



Environment

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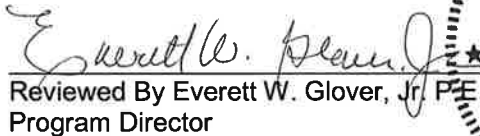
Auriga Spartanburg  
DMT Area Direct Push Investigation  
Chloroform  
March 2013



# Auriga Spartanburg DMT Area Direct Push Investigation Chloroform March 2013



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## 1.0 Introduction and Summary of Work Completed

This report provides a summary of the DMT area investigation activities, the results of the work, and recommendations for additional activity.

A work plan for investigation of the remaining chloroform plume at the former DMT area was submitted to the South Carolina Department of Health and Environmental Control (DHEC) on March 8, 2012. This plan was approved with minor comments in a letter from DHEC dated June 11, 2012. A revised plan was submitted on July 12, 2012, and was approved by DHEC in your letter dated August 6, 2012, and in an e-mail dated August 20, 2012. The direct push activities described in the plan were completed between September 4 and September 25, 2012. Based on the preliminary results, a request was submitted for the addition of four more direct push locations, plus collection of a sample from well MW-52. The additional work was approved in a letter from DHEC dated November 29, 2012. Well MW-52 was sampled on December 5, 2012, and the additional direct push locations were completed between December 10 and December 13, 2012. The locations of direct push and monitoring wells included in this investigation are presented on Figure 1.

As described in the work plan, groundwater samples were collected at two depths from each direct push location whenever possible. One sample was collected when groundwater was first encountered. When the direct push technology (DPT) could advance at least 10 feet beyond the first sample depth, a second sample was collected at refusal depth. Select direct push locations were also sampled more frequently to assist in establishing the vertical distribution of treatment effectiveness. The direct push groundwater samples were analyzed for volatile organic compounds (VOCs), including chloroform.

The routine December groundwater monitoring event for the DMT area was completed between December 5 and 6, 2012. Chloroform results associated with that event are also included in this report. The December 2012 monitoring report will be submitted by March 29, 2013. Analytical reports and additional review of the event are included in that report.

The direct push investigation was also supplemented to include further investigation of other chlorinated compounds and 1,4-dioxane detected at well MW-99. The details of this supplemental work were presented in letters from AECOM dated April 11, 2012 and April 27, 2012. The analytical results are included in this report. However, the purpose of this document is to assess the remaining chloroform conditions and propose further remediation plans. A work plan under the Voluntary Cleanup Contract (VCC) is also being developed at this time. Assessment and recommendations for 1,4-dioxane and other chlorinated compounds will be included in that document.

## 2.0 Results

Samples from direct push locations were identified as D12-XX-YY. The value of XX ranges from 01 to 30 and identifies the specific direct push location. The value of YY indicates the depth of sample collection below ground surface.

A summary of direct push analytical results is presented in Table 1. Only those parameters detected in at least one sample are included in Table 1. A complete copy of the analytical data report is included in Appendix A. A summary of analytical results associated with permanent wells is presented in Table 2. Permanent monitoring well results are also presented in the routine monitoring report submitted to DHEC each March, and further discussion of these results will be included in that document.

Chloroform results for samples collected from groundwater in saprolite are presented on Figure 2. Chloroform results for samples collected from direct push refusal and wells screened into bedrock are presented on Figure 3. Data for monitoring well locations represent the results of the December 2012 monitoring event.

### 2.1 Definition of Areas for Additional Remediation

Analytical results presented on Figures 2 and 3 show that the areas of remaining chloroform are consistent between saprolite and bedrock. Two areas of chloroform were identified. The first area is directly downgradient of the formerly identified quality control laboratory, which was the focus of historic remediation efforts. The second area is further to the east in the vicinity of Outfall 003.

Prior investigation into the origin of the plume determined that the former quality control (QC) laboratory used chloroform as a solvent. Injection activities significantly reduced the size and mass of the chloroform plume, but remaining concentrations have been observed to the east and west, outside of the effective treatment area, as well as downgradient of the treatment area.

Results from direct push locations 12, 13, and 15, combined with monitoring wells MW-105 and MW-106, provide improved definition of the areas beyond the existing treatment radius. Direct push location 15 is also upgradient of historic injection. The nearest injection to location 15 occurred at well EW-37 which is located cross-gradient from location 15 and is 110 feet away. Direct push location 10 is also near the former QC laboratory and reported detections of chloroform at concentrations of 1.17 and 1.46 milligrams per liter (mg/L).

The goal of this investigation was to define the extent of previously identified chloroform remaining outside of the effective treatment area. The detections at locations 12, 13, and 15 were consistent with expectations. The detection at location 10 is also upgradient of the nearest prior injection and in an area previously anticipated as likely not requiring treatment. Injection upgradient of location 10 occurred at well EW-49. However, well EW-49 is over 180 feet away from location 10. Other surrounding locations (8, 9, and 11 to the west, and 14 and 16 to the east) provide delineation on the remaining extents of the plume in this area. Based on these results, the area for further treatment is defined as shown on Figure 3.

The shallow sample from location 15 in this area reported a chloroform detection of 10.6 mg/L. Location 15 is upgradient of monitoring well RW-48. Prior to remediation, RW-48 reported a

concentration of 15 mg/L (September 18, 2012). As mentioned previously, nearby location 10 also reported detections of chloroform slightly upgradient of the prior treatment area. Therefore, locations 10 and 15 define a continuous section of a residual upgradient plume.

Additional detections of chloroform were historically identified to the east, primarily along an area running from wells MW-103 and MW-107 to wells EW-41 and EW-31, therefore, injection activities were completed in wells along this area. Direct push locations in this area were planned with the goal of establishing the chloroform boundary. Samples collected in this area included detections of chloroform exceeding the Maximum Contaminant Level (MCL) and up to 4.15 mg/L. Based on these results, four additional direct push locations (locations 27 – 30) and supplemental sampling of well MW-52 were added to the investigation.

The results of the supplemental samples provided delineation to the south and east, but confirmed that an additional plume area requiring treatment exists west-northwest of Outfall 003. This additional remediation area is also shown on Figure 4. In addition to the two areas described above, a detection of 0.118 mg/L chloroform was noted in one sample from location 20. Multiple other samples from adjacent locations are non-detect, suggesting that the chloroform at this location is isolated. A third small area for further remediation was included on Figure 4 to address this detection.

## 2.2 Assessment of Remediation Effectiveness

In addition to assessment of areas for additional injection, several elements of the direct push investigation were planned to provide additional evaluation of the prior remediation effectiveness.

### 2.2.1 Vertical Distribution of Effectiveness

Each direct push location was scheduled for collection of at least two samples unless the distance between the groundwater surface and refusal was inadequate for more than one sample. Several locations were also selected for additional sample collection. Three samples were collected from locations 12, 15, and 22. The samples at each location were reviewed for assessment of vertical distribution of effective remediation.

At four sample locations, only one sample was collected. Locations 2, 5, 20, and 21 were excluded from analysis for this reason. As discussed previously, multiple direct push locations defined areas outside of the prior remediation. Locations 4, 10, 12, 13, 15, 24, 25, 26, 27, and 28 were identified as outside of the treatment area. Therefore, these locations are not meaningful for assessment of vertical treatment distribution. Locations 12 and 15 had been selected for additional sampling prior to their identification as needed further treatment. Lastly, locations 1, 3, 7, 29, and 30 do not require remediation but are interpreted as beyond the original plume limits. Therefore, these locations are also not useful for assessment of vertical distribution.

Remaining locations 6, 8, 9, 11, 14, 16, 17, 18, 19, 22, and 23 were identified as representative of the former plume and within the treatment area. Both samples at each of these locations were either non-detect (<0.005 mg/L) or below the MCL of 0.080 mg/L. The three samples collected from location 22 were each non-detect (<0.005 mg/L).

The samples collected within treated locations support the conclusion that effective vertical distribution of treatment is achieved within the areas of injection. Multiple direct push investigations have been completed, and the data suggest the difference between shallow and refusal depth samples are approximately representative of saprolite and bedrock data. However, additional investigation with permanent wells installed into bedrock is needed to complete this evaluation. Future activities will

include the installation of additional monitoring wells in saprolite and bedrock, including well pairs for further comparison of conditions at various depths.

### **2.2.2 Horizontal Range of Effectiveness**

As described in the July 12, 2012 report, remediation of chloroform has been observed in wells as far as 150 feet downgradient of injection. The results of the direct push investigation supported the observations of that report, but also identified limitations to the interpretation.

Samples collected from direct push locations directly downgradient of former injection wells were found to either be non-detect for chloroform (<0.005 mg/L) or to contain concentrations below the MCL (0.080 mg/L) and significantly lower than historically noted levels. At direct push locations located greater than 100 feet downgradient, higher concentrations of chloroform were observed. These areas, which need further remediation, were typically in the vicinity of wells previously identified as outside of the treatment area of influence.

