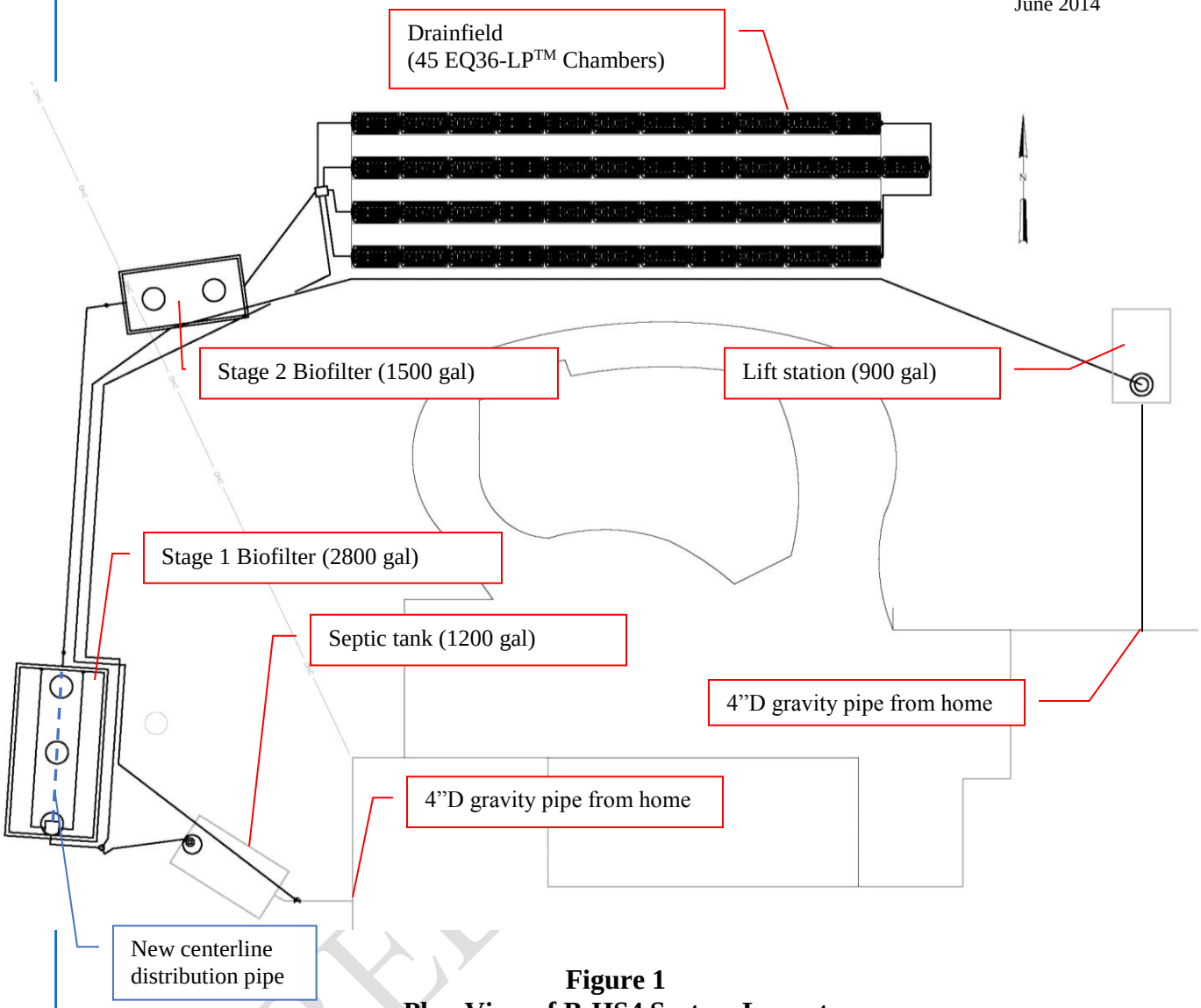


**Figure 1**
**Plan View of B-HS4 System Layout**

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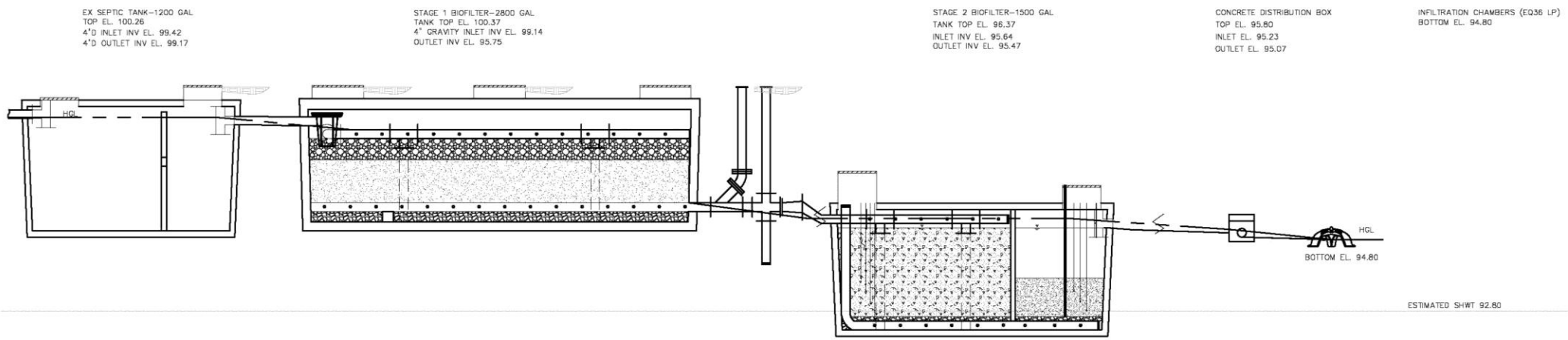


**Figure 2**
**Flow Schematic of B-HS4 PNRS**

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## 3.2 PNRS System Modification

As recommended in the fourth sample event report, continued investigation into possible reasons for the significantly reduced nitrification performance of the Stage 1 biofilter were performed. On April 25, 2014 (Experimental Day 290), the distribution box weirs inside the Stage 1 biofilter were adjusted to evenly split the influent flow, and the distribution pipes from the distribution box were leveled. In addition on April 29, 2014 (Experimental Day 294), a third distribution pipe along the centerline of the Stage 1 biofilter (see Figure 1) was installed to cover more of the Stage 1 biofilter surface area.

## 3.3 Monitoring and Sample Locations and Identification

The four primary monitoring points are shown in Figure 3. Household wastewater enters the primary tank and exits as septic tank effluent through an effluent filter screen into the Stage 1 biofilter. The first monitoring point, B-HS4-STE, is the effluent sampled approximately 1.5 feet below the surface of the primary tank before the effluent filter screen (Figure 4), which is referred to as primary effluent or septic tank effluent (STE). The lift station wastewater is pumped into the inlet side of the primary tank; therefore, samples from monitoring point B-HS4-STE are representative of the whole household wastewater and represent the influent to the remainder of the onsite nitrogen reduction system.

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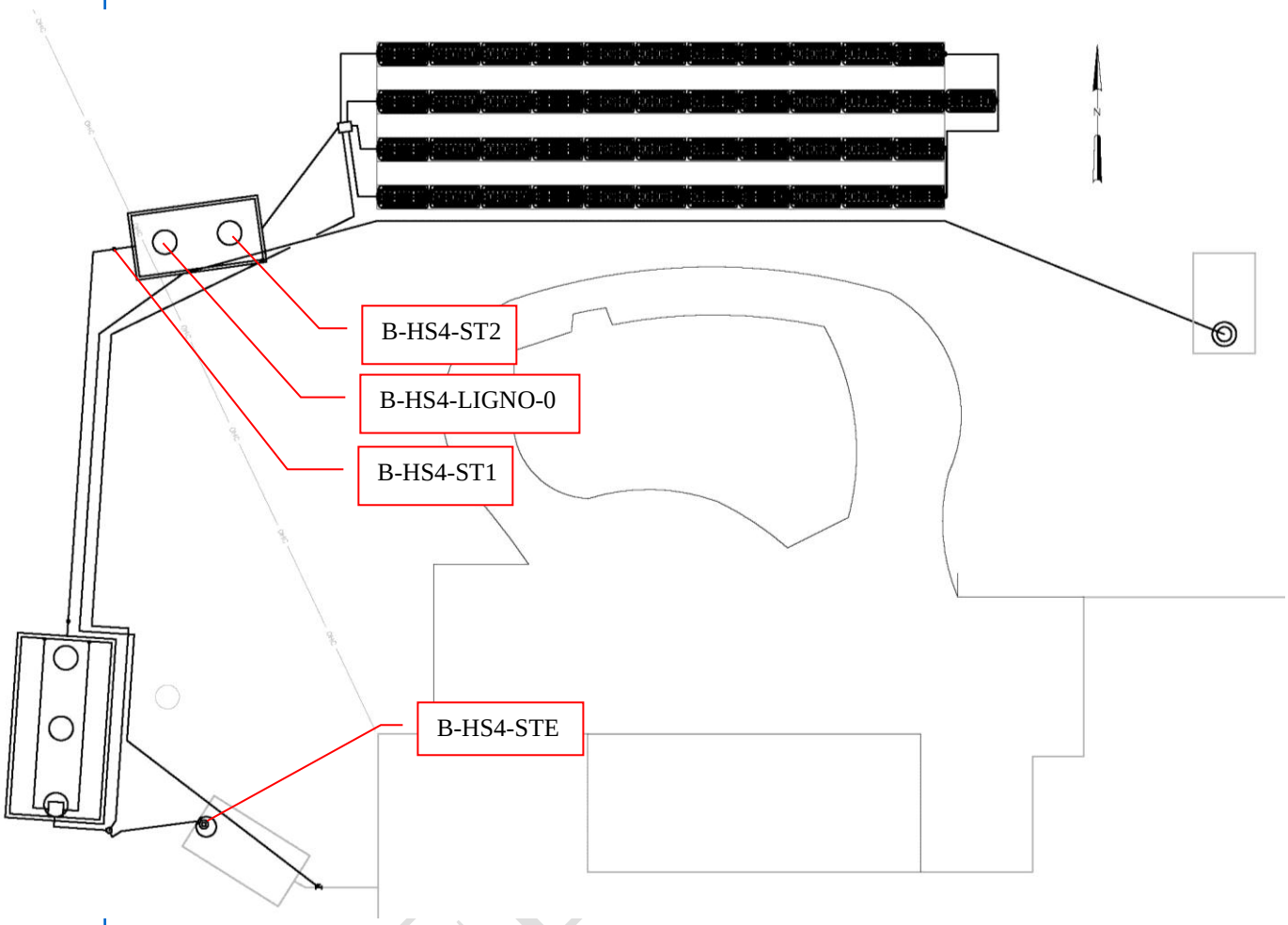


**Figure 3**
**B-HS4 Sample and Monitoring Locations**

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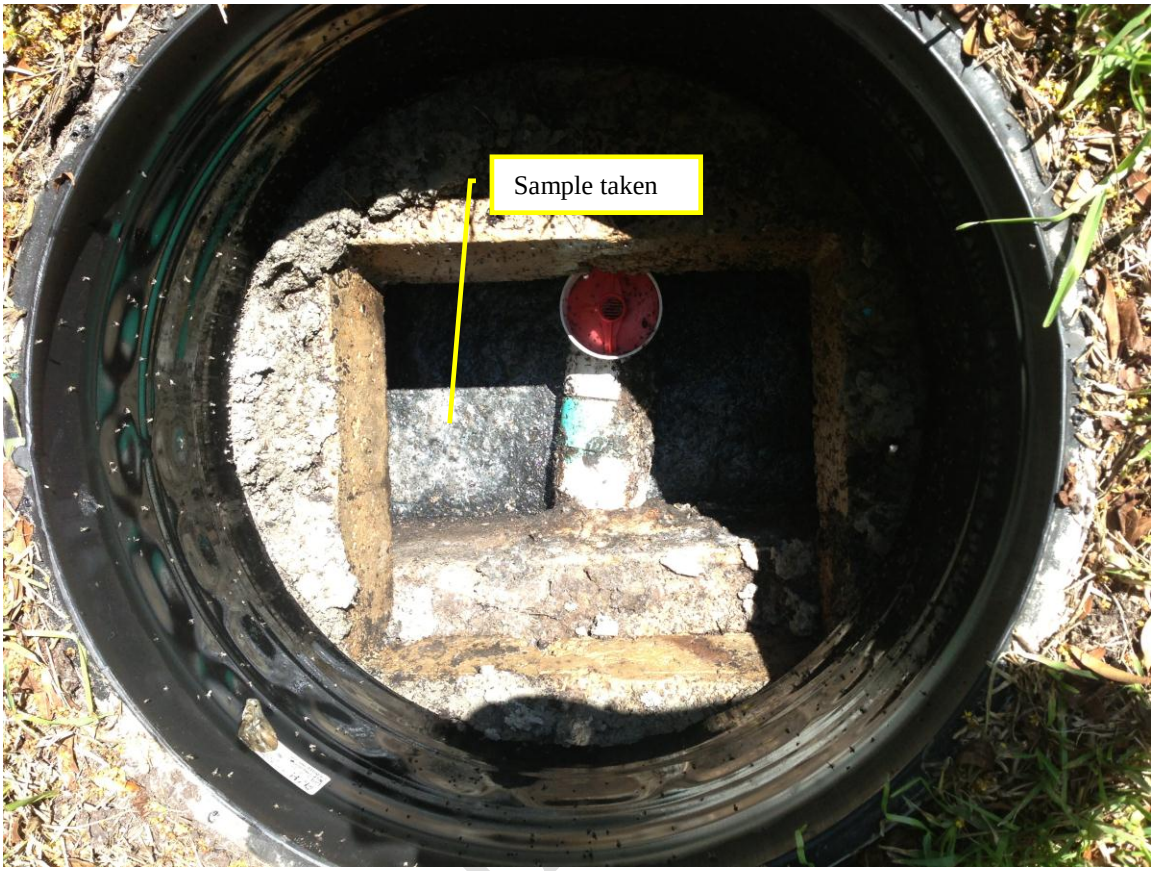


**Figure 4**
**Primary Tank (B-HS4-STE Sample)**

The primary tank contents are discharged by gravity to a distribution box, located inside the Stage 1 biofilter, which splits the flow between two perforated distribution pipes along the top of the unsaturated Stage 1 biofilter media. In the Stage 1 biofilter, wastewater percolates downward through 30-inches of unsaturated expanded clay media where nitrification occurs. Stage 1 biofilter effluent flows into the Stage 2 biofilter by gravity. The second sampling point (B-HS4-ST1) is taken from a sample port in the gravity pipe connecting the Stage 1 biofilter outlet to the Stage 2 biofilter inlet representing the Stage 1 biofilter effluent.

Effluent from the unsaturated (Stage 1) media tank enters the saturated denitrification (Stage 2) biofilter above the media in the first chamber (lignocellulosic media), flows downward through the media, moves laterally in a perforated 4-inch pipe through the

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baffle wall to the bottom of the second chamber, and upward through the media in the second chamber (elemental sulfur and oyster shell).

The first chamber of the Stage 2 biofilter contains 42-inches of lignocellulosic media. Stainless steel samplers are positioned at 12-inch increments for vertical profiling throughout the lignocellulosic media. The third primary sampling point is a stainless steel sampler positioned at the bottom of the lignocellulosic media (B-HS4-LIGNO-0) with tubing to the surface. Twelve inches above B-HS4-LIGNO-0 is another stainless steel drivepoint sampler B-HS4-LIGNO-12, and so forth (B-HS4-LIGNO-24 and B-HS4-LIGNO-36). The B-HS4-LIGNO-0 sample represents the lignocellulosic media effluent (Figure 5).

**Figure 5**
**First Chamber of Stage 2 Biofilter (B-HS4-LIGNO-0 Sample)**

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A collection pipe along the bottom transfers the first chamber (lignocellulosic media) effluent to the second chamber, which contains 18-inches of elemental sulfur mixed with oyster shell media. Similar to the lignocellulosic media chamber, stainless steel drive-point samplers are positioned to create a vertical profile. B-HS4-SULFUR-6 and B-HS4-SULFUR-12 are positioned 6-inches and 12-inches, respectively, above the bottom of the sulfur media. The fourth primary sampling point, B-HS4-ST2, is the second chamber of the Stage 2 biofilter effluent which is sampled approximately 1 foot below the surface of the effluent baffle tee. This sample location is after passage through the sulfur media; it is the final effluent from the treatment system prior to being discharged to the soil infiltration system, or drainfield (Figure 6).

**Figure 6**
**Second Chamber of Stage 2 Biofilter (B-HS4-ST2 Sample)**

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## 3.4 Operational Monitoring

Start-up of the system occurred on July 9, 2013 (Experimental Day 0). Preliminary sampling for several key parameters was conducted July 29, 2013 (Experimental Day 20) to evaluate start-up performance. It was noted during sampling that the incoming lift station wastewater flow into the primary tank was causing mixing in the primary tank and the carryover of solids into the Stage 1 biofilter d-box. Therefore, the PNRS system was bypassed on August 15, 2013. On September 5, 2013 a smaller (less horsepower) pump was installed in the lift station with a mechanical float switch to cause the lift station to dose less volume but more frequent doses to the primary tank which resulted in less mixing within the primary tank. The PNRS system has operated continually since that date. For the fifth formal sampling event, Sample Event No. 5, the water meter for the house was read and recorded on May 29, 2014. The household water meter is located on the potable water line from the onsite well prior to entering the household plumbing. The water meter does not include the irrigation water use. Therefore, the water meter reading should be indicative of the wastewater flow to the system.

## 3.5 Energy Consumption

Energy consumption was monitored using an electrical meter installed between the main power box for the house and the control panel. The electrical meter records the cumulative power usage of the system in kilowatt-hours. The power usage of the system is primarily due to the single lift station pump installed within the second chamber of the lift station. There are no chemicals added to the system. However, the Stage 2 biofilter media (lignocellulosic and sulfur) are “reactive” media which will be consumed during operation. The Stage 2 biofilter was initially filled with 42 inches of lignocellulosic media and 18 inches of sulfur and oyster shell mixture media, which ostensibly will last for many years without replenishment or replacement.

## 3.6 Water Quality Sample Collection and Analyses

The fifth formal sample event was conducted on May 29, 2014. A full suite of samples were collected for water quality analysis, including influent, intermediate and effluent points. Samples were collected at each of the nine monitoring points described in Section 3.3: B-HS4-STE, B-HS4-ST1, B-HS4-LIGNO-36, B-HS4-LIGNO-24, B-HS4-LIGNO-12, B-HS4-LIGNO-0, and B-HS4-SULFUR-6, B-HS4-SULFUR-12, B-HS4-ST2. A peristaltic pump was used to collect samples and route them directly into analysis-specific containers after sufficient flushing of the tubing had occurred. Field parameters were then recorded.

Immediately subsequent to the regular samples for each primary monitoring point, additional sample was collected to be filtered at the laboratory (0.45 micron filter) for analysis

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of $CBOD_5$ and the nitrogen species to allow for comparison to the unfiltered sample water quality results.

Lastly, field blank (FB) and field duplicate samples were taken. The field blank was collected by filling sample containers with deionized water that had been transported into the field along with other sample containers. The field sample duplicate (B-HS4-ST1) was collected immediately subsequent to the regular samples. These samples were then analyzed for the same parameters as the monitoring samples.

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 laboratories. Each sample container was secured in packing material as appropriate to prevent damage and spills, and was recorded on chain-of-custody forms supplied by the laboratory. Chain of custody forms, provided in Appendix A, were used to document the transfer of samples from field personnel to the analytical laboratory.

Field parameters were measured using portable electronic probes and included temperature (Temp), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, and specific conductance. The field parameters were measured by placing the analytical probes in a container overflowing with sample water. The influent, intermediate, and effluent samples were analyzed by the laboratory for: total alkalinity, chemical oxygen demand (COD), total Kjeldahl nitrogen (TKN-N), ammonia nitrogen ($NH_3$-N), nitrate nitrogen ($NO_3$-N), nitrite nitrogen ($NO_2$-N), total phosphorus (TP), orthophosphate (Ortho P), total suspended solids (TSS), volatile suspended solids (VSS), total organic carbon (TOC), fecal coliform (fecal), and E.coli. The influent and sulfur media samples included sulfate, sulfide, and hydrogen sulfide (unionized). All analyses were performed by an independent and fully NELAC certified analytical laboratory (Southern Analytical Laboratory). Table 1 lists the analytical parameters, analytical methods, and detection limits for laboratory analyses.

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**Table 1**
**Analytical Parameters, Method of Analysis, and Detection Limits**

| Analytical Parameter | Method of Analysis | Method 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 Nitrogen ($NO_3$-N) | EPA 300.0 | 0.01 mg/L |
| Nitrite Nitrogen ($NO_2$-N) | EPA 300.0 | 0.01 mg/L |
| Nitrate+Nitrite Nitrogen (NOX-N) | EPA 300.0 | 0.02 mg/L |
| Total Phosphorus (TP) | SM 4500P-E | 0.01 mg/L |
| Orthophosphate as P (Ortho P) | EPA 300.0 | 0.01 mg/L |
| Carbonaceous Biological Oxygen Demand ($CBOD_5$) | SM5210B | 2 mg/L |
| Total Solids (TS) | EPA 160.3 | .01 % by wt |
| Total Suspended Solids (TSS) | SM 2540D | 1 mg/L |
| Volatile Suspended Solids (VSS) | EPA 160.4 | 1 mg/L |
| Total Organic Carbon (TOC) | SM5310B | 0.06 mg/L |
| Sulfate | EPA 300.0 | 2.0 mg/L |
| Sulfide | SM 4500SF | 0.10 mg/L |
| Hydrogen Sulfide (unionized) | SM 4550SF | 0.01 mg/L |
| Fecal Coliform (fecal) | SM9222D | 1 ct/100mL |
| E.coli | SM9223B | 2 ct/100mL |

## 4.0 Results and Discussion

### 4.1 Operational Monitoring

Table 2 provides a summary of the household water use since the water meter installation on February 8, 2013. The operation and maintenance log which includes actions taken since start-up is provided in Appendix B.