Direct push locations D12-10 and D12-20 are close to prior injection wells and produced samples containing chloroform concentrations above the MCL.

At location 10, the concentrations of chloroform were 1.17 mg/L at 29 feet and 1.46 mg/L at 58 feet (refusal depth). This location is near former injection well EW-50, which indicated concentrations as high as 8 mg/L in 2003 and 19 mg/L in the 1990s. The post-remediation concentrations in samples from EW-50 have consistently remained non-detect (<0.005 mg/L).

Only one sample was collected from location 20, located adjacent to former injection well EW-53. The chloroform concentration at location 20 was 0.118 mg/L at 59 feet (refusal depth). In the early 2000s, chloroform concentrations of 3 to 4 mg/L were reported at EW-53 and were as high as 11 mg/L in the 1990s; however, since 2008, the chloroform concentration at EW-53 has been below the MCL, typically non-detect (<0.005 mg/L).

Location 20 was also part of a nest of direct push locations. As described in the July 2012 plan, locations 17 through 22 were grouped together to demonstrate the distribution of chloroform over a relatively small area. A detection of 0.00828 mg/L (below the 0.080 mg/L MCL) was noted in the 63-foot depth sample from location 19. The 80-foot depth sample from location 19 was non-detect, and the data from the remaining four locations in this cluster were also non-detect (<0.005 mg/L). These results indicate that the injection effectiveness is frequently found to extend a significant distance (up to or beyond 100 feet) from the point of injection.

For both cases with chloroform presence near injection points, the detections were somewhat cross-gradient to the injection rather than directly downgradient. This demonstrates a limitation of the prior injection strategy based on use of existing wells, therefore, future injection plans will utilize direct push temporary wells. Temporary wells for injection will improve distribution across the target area and will also allow for targeted placement of injection upgradient of the target areas.

### **2.2.3 Persistence of Remediation Effectiveness**

Ongoing monitoring has demonstrated that once effective treatment is achieved, the effectiveness persists for years and, so far, continues to remain effective through the 2012 monitoring data. A common remediation model includes destruction of aqueous contaminants followed by desorption of additional mass from the surrounding matrix and/or migration of contaminated water from within the matrix. In either case, "rebound" of concentrations is common. Limited rebound was noted at a few wells shortly after the initial injection, but after the second injection event, concentrations have



remained non-detect (<0.005 mg/L) at most locations. As described above, location 15 is slightly upgradient of the treatment area, and a chloroform concentration of 10.6 mg/L remains present. A short distance away, chloroform concentrations remain two orders of magnitude lower at location 16 (0.0278 mg/L at 49 feet and <0.005 mg/L at 64 feet). Injection has not been implemented since early 2005. Migration from the 10 mg/L area would be expected to impact downgradient locations within this time; however, the persistent changes to the geochemistry are interpreted as continued degradation of the chloroform mass as it migrates into previously treated areas.

### 2.3 Dehalobacter Analyses

As described in the July 2012 plan, ten locations were also analyzed for the presence of *Dehalobacter* by quantitative polymerase chain reaction (qPCR). The results of these analyses are presented on Table 3. The presence of *Dehalobacter* was not detected in samples from nine of the ten tested locations. The presence of *Dehalobacter* was noted at direct push location 9 at a count of 138 cells per milliliter (cells/mL).

These results indicate that *Dehalobacter* is not an active part of the chloroform remediation occurring at the site. Typical results associated with active remediation are two or more orders of magnitude higher than the one detection noted. The absence of *Dehalobacter* was noted in a range of locations, including locations with elevated chloroform concentrations (4.15 mg/L, D12-24-54) and locations that have been remediated (<0.005 mg/L, D12-23-69). Also, cis-1,2-dichloroethene (cDCE) was noted at location 9. The limited presence of *Dehalobacter* may be associated with degradation of compounds other than chloroform.

### 3.0 Plan Forward

As described previously and presented on Figure 4, areas for further remediation have been identified. These areas are defined primarily as locations that are upgradient or otherwise outside of the prior treatment areas. The investigation has shown that the potential for significant downgradient treatment (greater than 100 feet) and persistent effectiveness will be achieved through lactate injection. The investigation has also shown that the injection strategy can be improved by using temporary wells for injection to improve uniform coverage of the treatment area. Use of existing permanent wells limited the area of treatment and resulting gaps were identified. Temporary injection points will avoid this limitation.

The proposed remediation plan is presented on Figure 5.

The upgradient edge of the plume to the east of the former DMT area has not been completely delineated, therefore, three additional locations are shown on Figure 5 for additional direct push investigation. As the first step of the remediation, groundwater samples will be collected from each of these locations following the same protocol used in the late 2012 investigation. One sample will be collected at first groundwater and a second sample will be collected at refusal, if at least ten feet deeper than first groundwater. The samples will be delivered to the laboratory for rush analysis.

Thirty-eight proposed injection locations are presented on Figure 5. The locations have been placed to cover the areas for further remediation as defined on Figure 4. The upgradient injection points are placed north and west of the chloroform plume. Injection locations are then distributed every 100 feet across the width and length of the remaining plumes. An effective radius of influence of 50 feet was used to establish this distribution. Prior data indicates that treatment is effective over 100 to 150 feet from injection and this overlapping placement will provide additional effectiveness to address variations in the subsurface. The locations shown on Figure 5 are approximate and will be finalized based on utility clearance and access. Final injection locations will be surveyed and reported.

Forty drums of sodium lactate material will be delivered to the site for injection. The lactate material will be equivalent to the substrate used in prior injection events and will also be prepared for injection in the same manner as prior events. The contents of one 55-gallon drum will be placed in a mixing tank and diluted to approximately 500 gallons. The injection procedure, however, will be modified from prior events. As described previously, temporary locations installed by direct push will be used for injection. Injection will also be completed using pumps in place of the gravity feed method previously implemented. One drum plus dilution water (approximately 500 gallons total) will be injected at each location. Approximately one half of the total volume will be injected 5 to 10 feet below the groundwater surface. The remainder of the volume will be injected at refusal depth.

Analytical results of the additional monitoring locations are anticipated to be available prior to completion of the 38 proposed injection points. Two additional drums of lactate material will be available. Injection locations for these two drums will be selected based on the results of the analysis. If further injection is required in the area of the additional monitoring, the last two drums will be injected in this area. Otherwise, a field selection will be made to supplement existing injection locations to use the remaining two drums.

After the injection is complete, continued monitoring is planned. Based on prior results, a minimum of one year of monitoring is needed to establish the effectiveness. Monitoring of existing wells in the

area will continue in June and December. In addition, quarterly direct push monitoring will also be implemented for four quarters. The proposed direct push monitoring locations are presented on Figure 6. Four direct push monitoring events will be completed in September 2013, December 2013, March 2014, and June 2014. Samples will be collected at first groundwater and refusal as possible.

After four quarters of monitoring, the results will be reviewed and additional actions will be recommended, if needed.

Other additional actions are proposed after the injection results have been assessed. These actions will be planned and recommended after the remediation monitoring is complete. The post-injection phase of activities will include:

- Investigation of vertical delineation into bedrock – Locations for bedrock wells will be selected and a series of packer tests will be implemented to collect groundwater samples across a range of depths.
- Addition of pairs of permanent monitoring wells for long-term tracking of the remediation – Several pairs of monitoring wells will be installed. Each pair will consist of a saprolite well and a bedrock well.
- Using monitoring well data to confirm treatment into bedrock – The wide distribution of pressure injection at refusal depth is expected to follow chloroform into bedrock; however, if chloroform detections persist in bedrock, additional injection plans will be developed.

The prior treatment work has shown that remediation effectiveness persists after the lactate has been consumed. The planned injection mass is expected to be adequate to change the geochemical conditions; however, if the quarterly direct push monitoring events demonstrate that an additional injection is needed, supplemental injections will be proposed, and the supplemental monitoring activities will be delayed as appropriate.

The prior chloroform remediation activities have indicated favorable results within the treatment area. Therefore, the proposed plan is expected to be effective. The improvements of temporary well locations and pressure injection will enhance the effectiveness. Once treatment has been established, confirmation monitoring, including bedrock and long-term analysis plans, will be implemented.

Celanese is prepared to implement this plan upon approval, and the VCC work plan will be submitted in the near future. Ongoing plans, including monitoring, will be presented in the VCC work plan. As a minimum, the VCC work plan will include the activities proposed in this report.

## Tables

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-1-44 9/11/2012	D12-1-72.5 9/21/2012	D12-2-37.5 9/21/2012	D12-3-39 9/10/2012	D12-3-39 Dup 9/10/2012	D12-3-53 9/20/2012	D12-4-44 9/10/2012	D12-4-58 9/20/2012
acetone	mg/L	<0.01	<0.01	0.0151	<0.01	<0.01	<0.01	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00624	0.00585
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.052	0.0764
1,4-dioxane	mg/L	<0.01	R (<0.01)	R (<0.01)	<0.01	<0.01	R (<0.01)	0.0248	0.0218
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0408	0.0529
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0199	0.0226
nitrate-nitrite nitrogen	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
alkalinity	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
sulfate	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
sulfide	mg/L	NA	NA	NA	NA	NA	NA	NA	NA

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-5-23 9/6/2012	D12-6-27 9/6/2012	D12-6-45 9/14/2012	D12-7-17 9/6/2012	D12-7-33 9/20/2012	D12-8-29 9/6/2012	D12-8-50 9/17/2012	D12-9-16 9/6/2012
acetone	mg/L	<0.01	<0.01	0.0132	<0.01	<0.01	<0.01	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0156	0.0542
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	0.0162	0.0483	<0.005	<0.005	<0.005	0.0174	0.0147
1,4-dioxane	mg/L	<0.01	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	3.44	1.01	1.96	0.972	2.65	1.75	2	1.52
alkalinity	mg/L	38.2	4.52	82.4	4.02	45.2	<1	33.2	7.04
sulfate	mg/L	17.3	<1	1.3	12.6	2.51	<1	<1	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

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**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-9-16 Dup 9/6/2012	D12-9-47 9/20/2012	D12-9-47 Dup 9/20/2012	D12-10-29 9/4/2012	D12-10-29 Dup 9/4/2012	D12-10-58.5 9/11/2012	D12-11-25 9/5/2012
acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.0209	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	0.0564	0.0171	0.0171	1.17	1.2	1.46	0.0365
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	0.0155	0.0339	0.0335	<0.005	<0.005	0.0104	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	0.0131	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	0.00509	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	1.51	1.85	1.88	1.92	1.93	4.24	1.03
alkalinity	mg/L	5.03	43.2	57.3	3.48	<1	123	14.9
sulfate	mg/L	<1	1.2	1.04	<1	<1	3.82	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-11-40.5 9/12/2012	D12-12-39 9/4/2012	D12-12-49 9/4/2012	D12-12-60 9/13/2012	D12-13-37 9/14/2012	D12-13-47.5 9/14/2012	D12-14-49 9/10/2012	D12-14-64 9/12/2012
acetone	mg/L	0.0182	<0.01	0.0102	0.014	0.0161	0.0582	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.0133	<0.01	<0.01
chloroform	mg/L	0.016	0.0226	0.0996	0.134	3.14	4.21	0.0302	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	0.0257	<0.005	<0.005	<0.005	0.00501	0.00702	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	0.0184	0.0414	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	2.06	1.37	1.07	2.13	2.27	2.03	2.54	3.15
alkalinity	mg/L	46.2	32.8	44.3	13.1	45.7	66.3	26.6	69.3
sulfate	mg/L	<1	1	1.69	<1	<1	<1	<1	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().



**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-15-49 9/10/2012	D12-15-60 9/12/2012	D12-15-69.5 9/11/2012	D12-16-49 9/7/2012	D12-16-49 Dup 9/7/2012	D12-16-64 9/13/2012	D12-17-63 9/25/2012
acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	<0.005	10.6	1.51	0.0278	0.0285	<0.005	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	0.00907	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	1.78	2.41	2.42	8.09	8.12	2.73	0.759
alkalinity	mg/L	32.7	10.6	88.4	3.02	4.02	55.3	23.6
sulfate	mg/L	<1	<1	<1	<1	<1	<1	<1
sulfide	mg/L	<0.05	<0.05	0.0835	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-17-74 9/25/2012	D12-18-63 9/25/2012	D12-18-74.5 9/25/2012	D12-19-63 9/24/2012	D12-19-80 9/24/2012	D12-20-59 9/21/2012	D12-21-63 9/25/2012	D12-22-63 9/24/2012
acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.0466	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.0101	<0.01	<0.01
chloroform	mg/L	<0.005	<0.005	<0.005	0.00828	<0.005	0.118	<0.005	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	0.182	0.123	0.345	0.0269	<0.02	1.72	0.445	0.206
alkalinity	mg/L	35.2	32.2	21.6	43.2	78.4	46.2	23.1	24.6
sulfate	mg/L	<1	<1	<1	<1	<1	<1	<1	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ( ).

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-22-74.5 9/24/2012	D12-23-59 9/19/2012	D12-23-69 9/19/2012	D12-24-37 9/7/2012	D12-24-54 9/19/2012	D12-25-26 9/7/2012	D12-25-57_5 9/17/2012	D12-26-30 9/7/2012
acetone	mg/L	0.0107	<0.01	0.0263	0.0206	<0.01	<0.01	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	<0.005	<0.005	<0.005	<0.005	4.15	<0.005	0.221	0.126
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00644	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	0.982	0.317	1.75	0.194	2.24	0.334	1.03	1.01
alkalinity	mg/L	39.7	88.4	57.3	56.8	30.2	24.1	46.2	38.2
sulfate	mg/L	<1	1.16	<1	1.85	<1	<1	<1	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-26-60 9/17/2012	D12-26-60 Dup 9/17/2012	D12-27-61 12/11/2012	D12-27-75 12/11/2012	D12-28-66 12/11/2012	D12-28-87 12/10/2012	D12-29-41 12/12/2012
acetone	mg/L	<0.01	<0.01	0.0179	<0.01	<0.01	0.0149	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	0.285	0.27	0.299	0.361	1.04	1.12	0.00583
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	0.0108	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	1.33	1.37	1.18	0.919	1.67	1.26	0.942
alkalinity	mg/L	37.7	34.7	75.9	56.4	67.7	86.1	27.2
sulfate	mg/L	<1	<1	<1	<1	<1	3.27	<1
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ( ).

**Table 1**  
**Summary of Direct Push Analytical Results**  
**September - December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	D12-29-41 Dup 12/12/2012	D12-29-50 12/12/2012	D12-30-20 12/13/2012	D12-30-50 12/13/2012	MW-52 12/5/2012
acetone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
2-butanone	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
chloroform	mg/L	0.00581	0.00902	0.0733	0.0228	<0.005
1,1-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
1,4-dioxane	mg/L	NA	NA	NA	NA	NA
methylene chloride	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
nitrate-nitrite nitrogen	mg/L	0.945	0.963	0.955	0.0802	NA
alkalinity	mg/L	32.8	41	60.5	108	NA
sulfate	mg/L	<1	<1	<1	1.45	NA
sulfide	mg/L	<0.05	<0.05	<0.05	<0.05	NA

NA - Not analyzed

mg/L - milligrams per liter

(R) - Analyzed more than 2X Holding time, lab result as reported presented in ().

**Table 2**  
**Summary of Permanent Monitoring Well Analytical Results**  
**December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	EW-31 12/05/2012	EW-37 12/06/2012	EW-41 12/05/2012	EW-41 Dup 12/05/2012	EW-49 12/05/2012	EW-52 12/06/2012	EW-53 12/06/2012	MW-52 12/05/2012	MW-99 12/06/2012	MW-103 12/06/2012
<b>Volatile Organics</b>											
chloroform	mg/L	<0.005	<0.005	0.0778	0.079	<0.005	<0.005	<0.005	<0.005	0.00744	<0.005
cis-1,2-dichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	0.00651	0.0441	<0.005	<0.005	0.094	<0.005
tetrachloroethene	mg/L	<0.005	0.00664	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.163	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0316	<0.005
<b>Field and Natural Attenuation Parameters</b>											
alkalinity	mg/L	120	26.7	33.3	34.3	91.2	52.3	62.5	NA	3.59	3.59
chloride	mg/L	8	12.1	3.74	3.81	2.17	3.09	10.5	NA	1.87	2.99
dissolved oxygen	mg/L	0.43	0.22	0.38	0.38	0.6	0.37	0.21	4.11	2.11	6.82
ferrous iron	mg/L	1.2	0.2	1.2	1.2	0.0	4.2	4.6	NA	<0.1	<0.1
groundwater elevation	feet MSL	669.18	718.11	669.05	669.05	725.05	721.48	694.24	687.67	730.01	689.05
manganese (dissolved)	mg/L	1.56	0.917	0.896	0.884	0.057	0.201	1.45	NA	0.035	0.043
ORP	mV	-105.8	151.3	44	44	-189.4	-71.9	-22	153.4	277.5	345.3
pH	su	6.92	5.74	5.82	5.82	8.14	6.45	6.18	6.44	5.21	4.61
specific conductance	umhos/cm	269	125	103	103	209	154	171	149	30	53
temperature	degrees C	16.55	18.34	17.45	17.45	18.55	14.63	18.85	18.51	18.69	16.64
total organic carbon	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
turbidity	NTU	4.3	7.2	60.7	60.7	2.2	40.5	18.9	650	8.2	5.8