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**Table 2**
**Summary of Household Water Use**

| Date and Time Read | Cumulative Volume (gallons) | Average Daily Household Flow between readings, Q (gpd) |
|---|---|---|
| 2/8/2013 13:45 | 0.0 | INSTALLED |
| 2/21/2013 11:25 | 4,391.0 | 340.3 |
| 2/28/2013 12:00 | 6,292.5 | 270.7 |
| 6/7/2013 8:00 | 34,417.4 | 284.6 |
| 6/14/2013 8:00 | 36,179.5 | 251.7 |
| 6/20/2013 12:40 | 37,981.2 | 290.9 |
| 7/17/2013 14:30 | 45,422.8 | 274.8 |
| 7/23/2013 13:32 | 47,051.9 | 273.4 |
| 7/29/2013 11:25 | 48,658.8 | 271.8 |
| 8/6/2013 12:15 | 50,922.9 | 281.8 |
| 8/12/2013 10:24 | 52,614.2 | 285.6 |
| 8/15/2013 8:20 | 53,328.4 | 245.1 |
| 8/27/2013 10:20 | 56,550.0 | 266.6 |
| 9/5/2013 9:59 | 58,748.1 | 244.6 |
| 9/30/2013 13:15 | 65,633.7 | 273.9 |
| 11/8/2013 11:00 | 76,559.6 | 280.8 |
| 11/27/2013 11:15 | 82,039.9 | 288.3 |
| 12/2/2013 13:30 | 83,048.8 | 198.1 |
| 12/23/2013 13:00 | 88,271.2 | 248.9 |
| 1/23/2014 10:30 | 98,116.0 | 318.6 |
| 1/31/2014 10:48 | 100,521.0 | 300.2 |
| 2/3/2014 11:20 | 101,475.3 | 315.8 |
| 2/4/2014 10:05 | 101,844.6 | 389.6 |
| 2/5/2014 8:05 | 102,095.7 | 273.9 |
| 2/6/2014 9:25 | 102,275.2 | 170.1 |
| 2/7/2014 9:11 | 102,557.9 | 285.5 |
| 2/12/2014 11:30 | 103,986.0 | 280.2 |
| 3/14/2014 9:00 | 112,449.7 | 283.1 |
| 4/3/2014 12:00 | 118,146.5 | 283.1 |
| 4/25/2014 8:50 | 124,728.7 | 301.0 |
| 4/29/2014 11:15 | 125,962.6 | 300.9 |
| 5/29/2014 11:20 | 136,114.3 | 338.4 |
| Total average through 5/29/14 | | 286.6 |

From start-up through May 29, 2014, the household water use average was 287 gallons per day with periods of higher and lower flows (Table 2).

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## 4.2 Energy Consumption

Energy consumption is monitored using an electrical meter installed between the main power box for the house and the lift station pump outlet to record cumulative power usage of the pump in kilowatt-hours. The recorded electrical use for the system is summarized in Table 3.

**Table 3**
**Summary of System Electrical Use**

| Date and Time Read | Electrical Meter Reading | Average Daily Electrical Use between readings |
|---|---|---|
| | Cumulative (kWh) | (kWh/day) |
| 6/20/2013 14:00 | | Installed |
| 7/9/2013 15:45 | 0.3 | Start Up |
| 7/17/2013 10:41 | 0.5 | 0.026 |
| 7/23/2013 13:34 | 0.6 | 0.016 |
| 7/29/2013 11:30 | 0.8 | 0.034 |
| 8/6/2013 11:42 | 0.9 | 0.012 |
| 8/12/2013 10:24 | 1.2 | 0.050 |
| 8/15/2013 8:20 | 1.3 | 0.034 |
| 8/27/2013 10:20 | 1.8 | 0.041 |
| 9/5/2013 9:59 | 2.2 | 0.045 |
| 9/30/2013 13:15 | 5.8 | 0.143 |
| 11/8/2013 11:00 | 12.3 | 0.167 |
| 11/27/2013 11:15 | 14.1 | 0.095 |
| 12/2/2013 12:55 | 14.5 | 0.079 |
| 12/23/2013 13:00 | 17.3 | 0.133 |
| 1/23/2014 10:30 | 21.1 | 0.123 |
| 1/31/2014 10:48 | 22.2 | 0.137 |
| 2/3/2014 11:20 | 22.7 | 0.165 |
| 2/4/2014 10:05 | 22.9 | 0.211 |
| 2/5/2014 8:05 | 23.0 | 0.109 |
| 2/6/2014 9:25 | 23.1 | 0.095 |
| 2/7/2014 9:11 | 23.1 | 0.000 |
| 2/12/2014 11:30 | 23.9 | 0.157 |
| 3/14/2014 9:00 | 29.7 | 0.194 |
| 4/3/2014 12:00 | 62.2 | 1.615 |
| 4/25/2014 8:50 | 66.8 | 0.210 |
| 4/29/2014 11:15 | 68.4 | 0.239 |
| 5/29/2014 11:20 | 73.7 | 0.202 |
| Total average through 5/29/14 | | 0.227 |

The total average electrical use through May 29, 2014 was 0.227 kWh per day. The cause for the increase in electrical use between the March 14th and April 3rd readings is

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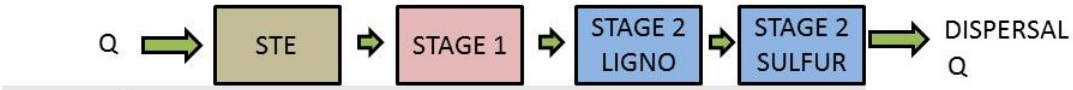
attributed to a clog in the lift station throttling valve (ball valve). The clog was causing the pump to run longer with a very slow flow rate.

## 4.3 Water Quality

Water quality analytical results, for Sample Event No. 5 are listed in Table 4 and nitrogen results are graphically displayed in Figure 7. A summary of the water quality data collected to date for the test system is presented in Table 5. The laboratory report containing the raw analytical data is included in Appendix A. The following discussion summarizes the water quality analytical results. The performance of the various system components was compared by considering the changes through treatment of nitrogen species (TKN, $NH_3$-N, and $NO_X$-N), as well as supporting water quality parameters.




| | STE | STAGE 1 | STAGE 2 LIGNO | STAGE 2 SULFUR |
|---|---|---|---|---|
| $CBOD_5$ mg/L | 220 | 3 | 12 | 22 |
| TKN mg N/L | 56.0 | 5.4 | 2.0 | 3.6 |
| $NH_3$ mg N/L | 61 | 1.5 | 0.1 | 0.5 |
| $NO_x$ mg N/L | 0.06 | 34.0 | 1.3 | Non-detect |
| TN mg N/L | 56.0 | 39.4 | 3.3 | 3.6 |
| Sulfate mg/L | 1.2 | 19 | 19 | 21 |
| Fecal Coliform (Ct/100mL) | 21,000 | 2500 | 260 | 80 |

**Figure 7**
**Graphical Representation of Nitrogen Results**
**Sample Event No. 5 May 29, 2014 (Experimental Day 324)**

***Septic Tank Effluent (STE) Quality:*** The water quality characteristics of STE collected in Sample Event 5 were within the typical range generally expected for domestic STE. The measured STE total nitrogen (TN) concentration was 56 mg/L, which is within the range that has been typically reported for Florida single family residence STE.

***Stage 1 Effluent (ST1):*** The Stage 1 effluent $NH_3$-N level was 1.5 mg/L with a DO level at 0.87 mg/L (Table 4). The Stage 1 effluent TSS concentration was 6 mg/L and $CBOD_5$ was 3 mg/L. The Stage 1 biofilter showed incomplete nitrification with an effluent $NH_3$-N concentration of 1.5 mg/L and TKN of 5.4 mg/L. However, the $NH_3$-N was significantly lower than Sample Event No. 4 (12 mg/L). So it seems the addition of the third distribu-

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tion pipe (see Section 3.2) improved the nitrification performance of the Stage 1 biofilter. The Stage 1 effluent $NO_x$-N was 34 mg/L. The Stage 1 effluent TN of 39 mg/L was 30% lower than that in STE, suggesting denitrification in the Stage 1 biofilter.

***Stage 2 Biofilter Effluent (LIGNO-0" and ST2)***: The Stage 2 system produced a highly reducing environment and achieved complete $NO_x$-N reduction. Effluent $NO_x$-N from the Stage 2 biofilter monitoring point was below the method detection limit of 0.02 mg/L. The low $NO_x$-N was accompanied by a measured 0.11 mg/L DO and -242 mV ORP. The lignocellulosic media effluent $NO_x$-N was 1.3 mg/L. Final total nitrogen (TN) in the treatment system effluent was approximately 3.6 mg/L. The Stage 2 biofilter lignocellulosic media effluent and sulfur media effluent $CBOD_5$ were 12 and 22 mg/L, respectively. The Stage 2 effluent sulfate concentration was 21 mg/L.

***Field Blank (FB)***: Described in Section 3.5, the field blank (FB) results for most of the parameters measured were at or below the method detection limit. The slightly elevated parameters were total alkalinity 4.7 mg/L, COD 12 mg/L, and TKN 0.07 mg/L.

As previously discussed in Section 3.3, Sample Event 5 also included Stage 2 biofilter profile samples. As depicted in Figure 8, the unsaturated Stage 1 biofilter effluent is discharged to the top of the first chamber of the Stage 2 biofilter which contains lignocellulosic media. The effluent flows downward through the lignocellulosic media, moves laterally in a perforated 4-inch pipe through the baffle wall to the bottom of the second chamber, and upward through the sulfur media mixture in the second chamber. The nitrogen results at the various depths of the Stage 2 biofilter are graphically displayed in Figure 8. Each stainless steel drivepoint sampler was assigned a unique identification indicating the depth (in inches) the sampler was placed above the bottom of the media. For example LIGNO-36 is a stainless steel drivepoint sampler located at 36 inches above the bottom of the lignocellulosic media. The profile results from this event indicate that the $NO_x$-N was effectively reduced below the method detection limit at profile sampler SULFUR-6. The $NO_x$-N concentration progressively decreased with passage through the lignocellulosic media in the downflow biofilter, which accounted for approximately 96 percent of the $NO_x$-N reduction. Residual $NO_x$-N in the effluent of the downflow biofilter was reduced to non-detection at the 6-inch depth through the sulfur media.

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| FROM PUMP | TKN | NH3-N | NOX-N | | | TKN | NH3-N | NOX-N |
|---|---|---|---|---|---|---|---|---|
| Influent | 5.4 | 1.5 | 34.0 | | Effluent | 3.6 | 0.5 | 0.02 |
| LIGNO-36 | 3.7 | 1.1 | 27.0 | | | | | |
| LIGNO-24 | 2.0 | 0.1 | 16.0 | | | | | |
| LIGNO-12 | 2.4 | 0.2 | 7.0 | | SULFUR-12 | 2.0 | 0.4 | 0.02 |
| LIGNO-0 | 2.0 | 0.1 | 1.3 | | SULFUR-6 | 2.1 | 1.9 | 0.02 |

**Figure 8**
**Graphical Representation of Stage 2 Biofilter Profile Nitrogen Results**

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# Table 4
# Water Quality Analytical Results

| Sample ID | Sample Date/Time | Temp (°C) | pH | Specific Conductance (uS/cm) | DO (mg/L) | ORP (mV) | Total Alkalinity (mg/L) | TSS (mg/L) | VSS (mg/L) | $CBOD_5$ (mg/L) | COD (mg/L) | TN (mg/L N)[1] | TKN (mg/L N) | Organic N (mg/L N)[2] | $NH_3$-N (mg/L N) | $NO_3$-N (mg/L N) | $NO_2$-N (mg/L N) | NOx (mg/L N) | TIN (mg/L N)[3] | TP (mg/L) | Ortho P (mg/L P) | Sulfate (mg/L) | Hydrogen Sulfide (mg/L) | Sulfide (mg/L) | Fecal (Ct/100 mL) | E-coli (Ct/100 mL) | TOC (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BHS4-STE | 5/29/14 11:40 | 26.1 | 6.83 | 1329 | 0.08 | -208 | 450 | 65 | 62 | 220 | 250 | 56.06 | 56 | -5 | 61 | 0.02 | 0.01 | 0.06 | 61.06 | 8 | 6.8 | 1.2 | 3 | 4.8 | 21000 | 10000 | 57 |
| BHS4-STE-FILTERED | 5/29/14 11:40 | 26.1 | 6.83 | 1329 | 0.08 | -208 | | | | 78 | | 61.02 | 61 | 15 | 46 | 0.01 | 0.01 | 0.02 | 46.02 | | | | | | | | |
| BHS4-ST1 | 5/29/14 11:15 | 25.2 | 6.6 | 1236 | 0.87 | 155 | 270 | 6 | 4 | 3 | 16 | 39.4 | 5.4 | 3.9 | 1.5 | 34 | 0.01 | 34 | 35.5 | 2.8 | 1.5 | 19 | 0.38 | 0.59 | 2500 | 230 | 16 |
| BHS4-ST1-DUP | 5/29/14 11:20 | 25.2 | 6.6 | 1236 | 0.87 | 155 | 270 | 5 | 4 | 3 | 18 | 40 | 5 | 2.4 | 2.6 | 35 | 0.01 | 35 | 37.6 | 2.8 | 1.8 | 20 | 0.38 | 0.59 | 600 | 160 | 15 |
| BHS4-ST1-FILTERED | 5/29/14 11:15 | 25.2 | 6.6 | 1236 | 0.87 | 155 | | | | 2 | | 40.2 | 5.2 | 3.7 | 1.5 | 35 | 0.01 | 35 | 36.5 | | | | | | | | |
| BHS4-LIGNO-36 | 5/29/14 11:25 | 25.6 | 6.52 | 1215 | 0.22 | -38.6 | | | | | | 30.7 | 3.7 | 2.6 | 1.1 | 27 | 0.01 | 27 | 28.1 | | | 22 | | | | | |
| BHS4-LIGNO-24 | 5/29/14 11:17 | 25.8 | 6.58 | 1164 | 0.21 | -56.3 | | | | | | 18 | 2 | 1.86 | 0.14 | 16 | 0.01 | 16 | 16.14 | | | 25 | | | | | |
| BHS4-LIGNO-12 | 5/29/14 11:10 | 25.7 | 6.51 | 1127 | 0.14 | -98.9 | | | | | | 8.9 | 2.4 | 2.22 | 0.18 | 5.6 | 0.89 | 6.5 | 6.68 | | | 29 | | | | | |
| BHS4-LIGNO-0 | 5/29/14 11:00 | 25.80 | 6.46 | 1120 | 0.16 | -159 | 400 | 4 | 4 | 12 | 37 | 3.3 | 2 | 1.87 | 0.13 | 1.3 | 0.01 | 1.3 | 1.43 | 1.9 | 1.2 | 19 | 1.4 | 1.8 | 260 | 170 | 19 |
| BHS4-LIGNO-0-FILTERED | 5/29/14 11:00 | 25.80 | 6.46 | 1120 | 0.16 | -159 | | | | 4 | | 2.88 | 1.9 | 1.35 | 0.55 | 0.98 | 0.01 | 0.98 | 1.53 | | | | | | | | |
| BHS4-SULFUR-6 | 5/29/14 10:48 | 24.48 | 6.48 | 1151 | 0.17 | -216 | | | | | | 2.12 | 2.1 | 0.2 | 1.9 | 0.01 | 0.01 | 0.02 | 1.92 | | | 31 | | | | | |
| BHS4-SULFUR-12 | 5/29/14 10:50 | 24.45 | 6.42 | 1170 | 0.16 | -211 | | | | | | 2.02 | 2 | 1.62 | 0.38 | 0.01 | 0.01 | 0.02 | 0.4 | | | 40 | | | | | |
| BHS4-ST2 | 5/29/14 10:35 | 24.30 | 6.48 | 1226 | 0.11 | -242 | 470 | 3 | 3 | 22 | 64 | 3.62 | 3.6 | 3.09 | 0.51 | 0.01 | 0.01 | 0.02 | 0.53 | 2.3 | 1.7 | 21 | 5 | 6.5 | 80 | 73 | 18 |
| BHS4-ST2-FILTERED | 5/29/14 10:35 | 24.30 | 6.48 | 1226 | 0.11 | -242 | | | | 10 | | 3.72 | 3.7 | 1.7 | 2 | 0.01 | 0.01 | 0.02 | 2.02 | | | 24 | | | | | |
| BHS4-FB | 5/29/14 12:10 | 29.40 | 5.28 | 1.49 | 7.28 | 110 | 4.7 | 1 | 1 | 2 | 12 | 0.09 | 0.07 | 0.06 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.01 | 0.01 | 0.2 | 0.01 | 0.1 | 1 | 2 | 0.06 |

Notes:

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

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

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

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

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

Too many colonies were present. The numeric value represents the filtration volume.

Results based on colony counts outside the ideal range.

Sample held beyond the accepted holding time.

PRELI

# Table 5
# Summary of Water Quality Data

| Sample ID | Statistical Parameter | Temp (°C) | pH | Specific Conductance (uS/cm) | DO (mg/L) | ORP (mV) | Total Alkalinity (mg/L) | TSS (mg/L) | VSS (mg/L) | $CBOD_5$ (mg/L) | COD (mg/L) | TN (mg/L N)[1] | TKN (mg/L N) | Organic N (mg/L N)[2] | $NH_3$-N (mg/L N) | $NO_3$-N (mg/L N) | $NO_2$-N (mg/L N) | NOx (mg/L N) | TIN (mg/L N)[3] | TP (mg/L) | Ortho P (mg/L P) | Sulfate (mg/L) | Hydrogen Sulfide (mg/L) | Sulfide (mg/L) | Fecal (Ct/100 mL) | E-coli (Ct/100 mL) | TOC (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STE | n | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 9 |
| | MEAN | 22.10 | 6.78 | 1148.67 | 0.18 | -228.83 | 434.44 | 65.00 | 61.44 | 148.89 | 210.89 | 67.83 | 67.78 | 7.33 | 60.44 | 0.04 | 0.01 | 0.05 | 60.49 | 9.47 | 6.03 | 1.98 | 3.26 | 5.16 | 37,811 | 14,726 | 69.33 |
| | STD. DEV. | 2.97 | 0.00 | 113.66 | 0.23 | 52.97 | 26.98 | 22.84 | 21.69 | 43.09 | 118.29 | 10.10 | 10.08 | 8.20 | 7.11 | 0.04 | 0.00 | 0.04 | 7.10 | 2.37 | 2.32 | 1.57 | 1.07 | 1.52 | | | 13.32 |
| | MIN | 19.50 | 6.52 | 1027.00 | 0.01 | -321.80 | 400.00 | 38.00 | 38.00 | 92.00 | 10.00 | 56.06 | 56.00 | -5.00 | 49.00 | 0.01 | 0.01 | 0.02 | 49.07 | 7.60 | 0.01 | 0.62 | 1.50 | 2.60 | 21,000 | 10,000 | 52.00 |
| | MAX | 27.80 | 6.94 | 1329.00 | 0.79 | -148.40 | 470.00 | 118.00 | 111.00 | 220.00 | 330.00 | 87.14 | 87.00 | 23.00 | 75.00 | 0.14 | 0.01 | 0.14 | 75.02 | 14.00 | 7.50 | 5.40 | 4.50 | 6.80 | 71,000 | 24,000 | 85.00 |
| Stage 1 | n | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 8 | 9 | 9 | 9 | 9 | 7 | 6 | 6 | 9 | 8 | 9 |
| | MEAN | 21.70 | 6.82 | 1151.56 | 2.66 | 42.09 | 325.56 | 10.78 | 9.44 | 9.56 | 47.11 | 43.51 | 14.07 | 4.48 | 9.58 | 28.63 | 0.20 | 29.44 | 39.03 | 3.71 | 2.91 | 18.14 | 0.33 | 0.58 | 4,279 | 2,090 | 17.22 |
| | STD. DEV. | 2.90 | 0.00 | 151.77 | 1.59 | 65.05 | 40.35 | 6.46 | 5.48 | 6.88 | 35.10 | 10.37 | 7.50 | 4.16 | 9.01 | 16.10 | 0.35 | 15.02 | 9.91 | 1.28 | 1.07 | 1.46 | 0.35 | 0.63 | | | 4.76 |
| | MIN | 19.00 | 6.42 | 978.00 | 0.87 | -69.70 | 270.00 | 3.00 | 3.00 | 2.00 | 10.00 | 27.00 | 5.40 | 0.00 | 0.38 | 12.00 | 0.01 | 12.00 | 27.00 | 1.80 | 1.50 | 16.00 | 0.01 | 0.10 | 100 | 41 | 12.00 |
| | MAX | 27.60 | 7.39 | 1385.00 | 5.16 | 155.10 | 390.00 | 22.00 | 18.00 | 18.00 | 120.00 | 63.30 | 25.00 | 14.44 | 23.00 | 57.00 | 0.85 | 57.00 | 58.80 | 5.50 | 4.10 | 20.00 | 1.00 | 1.80 | 32,000 | 24,000 | 24.00 |
| Stage 2 Ligno | n | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 7 | 7 | 9 | 8 | 9 |
| | MEAN | 22.07 | 6.65 | 1099.33 | 0.57 | -191.73 | 431.11 | 5.89 | 5.56 | 13.22 | 45.33 | 11.84 | 10.42 | 3.29 | 7.13 | 1.42 | 0.01 | 1.42 | 8.55 | 2.83 | 2.23 | 11.80 | 1.21 | 1.74 | 1,140 | 619 | 16.44 |
| | STD. DEV. | 3.26 | 0.00 | 91.75 | 0.64 | 28.48 | 21.47 | 3.92 | 3.54 | 6.85 | 11.85 | 4.68 | 6.18 | 3.87 | 6.54 | 2.24 | 0.00 | 2.24 | 5.29 | 1.51 | 1.32 | 6.22 | 0.65 | 0.94 | | | 2.35 |
| | MIN | 18.20 | 6.46 | 956.00 | 0.13 | -238.00 | 400.00 | 2.00 | 2.00 | 2.00 | 30.00 | 3.30 | 2.00 | 0.70 | 0.13 | 0.03 | 0.01 | 0.03 | 1.21 | 0.42 | 0.18 | 5.70 | 0.00 | 0.00 | 30 | 10 | 13.00 |
| | MAX | 27.50 | 6.80 | 1247.00 | 2.16 | -157.60 | 460.00 | 12.00 | 12.00 | 23.00 | 64.00 | 17.04 | 17.00 | 13.49 | 15.00 | 5.90 | 0.01 | 5.90 | 15.04 | 4.10 | 3.30 | 23.00 | 2.10 | 3.00 | 17,200 | 6,100 | 19.00 |
| Stage 2 Sulfur | n | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 | 9 |
| | MEAN | 21.62 | 6.73 | 1151.89 | 0.18 | -237.59 | 460.00 | 4.44 | 4.00 | 13.78 | 48.00 | 7.85 | 7.81 | 2.57 | 5.24 | 0.03 | 0.01 | 0.04 | 5.28 | 2.80 | 2.27 | 31.67 | 4.84 | 6.74 | 357 | 208 | 15.44 |
| | STD. DEV. | 2.69 | 0.49 | 98.14 | 0.12 | 54.58 | 23.45 | 2.46 | 2.55 | 8.86 | 11.64 | 4.34 | 4.33 | 3.53 | 4.29 | 0.03 | 0.00 | 0.02 | 4.30 | 1.23 | 1.14 | 10.07 | 2.64 | 3.34 | | | 2.55 |
| | MIN | 19.60 | 5.79 | 1054.00 | 0.04 | -348.90 | 440.00 | 2.00 | 1.00 | 3.00 | 30.00 | 1.32 | 1.30 | 0.30 | 0.51 | 0.01 | 0.01 | 0.02 | 0.53 | 0.70 | 0.32 | 21.00 | 1.30 | 1.30 | 1 | 2 | 11.00 |
| | MAX | 27.10 | 7.66 | 1306.00 | 0.44 | -140.20 | 510.00 | 9.00 | 8.00 | 30.00 | 64.00 | 13.07 | 13.00 | 11.70 | 10.00 | 0.07 | 0.01 | 0.07 | 10.04 | 4.10 | 3.50 | 50.00 | 9.90 | 11.00 | 5,400 | 1,400 | 18.00 |
| Well | n | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | MEAN | 27.90 | 7.32 | 529.00 | 5.10 | 101.30 | 150.00 | 1.00 | 1.00 | 2.00 | 10.00 | 1.58 | 0.18 | 0.16 | 0.02 | 1.40 | 0.01 | 1.40 | 1.42 | 0.49 | 0.20 | 8.70 | 0.13 | 0.41 | 1 | 2 | 2.10 |
| | STD. DEV. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MIN | 27.90 | 7.32 | 529.00 | 5.10 | 101.30 | 150.00 | 1.00 | 1.00 | 2.00 | 10.00 | 1.58 | 0.18 | 0.16 | 0.02 | 1.40 | 0.01 | 1.40 | 1.42 | 0.49 | 0.20 | 8.70 | 0.13 | 0.41 | 1 | 2 | 2.10 |
| | MAX | 27.90 | 7.32 | 529.00 | 5.10 | 101.30 | 150.00 | 1.00 | 1.00 | 2.00 | 10.00 | 1.58 | 0.18 | 0.16 | 0.02 | 1.40 | 0.01 | 1.40 | 1.42 | 0.49 | 0.20 | 8.70 | 0.13 | 0.41 | 1 | 2 | 2.10 |

Notes:

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

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

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

[4]Fecal coliform and pH values are reported as geometric mean.