NA - Not Analyzed  
degrees C - degrees Celsius  
feet MSL - feet above mean sea level  
mg/L - milligrams per liter  
mV - millivolts  
NTU - nephelometric turbidity units  
su - standard units  
umhos/cm - micromhos/cm

**Table 2**  
**Summary of Permanent Monitoring Well Analytical Results**  
**December 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

Parameter	Unit	MW-105 12/05/2012	MW-106 12/05/2012	MW-107 12/06/2012	MW-109 12/05/2012	RW-29 12/05/2012	RW-48 12/05/2012	RW-65 12/06/2012	RW-108 12/05/2012
<b>Volatile Organics</b>									
chloroform	mg/L	0.117	0.218	0.0468	0.586	<0.005	<0.005	<0.005	<0.005
cis-1,2-dichloroethene	mg/L	0.0165	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
tetrachloroethene	mg/L	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
trichloroethene	mg/L	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
<b>Field and Natural Attenuation Parameters</b>									
alkalinity	mg/L	9.74	<1	25.1	16.4	65.8	62.4	107	186
chloride	mg/L	6.22	11.2	2.16	3.62	1.48	3.23	12.7	4.94
dissolved oxygen	mg/L	4.39	6.55	7.36	9.21	0.21	0.24	0.55	0.41
ferrous iron	mg/L	<0.1	<0.1	<0.1	0.14	0.0	1.6	0.4	0.16
groundwater elevation	feet MSL	715.59	716.04	685.08	674	770.99	704.91	682.84	673.3
manganese (dissolved)	mg/L	<0.01	0.021	<0.01	<0.01	0.014	2.65	1.8	0.169
ORP	mV	226.8	292.9	197.6	184.1	-240.7	-175.9	-86.5	-86.11
pH	su	5.37	4.95	5.63	5.82	8.13	6.84	7.37	7.81
specific conductance	umhos/cm	69	63	67	56	152	208	258	326
temperature	degrees C	18.67	18.95	17.0	17.91	17.75	18.25	16.77	17.79
total organic carbon	mg/L	<1	<1	<1	<1	<1	<1	<1	<1
turbidity	NTU	2.2	3.4	0.6	281.6	6.9	75.8	1.8	15

NA - Not Analyzed  
degrees C - degrees Celsius  
feet MSL - feet above mean sea level  
mg/L - milligrams per liter  
mV - millivolts  
NTU - nephelometric turbidity units  
su - standard units  
umhos/cm - micromhos/cm

**Table 3**  
**Summary of Dehalobacter Analyses**  
**September 2012**  
**Auriga Spartanburg Facility**  
**AECOM Project No. 60280417**

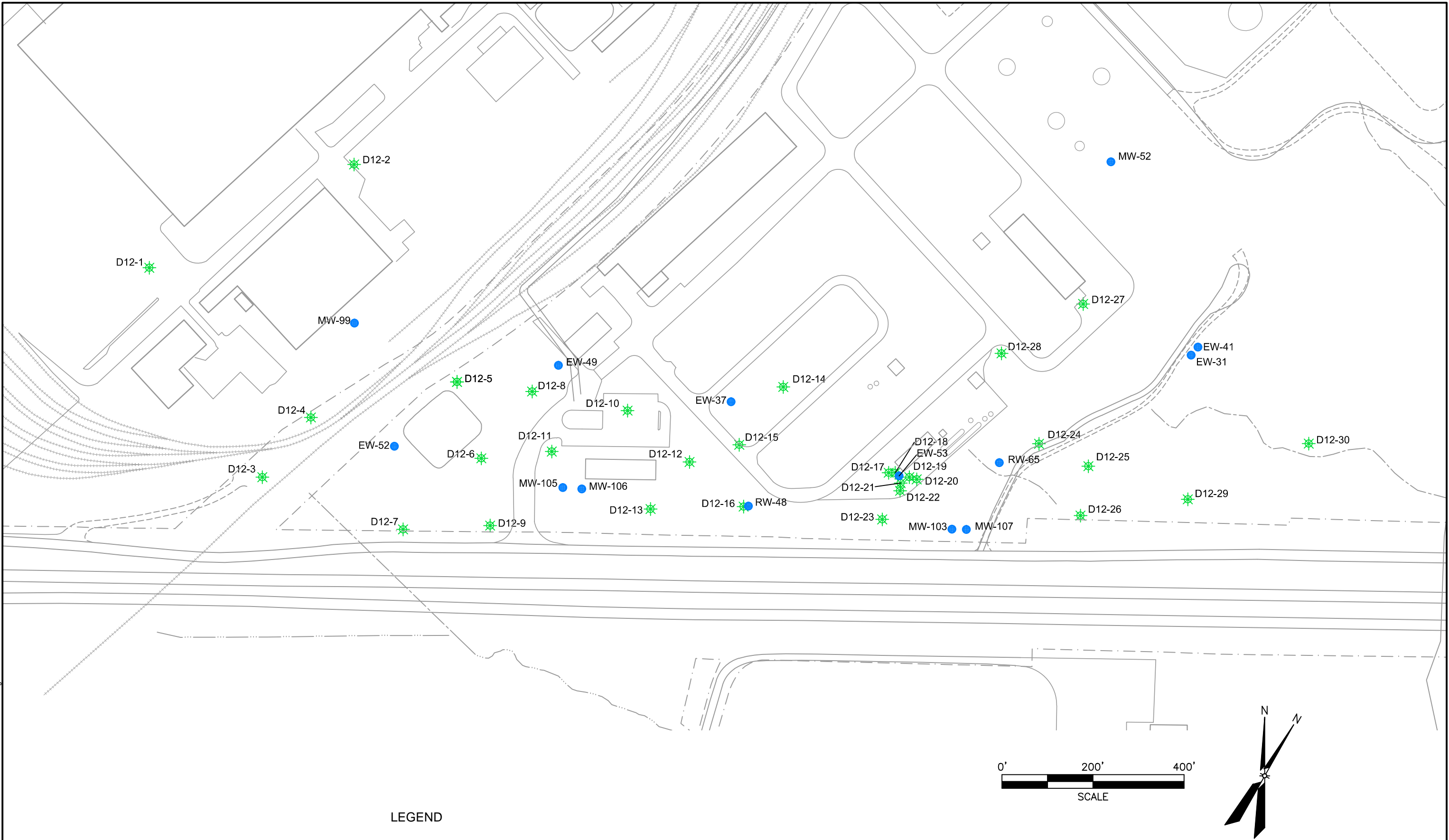
Parameter	Unit	D12-5-25 9/6/2012	D12-9-47 9/20/2012	D12-10-58.5 9/11/2012	D12-11-40.5 9/12/2012	D12-14-64 9/12/2012	D12-15-69.5 9/11/2012	D12-16-64 9/13/2012	D12-23-69 9/19/2012	D12-24-54 9/19/2012	D12-26-60 9/17/2012
Dehalobacter	cells/mL	<35.3	138	<15.8	<13.0	<13.6	<18.2	<42.9	<69.8	<69.8	<17.6



## Figures

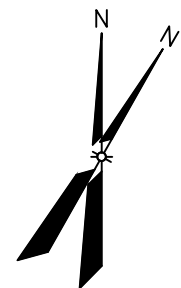
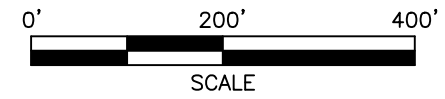
2/4/2013

79748121.dwg



LEGEND

- WELL LOCATION
- ✱ DPT LOCATION



**FIGURE 1**  
INVESTIGATION LOCATIONS

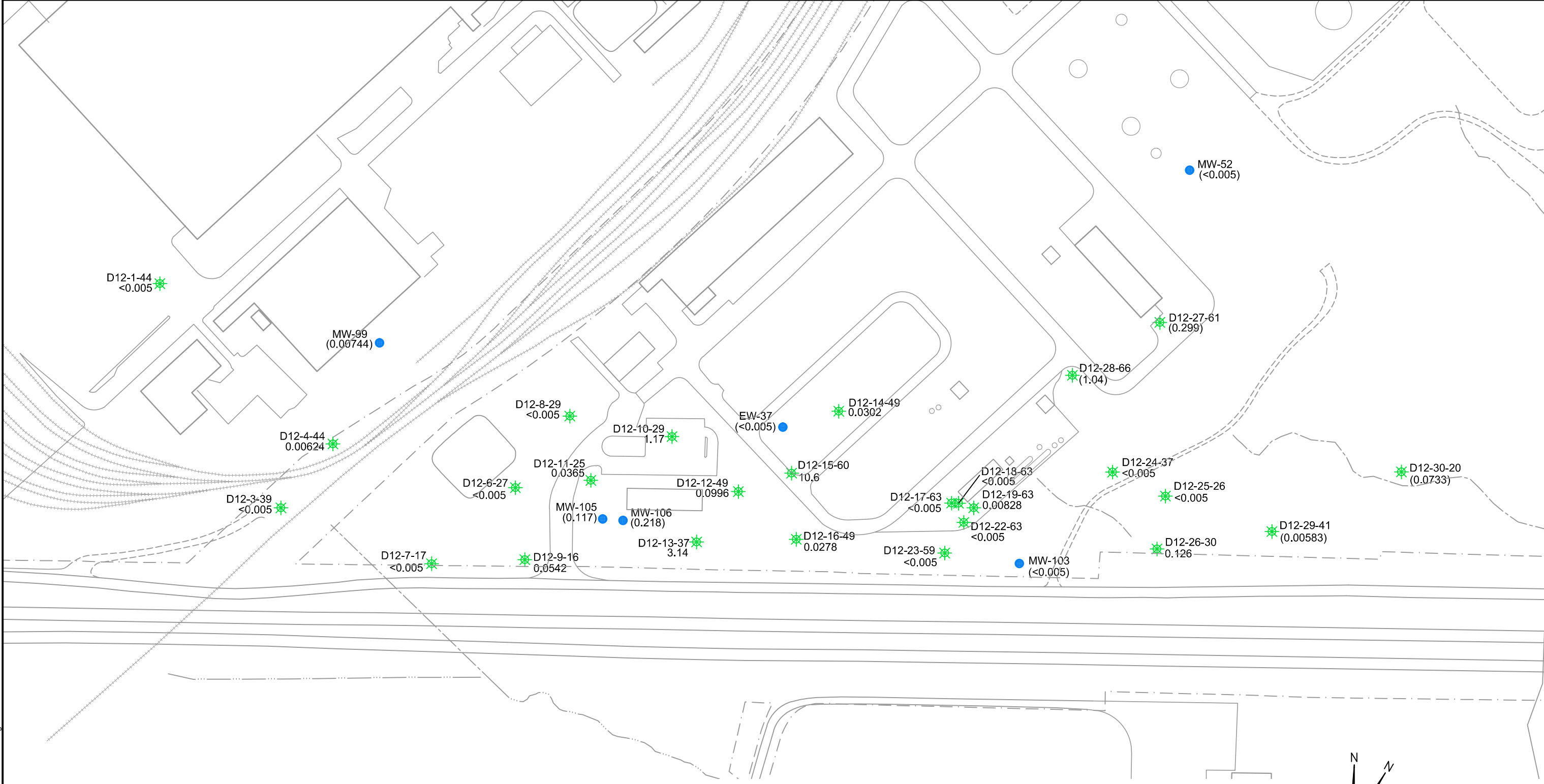
CNA HOLDINGS, INC.  
SPARTANBURG, SOUTH CAROLINA

MARCH 2013

60280417

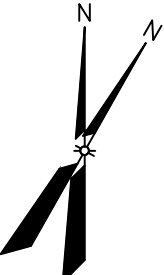
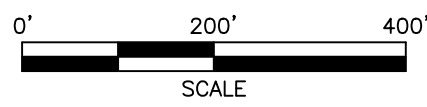
2/4/2013

79748115.dwg



LEGEND

- WELL LOCATION
- ✱ SAPROLITE DPT LOCATION
- 0.0365 CHLOROFORM RESULTS IN mg/L FROM SEPTEMBER 2012
- (0.117) CHLOROFORM RESULTS IN mg/L FROM DECEMBER 2012



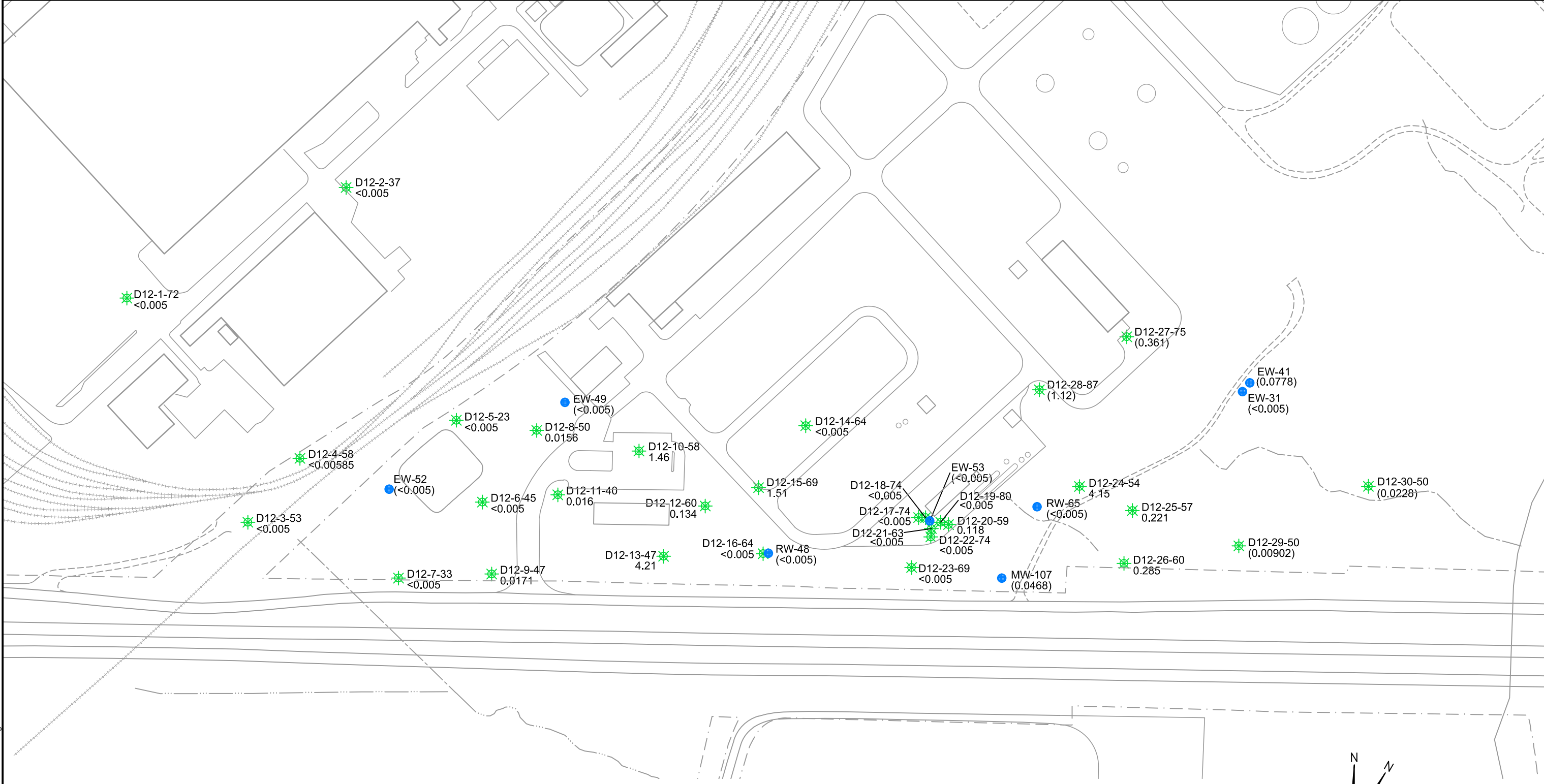
**FIGURE 2**  
**SAPROLITE CHLOROFORM RESULTS**  
**IN GROUNDWATER**

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MARCH 2013 60280417

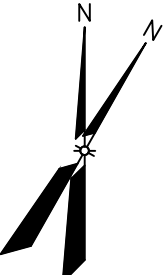
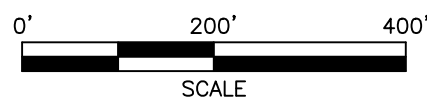
2/4/2013

79748116.dwg



LEGEND

- WELL LOCATION
- ✱ SAPROLITE DPT LOCATION
- 0.0156 CHLOROFORM RESULTS IN mg/L FROM SEPTEMBER 2012
- (0.0778) CHLOROFORM RESULTS IN mg/L FROM DECEMBER 2012