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

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

PRE

# 5.0 B-HS4 Sample Event No. 5: Summary and Recommendations

## 5.1 Summary

The results of the fifth sampling event indicate that:

- Septic tank effluent (STE) quality is characteristic of typical household STE quality. The total nitrogen concentration of 56 mg/L is within the range of values typically reported for Florida single family residence STE.
- The Stage 1 biofilter reduced TN and TKN by 30 and 90%, respectively.
- The Stage 1 biofilter was only partially successful in removing ammonia N; effluent TKN and ammonia N were 5.4 and 1.5 mg/L, respectively.
- The Stage 2 biofilter effluent $NO_x$-N was below the method detection limit of 0.02 mg N/L.
- The total nitrogen concentration in the final effluent from the total treatment system was 3.6 mg/L, an approximately 94% reduction in STE TN.

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# Appendix A: Laboratory Report

PRELIMINARY

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

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| **Project Name** | **B-HS4 SE#9** |
|---|---|
| Sample Description | **BHS4-STE** |
| Matrix | **Wastewater** |
| SAL Sample Number | **1405266-01** |
| Date/Time Collected | **05/29/14 11:40** |
| Collected by | **Josefin Hirst** |
| Date/Time Received | **05/29/14 15:15** |

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | |
| Acetone | ug/L | 50 | EPA 8260b | 4.0 | 2.0 | | 06/12/14 18:17 | 1 |
| Acetone | ug/L | 50 | EPA 8260 | 4.0 | 2.0 | | 06/12/14 18:17 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260b | 4.0 | 1.3 | | 06/12/14 18:17 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260 | 4.0 | 1.3 | | 06/12/14 18:17 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Bromobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:17 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 18:17 | 1 |
| 2-Butanone | ug/L | 2.6 I | EPA 8260b | 4.0 | 2.0 | | 06/12/14 18:17 | 1 |
| 2-Butanone | ug/L | 2.6 I | EPA 8260 | 4.0 | 2.0 | | 06/12/14 18:17 | 1 |
| n-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| sec-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| t-Butylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Carbon disulfide | ug/L | 0.6 I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Carbon disulfide | ug/L | 0.6 I | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 18:17 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:17 | 1 |
| Chloroform | ug/L | 3.1 | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Chloroform | ug/L | 3.1 | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 18:17 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:17 | 1 |
| 1,2-Dibromoethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:17 | 1 |
| 2-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 2-Chloroethylvinyl Ether | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 18:17 | 1 |
| 4-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-STE** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-01** | | | | | | |
| Date/Time Collected | | **05/29/14 11:40** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,3-Dichlorobenzene | ug/L | 0.07 U | EPA 8260b | 0.8 | 0.07 | | 06/12/14 18:17 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:17 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260 | 0.8 | 0.3 | | 06/12/14 18:17 | 1 |
| Dichlorodifluoromethane | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 18:17 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 18:17 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 18:17 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 2,2-Dichloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:17 | 1 |
| 1,1-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Ethylbenzene | ug/L | 0.4 I | EPA 8260b | 0.8 | 0.08 | | 06/12/14 18:17 | 1 |
| Ethylbenzene | ug/L | 0.4 I | EPA 8260 | 0.8 | 0.08 | | 06/12/14 18:17 | 1 |
| Hexachlorobutadiene | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:17 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260b | 4.0 | 2.1 | | 06/12/14 18:17 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260 | 4.0 | 2.1 | | 06/12/14 18:17 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Isopropylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |

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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-STE** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-01** | | | | | | |
| Date/Time Collected | | **05/29/14 11:40** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| 4-Isopropyltoluene | ug/L | 1.5 | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Methyl-t-butyl ether | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 18:17 | 1 |
| Methylene Chloride | ug/L | 2.1 | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Methylene Chloride | ug/L | 2.1 | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260b | 4.0 | 2.6 | | 06/12/14 18:17 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260 | 4.0 | 2.6 | | 06/12/14 18:17 | 1 |
| Naphthalene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| n-Propylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260 | 0.8 | 0.05 | | 06/12/14 18:17 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260b | 0.8 | 0.05 | | 06/12/14 18:17 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Toluene | ug/L | 13 | EPA 8260b | 0.8 | 0.09 | | 06/12/14 18:17 | 1 |
| Toluene | ug/L | 13 | EPA 8260 | 0.8 | 0.09 | | 06/12/14 18:17 | 1 |
| 1,2,3-Trichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2,4-Trichlorobenzene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:17 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ug/L | 0.6 U | EPA 8260b** | 1.6 | 0.6 | | 06/12/14 18:17 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 18:17 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:17 | 1 |
| 1,2,4-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,3,5-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Vinyl acetate | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:17 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260b | 1.6 | 0.3 | | 06/12/14 18:17 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260 | 1.6 | 0.3 | | 06/12/14 18:17 | 1 |
| Xylene-m,p | ug/L | 1.2 I | EPA 8260b | 1.6 | 0.2 | | 06/12/14 18:17 | 1 |
| Xylene-m,p | ug/L | 1.2 I | EPA 8260 | 1.6 | 0.2 | | 06/12/14 18:17 | 1 |

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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-STE** | | | | | | | |
| Matrix | | **Wastewater** | | | | | | | |
| SAL Sample Number | | **1405266-01** | | | | | | | |
| Date/Time Collected | | **05/29/14 11:40** | | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | | |
| Xylene-o | ug/L | 0.3 | I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Xylene-o | ug/L | 0.3 | I | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:17 | 1 |
| Xylenes- Total | ug/L | 1.5 | | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Xylenes- Total | ug/L | 1.5 | | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| Total Trihalomethanes | ug/L | 3.1 | | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:17 | 1 |
| 1,4-Dioxane | ug/L | 0.0 | | EPA 8260b** | | | | 06/12/14 18:17 | 1 |
| *Surrogate for EPA 8260* | *Dibromofluoromethane* | | | *102 %* | *Limits* | *65-135* | | | |
| **Pesticide Analyses** | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.0053 | U | EPA 504.1 | 0.021 | 0.0053 | 06/04/14 09:24 | 06/04/14 20:59 | 1 |
| 1,2-Dibromoethane | ug/L | 0.0053 | U | EPA 504.1 | 0.021 | 0.0053 | 06/04/14 09:24 | 06/04/14 20:59 | 1 |
| *Surrogate for EPA 504.1* | *2-Bromo-1-chloropropane* | | | *108 %* | *Limits* | *70-130* | | | |
| **Inorganics** | | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 3.0 | | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 61 | Q | EPA 350.1 | 0.040 | 0.009 | | 07/02/14 14:57 | 1 |
| Carbonaceous BOD | mg/L | 220 | | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 250 | | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 0.02 | I | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.06 | | EPA 353.2 | 0.04 | 0.01 | 06/23/14 17:37 | 06/23/14 18:49 | 1 |
| Nitrite (as N) | mg/L | 0.01 | U,J5,J6 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 6.8 | | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 8.0 | | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Sulfate | mg/L | 1.2 | | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 4.8 | | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 450 | | SM 2320B | 8.0 | 2.0 | | 06/06/14 11:27 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 56 | | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:52 | 06/24/14 12:12 | 1 |
| Total Organic Carbon | mg/L | 57 | | SM 5310B | 1.0 | 0.060 | | 06/02/14 12:52 | 1 |
| Total Suspended Solids | mg/L | 65 | | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 62 | | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 | I | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| **Microbiology** | | | | | | | | | |
| E. Coli | MPN/100 mL | 10,000 | | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 21,000 | | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-STE-FILTERED** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-02** | | | | | | |
| Date/Time Collected | | **05/29/14 11:40** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganic, Dissolved** | | | | | | | | |
| Ammonia as N | mg/L | 46 | EPA 350.1 | 2.0 | 0.47 | | 06/25/14 17:46 | 50 |
| Carbonaceous BOD | mg/L | 78 | SM 5210B | 2 | 2 | 05/29/14 12:05 | 06/03/14 09:47 | 1 |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 61 Q | EPA 351.2 | 0.20 | 0.050 | 06/23/14 15:10 | 06/27/14 15:45 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Lab filtration for diss. analytes | | | | | | | 05/29/14 12:05 | |

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-ST1** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-03** | | | | | | |
| Date/Time Collected | | **05/29/14 11:15** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 0.38 | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 1.5 Q | EPA 350.1 | 0.040 | 0.009 | | 07/02/14 14:57 | 1 |
| Carbonaceous BOD | mg/L | 3 | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 16 I | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 34 Q | EPA 300.0 | 0.40 | 0.10 | | 06/06/14 17:59 | 10 |
| Nitrate+Nitrite (N) | mg/L | 4.0 | EPA 353.2 | 0.04 | 0.01 | 06/23/14 17:37 | 06/23/14 18:49 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 1.5 | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 2.8 | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Sulfate | mg/L | 19 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 0.59 | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 270 | SM 2320B | 8.0 | 2.0 | | 06/06/14 11:37 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 5.4 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Total Organic Carbon | mg/L | 16 | SM 5310B | 1.0 | 0.060 | | 06/02/14 18:34 | 1 |
| Total Suspended Solids | mg/L | 6 | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 4 | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 34 | EPA 300.0 | 0.44 | 0.11 | | 06/06/14 17:59 | 10 |
| **Microbiology** | | | | | | | | |
| E. Coli | MPN/100 mL | 230 | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 2,500 | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-ST1-DUP** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-04** | | | | | | |
| Date/Time Collected | | **05/29/14 11:20** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 0.38 | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 2.6 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Carbonaceous BOD | mg/L | 3 | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 18 I | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 35 Q | EPA 300.0 | 0.40 | 0.10 | | 06/06/14 18:21 | 10 |
| Nitrate+Nitrite (N) | mg/L | 4.0 | EPA 353.2 | 0.04 | 0.01 | 06/23/14 17:37 | 06/23/14 18:49 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 1.8 | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 2.8 | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Sulfate | mg/L | 20 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 0.59 | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 270 | SM 2320B | 8.0 | 2.0 | | 06/06/14 11:46 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 5.0 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Total Organic Carbon | mg/L | 15 | SM 5310B | 1.0 | 0.060 | | 06/02/14 18:48 | 1 |
| Total Suspended Solids | mg/L | 5 | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 4 | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 35 | EPA 300.0 | 0.44 | 0.11 | | 06/06/14 18:21 | 10 |
| **Microbiology** | | | | | | | | |
| E. Coli | MPN/100 mL | 160 | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 600 | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |
| Sample Description | | **BHS4-ST1-FILTERED** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-05** | | | | | | |
| Date/Time Collected | | **05/29/14 11:15** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganic, Dissolved** | | | | | | | | |
| Ammonia as N | mg/L | 1.5 | EPA 350.1 | 0.20 | 0.047 | | 06/25/14 17:46 | 5 |
| Carbonaceous BOD | mg/L | 2 U | SM 5210B | 2 | 2 | 05/29/14 12:05 | 06/03/14 09:47 | 1 |
| Nitrate (as N) | mg/L | 35 Q | EPA 300.0 | 0.40 | 0.10 | | 06/06/14 18:32 | 10 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 5.2 | EPA 351.2 | 0.20 | 0.050 | 06/23/14 15:10 | 06/25/14 12:09 | 1 |
| Nitrate+Nitrite (N) | mg/L | 35 | EPA 300.0 | 0.44 | 0.11 | | 06/06/14 18:32 | 10 |
| Lab filtration for diss. analytes | | | | | | | 05/29/14 12:05 | |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-LIGNO-36** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-06** | | | | | | |
| Date/Time Collected | | **05/29/14 11:25** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Ammonia as N | mg/L | 1.1 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Nitrate (as N) | mg/L | 27 Q | EPA 300.0 | 0.40 | 0.10 | | 06/06/14 18:44 | 10 |
| Nitrate+Nitrite (N) | mg/L | 4.0 | EPA 353.2 | 0.04 | 0.01 | 06/23/14 17:37 | 06/23/14 18:49 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Sulfate | mg/L | 22 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 3.7 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Nitrate+Nitrite (N) | mg/L | 27 | EPA 300.0 | 0.44 | 0.11 | | 06/06/14 18:44 | 10 |
| Sample Description | | **BHS4-LIGNO-24** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-07** | | | | | | |
| Date/Time Collected | | **05/29/14 11:17** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Ammonia as N | mg/L | 0.14 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Nitrate (as N) | mg/L | 16 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Sulfate | mg/L | 25 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 2.0 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:52 | 06/23/14 14:26 | 1 |
| Nitrate+Nitrite (N) | mg/L | 16 | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Sample Description | | **BHS4-LIGNO-12** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-08** | | | | | | |
| Date/Time Collected | | **05/29/14 11:10** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Ammonia as N | mg/L | 0.18 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Nitrate (as N) | mg/L | 5.6 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.89 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Sulfate | mg/L | 29 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 2.4 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Nitrate+Nitrite (N) | mg/L | 6.5 | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-LIGNO-0** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-09** | | | | | | |
| Date/Time Collected | | **05/29/14 11:00** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 1.4 | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 0.13 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Carbonaceous BOD | mg/L | 12 | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 37 | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 1.3 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 1.2 | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 1.9 | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:57 | 06/24/14 12:12 | 1 |
| Sulfate | mg/L | 19 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 1.8 | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 400 | SM 2320B | 8.0 | 2.0 | | 06/06/14 11:58 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 2.0 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Total Organic Carbon | mg/L | 19 | SM 5310B | 1.0 | 0.060 | | 06/02/14 19:01 | 1 |
| Total Suspended Solids | mg/L | 4 | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 4 | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 1.3 | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| **Microbiology** | | | | | | | | |
| E. Coli | MPN/100 mL | 170 | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 260 | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-LIGNO-0-FILTERED** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-10** | | | | | | |
| Date/Time Collected | | **05/29/14 11:00** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganic, Dissolved** | | | | | | | | |
| Ammonia as N | mg/L | 0.55 | EPA 350.1 | 0.040 | 0.009 | | 06/25/14 17:46 | 1 |
| Carbonaceous BOD | mg/L | 4 | SM 5210B | 2 | 2 | 05/29/14 12:05 | 06/03/14 09:47 | 1 |
| Nitrate (as N) | mg/L | 0.98 | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 1.9 | EPA 351.2 | 0.20 | 0.050 | 06/23/14 15:10 | 06/25/14 12:09 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.98 | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Lab filtration for diss. analytes | | | | | | | 05/29/14 12:05 | |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-SULFUR-6** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-11** | | | | | | |
| Date/Time Collected | | **05/29/14 10:48** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Ammonia as N | mg/L | 1.9 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Sulfate | mg/L | 31 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 2.1 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Sample Description | | **BHS4-SULFUR-12** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-12** | | | | | | |
| Date/Time Collected | | **05/29/14 10:50** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Ammonia as N | mg/L | 0.38 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Sulfate | mg/L | 40 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 2.0 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Sample Description | | **BHS4-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-13** | | | | | | |
| Date/Time Collected | | **05/29/14 10:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | |
| Acetone | ug/L | 3.0 I | EPA 8260b | 4.0 | 2.0 | | 06/12/14 18:50 | 1 |
| Acetone | ug/L | 3.0 I | EPA 8260 | 4.0 | 2.0 | | 06/12/14 18:50 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260b | 4.0 | 1.3 | | 06/12/14 18:50 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260 | 4.0 | 1.3 | | 06/12/14 18:50 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Bromobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Results *** | **Method** | **PQL** | **MDL** | **Prepared** | **Analyzed** | **Dilution** |
| Sample Description | | **BHS4-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-13** | | | | | | |
| Date/Time Collected | | **05/29/14 10:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:50 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 18:50 | 1 |
| 2-Butanone | ug/L | 2.0 U | EPA 8260b | 4.0 | 2.0 | | 06/12/14 18:50 | 1 |
| 2-Butanone | ug/L | 2.0 U | EPA 8260 | 4.0 | 2.0 | | 06/12/14 18:50 | 1 |
| n-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| sec-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| t-Butylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Carbon disulfide | ug/L | 0.7 I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Carbon disulfide | ug/L | 0.7 I | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 18:50 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:50 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 18:50 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:50 | 1 |
| 1,2-Dibromoethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:50 | 1 |
| 2-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 2-Chloroethylvinyl Ether | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 18:50 | 1 |
| 4-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,3-Dichlorobenzene | ug/L | 0.07 U | EPA 8260b | 0.8 | 0.07 | | 06/12/14 18:50 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 |
|---|---|
| Sample Description | **BHS4-ST2** |
| Matrix | **Wastewater** |
| SAL Sample Number | **1405266-13** |
| Date/Time Collected | **05/29/14 10:35** |
| Collected by | **Josefin Hirst** |
| Date/Time Received | **05/29/14 15:15** |

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:50 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260 | 0.8 | 0.3 | | 06/12/14 18:50 | 1 |
| Dichlorodifluoromethane | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 18:50 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 18:50 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 18:50 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 2,2-Dichloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:50 | 1 |
| 1,1-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Ethylbenzene | ug/L | 0.1 I | EPA 8260b | 0.8 | 0.08 | | 06/12/14 18:50 | 1 |
| Ethylbenzene | ug/L | 0.1 I | EPA 8260 | 0.8 | 0.08 | | 06/12/14 18:50 | 1 |
| Hexachlorobutadiene | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:50 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260b | 4.0 | 2.1 | | 06/12/14 18:50 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260 | 4.0 | 2.1 | | 06/12/14 18:50 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Isopropylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 4-Isopropyltoluene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Methyl-t-butyl ether | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 18:50 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260b | 4.0 | 2.6 | | 06/12/14 18:50 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260 | 4.0 | 2.6 | | 06/12/14 18:50 | 1 |
| Naphthalene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| n-Propylbenzene | ug/L | 2.8 | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 |
|---|---|
| Sample Description | **BHS4-ST2** |
| Matrix | **Wastewater** |
| SAL Sample Number | **1405266-13** |
| Date/Time Collected | **05/29/14 10:35** |
| Collected by | **Josefin Hirst** |
| Date/Time Received | **05/29/14 15:15** |

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Styrene | ug/L | 0.05 U | EPA 8260 | 0.8 | 0.05 | | 06/12/14 18:50 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260b | 0.8 | 0.05 | | 06/12/14 18:50 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Toluene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 18:50 | 1 |
| Toluene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 18:50 | 1 |
| 1,2,3-Trichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2,4-Trichlorobenzene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 18:50 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ug/L | 0.6 U | EPA 8260b** | 1.6 | 0.6 | | 06/12/14 18:50 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 18:50 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 18:50 | 1 |
| 1,2,4-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,3,5-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Vinyl acetate | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 18:50 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260b | 1.6 | 0.3 | | 06/12/14 18:50 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260 | 1.6 | 0.3 | | 06/12/14 18:50 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 18:50 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260 | 1.6 | 0.2 | | 06/12/14 18:50 | 1 |
| Xylene-o | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Xylene-o | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 18:50 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| Total Trihalomethanes | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 18:50 | 1 |
| 1,4-Dioxane | ug/L | 0.0 | EPA 8260b** | | | | 06/12/14 18:50 | 1 |
| *Surrogate for EPA 8260* | *Dibromofluoromethane* | *102 %* | *Limits* | *65-135* | | | | |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-13** | | | | | | |
| Date/Time Collected | | **05/29/14 10:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Pesticide Analyses** | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.0054 U | EPA 504.1 | 0.022 | 0.0054 | 06/04/14 09:24 | 06/04/14 21:21 | 1 |
| 1,2-Dibromoethane | ug/L | 0.0054 U | EPA 504.1 | 0.022 | 0.0054 | 06/04/14 09:24 | 06/04/14 21:21 | 1 |
| *Surrogate for EPA 504.1* | *2-Bromo-1-chloropropane* | | *110 %* | *Limits* | *70-130* | | | |
| **Inorganics** | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 5.0 | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 0.51 | EPA 350.1 | 0.040 | 0.009 | 06/23/14 11:01 | 06/23/14 11:07 | 1 |
| Carbonaceous BOD | mg/L | 22 | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 64 | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 1.7 | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 2.3 | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:57 | 06/24/14 12:12 | 1 |
| Sulfate | mg/L | 21 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 6.5 | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 470 | SM 2320B | 8.0 | 2.0 | | 06/06/14 12:12 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 3.6 | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Total Organic Carbon | mg/L | 18 | SM 5310B | 1.0 | 0.060 | | 06/02/14 19:15 | 1 |
| Total Suspended Solids | mg/L | 3 | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 3 | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| **Microbiology** | | | | | | | | |
| E. Coli | MPN/100 mL | 73 | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 80 | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-ST2-FILTERED** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-14** | | | | | | |
| Date/Time Collected | | **05/29/14 10:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Sulfate | mg/L | 24 | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| **Inorganic, Dissolved** | | | | | | | | |
| Ammonia as N | mg/L | 2.0 | EPA 350.1 | 0.20 | 0.047 | | 06/25/14 17:46 | 5 |
| Carbonaceous BOD | mg/L | 10 | SM 5210B | 2 | 2 | 05/29/14 12:05 | 06/03/14 09:47 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS4-ST2-FILTERED** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-14** | | | | | | |
| Date/Time Collected | | **05/29/14 10:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 3.7 | EPA 351.2 | 0.20 | 0.050 | 06/23/14 15:10 | 06/25/14 12:09 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| Lab filtration for diss. analytes | | | | | | | 05/29/14 12:05 | |
| Sample Description | | **BHS4-FB** | | | | | | |
| Matrix | | **Reagent Water** | | | | | | |
| SAL Sample Number | | **1405266-15** | | | | | | |
| Date/Time Collected | | **05/29/14 12:10** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Inorganics** | | | | | | | | |
| Hydrogen Sulfide (Unionized) | mg/L | 0.01 U | SM 4550SF | 0.04 | 0.01 | 06/03/14 17:02 | 06/03/14 17:05 | 1 |
| Ammonia as N | mg/L | 0.010 I,Q | EPA 350.1 | 0.040 | 0.009 | | 07/17/14 11:07 | 1 |
| Carbonaceous BOD | mg/L | 2 U | SM 5210B | 2 | 2 | 05/30/14 13:27 | 06/04/14 09:34 | 1 |
| Chemical Oxygen Demand | mg/L | 12 I | EPA 410.4 | 25 | 10 | 06/24/14 10:02 | 06/24/14 13:34 | 1 |
| Nitrate (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Nitrite (as N) | mg/L | 0.01 U | EPA 300.0 | 0.04 | 0.01 | | 05/30/14 08:39 | 1 |
| Orthophosphate as P | mg/L | 0.010 U | EPA 300.0 | 0.040 | 0.010 | | 05/30/14 08:39 | 1 |
| Phosphorous - Total as P | mg/L | 0.010 U | SM 4500P-E | 0.040 | 0.010 | 06/11/14 09:57 | 06/24/14 12:12 | 1 |
| Sulfate | mg/L | 0.20 U | EPA 300.0 | 0.60 | 0.20 | | 05/30/14 08:39 | 1 |
| Sulfide | mg/L | 0.10 U | SM 4500SF | 0.40 | 0.10 | | 06/03/14 16:28 | 1 |
| Total Alkalinity | mg/L | 4.7 I | SM 2320B | 8.0 | 2.0 | | 06/06/14 12:15 | 1 |
| Total Kjeldahl Nitrogen | mg/L | 0.07 I | EPA 351.2 | 0.20 | 0.05 | 06/11/14 09:57 | 06/23/14 14:25 | 1 |
| Total Organic Carbon | mg/L | 0.060 U | SM 5310B | 1.0 | 0.060 | | 06/02/14 20:11 | 1 |
| Total Suspended Solids | mg/L | 1 U | SM 2540D | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:04 | 1 |
| Volatile Suspended Solids | mg/L | 1 U | EPA 160.4 | 1 | 1 | 06/04/14 10:58 | 06/10/14 11:07 | 1 |
| Nitrate+Nitrite (N) | mg/L | 0.02 U | EPA 300.0 | 0.08 | 0.02 | | 05/30/14 08:39 | 1 |
| **Microbiology** | | | | | | | | |
| E. Coli | MPN/100 mL | 2.0 U | SM 9223B | 2.0 | 2.0 | 05/29/14 16:39 | 05/30/14 10:50 | 1 |
| Fecal Coliforms | CFU/100 ml | 1 U | SM 9222D | 1 | 1 | 05/29/14 16:33 | 05/30/14 14:50 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS5-STE** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-16** | | | | | | |
| Date/Time Collected | | **05/29/14 12:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | |
| Acetone | ug/L | 100 J4 | EPA 8260b | 4.0 | 2.0 | | 06/12/14 19:22 | 1 |
| Acetone | ug/L | 100 J4 | EPA 8260 | 4.0 | 2.0 | | 06/12/14 19:22 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260b | 4.0 | 1.3 | | 06/12/14 19:22 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260 | 4.0 | 1.3 | | 06/12/14 19:22 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Bromobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 19:22 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 19:22 | 1 |
| 2-Butanone | ug/L | 2.2 I | EPA 8260b | 4.0 | 2.0 | | 06/12/14 19:22 | 1 |
| 2-Butanone | ug/L | 2.2 I | EPA 8260 | 4.0 | 2.0 | | 06/12/14 19:22 | 1 |
| n-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| sec-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| t-Butylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Carbon disulfide | ug/L | 0.5 I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Carbon disulfide | ug/L | 0.5 I | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 19:22 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 19:22 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 19:22 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 19:22 | 1 |
| 1,2-Dibromoethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 19:22 | 1 |
| 2-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 2-Chloroethylvinyl Ether | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 19:22 | 1 |
| 4-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |

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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 |
|---|---|
| Sample Description | **BHS5-STE** |
| Matrix | **Wastewater** |
| SAL Sample Number | **1405266-16** |
| Date/Time Collected | **05/29/14 12:35** |
| Collected by | **Josefin Hirst** |
| Date/Time Received | **05/29/14 15:15** |

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,3-Dichlorobenzene | ug/L | 0.07 U | EPA 8260b | 0.8 | 0.07 | | 06/12/14 19:22 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260 | 0.8 | 0.3 | | 06/12/14 19:22 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 19:22 | 1 |
| Dichlorodifluoromethane | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 19:22 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 19:22 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 19:22 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 2,2-Dichloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 19:22 | 1 |
| 1,1-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Ethylbenzene | ug/L | 0.08 U | EPA 8260b | 0.8 | 0.08 | | 06/12/14 19:22 | 1 |
| Ethylbenzene | ug/L | 0.08 U | EPA 8260 | 0.8 | 0.08 | | 06/12/14 19:22 | 1 |
| Hexachlorobutadiene | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 19:22 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260b | 4.0 | 2.1 | | 06/12/14 19:22 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260 | 4.0 | 2.1 | | 06/12/14 19:22 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Isopropylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS5-STE** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-16** | | | | | | |
| Date/Time Collected | | **05/29/14 12:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| 4-Isopropyltoluene | ug/L | 0.3 I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Methyl-t-butyl ether | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 19:22 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260b | 4.0 | 2.6 | | 06/12/14 19:22 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260 | 4.0 | 2.6 | | 06/12/14 19:22 | 1 |
| Naphthalene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| n-Propylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260 | 0.8 | 0.05 | | 06/12/14 19:22 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260b | 0.8 | 0.05 | | 06/12/14 19:22 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Toluene | ug/L | 0.5 I | EPA 8260 | 0.8 | 0.09 | | 06/12/14 19:22 | 1 |
| Toluene | ug/L | 0.5 I | EPA 8260b | 0.8 | 0.09 | | 06/12/14 19:22 | 1 |
| 1,2,3-Trichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2,4-Trichlorobenzene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 19:22 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ug/L | 0.6 U | EPA 8260b** | 1.6 | 0.6 | | 06/12/14 19:22 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 19:22 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 19:22 | 1 |
| 1,2,4-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,3,5-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Vinyl acetate | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 19:22 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260 | 1.6 | 0.3 | | 06/12/14 19:22 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260b | 1.6 | 0.3 | | 06/12/14 19:22 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260 | 1.6 | 0.2 | | 06/12/14 19:22 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 19:22 | 1 |

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

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS5-STE** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-16** | | | | | | |
| Date/Time Collected | | **05/29/14 12:35** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| Xylene-o | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Xylene-o | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 19:22 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| Total Trihalomethanes | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 19:22 | 1 |
| 1,4-Dioxane | ug/L | 0.0 | EPA 8260b** | | | | 06/12/14 19:22 | 1 |
| *Surrogate for EPA 8260* | *Dibromofluoromethane* | | *101 %* | *Limits* | *65-135* | | | |
| **Pesticide Analyses** | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.0054 U | EPA 504.1 | 0.021 | 0.0054 | 06/04/14 09:24 | 06/04/14 21:43 | 1 |
| 1,2-Dibromoethane | ug/L | 0.0054 U | EPA 504.1 | 0.021 | 0.0054 | 06/04/14 09:24 | 06/04/14 21:43 | 1 |
| *Surrogate for EPA 504.1* | *2-Bromo-1-chloropropane* | | *122 %* | *Limits* | *70-130* | | | |
| Sample Description | | **BHS5-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-17** | | | | | | |
| Date/Time Collected | | **05/29/14 12:27** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | |
| Acetone | ug/L | 2.0 U | EPA 8260b | 4.0 | 2.0 | | 06/12/14 20:26 | 1 |
| Acetone | ug/L | 2.0 U | EPA 8260 | 4.0 | 2.0 | | 06/12/14 20:26 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260b | 4.0 | 1.3 | | 06/12/14 20:26 | 1 |
| Acrylonitrile | ug/L | 1.3 U | EPA 8260 | 4.0 | 1.3 | | 06/12/14 20:26 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Benzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Bromobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Bromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Bromodichloromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Bromoform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 20:26 | 1 |
| Bromomethane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 20:26 | 1 |
| 2-Butanone | ug/L | 2.0 U | EPA 8260b | 4.0 | 2.0 | | 06/12/14 20:26 | 1 |
| 2-Butanone | ug/L | 2.0 U | EPA 8260 | 4.0 | 2.0 | | 06/12/14 20:26 | 1 |

**Hazen and Sawyer**
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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Results *** | **Method** | **PQL** | **MDL** | **Prepared** | **Analyzed** | **Dilution** |
| Sample Description | | **BHS5-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-17** | | | | | | |
| Date/Time Collected | | **05/29/14 12:27** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| n-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| sec-Butylbenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| t-Butylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Carbon disulfide | ug/L | 0.5 I | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Carbon disulfide | ug/L | 0.5 I | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Carbon tetrachloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Chlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 20:26 | 1 |
| Chloroethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 20:26 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Chloroform | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260b | 1.6 | 0.4 | | 06/12/14 20:26 | 1 |
| Chloromethane | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 20:26 | 1 |
| 1,2-Dibromoethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 20:26 | 1 |
| 2-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 2-Chloroethylvinyl Ether | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 20:26 | 1 |
| 4-Chlorotoluene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Dibromochloromethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Dibromomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,2-Dichlorobenzene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,3-Dichlorobenzene | ug/L | 0.07 U | EPA 8260b | 0.8 | 0.07 | | 06/12/14 20:26 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,4-Dichlorobenzene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 20:26 | 1 |
| trans-1,4-Dichloro-2-butene | ug/L | 0.3 U | EPA 8260 | 0.8 | 0.3 | | 06/12/14 20:26 | 1 |
| Dichlorodifluoromethane | ug/L | 0.5 U | EPA 8260b | 1.6 | 0.5 | | 06/12/14 20:26 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1-Dichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,2-Dichloroethane | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |

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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

| Project Name | B-HS4 SE#9 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Parameters** | **Units** | **Results *** | **Method** | **PQL** | **MDL** | **Prepared** | **Analyzed** | **Dilution** |
| Sample Description | | **BHS5-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-17** | | | | | | |
| Date/Time Collected | | **05/29/14 12:27** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 20:26 | 1 |
| cis-1,2-Dichloroethene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 20:26 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| trans-1,2-Dichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2-Dichloropropane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 2,2-Dichloropropane | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 20:26 | 1 |
| 1,1-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| cis-1,3-Dichloropropene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| trans-1,3-Dichloropropene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Ethylbenzene | ug/L | 0.08 U | EPA 8260b | 0.8 | 0.08 | | 06/12/14 20:26 | 1 |
| Ethylbenzene | ug/L | 0.08 U | EPA 8260 | 0.8 | 0.08 | | 06/12/14 20:26 | 1 |
| Hexachlorobutadiene | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 20:26 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260b | 4.0 | 2.1 | | 06/12/14 20:26 | 1 |
| 2-Hexanone | ug/L | 2.1 U | EPA 8260 | 4.0 | 2.1 | | 06/12/14 20:26 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Iodomethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Isopropylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 4-Isopropyltoluene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Methyl-t-butyl ether | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 20:26 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Methylene Chloride | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260b | 4.0 | 2.6 | | 06/12/14 20:26 | 1 |
| 4-Methyl-2-pentanone | ug/L | 2.6 U | EPA 8260 | 4.0 | 2.6 | | 06/12/14 20:26 | 1 |
| Naphthalene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| n-Propylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260 | 0.8 | 0.05 | | 06/12/14 20:26 | 1 |
| Styrene | ug/L | 0.05 U | EPA 8260b | 0.8 | 0.05 | | 06/12/14 20:26 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,1,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,2,2-Tetrachloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Tetrachloroethene | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Toluene | ug/L | 0.09 U | EPA 8260b | 0.8 | 0.09 | | 06/12/14 20:26 | 1 |
| Toluene | ug/L | 0.09 U | EPA 8260 | 0.8 | 0.09 | | 06/12/14 20:26 | 1 |

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**July 23, 2014**
**Work Order: 1405266**

## Laboratory Report

**Project Name** **B-HS4 SE#9**

| Parameters | Units | Results * | Method | PQL | MDL | Prepared | Analyzed | Dilution |
|---|---|---|---|---|---|---|---|---|
| Sample Description | | **BHS5-ST2** | | | | | | |
| Matrix | | **Wastewater** | | | | | | |
| SAL Sample Number | | **1405266-17** | | | | | | |
| Date/Time Collected | | **05/29/14 12:27** | | | | | | |
| Collected by | | **Josefin Hirst** | | | | | | |
| Date/Time Received | | **05/29/14 15:15** | | | | | | |
| 1,2,3-Trichlorobenzene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2,4-Trichlorobenzene | ug/L | 0.3 U | EPA 8260b | 0.8 | 0.3 | | 06/12/14 20:26 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,1-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,2-Trichloroethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Trichloroethene | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ug/L | 0.6 U | EPA 8260b** | 1.6 | 0.6 | | 06/12/14 20:26 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Trichlorofluoromethane | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260b | 0.8 | 0.4 | | 06/12/14 20:26 | 1 |
| 1,2,3-Trichloropropane | ug/L | 0.4 U | EPA 8260 | 0.8 | 0.4 | | 06/12/14 20:26 | 1 |
| 1,2,4-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,3,5-Trimethylbenzene | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Vinyl acetate | ug/L | 0.4 U | EPA 8260 | 1.6 | 0.4 | | 06/12/14 20:26 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260b | 1.6 | 0.3 | | 06/12/14 20:26 | 1 |
| Vinyl chloride | ug/L | 0.3 U | EPA 8260 | 1.6 | 0.3 | | 06/12/14 20:26 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260b | 1.6 | 0.2 | | 06/12/14 20:26 | 1 |
| Xylene-m,p | ug/L | 0.2 U | EPA 8260 | 1.6 | 0.2 | | 06/12/14 20:26 | 1 |
| Xylene-o | ug/L | 0.2 U | EPA 8260b | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Xylene-o | ug/L | 0.2 U | EPA 8260 | 0.8 | 0.2 | | 06/12/14 20:26 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260 | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Xylenes- Total | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| Total Trihalomethanes | ug/L | 0.1 U | EPA 8260b | 0.8 | 0.1 | | 06/12/14 20:26 | 1 |
| 1,4-Dioxane | ug/L | 0.0 | EPA 8260b** | | | | 06/12/14 20:26 | 1 |
| *Surrogate for EPA 8260* | *Dibromofluoromethane* | | *100 %* | *Limits* | *65-135* | | | |
| **Pesticide Analyses** | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | ug/L | 0.0055 U | EPA 504.1 | 0.022 | 0.0055 | 06/04/14 09:24 | 06/04/14 22:04 | 1 |
| 1,2-Dibromoethane | ug/L | 0.0055 U | EPA 504.1 | 0.022 | 0.0055 | 06/04/14 09:24 | 06/04/14 22:04 | 1 |
| *Surrogate for EPA 504.1* | *2-Bromo-1-chloropropane* | | *111 %* | *Limits* | *70-130* | | | |

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

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Blank (BF41217-BLK1)** | | | | | Prepared & Analyzed: 06/12/14 13:35 | | | | | |
| Acetone | 2.0 U | 4.0 | 2.0 | ug/L | | | | | | |
| Acetone | 2.0 U | 4.0 | 2.0 | ug/L | | | | | | |
| Acrylonitrile | 1.3 U | 4.0 | 1.3 | ug/L | | | | | | |
| Acrylonitrile | 1.3 U | 4.0 | 1.3 | ug/L | | | | | | |
| Benzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Benzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Bromobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Bromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Bromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Bromodichloromethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Bromodichloromethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Bromoform | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Bromoform | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Bromomethane | 0.4 U | 0.8 | 0.4 | ug/L | | | | | | |
| Bromomethane | 0.4 U | 0.8 | 0.4 | ug/L | | | | | | |
| 2-Butanone | 2.0 U | 4.0 | 2.0 | ug/L | | | | | | |
| 2-Butanone | 2.0 U | 4.0 | 2.0 | ug/L | | | | | | |
| n-Butylbenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| sec-Butylbenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| t-Butylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Carbon disulfide | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Carbon disulfide | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Carbon tetrachloride | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Carbon tetrachloride | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Chlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Chlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Chloroethane | 0.4 U | 1.6 | 0.4 | ug/L | | | | | | |
| Chloroethane | 0.4 U | 1.6 | 0.4 | ug/L | | | | | | |
| Chloroform | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Chloroform | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Chloromethane | 0.4 U | 1.6 | 0.4 | ug/L | | | | | | |
| Chloromethane | 0.4 U | 1.6 | 0.4 | ug/L | | | | | | |
| 1,2-Dibromoethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 2-Chlorotoluene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.3 U | 0.8 | 0.3 | ug/L | | | | | | |
| 2-Chloroethylvinyl Ether | 0.5 U | 1.6 | 0.5 | ug/L | | | | | | |
| 4-Chlorotoluene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Dibromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Dibromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Dibromomethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Dibromomethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2-Dichlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,2-Dichlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,3-Dichlorobenzene | 0.07 U | 0.8 | 0.07 | ug/L | | | | | | |
| 1,4-Dichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |

**Hazen and Sawyer**
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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Blank (BF41217-BLK1)** | | | | | Prepared & Analyzed: 06/12/14 13:35 | | | | | |
| 1,4-Dichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| trans-1,4-Dichloro-2-butene | 0.3 U | 0.8 | 0.3 | ug/L | | | | | | |
| trans-1,4-Dichloro-2-butene | 0.3 U | 0.8 | 0.3 | ug/L | | | | | | |
| Dichlorodifluoromethane | 0.5 U | 1.6 | 0.5 | ug/L | | | | | | |
| 1,1-Dichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1-Dichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2-Dichloroethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,2-Dichloroethane | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,1-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| cis-1,2-Dichloroethene | 0.09 U | 0.8 | 0.09 | ug/L | | | | | | |
| cis-1,2-Dichloroethene | 0.09 U | 0.8 | 0.09 | ug/L | | | | | | |
| trans-1,2-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| trans-1,2-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2-Dichloropropane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2-Dichloropropane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 2,2-Dichloropropane | 0.3 U | 0.8 | 0.3 | ug/L | | | | | | |
| 1,1-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| cis-1,3-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| cis-1,3-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| trans-1,3-Dichloropropene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| trans-1,3-Dichloropropene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Ethylbenzene | 0.08 U | 0.8 | 0.08 | ug/L | | | | | | |
| Ethylbenzene | 0.08 U | 0.8 | 0.08 | ug/L | | | | | | |
| Hexachlorobutadiene | 0.4 U | 0.8 | 0.4 | ug/L | | | | | | |
| 2-Hexanone | 2.1 U | 4.0 | 2.1 | ug/L | | | | | | |
| 2-Hexanone | 2.1 U | 4.0 | 2.1 | ug/L | | | | | | |
| Iodomethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Iodomethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Isopropylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 4-Isopropyltoluene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Methyl-t-butyl ether | 0.2 U | 1.6 | 0.2 | ug/L | | | | | | |
| Methylene Chloride | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Methylene Chloride | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 4-Methyl-2-pentanone | 2.6 U | 4.0 | 2.6 | ug/L | | | | | | |
| 4-Methyl-2-pentanone | 2.6 U | 4.0 | 2.6 | ug/L | | | | | | |
| Naphthalene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| n-Propylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Styrene | 0.05 U | 0.8 | 0.05 | ug/L | | | | | | |
| Styrene | 0.05 U | 0.8 | 0.05 | ug/L | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Tetrachloroethene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |

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**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Blank (BF41217-BLK1)** | | | | | Prepared & Analyzed: 06/12/14 13:35 | | | | | |
| Tetrachloroethene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Toluene | 0.09 U | 0.8 | 0.09 | ug/L | | | | | | |
| Toluene | 0.09 U | 0.8 | 0.09 | ug/L | | | | | | |
| 1,2,3-Trichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2,4-Trichlorobenzene | 0.3 U | 0.8 | 0.3 | ug/L | | | | | | |
| 1,1,1-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,1-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,2-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,2-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Trichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Trichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.6 U | 1.6 | 0.6 | ug/L | | | | | | |
| Trichlorofluoromethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Trichlorofluoromethane | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| 1,2,3-Trichloropropane | 0.4 U | 0.8 | 0.4 | ug/L | | | | | | |
| 1,2,3-Trichloropropane | 0.4 U | 0.8 | 0.4 | ug/L | | | | | | |
| 1,2,4-Trimethylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,3,5-Trimethylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Vinyl acetate | 0.4 U | 1.6 | 0.4 | ug/L | | | | | | |
| Vinyl chloride | 0.3 U | 1.6 | 0.3 | ug/L | | | | | | |
| Vinyl chloride | 0.3 U | 1.6 | 0.3 | ug/L | | | | | | |
| Xylene-m,p | 0.2 U | 1.6 | 0.2 | ug/L | | | | | | |
| Xylene-m,p | 0.2 U | 1.6 | 0.2 | ug/L | | | | | | |
| Xylene-o | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Xylene-o | 0.2 U | 0.8 | 0.2 | ug/L | | | | | | |
| Xylenes- Total | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Xylenes- Total | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| Total Trihalomethanes | 0.1 U | 0.8 | 0.1 | ug/L | | | | | | |
| 1,4-Dioxane | 0.00 | | | ug/L | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *20.8* | | | *ug/L* | *20* | | *104* | *65-135* | | |
| *Surrogate: 4-Bromofluorobenzene* | *20.8* | | | *ug/L* | *20* | | *104* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.3* | | | *ug/L* | *20* | | *101* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.3* | | | *ug/L* | *20* | | *101* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **LCS (BF41217-BS1)** | | | | | Prepared & Analyzed: 06/12/14 14:07 | | | | | |
| Acetone | 96.8 | 4.0 | 2.0 | ug/L | 100 | | 97 | 70-130 | | |
| Acetone | 96.8 | 4.0 | 2.0 | ug/L | 100 | | 97 | 70-130 | | |
| Acrylonitrile | 99.5 | 4.0 | 1.3 | ug/L | 100 | | 100 | 70-130 | | |
| Acrylonitrile | 99.5 | 4.0 | 1.3 | ug/L | 100 | | 100 | 70-130 | | |
| Benzene | 20.4 | 0.8 | 0.1 | ug/L | 20 | | 102 | 70-130 | | |
| Benzene | 20.4 | 0.8 | 0.1 | ug/L | 20 | | 102 | 37-151 | | |
| Bromobenzene | 20.1 | 0.8 | 0.2 | ug/L | 20 | | 101 | 70-130 | | |
| Bromochloromethane | 21.1 | 0.8 | 0.1 | ug/L | 20 | | 106 | 70-130 | | |
| Bromochloromethane | 21.1 | 0.8 | 0.1 | ug/L | 20 | | 106 | 70-130 | | |
| Bromodichloromethane | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| Bromodichloromethane | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 35-155 | | |
| Bromoform | 19.6 | 0.8 | 0.2 | ug/L | 20 | | 98 | 70-130 | | |
| Bromoform | 19.6 | 0.8 | 0.2 | ug/L | 20 | | 98 | 45-169 | | |
| Bromomethane | 34.1 | 0.8 | 0.4 | ug/L | 40 | | 85 | 70-130 | | |
| Bromomethane | 34.1 | 0.8 | 0.4 | ug/L | 40 | | 85 | 0-242 | | |
| 2-Butanone | 99.3 | 4.0 | 2.0 | ug/L | 100 | | 99 | 70-130 | | |
| 2-Butanone | 99.3 | 4.0 | 2.0 | ug/L | 100 | | 99 | 70-130 | | |
| n-Butylbenzene | 21.2 | 0.8 | 0.2 | ug/L | 20 | | 106 | 70-130 | | |
| sec-Butylbenzene | 20.3 | 0.8 | 0.2 | ug/L | 20 | | 102 | 70-130 | | |
| t-Butylbenzene | 20.2 | 0.8 | 0.1 | ug/L | 20 | | 101 | 70-130 | | |
| Carbon disulfide | 20.6 | 0.8 | 0.2 | ug/L | 20 | | 103 | 70-130 | | |
| Carbon disulfide | 20.6 | 0.8 | 0.2 | ug/L | 20 | | 103 | 70-130 | | |
| Carbon tetrachloride | 20.9 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-130 | | |
| Carbon tetrachloride | 20.9 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-140 | | |
| Chlorobenzene | 20.8 | 0.8 | 0.1 | ug/L | 20 | | 104 | 37-160 | | |
| Chlorobenzene | 20.8 | 0.8 | 0.1 | ug/L | 20 | | 104 | 70-130 | | |
| Chloroethane | 46.5 | 1.6 | 0.4 | ug/L | 40 | | 116 | 14-230 | | |
| Chloroethane | 46.5 | 1.6 | 0.4 | ug/L | 40 | | 116 | 70-130 | | |
| Chloroform | 20.8 | 0.8 | 0.2 | ug/L | 20 | | 104 | 51-138 | | |
| Chloroform | 20.8 | 0.8 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| Chloromethane | 41.8 | 1.6 | 0.4 | ug/L | 40 | | 104 | 1-273 | | |
| Chloromethane | 41.8 | 1.6 | 0.4 | ug/L | 40 | | 104 | 70-130 | | |
| 2-Chlorotoluene | 20.7 | 0.8 | 0.1 | ug/L | 20 | | 104 | 70-130 | | |
| 4-Chlorotoluene | 21.1 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| Dibromochloromethane | 21.8 | 0.8 | 0.1 | ug/L | 20 | | 109 | 53-149 | | |
| Dibromochloromethane | 21.8 | 0.8 | 0.1 | ug/L | 20 | | 109 | 70-130 | | |
| Dibromomethane | 20.5 | 0.8 | 0.2 | ug/L | 20 | | 102 | 70-130 | | |
| Dibromomethane | 20.5 | 0.8 | 0.2 | ug/L | 20 | | 102 | 70-130 | | |
| 1,2-Dichlorobenzene | 20.3 | 0.8 | 0.1 | ug/L | 20 | | 101 | 70-130 | | |
| 1,2-Dichlorobenzene | 20.3 | 0.8 | 0.1 | ug/L | 20 | | 101 | 18-190 | | |
| 1,3-Dichlorobenzene | 20.1 | 0.8 | 0.07 | ug/L | 20 | | 101 | 70-130 | | |
| 1,4-Dichlorobenzene | 20.4 | 0.8 | 0.2 | ug/L | 20 | | 102 | 70-130 | | |
| 1,4-Dichlorobenzene | 20.4 | 0.8 | 0.2 | ug/L | 20 | | 102 | 18-190 | | |
| trans-1,4-Dichloro-2-butene | 19.2 | 0.8 | 0.3 | ug/L | 20 | | 96 | 70-130 | | |
| trans-1,4-Dichloro-2-butene | 19.2 | 0.8 | 0.3 | ug/L | 20 | | 96 | 70-130 | | |

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**July 23, 2014**
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**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **LCS (BF41217-BS1)** | | | | | Prepared & Analyzed: 06/12/14 14:07 | | | | | |
| Dichlorodifluoromethane | 47.6 | 1.6 | 0.5 | ug/L | 40 | | 119 | 70-130 | | |
| 1,1-Dichloroethane | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 103 | 70-130 | | |
| 1,1-Dichloroethane | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 103 | 59-155 | | |
| 1,2-Dichloroethane | 21.0 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| 1,2-Dichloroethane | 21.0 | 0.8 | 0.1 | ug/L | 20 | | 105 | 49-155 | | |
| 1,1-Dichloroethene | 21.1 | 0.8 | 0.2 | ug/L | 20 | | 106 | 70-130 | | |
| 1,1-Dichloroethene | 21.1 | 0.8 | 0.2 | ug/L | 20 | | 106 | 1-234 | | |
| cis-1,2-Dichloroethene | 20.9 | 0.8 | 0.09 | ug/L | 20 | | 105 | 70-130 | | |
| cis-1,2-Dichloroethene | 20.9 | 0.8 | 0.09 | ug/L | 20 | | 105 | 70-130 | | |
| trans-1,2-Dichloroethene | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 54-156 | | |
| trans-1,2-Dichloroethene | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| 1,2-Dichloropropane | 20.9 | 0.8 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| 1,2-Dichloropropane | 20.9 | 0.8 | 0.2 | ug/L | 20 | | 104 | 1-210 | | |
| 2,2-Dichloropropane | 21.9 | 0.8 | 0.3 | ug/L | 20 | | 109 | 70-130 | | |
| 1,1-Dichloropropene | 21.3 | 0.8 | 0.2 | ug/L | 20 | | 107 | 70-130 | | |
| cis-1,3-Dichloropropene | 21.3 | 0.8 | 0.2 | ug/L | 20 | | 107 | 1-227 | | |
| cis-1,3-Dichloropropene | 21.3 | 0.8 | 0.2 | ug/L | 20 | | 107 | 70-130 | | |
| trans-1,3-Dichloropropene | 22.0 | 0.8 | 0.1 | ug/L | 20 | | 110 | 70-130 | | |
| trans-1,3-Dichloropropene | 22.0 | 0.8 | 0.1 | ug/L | 20 | | 110 | 17-183 | | |
| Ethylbenzene | 21.6 | 0.8 | 0.08 | ug/L | 20 | | 108 | 37-162 | | |
| Ethylbenzene | 21.6 | 0.8 | 0.08 | ug/L | 20 | | 108 | 70-130 | | |
| Hexachlorobutadiene | 19.6 | 0.8 | 0.4 | ug/L | 20 | | 98 | 70-130 | | |
| 2-Hexanone | 102 | 4.0 | 2.1 | ug/L | 100 | | 102 | 70-130 | | |
| 2-Hexanone | 102 | 4.0 | 2.1 | ug/L | 100 | | 102 | 70-130 | | |
| Iodomethane | 16.9 | 0.8 | 0.2 | ug/L | 20 | | 84 | 70-130 | | |
| Iodomethane | 16.9 | 0.8 | 0.2 | ug/L | 20 | | 84 | 70-130 | | |
| Isopropylbenzene | 21.5 | 0.8 | 0.1 | ug/L | 20 | | 107 | 70-130 | | |
| 4-Isopropyltoluene | 20.9 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-130 | | |
| Methyl-t-butyl ether | 20.8 | 1.6 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| Methylene Chloride | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 1-221 | | |
| Methylene Chloride | 20.7 | 0.8 | 0.2 | ug/L | 20 | | 104 | 70-130 | | |
| 4-Methyl-2-pentanone | 97.4 | 4.0 | 2.6 | ug/L | 100 | | 97 | 70-130 | | |
| 4-Methyl-2-pentanone | 97.4 | 4.0 | 2.6 | ug/L | 100 | | 97 | 70-130 | | |
| Naphthalene | 19.6 | 0.8 | 0.2 | ug/L | 20 | | 98 | 70-130 | | |
| n-Propylbenzene | 21.0 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| Styrene | 21.9 | 0.8 | 0.05 | ug/L | 20 | | 110 | 70-130 | | |
| Styrene | 21.9 | 0.8 | 0.05 | ug/L | 20 | | 110 | 70-130 | | |
| 1,1,1,2-Tetrachloroethane | 21.0 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-130 | | |
| 1,1,1,2-Tetrachloroethane | 21.0 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-130 | | |
| 1,1,2,2-Tetrachloroethane | 19.6 | 0.8 | 0.2 | ug/L | 20 | | 98 | 70-130 | | |
| 1,1,2,2-Tetrachloroethane | 19.6 | 0.8 | 0.2 | ug/L | 20 | | 98 | 46-157 | | |
| Tetrachloroethene | 21.0 | 0.8 | 0.1 | ug/L | 20 | | 105 | 64-148 | | |
| Tetrachloroethene | 21.0 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| Toluene | 21.3 | 0.8 | 0.09 | ug/L | 20 | | 107 | 47-150 | | |
| Toluene | 21.3 | 0.8 | 0.09 | ug/L | 20 | | 107 | 70-130 | | |

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

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **LCS (BF41217-BS1)** | | | | | Prepared & Analyzed: 06/12/14 14:07 | | | | | |
| 1,2,3-Trichlorobenzene | 19.2 | 0.8 | 0.2 | ug/L | 20 | | 96 | 70-130 | | |
| 1,2,4-Trichlorobenzene | 18.8 | 0.8 | 0.3 | ug/L | 20 | | 94 | 70-130 | | |
| 1,1,1-Trichloroethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | | 106 | 70-130 | | |
| 1,1,1-Trichloroethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | | 106 | 52-162 | | |
| 1,1,2-Trichloroethane | 21.0 | 0.8 | 0.2 | ug/L | 20 | | 105 | 70-130 | | |
| 1,1,2-Trichloroethane | 21.0 | 0.8 | 0.2 | ug/L | 20 | | 105 | 52-150 | | |
| Trichloroethene | 20.6 | 0.8 | 0.2 | ug/L | 20 | | 103 | 71-157 | | |
| Trichloroethene | 20.6 | 0.8 | 0.2 | ug/L | 20 | | 103 | 70-130 | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 21.8 | 1.6 | 0.6 | ug/L | 20 | | 109 | 70-130 | | |
| Trichlorofluoromethane | 21.7 | 0.8 | 0.2 | ug/L | 20 | | 109 | 17-181 | | |
| Trichlorofluoromethane | 21.7 | 0.8 | 0.2 | ug/L | 20 | | 109 | 70-130 | | |
| 1,2,3-Trichloropropane | 19.7 | 0.8 | 0.4 | ug/L | 20 | | 98 | 70-130 | | |
| 1,2,3-Trichloropropane | 19.7 | 0.8 | 0.4 | ug/L | 20 | | 98 | 70-130 | | |
| 1,2,4-Trimethylbenzene | 20.9 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| 1,3,5-Trimethylbenzene | 21.1 | 0.8 | 0.1 | ug/L | 20 | | 105 | 70-130 | | |
| Vinyl acetate | 43.6 | 1.6 | 0.4 | ug/L | 40 | | 109 | 70-130 | | |
| Vinyl chloride | 40.6 | 1.6 | 0.3 | ug/L | 40 | | 102 | 1-251 | | |
| Vinyl chloride | 40.6 | 1.6 | 0.3 | ug/L | 40 | | 102 | 70-130 | | |
| Xylene-m,p | 43.1 | 1.6 | 0.2 | ug/L | 40 | | 108 | 70-130 | | |
| Xylene-m,p | 43.1 | 1.6 | 0.2 | ug/L | 40 | | 108 | 70-130 | | |
| Xylene-o | 21.3 | 0.8 | 0.2 | ug/L | 20 | | 106 | 70-130 | | |
| Xylene-o | 21.3 | 0.8 | 0.2 | ug/L | 20 | | 106 | 70-130 | | |
| *Surrogate: 4-Bromofluorobenzene* | *19.8* | | | *ug/L* | *20* | | *99* | *65-135* | | |
| *Surrogate: 4-Bromofluorobenzene* | *19.8* | | | *ug/L* | *20* | | *99* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.1* | | | *ug/L* | *20* | | *96* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.1* | | | *ug/L* | *20* | | *96* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.1* | | | *ug/L* | *20* | | *101* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.1* | | | *ug/L* | *20* | | *101* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |

**Hazen and Sawyer**
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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Duplicate (BF41217-DUP1)** | | **Source: 1405266-16** | | | Prepared & Analyzed: 06/12/14 19:54 | | | | | |
| Acetone | 59.3 J3 | 4.0 | 2.0 | ug/L | | 104 | | | 55 | 20 |
| Acetone | 59.3 J3 | 4.0 | 2.0 | ug/L | | 104 | | | 55 | 20 |
| Acrylonitrile | 1.3 U | 4.0 | 1.3 | ug/L | | ND | | | | 20 |
| Acrylonitrile | 1.3 U | 4.0 | 1.3 | ug/L | | ND | | | | 20 |
| Benzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Benzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Bromobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Bromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Bromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Bromodichloromethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Bromodichloromethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Bromoform | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Bromoform | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Bromomethane | 0.4 U | 0.8 | 0.4 | ug/L | | ND | | | | 20 |
| Bromomethane | 0.4 U | 0.8 | 0.4 | ug/L | | ND | | | | 20 |
| 2-Butanone | 2.0 U | 4.0 | 2.0 | ug/L | | 2.18 | | | | 20 |
| 2-Butanone | 2.0 U | 4.0 | 2.0 | ug/L | | 2.18 | | | | 20 |
| n-Butylbenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| sec-Butylbenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| t-Butylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Carbon disulfide | 0.526 I | 0.8 | 0.2 | ug/L | | 0.470 | | | 11 | 20 |
| Carbon disulfide | 0.526 I | 0.8 | 0.2 | ug/L | | 0.470 | | | 11 | 20 |
| Carbon tetrachloride | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Carbon tetrachloride | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Chlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Chlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Chloroethane | 0.4 U | 1.6 | 0.4 | ug/L | | ND | | | | 20 |
| Chloroethane | 0.4 U | 1.6 | 0.4 | ug/L | | ND | | | | 20 |
| Chloroform | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Chloroform | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Chloromethane | 0.4 U | 1.6 | 0.4 | ug/L | | ND | | | | 20 |
| Chloromethane | 0.4 U | 1.6 | 0.4 | ug/L | | ND | | | | 20 |
| 1,2-Dibromoethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 200 |
| 2-Chlorotoluene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,2-Dibromo-3-chloropropane | 0.3 U | 0.8 | 0.3 | ug/L | | ND | | | | 200 |
| 2-Chloroethylvinyl Ether | 0.5 U | 1.6 | 0.5 | ug/L | | ND | | | | 200 |
| 4-Chlorotoluene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Dibromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Dibromochloromethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Dibromomethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Dibromomethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2-Dichlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,2-Dichlorobenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,3-Dichlorobenzene | 0.07 U | 0.8 | 0.07 | ug/L | | ND | | | | 20 |
| 1,4-Dichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |

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**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Duplicate (BF41217-DUP1)** | | **Source: 1405266-16** | | | Prepared & Analyzed: 06/12/14 19:54 | | | | | |
| 1,4-Dichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| trans-1,4-Dichloro-2-butene | 0.3 U | 0.8 | 0.3 | ug/L | | ND | | | | 20 |
| trans-1,4-Dichloro-2-butene | 0.3 U | 0.8 | 0.3 | ug/L | | ND | | | | 20 |
| Dichlorodifluoromethane | 0.5 U | 1.6 | 0.5 | ug/L | | ND | | | | 20 |
| 1,1-Dichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1-Dichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2-Dichloroethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,2-Dichloroethane | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,1-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| cis-1,2-Dichloroethene | 0.09 U | 0.8 | 0.09 | ug/L | | ND | | | | 20 |
| cis-1,2-Dichloroethene | 0.09 U | 0.8 | 0.09 | ug/L | | ND | | | | 20 |
| trans-1,2-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| trans-1,2-Dichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2-Dichloropropane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2-Dichloropropane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 2,2-Dichloropropane | 0.3 U | 0.8 | 0.3 | ug/L | | ND | | | | 20 |
| 1,1-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| cis-1,3-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| cis-1,3-Dichloropropene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| trans-1,3-Dichloropropene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| trans-1,3-Dichloropropene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Ethylbenzene | 0.08 U | 0.8 | 0.08 | ug/L | | ND | | | | 20 |
| Ethylbenzene | 0.08 U | 0.8 | 0.08 | ug/L | | ND | | | | 20 |
| Hexachlorobutadiene | 0.4 U | 0.8 | 0.4 | ug/L | | ND | | | | 20 |
| 2-Hexanone | 2.1 U | 4.0 | 2.1 | ug/L | | ND | | | | 20 |
| 2-Hexanone | 2.1 U | 4.0 | 2.1 | ug/L | | ND | | | | 20 |
| Iodomethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Iodomethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Isopropylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 4-Isopropyltoluene | 0.267 I | 0.8 | 0.2 | ug/L | | 0.261 | | | 2 | 20 |
| Methyl-t-butyl ether | 0.2 U | 1.6 | 0.2 | ug/L | | ND | | | | 20 |
| Methylene Chloride | 0.603 I | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Methylene Chloride | 0.603 I | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 4-Methyl-2-pentanone | 2.6 U | 4.0 | 2.6 | ug/L | | ND | | | | 20 |
| 4-Methyl-2-pentanone | 2.6 U | 4.0 | 2.6 | ug/L | | ND | | | | 20 |
| Naphthalene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| n-Propylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Styrene | 0.05 U | 0.8 | 0.05 | ug/L | | ND | | | | 20 |
| Styrene | 0.05 U | 0.8 | 0.05 | ug/L | | ND | | | | 20 |
| 1,1,1,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,1,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,2,2-Tetrachloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Tetrachloroethene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |

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**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Duplicate (BF41217-DUP1)** | | **Source: 1405266-16** | | | Prepared & Analyzed: 06/12/14 19:54 | | | | | |
| Tetrachloroethene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Toluene | 0.557 I | 0.8 | 0.09 | ug/L | | 0.468 | | | 17 | 20 |
| Toluene | 0.557 I | 0.8 | 0.09 | ug/L | | 0.468 | | | 17 | 20 |
| 1,2,3-Trichlorobenzene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2,4-Trichlorobenzene | 0.3 U | 0.8 | 0.3 | ug/L | | ND | | | | 20 |
| 1,1,1-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,1-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,2-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,2-Trichloroethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Trichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Trichloroethene | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Trichlorofluoromethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.6 U | 1.6 | 0.6 | ug/L | | ND | | | | 20 |
| Trichlorofluoromethane | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| 1,2,3-Trichloropropane | 0.4 U | 0.8 | 0.4 | ug/L | | ND | | | | 20 |
| 1,2,3-Trichloropropane | 0.4 U | 0.8 | 0.4 | ug/L | | ND | | | | 20 |
| 1,2,4-Trimethylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| 1,3,5-Trimethylbenzene | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Vinyl acetate | 0.4 U | 1.6 | 0.4 | ug/L | | ND | | | | 20 |
| Vinyl chloride | 0.3 U | 1.6 | 0.3 | ug/L | | ND | | | | 20 |
| Vinyl chloride | 0.3 U | 1.6 | 0.3 | ug/L | | ND | | | | 20 |
| Xylene-m,p | 0.2 U | 1.6 | 0.2 | ug/L | | ND | | | | 20 |
| Xylene-m,p | 0.2 U | 1.6 | 0.2 | ug/L | | ND | | | | 20 |
| Xylene-o | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Xylene-o | 0.2 U | 0.8 | 0.2 | ug/L | | ND | | | | 20 |
| Xylenes- Total | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Xylenes- Total | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 20 |
| Total Trihalomethanes | 0.1 U | 0.8 | 0.1 | ug/L | | ND | | | | 200 |
| 1,4-Dioxane | 0.00 | | | ug/L | | 0.00 | | | | 200 |
| *Surrogate: 4-Bromofluorobenzene* | *20.5* | | | *ug/L* | *20* | | *103* | *65-135* | | |
| *Surrogate: 4-Bromofluorobenzene* | *20.5* | | | *ug/L* | *20* | | *103* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.9* | | | *ug/L* | *20* | | *99* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.9* | | | *ug/L* | *20* | | *99* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.3* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.3* | | | *ug/L* | *20* | | *102* | *65-135* | | |

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

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Matrix Spike (BF41217-MS1)** | | **Source: 1405265-01** | | | Prepared & Analyzed: 06/12/14 15:36 | | | | | |
| Acetone | 187 | 4.0 | 2.0 | ug/L | 100 | 56.9 | 130 | 65-135 | | |
| Acetone | 187 | 4.0 | 2.0 | ug/L | 100 | 56.9 | 130 | 65-135 | | |
| Acrylonitrile | 96.8 | 4.0 | 1.3 | ug/L | 100 | ND | 97 | 65-135 | | |
| Acrylonitrile | 96.8 | 4.0 | 1.3 | ug/L | 100 | ND | 97 | 60-140 | | |
| Benzene | 20.1 | 0.8 | 0.1 | ug/L | 20 | ND | 100 | 65-135 | | |
| Benzene | 20.1 | 0.8 | 0.1 | ug/L | 20 | ND | 100 | 37-151 | | |
| Bromobenzene | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 65-135 | | |
| Bromochloromethane | 21.3 | 0.8 | 0.1 | ug/L | 20 | ND | 106 | 65-135 | | |
| Bromochloromethane | 21.3 | 0.8 | 0.1 | ug/L | 20 | ND | 106 | 65-135 | | |
| Bromodichloromethane | 20.3 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 65-135 | | |
| Bromodichloromethane | 20.3 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 35-155 | | |
| Bromoform | 19.5 | 0.8 | 0.2 | ug/L | 20 | ND | 97 | 65-135 | | |
| Bromoform | 19.5 | 0.8 | 0.2 | ug/L | 20 | ND | 97 | 45-169 | | |
| Bromomethane | 26.1 | 0.8 | 0.4 | ug/L | 40 | ND | 65 | 65-135 | | |
| Bromomethane | 25.0 | 0.8 | 0.4 | ug/L | 40 | ND | 62 | 1-242 | | |
| 2-Butanone | 113 | 4.0 | 2.0 | ug/L | 100 | 5.20 | 108 | 65-135 | | |
| 2-Butanone | 113 | 4.0 | 2.0 | ug/L | 100 | 5.20 | 108 | 65-135 | | |
| n-Butylbenzene | 20.8 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 65-135 | | |
| sec-Butylbenzene | 20.3 | 0.8 | 0.2 | ug/L | 20 | ND | 101 | 65-135 | | |
| t-Butylbenzene | 19.7 | 0.8 | 0.1 | ug/L | 20 | ND | 98 | 65-135 | | |
| Carbon disulfide | 20.5 | 0.8 | 0.2 | ug/L | 20 | 0.588 | 100 | 65-135 | | |
| Carbon disulfide | 20.5 | 0.8 | 0.2 | ug/L | 20 | 0.588 | 100 | 65-135 | | |
| Carbon tetrachloride | 20.8 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 65-135 | | |
| Carbon tetrachloride | 20.8 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 70-140 | | |
| Chlorobenzene | 21.3 | 0.8 | 0.1 | ug/L | 20 | ND | 107 | 65-135 | | |
| Chlorobenzene | 21.3 | 0.8 | 0.1 | ug/L | 20 | ND | 107 | 37-160 | | |
| Chloroethane | 41.0 | 1.6 | 0.4 | ug/L | 40 | ND | 102 | 65-135 | | |
| Chloroethane | 41.0 | 1.6 | 0.4 | ug/L | 40 | ND | 102 | 14-230 | | |
| Chloroform | 21.0 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 65-135 | | |
| Chloroform | 21.0 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 51-138 | | |
| Chloromethane | 36.4 | 1.6 | 0.4 | ug/L | 40 | ND | 91 | 65-135 | | |
| Chloromethane | 36.4 | 1.6 | 0.4 | ug/L | 40 | ND | 91 | 0-273 | | |
| 2-Chlorotoluene | 21.2 | 0.8 | 0.1 | ug/L | 20 | ND | 106 | 65-135 | | |
| 4-Chlorotoluene | 21.6 | 0.8 | 0.1 | ug/L | 20 | ND | 108 | 65-135 | | |
| Dibromochloromethane | 21.2 | 0.8 | 0.1 | ug/L | 20 | ND | 106 | 65-135 | | |
| Dibromochloromethane | 21.2 | 0.8 | 0.1 | ug/L | 20 | ND | 106 | 53-149 | | |
| Dibromomethane | 20.2 | 0.8 | 0.2 | ug/L | 20 | ND | 101 | 65-135 | | |
| Dibromomethane | 20.2 | 0.8 | 0.2 | ug/L | 20 | ND | 101 | 65-135 | | |
| 1,2-Dichlorobenzene | 20.6 | 0.8 | 0.1 | ug/L | 20 | ND | 103 | 65-135 | | |
| 1,2-Dichlorobenzene | 20.6 | 0.8 | 0.1 | ug/L | 20 | ND | 103 | 18-190 | | |
| 1,3-Dichlorobenzene | 20.9 | 0.8 | 0.07 | ug/L | 20 | ND | 104 | 65-135 | | |
| 1,4-Dichlorobenzene | 21.0 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 65-135 | | |
| 1,4-Dichlorobenzene | 21.0 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 18-190 | | |
| trans-1,4-Dichloro-2-butene | 18.4 | 0.8 | 0.3 | ug/L | 20 | ND | 92 | 65-135 | | |
| trans-1,4-Dichloro-2-butene | 18.4 | 0.8 | 0.3 | ug/L | 20 | ND | 92 | 65-135 | | |

**Hazen and Sawyer**
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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Matrix Spike (BF41217-MS1)** | | **Source: 1405265-01** | | | Prepared & Analyzed: 06/12/14 15:36 | | | | | |
| Dichlorodifluoromethane | 36.1 | 1.6 | 0.5 | ug/L | 40 | ND | 90 | 65-135 | | |
| 1,1-Dichloroethane | 20.3 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 59-155 | | |
| 1,1-Dichloroethane | 20.3 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 65-135 | | |
| 1,2-Dichloroethane | 20.9 | 0.8 | 0.1 | ug/L | 20 | ND | 104 | 65-135 | | |
| 1,2-Dichloroethane | 20.9 | 0.8 | 0.1 | ug/L | 20 | ND | 104 | 49-155 | | |
| 1,1-Dichloroethene | 20.0 | 0.8 | 0.2 | ug/L | 20 | ND | 100 | 65-135 | | |
| 1,1-Dichloroethene | 20.0 | 0.8 | 0.2 | ug/L | 20 | ND | 100 | 1-234 | | |
| cis-1,2-Dichloroethene | 21.1 | 0.8 | 0.09 | ug/L | 20 | ND | 105 | 65-135 | | |
| cis-1,2-Dichloroethene | 21.1 | 0.8 | 0.09 | ug/L | 20 | ND | 105 | 65-135 | | |
| trans-1,2-Dichloroethene | 20.5 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 54-156 | | |
| trans-1,2-Dichloroethene | 20.5 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 65-135 | | |
| 1,2-Dichloropropane | 20.8 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 65-135 | | |
| 1,2-Dichloropropane | 20.8 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 0-210 | | |
| 2,2-Dichloropropane | 22.9 | 0.8 | 0.3 | ug/L | 20 | ND | 114 | 65-135 | | |
| 1,1-Dichloropropene | 21.3 | 0.8 | 0.2 | ug/L | 20 | ND | 107 | 65-135 | | |
| cis-1,3-Dichloropropene | 20.0 | 0.8 | 0.2 | ug/L | 20 | ND | 100 | 65-135 | | |
| cis-1,3-Dichloropropene | 20.0 | 0.8 | 0.2 | ug/L | 20 | ND | 100 | 1-227 | | |
| trans-1,3-Dichloropropene | 21.4 | 0.8 | 0.1 | ug/L | 20 | ND | 107 | 17-183 | | |
| trans-1,3-Dichloropropene | 21.4 | 0.8 | 0.1 | ug/L | 20 | ND | 107 | 65-135 | | |
| Ethylbenzene | 21.0 | 0.8 | 0.08 | ug/L | 20 | ND | 105 | 65-135 | | |
| Ethylbenzene | 21.0 | 0.8 | 0.08 | ug/L | 20 | ND | 105 | 37-162 | | |
| Hexachlorobutadiene | 22.4 | 0.8 | 0.4 | ug/L | 20 | ND | 112 | 65-135 | | |
| 2-Hexanone | 109 | 4.0 | 2.1 | ug/L | 100 | ND | 109 | 65-135 | | |
| 2-Hexanone | 109 | 4.0 | 2.1 | ug/L | 100 | ND | 109 | 65-135 | | |
| Iodomethane | 30.5 J2 | 0.8 | 0.2 | ug/L | 20 | ND | 152 | 65-135 | | |
| Iodomethane | 30.5 J2 | 0.8 | 0.2 | ug/L | 20 | ND | 152 | 65-135 | | |
| Isopropylbenzene | 20.9 | 0.8 | 0.1 | ug/L | 20 | ND | 104 | 65-135 | | |
| 4-Isopropyltoluene | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 65-135 | | |
| Methyl-t-butyl ether | 19.8 | 1.6 | 0.2 | ug/L | 20 | ND | 99 | 65-135 | | |
| Methylene Chloride | 21.4 | 0.8 | 0.2 | ug/L | 20 | 0.570 | 104 | 65-135 | | |
| Methylene Chloride | 21.4 | 0.8 | 0.2 | ug/L | 20 | 0.570 | 104 | 1-221 | | |
| 4-Methyl-2-pentanone | 101 | 4.0 | 2.6 | ug/L | 100 | ND | 101 | 65-135 | | |
| 4-Methyl-2-pentanone | 101 | 4.0 | 2.6 | ug/L | 100 | ND | 101 | 65-135 | | |
| Naphthalene | 19.4 | 0.8 | 0.2 | ug/L | 20 | ND | 97 | 65-135 | | |
| n-Propylbenzene | 20.7 | 0.8 | 0.1 | ug/L | 20 | ND | 104 | 65-135 | | |
| Styrene | 21.6 | 0.8 | 0.05 | ug/L | 20 | ND | 108 | 65-135 | | |
| Styrene | 21.6 | 0.8 | 0.05 | ug/L | 20 | ND | 108 | 65-135 | | |
| 1,1,1,2-Tetrachloroethane | 20.5 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 65-135 | | |
| 1,1,1,2-Tetrachloroethane | 20.5 | 0.8 | 0.2 | ug/L | 20 | ND | 102 | 65-135 | | |
| 1,1,2,2-Tetrachloroethane | 19.1 | 0.8 | 0.2 | ug/L | 20 | ND | 95 | 65-135 | | |
| 1,1,2,2-Tetrachloroethane | 19.1 | 0.8 | 0.2 | ug/L | 20 | ND | 95 | 46-157 | | |
| Tetrachloroethene | 21.0 | 0.8 | 0.1 | ug/L | 20 | ND | 105 | 65-135 | | |
| Tetrachloroethene | 21.0 | 0.8 | 0.1 | ug/L | 20 | ND | 105 | 64-148 | | |
| Toluene | 26.0 | 0.8 | 0.09 | ug/L | 20 | 5.26 | 104 | 65-135 | | |
| Toluene | 26.0 | 0.8 | 0.09 | ug/L | 20 | 5.26 | 104 | 47-150 | | |

**Hazen and Sawyer**
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**July 23, 2014**
**Work Order: 1405266**

**Volatile Organic Compounds - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41217 - VOC - Prep** | | | | | | | | | | |
| **Matrix Spike (BF41217-MS1)** | | **Source: 1405265-01** | | | Prepared & Analyzed: 06/12/14 15:36 | | | | | |
| 1,2,3-Trichlorobenzene | 19.3 | 0.8 | 0.2 | ug/L | 20 | ND | 97 | 65-135 | | |
| 1,2,4-Trichlorobenzene | 19.6 | 0.8 | 0.3 | ug/L | 20 | ND | 98 | 65-135 | | |
| 1,1,1-Trichloroethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 106 | 65-135 | | |
| 1,1,1-Trichloroethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 106 | 52-162 | | |
| 1,1,2-Trichloroethane | 20.2 | 0.8 | 0.2 | ug/L | 20 | ND | 101 | 65-135 | | |
| 1,1,2-Trichloroethane | 20.2 | 0.8 | 0.2 | ug/L | 20 | ND | 101 | 52-150 | | |
| Trichloroethene | 20.7 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 71-157 | | |
| Trichloroethene | 20.7 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 65-135 | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 21.1 | 1.6 | 0.6 | ug/L | 20 | ND | 106 | 65-135 | | |
| Trichlorofluoromethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 65-135 | | |
| Trichlorofluoromethane | 21.1 | 0.8 | 0.2 | ug/L | 20 | ND | 105 | 17-181 | | |
| 1,2,3-Trichloropropane | 19.5 | 0.8 | 0.4 | ug/L | 20 | ND | 98 | 65-135 | | |
| 1,2,3-Trichloropropane | 19.5 | 0.8 | 0.4 | ug/L | 20 | ND | 98 | 65-135 | | |
| 1,2,4-Trimethylbenzene | 20.4 | 0.8 | 0.1 | ug/L | 20 | ND | 102 | 65-135 | | |
| 1,3,5-Trimethylbenzene | 20.7 | 0.8 | 0.1 | ug/L | 20 | ND | 104 | 65-135 | | |
| Vinyl acetate | 42.0 | 1.6 | 0.4 | ug/L | 40 | ND | 105 | 65-135 | | |
| Vinyl chloride | 40.8 | 1.6 | 0.3 | ug/L | 40 | ND | 102 | 65-135 | | |
| Vinyl chloride | 40.8 | 1.6 | 0.3 | ug/L | 40 | ND | 102 | 1-251 | | |
| Xylene-m,p | 42.2 | 1.6 | 0.2 | ug/L | 40 | ND | 106 | 65-135 | | |
| Xylene-m,p | 42.2 | 1.6 | 0.2 | ug/L | 40 | ND | 106 | 60-140 | | |
| Xylene-o | 20.9 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 65-135 | | |
| Xylene-o | 20.9 | 0.8 | 0.2 | ug/L | 20 | ND | 104 | 60-140 | | |
| *Surrogate: 4-Bromofluorobenzene* | *19.5* | | | *ug/L* | *20* | | *97* | *65-135* | | |
| *Surrogate: 4-Bromofluorobenzene* | *19.5* | | | *ug/L* | *20* | | *97* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.9* | | | *ug/L* | *20* | | *100* | *65-135* | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *19.9* | | | *ug/L* | *20* | | *100* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Toluene-d8* | *20.4* | | | *ug/L* | *20* | | *102* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.0* | | | *ug/L* | *20* | | *100* | *65-135* | | |
| *Surrogate: Dibromofluoromethane* | *20.0* | | | *ug/L* | *20* | | *100* | *65-135* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Pesticide Analyses - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40406 - EPA 504 Micro extraction** | | | | | | | | | | |
| **Blank (BF40406-BLK1)** | | | | | Prepared & Analyzed: 06/04/14 18:48 | | | | | |
| 1,2-Dibromoethane | 0.0050 U | 0.020 | 0.0050 | ug/L | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.0050 U | 0.020 | 0.0050 | ug/L | | | | | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *0.105* | | | *ug/L* | *0.10* | | *105* | *70-130* | | |
| **LCS (BF40406-BS1)** | | | | | Prepared & Analyzed: 06/04/14 19:10 | | | | | |
| 1,2-Dibromoethane | 0.109 | 0.020 | 0.0050 | ug/L | 0.10 | | 109 | 70-130 | | |
| 1,2-Dibromo-3-chloropropane | 0.107 | 0.020 | 0.0050 | ug/L | 0.10 | | 107 | 70-130 | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *0.104* | | | *ug/L* | *0.10* | | *104* | *70-130* | | |
| **LCS Dup (BF40406-BSD1)** | | | | | Prepared & Analyzed: 06/04/14 19:32 | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.110 | 0.020 | 0.0050 | ug/L | 0.10 | | 110 | 70-130 | 3 | 20 |
| 1,2-Dibromoethane | 0.103 | 0.020 | 0.0050 | ug/L | 0.10 | | 103 | 70-130 | 6 | 20 |
| *Surrogate: 2-Bromo-1-chloropropane* | *0.105* | | | *ug/L* | *0.10* | | *105* | *70-130* | | |
| **Matrix Spike (BF40406-MS1)** | | **Source: 1405567-01** | | | Prepared & Analyzed: 06/04/14 19:53 | | | | | |
| 1,2-Dibromoethane | 0.0977 | 0.021 | 0.0054 | ug/L | 0.11 | ND | 91 | 65-135 | | |
| 1,2-Dibromo-3-chloropropane | 0.116 | 0.021 | 0.0054 | ug/L | 0.11 | ND | 108 | 65-135 | | |
| *Surrogate: 2-Bromo-1-chloropropane* | *0.108* | | | *ug/L* | *0.11* | | *101* | *70-130* | | |
| **Matrix Spike Dup (BF40406-MSD1)** | | **Source: 1405567-01** | | | Prepared & Analyzed: 06/04/14 20:15 | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.114 | 0.020 | 0.0051 | ug/L | 0.10 | ND | 112 | 65-135 | 2 | 20 |
| 1,2-Dibromoethane | 0.111 | 0.020 | 0.0051 | ug/L | 0.10 | ND | 109 | 65-135 | 13 | 20 |
| *Surrogate: 2-Bromo-1-chloropropane* | *0.111* | | | *ug/L* | *0.10* | | *109* | *70-130* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE43003 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Blank (BE43003-BLK1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Sulfate | 0.20 U | 0.60 | 0.20 | mg/L | | | | | | |
| Nitrate (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| Nitrite (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| Orthophosphate as P | 0.010 U | 0.040 | 0.010 | mg/L | | | | | | |
| *Surrogate: Dichloroacetate* | *0.911* | | | *mg/L* | *1.0* | | *91* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.911* | | | *mg/L* | *1.0* | | *91* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.911* | | | *mg/L* | *1.0* | | *91* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.911* | | | *mg/L* | *1.0* | | *91* | *78-120* | | |
| **LCS (BE43003-BS1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Sulfate | 9.20 | 0.60 | 0.20 | mg/L | 9.0 | | 102 | 85-115 | | |
| Orthophosphate as P | 0.915 | 0.040 | 0.010 | mg/L | 0.90 | | 102 | 85-115 | | |
| Nitrite (as N) | 1.46 | 0.04 | 0.01 | mg/L | 1.4 | | 105 | 85-115 | | |
| Nitrate (as N) | 1.68 | 0.04 | 0.01 | mg/L | 1.7 | | 99 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *78-120* | | |
| **LCS Dup (BE43003-BSD1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Orthophosphate as P | 0.876 | 0.040 | 0.010 | mg/L | 0.90 | | 97 | 85-115 | 4 | 200 |
| Nitrate (as N) | 1.75 | 0.04 | 0.01 | mg/L | 1.7 | | 103 | 85-115 | 4 | 200 |
| Sulfate | 9.40 | 0.60 | 0.20 | mg/L | 9.0 | | 104 | 85-115 | 2 | 200 |
| Nitrite (as N) | 1.47 | 0.04 | 0.01 | mg/L | 1.4 | | 105 | 85-115 | 0.1 | 200 |
| *Surrogate: Dichloroacetate* | *1.12* | | | *mg/L* | *1.0* | | *112* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.12* | | | *mg/L* | *1.0* | | *112* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.12* | | | *mg/L* | *1.0* | | *112* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.12* | | | *mg/L* | *1.0* | | *112* | *78-120* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Inorganics - Quality Control**

| Analyte | Result | | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE43003 - Ion Chromatography 300.0 Prep** | | | | | | | | | | | |
| **Matrix Spike (BE43003-MS1)** | | | **Source: 1405265-06** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Sulfate | 18.8 | | 0.60 | 0.20 | mg/L | 9.0 | 9.15 | 108 | 85-115 | | |
| Nitrite (as N) | 2.02 | J2,J6 | 0.04 | 0.01 | mg/L | 1.4 | ND | 144 | 85-115 | | |
| Orthophosphate as P | 0.010 | U,J2,J6 | 0.040 | 0.010 | mg/L | 0.90 | ND | | 85-115 | | |
| Nitrate (as N) | 1.64 | | 0.04 | 0.01 | mg/L | 1.7 | ND | 96 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | | *mg/L* | *1.0* | | *110* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | | *mg/L* | *1.0* | | *110* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | | *mg/L* | *1.0* | | *110* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | | *mg/L* | *1.0* | | *110* | *78-120* | | |
| **Matrix Spike (BE43003-MS2)** | | | **Source: 1405266-01** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Orthophosphate as P | 7.66 | | 0.040 | 0.010 | mg/L | 0.90 | 6.83 | 91 | 85-115 | | |
| Nitrite (as N) | 2.69 | J2,J6 | 0.04 | 0.01 | mg/L | 1.4 | ND | 192 | 85-115 | | |
| Nitrate (as N) | 1.61 | | 0.04 | 0.01 | mg/L | 1.7 | 0.0240 | 93 | 85-115 | | |
| Sulfate | 10.3 | | 0.60 | 0.20 | mg/L | 9.0 | 1.17 | 101 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *0.987* | | | | *mg/L* | *1.0* | | *99* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.987* | | | | *mg/L* | *1.0* | | *99* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.987* | | | | *mg/L* | *1.0* | | *99* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.987* | | | | *mg/L* | *1.0* | | *99* | *78-120* | | |
| **Batch BE43004 - Ion Chromatography 300.0 Prep** | | | | | | | | | | | |
| **Blank (BE43004-BLK1)** | | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 0.01 | U | 0.04 | 0.01 | mg/L | | | | | | |
| Orthophosphate as P | 0.010 | U | 0.040 | 0.010 | mg/L | | | | | | |
| Nitrate (as N) | 0.01 | U | 0.04 | 0.01 | mg/L | | | | | | |
| Sulfate | 0.20 | U | 0.60 | 0.20 | mg/L | | | | | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | | *mg/L* | *1.0* | | *93* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | | *mg/L* | *1.0* | | *93* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | | *mg/L* | *1.0* | | *93* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | | *mg/L* | *1.0* | | *93* | *90-115* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE43004 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **LCS (BE43004-BS1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Orthophosphate as P | 0.885 | 0.040 | 0.010 | mg/L | 0.90 | | 98 | 85-115 | | |
| Sulfate | 9.22 | 0.60 | 0.20 | mg/L | 9.0 | | 102 | 85-115 | | |
| Nitrate (as N) | 1.64 | 0.04 | 0.01 | mg/L | 1.7 | | 96 | 85-115 | | |
| Nitrite (as N) | 1.43 | 0.04 | 0.01 | mg/L | 1.4 | | 102 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| **LCS Dup (BE43004-BSD1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 1.46 | 0.04 | 0.01 | mg/L | 1.4 | | 104 | 85-115 | 2 | 200 |
| Orthophosphate as P | 0.906 | 0.040 | 0.010 | mg/L | 0.90 | | 101 | 85-115 | 2 | 200 |
| Nitrate (as N) | 1.74 | 0.04 | 0.01 | mg/L | 1.7 | | 102 | 85-115 | 6 | 200 |
| Sulfate | 9.29 | 0.60 | 0.20 | mg/L | 9.0 | | 103 | 85-115 | 0.8 | 200 |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |
| **Matrix Spike (BE43004-MS1)** | | **Source: 1405266-11** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrate (as N) | 1.55 | 0.04 | 0.01 | mg/L | 1.7 | ND | 91 | 85-115 | | |
| Sulfate | 40.8 | 0.60 | 0.20 | mg/L | 9.0 | 31.5 | 104 | 85-115 | | |
| Nitrite (as N) | 1.38 | 0.04 | 0.01 | mg/L | 1.4 | ND | 98 | 85-115 | | |
| Orthophosphate as P | 2.32 | 0.040 | 0.010 | mg/L | 0.90 | 1.34 | 109 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |

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**July 23, 2014**
**Work Order: 1405266**

**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE43004 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Matrix Spike (BE43004-MS2)** | | **Source: 1404937-09** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 14.0 | 0.40 | 0.10 | mg/L | 14 | ND | 100 | 85-115 | | |
| Sulfate | 133 | 6.0 | 2.0 | mg/L | 90 | 46.1 | 97 | 85-115 | | |
| Orthophosphate as P | 10.5 | 0.40 | 0.10 | mg/L | 9.0 | 2.20 | 92 | 85-115 | | |
| Nitrate (as N) | 15.6 | 0.40 | 0.10 | mg/L | 17 | 0.280 | 90 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| **Batch BE43013 - BOD** | | | | | | | | | | |
| **Blank (BE43013-BLK1)** | | | | | Prepared: 05/30/14 Analyzed: 06/04/14 09:34 | | | | | |
| Carbonaceous BOD | 2 U | 2 | 2 | mg/L | | | | | | |
| **LCS (BE43013-BS1)** | | | | | Prepared: 05/30/14 Analyzed: 06/04/14 09:34 | | | | | |
| Carbonaceous BOD | 219 | 2 | 2 | mg/L | 200 | | 109 | 85-115 | | |
| **LCS Dup (BE43013-BSD1)** | | | | | Prepared: 05/30/14 Analyzed: 06/04/14 09:34 | | | | | |
| Carbonaceous BOD | 222 | 2 | 2 | mg/L | 200 | | 111 | 85-115 | 1 | 200 |
| **Duplicate (BE43013-DUP1)** | | **Source: 1405265-08** | | | Prepared: 05/30/14 Analyzed: 06/04/14 09:34 | | | | | |
| Carbonaceous BOD | 16 | 2 | 2 | mg/L | | 15 | | | 6 | 25 |
| **Batch BF40207 - TOC prep** | | | | | | | | | | |
| **Blank (BF40207-BLK1)** | | | | | Prepared & Analyzed: 06/02/14 11:58 | | | | | |
| Total Organic Carbon | 0.060 U | 1.0 | 0.060 | mg/L | | | | | | |

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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40207 - TOC prep** | | | | | | | | | | |
| **LCS (BF40207-BS1)** | | | | | Prepared & Analyzed: 06/02/14 12:12 | | | | | |
| Total Organic Carbon | 9.93 | 1.0 | 0.060 | mg/L | 10 | | 99 | 90-110 | | |
| **Matrix Spike (BF40207-MS1)** | | **Source: 1405482-01** | | | Prepared & Analyzed: 06/02/14 15:17 | | | | | |
| Total Organic Carbon | 14.7 | 1.0 | 0.060 | mg/L | 10 | 3.28 | 115 | 85-115 | | |
| **Matrix Spike Dup (BF40207-MSD1)** | | **Source: 1405482-01** | | | Prepared & Analyzed: 06/02/14 15:35 | | | | | |
| Total Organic Carbon | 14.4 | 1.0 | 0.060 | mg/L | 10 | 3.28 | 111 | 85-115 | 2 | 10 |
| **Batch BF40331 - Sulfide prep** | | | | | | | | | | |
| **Blank (BF40331-BLK1)** | | | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 0.10 U | 0.40 | 0.10 | mg/L | | | | | | |
| **Blank (BF40331-BLK2)** | | | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 0.10 U | 0.40 | 0.10 | mg/L | | | | | | |
| **LCS (BF40331-BS1)** | | | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 4.95 | 0.40 | 0.10 | mg/L | 5.0 | | 99 | 85-115 | | |
| **LCS (BF40331-BS2)** | | | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 4.75 | 0.40 | 0.10 | mg/L | 5.0 | | 95 | 85-115 | | |
| **Matrix Spike (BF40331-MS1)** | | **Source: 1405266-15** | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 4.75 | 0.40 | 0.10 | mg/L | 5.0 | ND | 95 | 85-115 | | |
| **Matrix Spike (BF40331-MS2)** | | **Source: 1405631-05** | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 5.54 | 0.40 | 0.10 | mg/L | 5.0 | 0.590 | 99 | 85-115 | | |

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**July 23, 2014**
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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40331 - Sulfide prep** | | | | | | | | | | |
| **Matrix Spike Dup (BF40331-MSD1)** | | **Source: 1405266-15** | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 4.75 | 0.40 | 0.10 | mg/L | 5.0 | ND | 95 | 85-115 | 0 | 14 |
| **Matrix Spike Dup (BF40331-MSD2)** | | **Source: 1405631-05** | | | Prepared & Analyzed: 06/03/14 16:28 | | | | | |
| Sulfide | 5.74 | 0.40 | 0.10 | mg/L | 5.0 | 0.590 | 103 | 85-115 | 4 | 14 |
| **Batch BF40413 - TSS prep** | | | | | | | | | | |
| **Blank (BF40413-BLK1)** | | | | | Prepared: 06/04/14 Analyzed: 06/10/14 11:07 | | | | | |
| Volatile Suspended Solids | 1 U | 1 | | mg/L | | | | | | |
| Total Suspended Solids | 1 U | 1 | 1 | mg/L | | | | | | |
| **LCS (BF40413-BS1)** | | | | | Prepared: 06/04/14 Analyzed: 06/10/14 11:04 | | | | | |
| Total Suspended Solids | 47.0 | 1 | 1 | mg/L | 50 | | 94 | 85-115 | | |
| **Duplicate (BF40413-DUP1)** | | **Source: 1405265-01** | | | Prepared: 06/04/14 Analyzed: 06/10/14 11:07 | | | | | |
| Volatile Suspended Solids | 13.0 | 1 | | mg/L | | 14.5 | | | 11 | 20 |
| Total Suspended Solids | 15.5 | 1 | 1 | mg/L | | 15.0 | | | 3 | 30 |
| **Batch BF40501 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Blank (BF40501-BLK1)** | | | | | Prepared & Analyzed: 06/06/14 16:40 | | | | | |
| Nitrite (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| Nitrate (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| Sulfate | 0.20 U | 0.60 | 0.20 | mg/L | | | | | | |
| *Surrogate: Dichloroacetate* | *0.948* | | | *mg/L* | *1.0* | | *95* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.948* | | | *mg/L* | *1.0* | | *95* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.948* | | | *mg/L* | *1.0* | | *95* | *90-115* | | |

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**July 23, 2014**
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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40501 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **LCS (BF40501-BS1)** | | | | | Prepared & Analyzed: 06/06/14 16:51 | | | | | |
| Sulfate | 9.14 | 0.60 | 0.20 | mg/L | 9.0 | | 102 | 85-115 | | |
| Nitrate (as N) | 1.70 | 0.04 | 0.01 | mg/L | 1.7 | | 100 | 85-115 | | |
| Nitrite (as N) | 1.48 | 0.04 | 0.01 | mg/L | 1.4 | | 106 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.13* | | | *mg/L* | *1.0* | | *113* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.13* | | | *mg/L* | *1.0* | | *113* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.13* | | | *mg/L* | *1.0* | | *113* | *90-115* | | |
| **LCS Dup (BF40501-BSD1)** | | | | | Prepared & Analyzed: 06/06/14 17:02 | | | | | |
| Nitrite (as N) | 1.48 | 0.04 | 0.01 | mg/L | 1.4 | | 106 | 85-115 | 0.07 | 200 |
| Sulfate | 9.23 | 0.60 | 0.20 | mg/L | 9.0 | | 103 | 85-115 | 1 | 200 |
| Nitrate (as N) | 1.69 | 0.04 | 0.01 | mg/L | 1.7 | | 100 | 85-115 | 0.06 | 200 |
| *Surrogate: Dichloroacetate* | *1.14* | | | *mg/L* | *1.0* | | *114* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.14* | | | *mg/L* | *1.0* | | *114* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.14* | | | *mg/L* | *1.0* | | *114* | *90-115* | | |
| **Matrix Spike (BF40501-MS1)** | | **Source: 1405266-03** | | | Prepared & Analyzed: 06/06/14 18:10 | | | | | |
| Sulfate | 104 | 6.0 | 2.0 | mg/L | 90 | ND | 115 | 85-115 | | |
| Nitrite (as N) | 14.7 | 0.40 | 0.10 | mg/L | 14 | ND | 105 | 85-115 | | |
| Nitrate (as N) | 49.9 | 0.40 | 0.10 | mg/L | 17 | 34.4 | 91 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *0.984* | | | *mg/L* | *1.0* | | *98* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.00* | | | *mg/L* | *1.0* | | | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.00* | | | *mg/L* | *1.0* | | | *78-120* | | |
| **Matrix Spike (BF40501-MS2)** | | **Source: 1405795-05** | | | Prepared & Analyzed: 06/06/14 21:32 | | | | | |
| Sulfate | 20.6 | 0.60 | 0.20 | mg/L | 9.0 | 12.9 | 86 | 85-115 | | |
| Nitrate (as N) | 1.63 | 0.04 | 0.01 | mg/L | 1.7 | ND | 96 | 85-115 | | |
| Nitrite (as N) | 0.317 J2,J6 | 0.04 | 0.01 | mg/L | 1.4 | ND | 23 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *0.984* | | | *mg/L* | *1.0* | | *98* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.984* | | | *mg/L* | *1.0* | | *98* | *78-120* | | |
| *Surrogate: Dichloroacetate* | *0.984* | | | *mg/L* | *1.0* | | *98* | *78-120* | | |

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**July 23, 2014**
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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40601 - alkalinity** | | | | | | | | | | |
| **Blank (BF40601-BLK1)** | | | | | Prepared & Analyzed: 06/06/14 10:58 | | | | | |
| Total Alkalinity | 2.0 U | 8.0 | 2.0 | mg/L | | | | | | |
| **LCS (BF40601-BS1)** | | | | | Prepared & Analyzed: 06/06/14 11:03 | | | | | |
| Total Alkalinity | 120 | 8.0 | 2.0 | mg/L | 120 | | 96 | 90-110 | | |
| **Matrix Spike (BF40601-MS1)** | | **Source: 1405631-05** | | | Prepared & Analyzed: 06/06/14 13:44 | | | | | |
| Total Alkalinity | 130 | 8.0 | 2.0 | mg/L | 120 | 8.7 | 95 | 80-120 | | |
| **Matrix Spike Dup (BF40601-MSD1)** | | **Source: 1405631-05** | | | Prepared & Analyzed: 06/06/14 13:50 | | | | | |
| Total Alkalinity | 130 | 8.0 | 2.0 | mg/L | 120 | 8.7 | 94 | 80-120 | 1 | 26 |
| **Batch BF41109 - Digestion for TP and TKN** | | | | | | | | | | |
| **Blank (BF41109-BLK1)** | | | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Total Kjeldahl Nitrogen | 0.05 U | 0.20 | 0.05 | mg/L | | | | | | |
| Phosphorous - Total as P | 0.010 U | 0.040 | 0.010 | mg/L | | | | | | |
| **LCS (BF41109-BS1)** | | | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Total Kjeldahl Nitrogen | 1.09 | 0.20 | 0.05 | mg/L | 1.0 | | 109 | 90-110 | | |
| Phosphorous - Total as P | 0.495 | 0.040 | 0.010 | mg/L | 0.50 | | 99 | 90-110 | | |
| **Matrix Spike (BF41109-MS1)** | | **Source: 1405265-01** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Total Kjeldahl Nitrogen | 56.6 L2 | 0.20 | 0.05 | mg/L | 2.0 | 50.3 | 313 | 90-110 | | |
| Phosphorous - Total as P | 6.66 L2 | 0.040 | 0.010 | mg/L | 1.0 | 6.81 | NR | 90-110 | | |
| **Matrix Spike (BF41109-MS2)** | | **Source: 1405265-17** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Phosphorous - Total as P | 1.83 | 0.040 | 0.010 | mg/L | 1.0 | 0.908 | 92 | 90-110 | | |
| Total Kjeldahl Nitrogen | 2.98 | 0.20 | 0.05 | mg/L | 2.0 | 0.888 | 104 | 90-110 | | |

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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41109 - Digestion for TP and TKN** | | | | | | | | | | |
| **Matrix Spike Dup (BF41109-MSD1)** | | **Source: 1405265-01** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Total Kjeldahl Nitrogen | 55.2 L2 | 0.20 | 0.05 | mg/L | 2.0 | 50.3 | 243 | 90-110 | 2 | 20 |
| Phosphorous - Total as P | 6.41 L2 | 0.040 | 0.010 | mg/L | 1.0 | 6.81 | NR | 90-110 | 4 | 25 |
| **Matrix Spike Dup (BF41109-MSD2)** | | **Source: 1405265-17** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:26 | | | | | |
| Total Kjeldahl Nitrogen | 3.02 | 0.20 | 0.05 | mg/L | 2.0 | 0.888 | 107 | 90-110 | 2 | 20 |
| Phosphorous - Total as P | 1.79 | 0.040 | 0.010 | mg/L | 1.0 | 0.908 | 88 | 90-110 | 2 | 25 |
| **Batch BF41111 - Digestion for TP and TKN** | | | | | | | | | | |
| **Blank (BF41111-BLK1)** | | | | | Prepared: 06/11/14 Analyzed: 06/24/14 12:12 | | | | | |
| Phosphorous - Total as P | 0.010 U | 0.040 | 0.010 | mg/L | | | | | | |
| Total Kjeldahl Nitrogen | 0.05 U | 0.20 | 0.05 | mg/L | | | | | | |
| **LCS (BF41111-BS1)** | | | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:25 | | | | | |
| Total Kjeldahl Nitrogen | 0.998 | 0.20 | 0.05 | mg/L | 1.0 | | 100 | 90-110 | | |
| Phosphorous - Total as P | 0.537 | 0.040 | 0.010 | mg/L | 0.50 | | 107 | 90-110 | | |
| **LCS (BF41111-BS2)** | | | | | Prepared: 06/11/14 Analyzed: 06/24/14 12:12 | | | | | |
| Phosphorous - Total as P | 0.452 | 0.040 | 0.010 | mg/L | 0.50 | | 90 | 90-110 | | |
| Total Kjeldahl Nitrogen | 0.987 | 0.20 | 0.05 | mg/L | 1.0 | | 99 | 90-110 | | |
| **Matrix Spike (BF41111-MS1)** | | **Source: 1405266-08** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:25 | | | | | |
| Total Kjeldahl Nitrogen | 3.30 | 0.20 | 0.05 | mg/L | 1.0 | 2.42 | 88 | 90-110 | | |
| Phosphorous - Total as P | 2.87 | 0.040 | 0.010 | mg/L | 0.50 | 2.39 | 97 | 90-110 | | |
| **Matrix Spike (BF41111-MS2)** | | **Source: 1405267-07** | | | Prepared: 06/11/14 Analyzed: 06/23/14 14:25 | | | | | |
| Total Kjeldahl Nitrogen | 2.15 J2 | 0.20 | 0.05 | mg/L | 1.0 | 2.12 | 3 | 90-110 | | |
| Phosphorous - Total as P | 2.40 J2 | 0.040 | 0.010 | mg/L | 0.50 | 1.81 | 119 | 90-110 | | |

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**July 23, 2014**
**Work Order: 1405266**

**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF41111 - Digestion for TP and TKN** | | | | | | | | | | |
| **Matrix Spike Dup (BF41111-MSD1)** | | **Source: 1405266-08** | | | Prepared: 06/11/14 Analyzed: 06/24/14 12:12 | | | | | |
| Phosphorous - Total as P | 2.88 | 0.040 | 0.010 | mg/L | 0.50 | 2.39 | 98 | 90-110 | 0.1 | 25 |
| Total Kjeldahl Nitrogen | 3.34 | 0.20 | 0.05 | mg/L | 1.0 | 2.42 | 92 | 90-110 | 1 | 20 |
| **Matrix Spike Dup (BF41111-MSD2)** | | **Source: 1405267-07** | | | Prepared: 06/11/14 Analyzed: 06/24/14 12:12 | | | | | |
| Phosphorous - Total as P | 2.26 J2 | 0.040 | 0.010 | mg/L | 0.50 | 1.81 | 90 | 90-110 | 6 | 25 |
| Total Kjeldahl Nitrogen | 3.44 J3 | 0.20 | 0.05 | mg/L | 1.0 | 2.12 | 132 | 90-110 | 46 | 20 |
| **Batch BF42005 - Ammonia by SEAL** | | | | | | | | | | |
| **Blank (BF42005-BLK1)** | | | | | Prepared: 06/20/14 Analyzed: 07/02/14 14:57 | | | | | |
| Ammonia as N | 0.009 U | 0.040 | 0.009 | mg/L | | | | | | |
| **LCS (BF42005-BS1)** | | | | | Prepared: 06/20/14 Analyzed: 07/02/14 14:57 | | | | | |
| Ammonia as N | 0.51 | 0.040 | 0.009 | mg/L | 0.50 | | 102 | 90-110 | | |
| **Matrix Spike (BF42005-MS1)** | | **Source: 1402817-10** | | | Prepared: 06/20/14 Analyzed: 07/02/14 14:57 | | | | | |
| Ammonia as N | 0.44 J2 | 0.040 | 0.009 | mg/L | 0.50 | 0.064 | 75 | 90-110 | | |
| **Matrix Spike (BF42005-MS2)** | | **Source: 1405265-21** | | | Prepared: 06/20/14 Analyzed: 07/02/14 14:57 | | | | | |
| Ammonia as N | 2.8 L1 | 0.040 | 0.009 | mg/L | 0.50 | 0.030 | 547 | 90-110 | | |
| **Matrix Spike Dup (BF42005-MSD1)** | | **Source: 1402817-10** | | | Prepared: 06/20/14 Analyzed: 07/02/14 14:57 | | | | | |
| Ammonia as N | 0.45 J3 | 0.040 | 0.009 | mg/L | 0.50 | 0.064 | 78 | 90-110 | 3 | 10 |
| **Matrix Spike Dup (BF42005-MSD2)** | | **Source: 1405265-21** | | | Prepared: 06/20/14 Analyzed: 07/02/14 17:57 | | | | | |
| Ammonia as N | 2.7 L1 | 0.040 | 0.009 | mg/L | 0.50 | 0.030 | 524 | 90-110 | 4 | 10 |

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**July 23, 2014**
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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF42014 - Nitrate 353.2 by seal** | | | | | | | | | | |
| **Blank (BF42014-BLK1)** | | | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 0.0107 I | 0.04 | 0.01 | mg/L | | | | | | |
| **LCS (BF42014-BS1)** | | | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 0.823 | 0.04 | 0.01 | mg/L | 0.80 | | 103 | 90-110 | | |
| **Matrix Spike (BF42014-MS1)** | | **Source: 1405266-01** | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 0.997 | 0.04 | 0.01 | mg/L | 1.0 | 0.0628 | 93 | 90-110 | | |
| **Matrix Spike (BF42014-MS2)** | | **Source: 1405840-02** | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 1.04 | 0.04 | 0.01 | mg/L | 1.0 | 0.0175 | 102 | 90-110 | | |
| **Matrix Spike Dup (BF42014-MSD1)** | | **Source: 1405266-01** | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 1.06 | 0.04 | 0.01 | mg/L | 1.0 | 0.0628 | 100 | 90-110 | 6 | 20 |
| **Matrix Spike Dup (BF42014-MSD2)** | | **Source: 1405840-02** | | | Prepared & Analyzed: 06/23/14 18:49 | | | | | |
| Nitrate+Nitrite (N) | 1.04 | 0.04 | 0.01 | mg/L | 1.0 | 0.0175 | 103 | 90-110 | 0.4 | 20 |
| **Batch BF42316 - Ammonia by SEAL** | | | | | | | | | | |
| **Blank (BF42316-BLK1)** | | | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 0.009 U | 0.040 | 0.009 | mg/L | | | | | | |
| **LCS (BF42316-BS1)** | | | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 0.51 | 0.040 | 0.009 | mg/L | 0.50 | | 101 | 90-110 | | |
| **Matrix Spike (BF42316-MS1)** | | **Source: 1405266-04** | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 0.45 J4 | 0.040 | 0.009 | mg/L | 0.50 | 2.6 | NR | 90-110 | | |