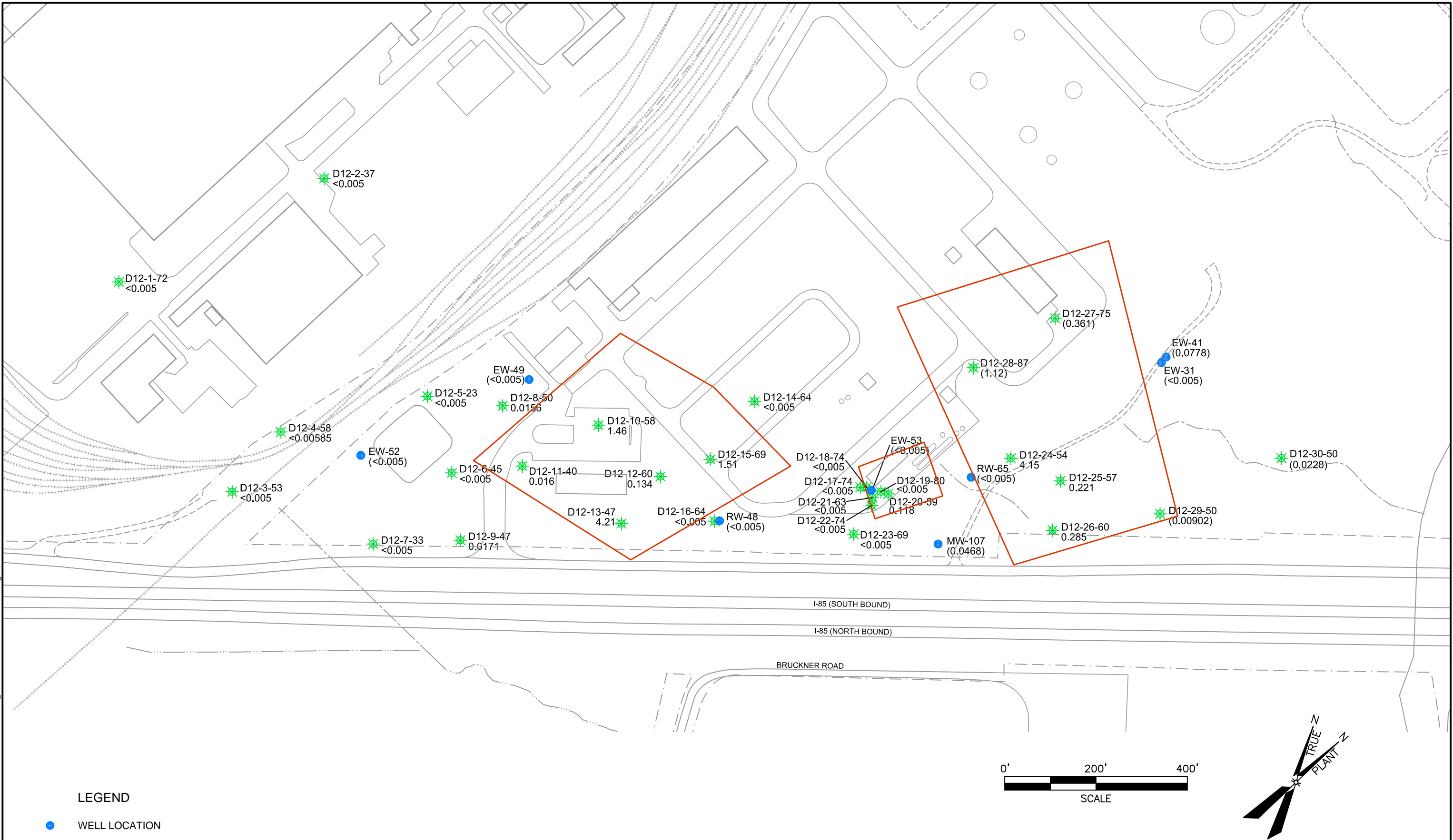
**FIGURE 3**  
BEDROCK CHLOROFORM RESULTS  
IN GROUNDWATER

CNA HOLDINGS, INC.  
SPARTANBURG, SOUTH CAROLINA

MARCH 2013

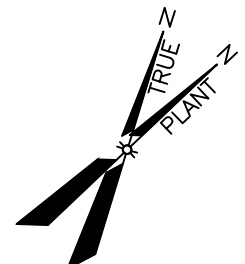
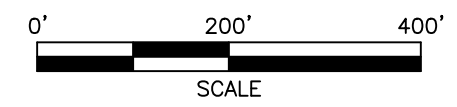
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2/4/2013  
79748122\_Areas for Further Remediation.dwg



LEGEND

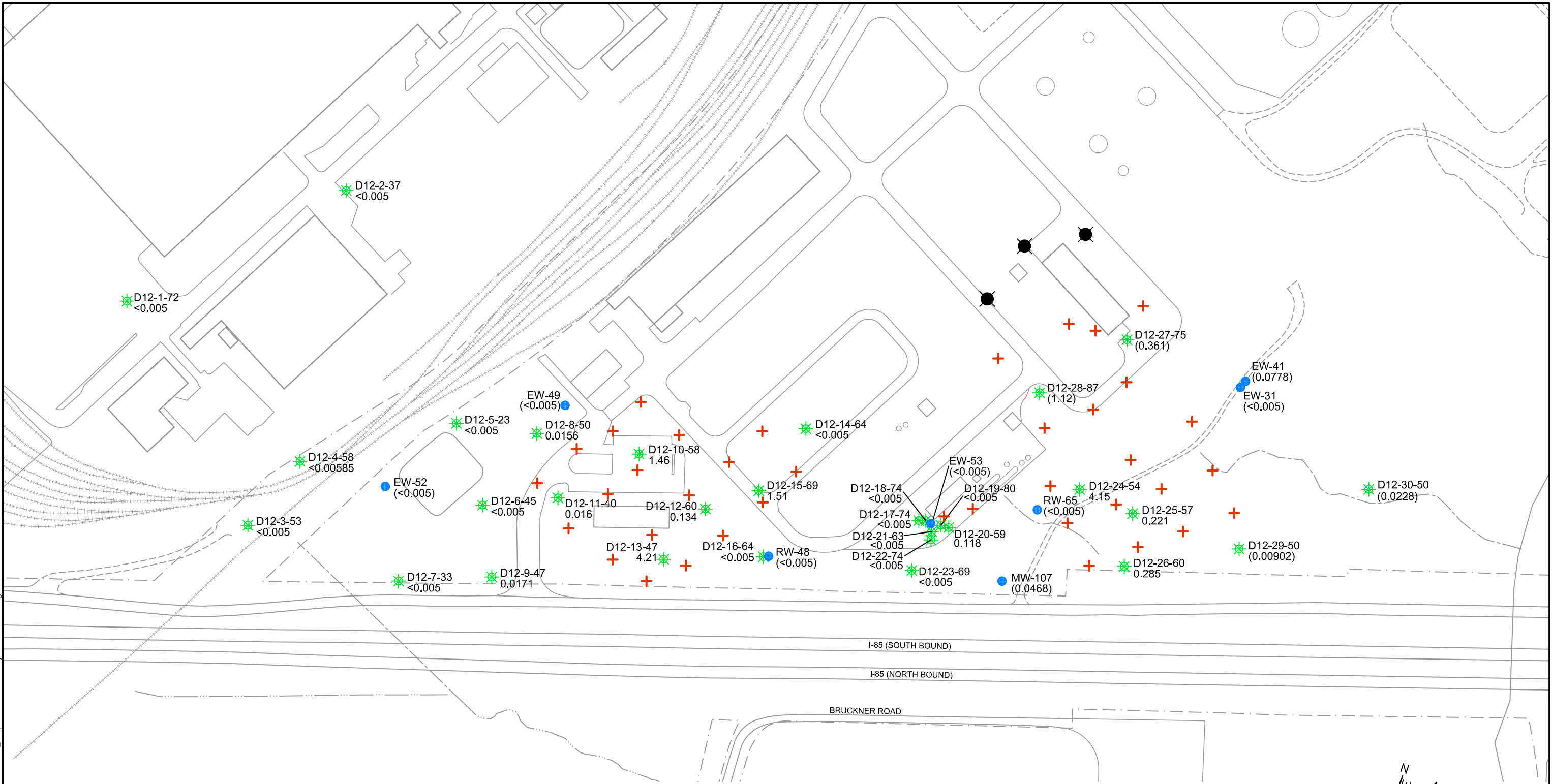
- WELL LOCATION
- ★ SAPROLITE DPT LOCATION
- 0.0156 CHLOROFORM RESULTS IN mg/L FROM SEPTEMBER 2012
- (0.0778) CHLOROFORM RESULTS IN mg/L FROM DECEMBER 2012



**FIGURE 4**  
AREAS FOR FURTHER REMEDIATION

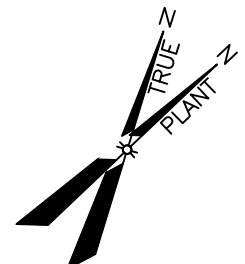
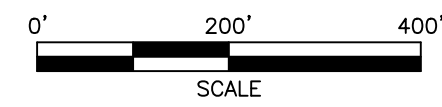
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79748117\_Proposed DMT Area Injection Points.dwg 2/4/2013



LEGEND

- + PROPOSED INJECTION POINT
- ADDITIONAL DIRECT PUSH LOCATION
- WELL LOCATION
- ★ SAPROLITE DPT LOCATION
- 0.0156 CHLOROFORM RESULTS IN mg/L FROM SEPTEMBER 2012
- (0.0778) CHLOROFORM RESULTS IN mg/L FROM DECEMBER 2012



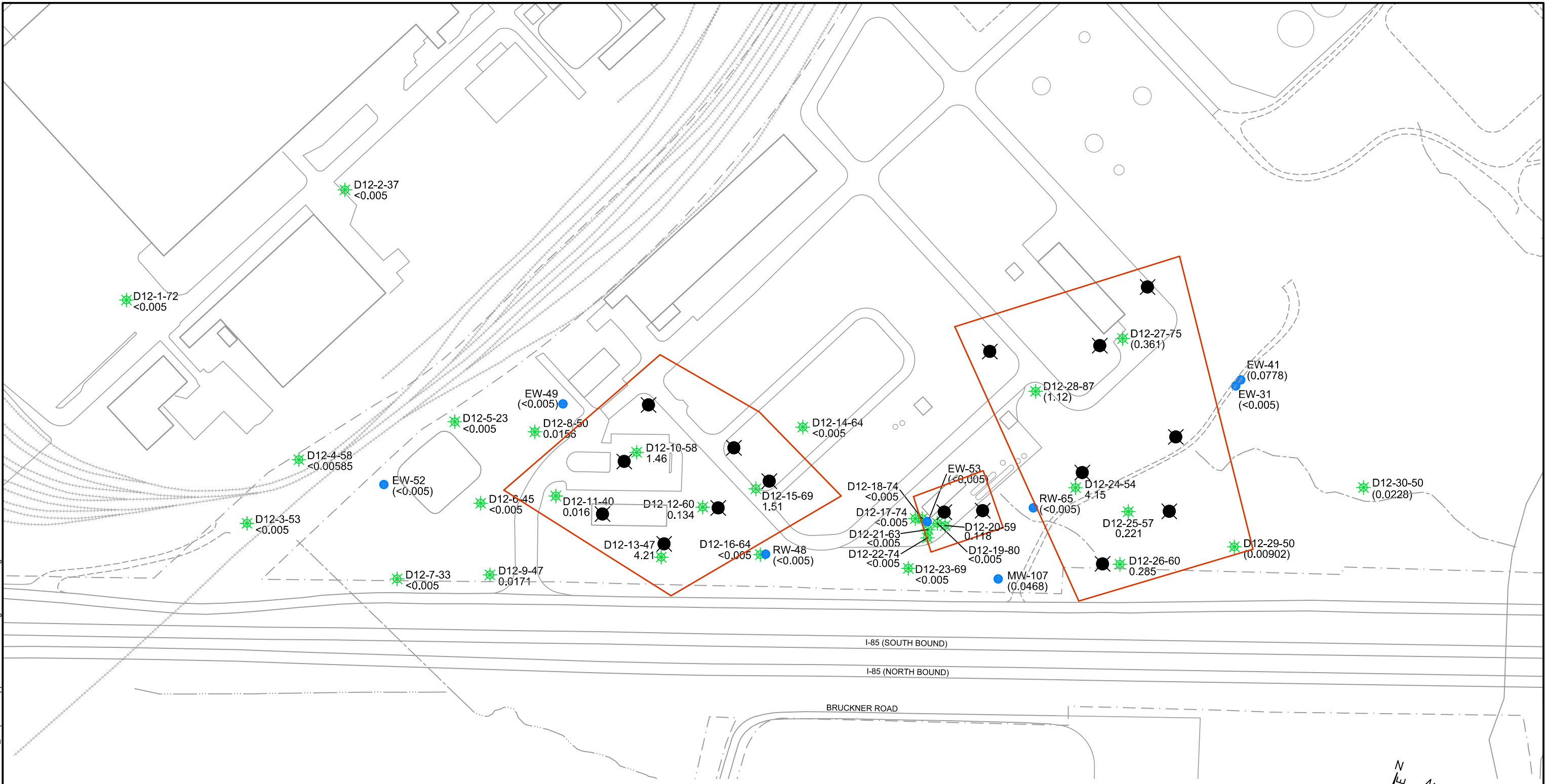
**FIGURE 5**  
PROPOSED INJECTION POINT  
LOCATION MAP

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SPARTANBURG, SOUTH CAROLINA




MARCH 2013

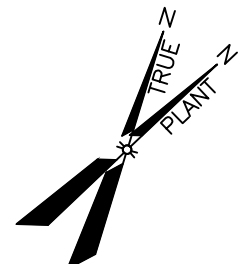
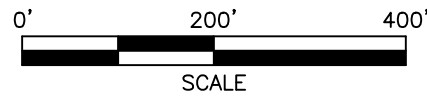
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2/4/2013  
79748124\_Proposed Supplemental Monitoring Locations.dwg



LEGEND

-  PROPOSED DIRECT PUSH MONITORING LOCATION
-  WELL LOCATION
-  SAPROLITE DPT LOCATION
- 0.0156 CHLOROFORM RESULTS IN mg/L FROM SEPTEMBER 2012
- (0.0778) CHLOROFORM RESULTS IN mg/L FROM DECEMBER 2012



**FIGURE 6**  
PROPOSED SUPPLEMENTAL  
MONITORING LOCATIONS

CNA HOLDINGS, INC.  
SPARTANBURG, SOUTH CAROLINA

MARCH 2013

60280417

# **Appendix A**

## **Analytical Data**



September 20, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2003  
Page 1 of 45

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Login Number	:L12090513
Project Number	:61576.08
Description	:AURIGA - SPARTANBURG, SC

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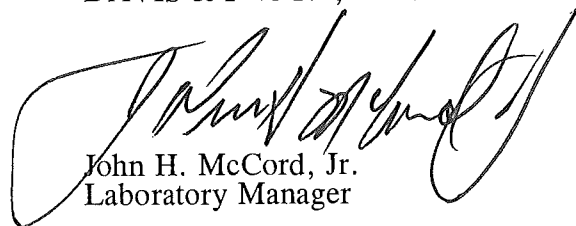
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 05, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 47 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

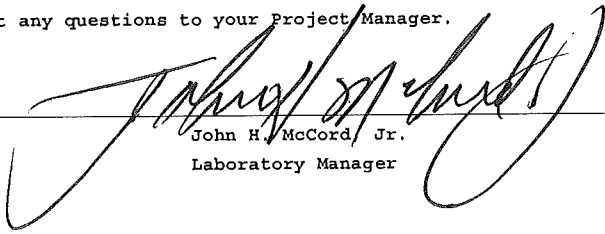
Project Number: 61576.08  
Report Date : September 20, 2012  
Page 2 of 45 Report ID: AK2003

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12090513-01	D12-10-29	09/04/2012 1215	09/05/2012
L12090513-02	D12-10-29-A	09/04/2012 1215	09/05/2012
L12090513-03	D12-12-39	09/04/2012 1415	09/05/2012
L12090513-04	D12-12-49	09/04/2012 1550	09/05/2012
L12090513-05	D12-11-25	09/05/2012 0925	09/05/2012
L12090513-06	TRIP BLANK		09/05/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 3 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29  
Sample ID: L12090513-01

Date Collected: 09/04/2012 1215  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1058 Analyst: PAF Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 4 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29  
 Sample ID: L12090513-01

Date Collected: 09/04/2012 1215  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	110 %		(74-140)	
Surr: BROMOFLUOROBENZENE	107 %		(77-133)	
Surr: TOLUENE-D8	108 %		(77-131)	
<b>Date/Time: 09/06/2012 1401 Analyst: PAP Dilution: 10</b>				
CHLOROFORM	1170		50.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4	115 %		(74-140)	
Surr: BROMOFLUOROBENZENE	107 %		(77-133)	
Surr: TOLUENE-D8	109 %		(77-131)	
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/12/2012 1359 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)	1.92		0.0400	mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/06/2012 1434 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL	3.48		1.00	mg/l
ENDPOINT PH	4.19			su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/10/2012 1542 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 5 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29  
Sample ID: L12090513-01

Date Collected: 09/04/2012 1215  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/12/2012 1752 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 6 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29-A  
Sample ID: L12090513-02

Date Collected: 09/04/2012 1215  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1124 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 7 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29-A  
Sample ID: L12090513-02

Date Collected: 09/04/2012 1215  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE		5.09	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		110 %	(74-140)	
Surr: BROMOFLUOROBENZENE		108 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	
<b>Date/Time: 09/06/2012 1426 Analyst: PAP Dilution: 10</b>				
CHLOROFORM		1200	50.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4		112 %	(74-140)	
Surr: BROMOFLUOROBENZENE		106 %	(77-133)	
Surr: TOLUENE-D8		106 %	(77-131)	
<b>Wet Chemistry</b>				
<i>EPA 353.2</i>				
<b>Date/Time: 09/12/2012 1401 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		1.93	0.0400	mg/l
<i>SM 2320B</i>				
<b>Date/Time: 09/06/2012 1443 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.19		su
<i>SM 4500-S2-D</i>				
<b>Date/Time: 09/10/2012 1543 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 8 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-10-29-A  
Sample ID: L12090513-02