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**July 23, 2014**
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**Inorganics - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF42316 - Ammonia by SEAL** | | | | | | | | | | |
| **Matrix Spike (BF42316-MS2)** | | **Source: 1405267-15** | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 1.7 L | 0.040 | 0.009 | mg/L | 0.50 | 0.48 | 252 | 90-110 | | |
| **Matrix Spike Dup (BF42316-MSD1)** | | **Source: 1405266-04** | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 0.44 J4 | 0.040 | 0.009 | mg/L | 0.50 | 2.6 | NR | 90-110 | 3 | 10 |
| **Matrix Spike Dup (BF42316-MSD2)** | | **Source: 1405267-15** | | | Prepared & Analyzed: 06/23/14 11:07 | | | | | |
| Ammonia as N | 2.4 L | 0.040 | 0.009 | mg/L | 0.50 | 0.48 | 384 | 90-110 | 32 | 10 |
| **Batch BF42405 - COD prep** | | | | | | | | | | |
| **Blank (BF42405-BLK1)** | | | | | Prepared & Analyzed: 06/24/14 13:34 | | | | | |
| Chemical Oxygen Demand | 10 U | 25 | 10 | mg/L | | | | | | |
| **LCS (BF42405-BS1)** | | | | | Prepared & Analyzed: 06/24/14 13:34 | | | | | |
| Chemical Oxygen Demand | 50 | 25 | 10 | mg/L | 50 | | 100 | 90-110 | | |
| **Matrix Spike (BF42405-MS1)** | | **Source: 1405266-01** | | | Prepared & Analyzed: 06/24/14 13:34 | | | | | |
| Chemical Oxygen Demand | 450 L2 | 25 | 10 | mg/L | 50 | 250 | 404 | 85-115 | | |
| **Matrix Spike Dup (BF42405-MSD1)** | | **Source: 1405266-01** | | | Prepared & Analyzed: 06/24/14 13:34 | | | | | |
| Chemical Oxygen Demand | 440 L2 | 25 | 10 | mg/L | 50 | 250 | 386 | 85-115 | 2 | 32 |

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**Inorganic, Dissolved - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE42907 - BOD Dissolved** | | | | | | | | | | |
| **Blank (BE42907-BLK1)** | | | | | Prepared: 05/29/14 Analyzed: 06/03/14 09:47 | | | | | |
| Carbonaceous BOD | 2 U | 2 | 2 | mg/L | | | | | | |
| **LCS (BE42907-BS1)** | | | | | Prepared: 05/29/14 Analyzed: 06/03/14 09:47 | | | | | |
| Carbonaceous BOD | 205 | 2 | 2 | mg/L | 200 | | 103 | 85-115 | | |
| **LCS Dup (BE42907-BSD1)** | | | | | Prepared: 05/29/14 Analyzed: 06/03/14 09:47 | | | | | |
| Carbonaceous BOD | 210 | 2 | 2 | mg/L | 200 | | 105 | 85-115 | 2 | 200 |
| **Duplicate (BE42907-DUP1)** | | **Source: 1405267-14** | | | Prepared: 05/29/14 Analyzed: 06/03/14 09:47 | | | | | |
| Carbonaceous BOD | 10 | 2 | 2 | mg/L | | 10 | | | 5 | 25 |
| **Batch BE43004 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Blank (BE43004-BLK1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| Nitrate (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | *mg/L* | *1.0* | | *93* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *0.928* | | | *mg/L* | *1.0* | | *93* | *90-115* | | |
| **LCS (BE43004-BS1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrate (as N) | 1.64 | 0.04 | 0.01 | mg/L | 1.7 | | 96 | 85-115 | | |
| Nitrite (as N) | 1.43 | 0.04 | 0.01 | mg/L | 1.4 | | 102 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.01* | | | *mg/L* | *1.0* | | *101* | *90-115* | | |
| **LCS Dup (BE43004-BSD1)** | | | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 1.46 | 0.04 | 0.01 | mg/L | 1.4 | | 104 | 85-115 | 2 | 200 |
| Nitrate (as N) | 1.74 | 0.04 | 0.01 | mg/L | 1.7 | | 102 | 85-115 | 6 | 200 |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.10* | | | *mg/L* | *1.0* | | *110* | *90-115* | | |

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**Inorganic, Dissolved - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE43004 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Matrix Spike (BE43004-MS1)** | | **Source: 1405266-11** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrite (as N) | 1.38 | 0.04 | 0.01 | mg/L | 1.4 | ND | 98 | 85-115 | | |
| Nitrate (as N) | 1.55 | 0.04 | 0.01 | mg/L | 1.7 | ND | 91 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.02* | | | *mg/L* | *1.0* | | *102* | *90-115* | | |
| **Matrix Spike (BE43004-MS2)** | | **Source: 1404937-09** | | | Prepared & Analyzed: 05/30/14 08:39 | | | | | |
| Nitrate (as N) | 15.6 | 0.40 | 0.10 | mg/L | 17 | 0.280 | 90 | 85-115 | | |
| Nitrite (as N) | 14.0 | 0.40 | 0.10 | mg/L | 14 | ND | 100 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| *Surrogate: Dichloroacetate* | *1.08* | | | *mg/L* | *1.0* | | *108* | *90-115* | | |
| **Batch BF40501 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Blank (BF40501-BLK1)** | | | | | Prepared & Analyzed: 06/06/14 16:40 | | | | | |
| Nitrate (as N) | 0.01 U | 0.04 | 0.01 | mg/L | | | | | | |
| *Surrogate: Dichloroacetate* | *0.948* | | | *mg/L* | *1.0* | | *95* | *90-115* | | |
| **LCS (BF40501-BS1)** | | | | | Prepared & Analyzed: 06/06/14 16:51 | | | | | |
| Nitrate (as N) | 1.70 | 0.04 | 0.01 | mg/L | 1.7 | | 100 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *1.13* | | | *mg/L* | *1.0* | | *113* | *90-115* | | |
| **LCS Dup (BF40501-BSD1)** | | | | | Prepared & Analyzed: 06/06/14 17:02 | | | | | |
| Nitrate (as N) | 1.69 | 0.04 | 0.01 | mg/L | 1.7 | | 100 | 85-115 | 0.06 | 200 |
| *Surrogate: Dichloroacetate* | *1.14* | | | *mg/L* | *1.0* | | *114* | *90-115* | | |
| **Matrix Spike (BF40501-MS1)** | | **Source: 1405266-03** | | | Prepared & Analyzed: 06/06/14 18:10 | | | | | |
| Nitrate (as N) | 49.9 | 0.40 | 0.10 | mg/L | 17 | 34.4 | 91 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *0.00* | | | *mg/L* | *1.0* | | | *78-120* | | |

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**Inorganic, Dissolved - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF40501 - Ion Chromatography 300.0 Prep** | | | | | | | | | | |
| **Matrix Spike (BF40501-MS2)** | | **Source: 1405795-05** | | | Prepared & Analyzed: 06/06/14 21:32 | | | | | |
| Nitrate (as N) | 1.63 | 0.04 | 0.01 | mg/L | 1.7 | ND | 96 | 85-115 | | |
| *Surrogate: Dichloroacetate* | *0.984* | | | *mg/L* | *1.0* | | *98* | *78-120* | | |
| **Batch BF42328 - Digestion for TP and TKN** | | | | | | | | | | |
| **Blank (BF42328-BLK1)** | | | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 0.050 U | 0.20 | 0.050 | mg/L | | | | | | |
| **LCS (BF42328-BS1)** | | | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 1.28 | 0.20 | 0.050 | mg/L | 1.3 | | 96 | 90-110 | | |
| **Matrix Spike (BF42328-MS1)** | | **Source: 1405265-10** | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 2.51 J2 | 0.20 | 0.050 | mg/L | 1.3 | 4.75 | NR | 90-110 | | |
| **Matrix Spike (BF42328-MS2)** | | **Source: 1405267-14** | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 2.52 | 0.20 | 0.050 | mg/L | 1.3 | 1.11 | 106 | 90-110 | | |
| **Matrix Spike Dup (BF42328-MSD1)** | | **Source: 1405265-10** | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 2.88 J2 | 0.20 | 0.050 | mg/L | 1.3 | 4.75 | NR | 90-110 | 14 | 20 |
| **Matrix Spike Dup (BF42328-MSD2)** | | **Source: 1405267-14** | | | Prepared: 06/23/14 Analyzed: 06/25/14 12:09 | | | | | |
| Total Kjeldahl Nitrogen | 2.35 | 0.20 | 0.050 | mg/L | 1.3 | 1.11 | 93 | 90-110 | 7 | 20 |
| **Batch BF43031 - Ammonia Dissolved by Seal** | | | | | | | | | | |
| **Blank (BF43031-BLK1)** | | | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 0.009 U | 0.040 | 0.009 | mg/L | | | | | | |

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**July 23, 2014**
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**Inorganic, Dissolved - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BF43031 - Ammonia Dissolved by Seal** | | | | | | | | | | |
| **LCS (BF43031-BS1)** | | | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 0.50 | 0.040 | 0.009 | mg/L | 0.50 | | 101 | 90-110 | | |
| **Matrix Spike (BF43031-MS1)** | | **Source: 1405265-02** | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 93 | 0.040 | 0.009 | mg/L | 50 | 49 | 88 | 90-110 | | |
| **Matrix Spike (BF43031-MS2)** | | **Source: 1405267-14** | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 1.1 | 0.040 | 0.009 | mg/L | 0.50 | 0.61 | 88 | 90-110 | | |
| **Matrix Spike Dup (BF43031-MSD1)** | | **Source: 1405265-02** | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 94 | 0.040 | 0.009 | mg/L | 50 | 49 | 90 | 90-110 | 0.9 | 10 |
| **Matrix Spike Dup (BF43031-MSD2)** | | **Source: 1405267-14** | | | Prepared & Analyzed: 06/25/14 17:46 | | | | | |
| Ammonia as N | 1.1 | 0.040 | 0.009 | mg/L | 0.50 | 0.61 | 95 | 90-110 | 3 | 10 |

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**Microbiology - Quality Control**

| Analyte | Result | PQL | MDL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch BE42938 - FC-MF** | | | | | | | | | | |
| **Blank (BE42938-BLK1)** | | | | | Prepared: 05/29/14 Analyzed: 05/30/14 14:50 | | | | | |
| Fecal Coliforms | 1 U | 1 | 1 | CFU/100 ml | | | | | | |
| **Duplicate (BE42938-DUP1)** | | **Source: 1405266-15** | | | Prepared: 05/29/14 Analyzed: 05/30/14 14:50 | | | | | |
| Fecal Coliforms | 1 U | 1 | 1 | CFU/100 ml | | ND | | | | 200 |
| **Duplicate (BE42938-DUP2)** | | **Source: 1405265-21** | | | Prepared: 05/29/14 Analyzed: 05/30/14 14:50 | | | | | |
| Fecal Coliforms | 1 U | 1 | 1 | CFU/100 ml | | ND | | | | 200 |

**SOUTHERN ANALYTICAL LABORATORIES, INC.**
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**Tampa, FL 33619**

**July 23, 2014**
**Work Order: 1405266**

## * Qualifiers, Notes and Definitions

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

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

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

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

| | |
|---|---|
| Q | Sample held beyond the accepted holding time. |
| L2 | Analyte level in sample invalidated Matrix Spike. |
| L1 | Off-scale high. Result exceeded method capacity. |
| L | Off-scale high. Result exceeded highest calibration standard. |
| J6 | The sample matrix interfered with the ability to make any accurate determination. |
| J5 | Matrix spike of this sample was outside typical range. All other QC criteria were acceptable. |
| J4 | Quality control sample(s) associated with this sample did not meet established criteria. |
| J3 | Quality control value for precision was outside control limits. |
| J2 | Quality control value for accuracy was outside control limits. |

Questions regarding this report should be directed to :

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SOUTHERN ANALYTICAL LABORATORIES, INC.
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SAL Project No. 1405266

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: B-HS4 SE#9

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

| SAL Use Only Sample No. | Sample Description | Date | Time | Matrix | Composite | Grab | 125mLP, $Na_2S_2O_3$ FC-MF, FC-QT | 500mLP, Cool Total Alkalinity, TSS, VSS, CBOD, NOx, OP, $SO_4$ | 125mLP, $H_2SO_4$ COD, TKN, $NH_3$, TP | 500mLP, NaOH, Zn Acetate $H_2S$ | 40mLaV, HCl TOC | 500mLP, Cool Lab Filtered (CBOD, TKN, $NH_3$, NOx) | 125mLP, $H_2SO_4$ TKN, $NH_3$ | 500mLP, Cool NOx, $SO_4$ | 8240 + 504.1 | | | pH | Temperature | Conductivity | DO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | BHS4-STE | 5/29/14 | 11:40 | WW | | X | 4 | 2 | 1 | 1 | 2 | | | | 5 | | | 6.83 | 26.1 | 1329 | 0.08 |
| 02 | BHS4-STE-FILTERED | | 11:40 | WW | | X | | | | | | 1 | | | | | | 6.83 | 26.1 | 1329 | 0.08 |
| 03 | BHS4-ST1 | | 11:15 | WW | | X | 4 | 2 | 1 | 1 | 2 | | | | | | | 6.80 | 25.2 | 1239 | 0.87 |
| 04 | BHS4-ST1-DUP | | 11:20 | WW | | X | 4 | 2 | 1 | 1 | 2 | | | | | | | 6.60 | 25.2 | 1239 | 0.87 |
| 05 | BHS4-ST1-FILTERED | | 11:15 | WW | | X | | | | | | 1 | | | | | | 6.80 | 25.2 | 1239 | 0.87 |
| 06 | BHS4-LIGNO-36 | | 11:25 | WW | | X | | | | | | | 1 | 1 | | | | 6.52 | 25.6 | 1215 | 0.22 |
| 07 | BHS4-LIGNO-24 | | 11:17 | WW | | X | | | | | | | 1 | 1 | | | | 6.58 | 25.8 | 1164 | 0.21 |
| 08 | BHS4-LIGNO-12 | | 11:10 | WW | | X | | | | | | | 1 | 1 | | | | 6.51 | 25.7 | 1127 | 0.14 |
| 09 | BHS4-LIGNO-0 | | 11:00 | WW | | X | 4 | 2 | 1 | 1 | 2 | | | | | | | 6.46 | 25.8 | 1120 | 0.16 |
| 10 | BHS4-LIGNO-0-FILTERED | | 11:00 | WW | | X | | | | | | 1 | | | | | | 6.46 | 25.8 | 1120 | 0.16 |
| 11 | BHS4-SULFUR-6 | | 10:48 | WW | | X | | | | | | | 1 | 1 | | | | 6.48 | 24.5 | 1151 | 0.17 |
| 12 | BHS4-SULFUR-12 | | 10:50 | WW | | X | | | | | | | 1 | 1 | | | | 6.42 | 24.5 | 1170 | 0.16 |

| | Date/Time: | Received: | Date/Time: |
|---|---|---|---|
| Containers Prepared/ Relinquished: | | | 5/23/14 12:00 |
| Relinquished: | 1575 5/29/14 | K Mudment | 5/29/14 1575 |
| Relinquished: | | | |
| Relinquished: | | | |
| Relinquished: | | | |

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

Instructions / Remarks:

1405266

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. 1405266

Client Name: Hazen and Sawyer

Contact / Phone:

Project Name / Location: B-HS4 SE#9

Samplers: (Signature)

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

PARAMETER / CONTAINER DESCRIPTION

| SAL Use Only Sample No | Sample Description | Date | Time | Matrix | Composite | Grab | 125mLP, $Na_2S_2O_3$ FC-MF, FC-QT | 500mLP, Cool Total Alkalinity, TSS, VSS, CBOD, NOx, OP, $SO_4$ | 125mLP, $H_2SO_4$ COD, TKN, $NH_3$, TP | 500mLP, NaOH, Zn Acetate $H_2S$ | 40mLaV, HCl TOC | 500mLP, Cool Lab Filtered (CBOD, TKN, $NH_3$, NOx, $SO_4$) | 125mLP, $H_2SO_4$ TKN, $NH_3$ | 500mLP, Cool NOx, $SO_4$ | EPA 8260 + SO4 | | | pH | Temperature | Conductivity | DO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | BHS4-ST2 | 5/29/14 | 10:35 | WW | | X | 4 | 2 | 1 | 1 | 2 | | | | 5 ea | 10:40am | | 6.48 | 24.3 | 1276 | 0.11 |
| 14 | BHS4-ST2-FILTERED | ↓ | 10:35 | WW | | X | | | | | | 1 | | | | | | 6.48 | 24.3 | 1276 | 0.11 |
| 15 | BHS4-~~EB~~ FB | ↓ | 12:10 | R | | X | 4 | 2 | 1 | 1 | 2 | | | | | | | 5.28 | 29.4 | 1.49 | 7.28 |
| 16 | BHS5-ST1 | 5/29/14 | 12:35 | | | | | | | | | | | | 5 | | | 7.05 | 26.0 | 1231 | 0.19 |
| 17 | BHS5-ST2 | 5/29/14 | 12:27 | | | | | | | | | | | | 5 | | | 6.65 | 25.0 | 1288 | 0.29 |

| Containers Prepared/ Relinquished: | Date/Time: | Received: | Date/Time: 5/23/14 12:00 |
|---|---|---|---|
| Relinquished: | Date/Time: 5/29/14 1515 | Received: K Nudman | Date/Time: 5/29/14 1515 |
| Relinquished: | Date/Time: | Received: | Date/Time: |
| Relinquished: | Date/Time: | Received: | Date/Time: |
| Relinquished: | Date/Time: | Received: | Date/Time: |

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

Instructions / Remarks:

1405266

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

Chain of Custody

# Appendix B: Operation & Maintenance Log

**Table B.1**
**Operation and Maintenance Log**

| Date | Description |
|---|---|
| 6/19/2013 | Construction - Stage 1 and Stage 2 tank installed |
| 6/20/2013 | Construction - drainfield installed |
| 6/21/2013 | Construction - electrical work |
| 7/9/2013 | System Start-up |
| | Bull run valve switched from drainfield to Stage 1 biofilter |
| 7/17/2013 | Site visit. System ok. |
| 7/23/2013 | Construction - sod installation |
| 7/29/2013 | Preliminary sampling event |
| 8/6/2013 | Site visit. |
| | Back-up in STE tank, water level above outlet effluent screen |
| 8/12/2013 | Back-up in STE tank again, removed filter screen |
| | Lift station pump causing lots of mixing in STE tank |
| | Shortened float swing on lift station pump to reduce pump runtime |
| | Lots of solids in Stage 1 Biofilter |
| | During lift station pump dose, ponding in Stage 1 biofilter |
| 8/15/2013 | Bull run valve switched to drainfield |
| 9/5/2013 | Lift station pump replaced with smaller pump |
| | Smaller pump installed in second chamber of old septic tank |
| | Switched bull run valve to PNRS system |
| 9/10/2013 | Site visit. System ok. |
| 9/30/2013 | Sample Event No. 1 |
| 11/8/2013 | Site visit. System ok. |
| 11/27/2013 | Site visit. System ok. |
| 12/2/2013 | Sample Event No. 2 |
| | Cleaned STE effluent filter screen |
| | A little bit of ponding in Stage 1 biofilter influent side |
| | No ponding in all 4 drainfield observation ports |
| | *homeowners were out of town for Thanksgiving holiday |
| 12/23/2013 | Site visit. System ok. No ponding in all 4 drainfield observation ports |
| 1/23/2014 | Site visit. |

PRELIMINARY

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| Date | Description |
|---|---|
| 1/23/2014 | Ponding near Stage 1 d-box, adjusted pipe and raked media |
| | No ponding in all 4 drainfield observation ports |
| 1/31/2014 | Site visit. |
| | Fixed Stage 1 biofilter distribution pipe (east side) which was off support |
| | No ponding in all 4 drainfield observation ports |
| 2/3/2014 | Sample Event No. 3 |
| | No ponding in all 4 drainfield observation ports |
| 2/4/2014 | Sample Event No. 4 |
| | No ponding in all 4 drainfield observation ports |
| 2/5/2014 | Sample Event No. 5 |
| | No ponding in all 4 drainfield observation ports |
| 2/6/2014 | Sample Event No. 6 |
| | No ponding in all 4 drainfield observation ports |
| 2/7/2014 | Sample Event No. 7 |
| | No ponding in all 4 drainfield observation ports |
| 2/12/2014 | Site visit. System ok. No visible ponding in Stage 1 biofilter. |
| 3/14/2014 | Site visit. System ok. No visible ponding in Stage 1 biofilter. |
| 4/3/2014 | Sample Event No. 8 |
| | No ponding in all 4 drainfield observation ports |
| | No visible ponding in Stage 1 biofilter. |
| | High power meter reading. Checked lift station pump which was ok. |
| 4/25/2014 | Site visit. System ok. |
| | Installed piezometer in Stage 1 biofilter to monitor water level. |
| | Leveled Stage 1 biofilter distribution pipes |
| | Adjusted weirs inside Stage 1 d-box |
| 4/29/2014 | Site visit. System ok. |
| | Installed third Stage 1 distribution pipe along centerline of biofilter |
| 5/19/2014 | Septic tank effluent screen severely clogged. |
| | Cleaned STE effluent screen |
| | Also cleared clog within ball valve from lift station |
| 5/29/2014 | Sample Event No. 9 |
| | No ponding in all 4 drainfield observation ports |
| | No visible ponding in Stage 1 biofilter. |
| 6/9/2014 | Re-sampled B-HS4-ST2 for toxicity testing. |
| | Measured lift station dose runtime |

PRELIMINARY

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