Date Collected: 09/04/2012 1215  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/12/2012 1822 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 9 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-12-39  
Sample ID: L12090513-03

Date Collected: 09/04/2012 1415  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SWB46 8260B				
Date/Time: 09/06/2012 1335 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	22.6	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 10 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: **D12-12-39**  
 Sample ID: L12090513-03

Date Collected: 09/04/2012 1415  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		112 %	(74-140)	
Surr: BROMOFLUOROBENZENE		106 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1404 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.37 0.0400 mg/l

SM 2320B

Date/Time: 09/06/2012 1502 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 32.8 1.00 mg/l  
 ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 09/10/2012 1544 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 1954 Analyst: CDC Dilution: 1  
 SULFATE 1.00 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 11 of 45 Report ID: AK2003

### Certificate of Analysis

Client ID: D12-12-49  
 Sample ID: L12090513-04

Date Collected: 09/04/2012 1550  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1216 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		10.2	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM		99.6	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
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### Certificate of Analysis

Client ID: D12-12-49  
Sample ID: L12090513-04

Date Collected: 09/04/2012 1550  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		112 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1406 Analyst: LES Dilution: 2  
NITRATE + NITRITE NITROGEN (AS N) 1.07 0.0400 mg/l

SM 2320B

Date/Time: 09/06/2012 1549 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 44.3 1.00 mg/l  
ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/10/2012 1545 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 2024 Analyst: CDC Dilution: 1  
SULFATE 1.69 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### Certificate of Analysis

Client ID: D12-11-25  
 Sample ID: L12090513-05

Date Collected: 09/05/2012 0925  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1242      Analyst: PAP      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	36.5	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: **D12-11-25**  
 Sample ID: L12090513-05

Date Collected: 09/05/2012 0925  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		114 %	(74-140)	
Surr: BROMOFLUOROBENZENE		111 %	(77-133)	
Surr: TOLUENE-D8		109 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1409 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.03 0.0400 mg/l

SM 2320B

Date/Time: 09/06/2012 1610 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 14.9 1.00 mg/l  
 ENDPOINT PH 4.18 su

SM 4500-S2-D

Date/Time: 09/10/2012 1546 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 2055 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: TRIP BLANK  
Sample ID: L12090513-06

Date Collected:  
Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1032 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: TRIP BLANK  
 Sample ID: L12090513-06

Date Collected:  
 Date Received : 09/05/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		111 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	



*SC Certification Number: 24110001*

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63127  
 Description: VO/89260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12090513-01	D12-10-29	1		09/06/2012 1058	PAP	1
L12090513-01	D12-10-29	2		09/06/2012 1401	PAP	10
L12090513-02	D12-10-29-A	1		09/06/2012 1124	PAP	1
L12090513-02	D12-10-29-A	2		09/06/2012 1426	PAP	10
L12090513-03	D12-12-39	1		09/06/2012 1335	PAP	1
L12090513-04	D12-12-49	1		09/06/2012 1216	PAP	1
L12090513-05	D12-11-25	1		09/06/2012 1242	PAP	1
L12090513-06	TRIP BLANK	1		09/06/2012 1032	PAP	1
MB63127:1	Method Blank	1		09/06/2012 1006	PAP	1
LCS63127:1	Laboratory Control Spike	1		09/06/2012 1544	PAP	1
MS12090513-05:63127	Matrix Spike	1		09/06/2012 1452	PAP	1
MSD12090513-05:63127	Matrix Spike Duplicate	1		09/06/2012 1518	PAP	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63127

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA	BFB	TOL
		74-140	77-133	77-131
L12090513-01	09/06/2012 1058	110	107	108
L12090513-01	09/06/2012 1401	115	107	109
L12090513-02	09/06/2012 1124	110	108	108
L12090513-02	09/06/2012 1426	112	106	106
L12090513-03	09/06/2012 1335	112	106	108
L12090513-04	09/06/2012 1216	112	109	108
L12090513-05	09/06/2012 1242	114	111	109
L12090513-06	09/06/2012 1032	111	109	108
MB63127:1	09/06/2012 1006	109	110	107
LCS63127:1	09/06/2012 1544	112	111	107
MS12090513-05:63127	09/06/2012 1452	116	110	109
MSD12090513-05:63127	09/06/2012 1518	114	112	110

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63127  
 Blank : MB63127:1

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/06/2012 1006 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63127  
 Blank : MB63127:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		109 %	(74-140)	
Surr: BROMOFLUOROBENZENE		110 %	(77-133)	
Surr: TOLUENE-D8		107 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63127  
MS/MSD : MS12090513-05:63127  
MSD12090513-05:63127

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	53.27	ug/l	107	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	50.63	ug/l	101	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	50.77	ug/l	102	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	49.91	ug/l	100	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	52.70	ug/l	105	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	52.15	ug/l	104	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	49.79	ug/l	100	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	50.71	ug/l	101	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	51.94	ug/l	104	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	49.64	ug/l	99	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	48.67	ug/l	97	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	52.04	ug/l	104	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	50.54	ug/l	101	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	49.44	ug/l	99	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	48.76	ug/l	98	74-108
2-BUTANONE	50.00	< 10.00	54.83	ug/l	110	68-134
2-HEXANONE	50.00	< 10.00	53.23	ug/l	106	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	52.96	ug/l	106	69-135
ACETONE	50.00	< 10.00	64.69	ug/l	129	64-149
BENZENE	50.00	< 5.00	50.46	ug/l	101	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	51.21	ug/l	102	76-123
BROMOFORM	50.00	< 5.00	51.77	ug/l	104	74-124
BROMOMETHANE	50.00	< 10.00	47.86	ug/l	96	64-121
CARBON DISULFIDE	50.00	< 5.00	44.08	ug/l	88	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	53.90	ug/l	108	72-126
CHLOROBENZENE	50.00	< 5.00	49.27	ug/l	99	74-113
CHLOROETHANE	50.00	< 10.00	47.28	ug/l	95	71-121
CHLOROFORM	50.00	36.49	88.93	ug/l	105	76-119
CHLOROMETHANE	50.00	< 10.00	51.42	ug/l	103	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	54.26	ug/l	109	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	53.59	ug/l	107	83-125
CYCLOHEXANE	50.00	< 5.00	54.01	ug/l	108	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	51.87	ug/l	104	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	61.17	ug/l	122	53-141
ETHYLBENZENE	50.00	< 5.00	50.01	ug/l	100	70-130
ISOPROPYL BENZENE	50.00	< 5.00	51.21	ug/l	102	74-114
METHYL ACETATE	50.00	< 10.00	52.67	ug/l	105	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	51.19	ug/l	102	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63127  
MS/MSD : MS12090513-05:63127  
MSD12090513-05:63127

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	51.38	ug/l	103	61-126
METHYLENE CHLORIDE	50.00	< 5.00	52.32	ug/l	105	71-115
STYRENE	50.00	< 5.00	50.52	ug/l	101	75-116
TETRACHLOROETHENE	50.00	< 5.00	49.83	ug/l	100	69-121
TOLUENE	50.00	< 5.00	50.39	ug/l	101	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	49.63	ug/l	99	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	48.57	ug/l	97	73-112
TRICHLOROETHENE	50.00	< 5.00	49.65	ug/l	99	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	53.28	ug/l	107	70-134
VINYL ACETATE	50.00	< 10.00	52.72	ug/l	105	59-146
VINYL CHLORIDE	50.00	< 10.00	53.87	ug/l	108	63-124
XYLENE (TOTAL)	150.0	< 5.00	150.6	ug/l	100	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	51.21	ug/l	102	4	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	49.46	ug/l	99	2	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	47.63	ug/l	95	6	18	64-130
1,1,2-TRICHLOROETHANE	50.00	48.70	ug/l	97	2	14	78-113
1,1-DICHLOROETHANE	50.00	50.12	ug/l	100	5	15	76-116
1,1-DICHLOROETHENE	50.00	49.67	ug/l	99	5	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	48.54	ug/l	97	3	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	49.40	ug/l	99	3	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.57	ug/l	99	5	20	73-124
1,2-DIBROMOETHANE	50.00	47.70	ug/l	95	4	16	79-114
1,2-DICHLOROBENZENE	50.00	47.52	ug/l	95	2	15	76-109
1,2-DICHLOROETHANE	50.00	49.77	ug/l	100	4	16	74-122
1,2-DICHLOROPROPANE	50.00	49.10	ug/l	98	3	15	79-113
1,3-DICHLOROBENZENE	50.00	48.01	ug/l	96	3	17	69-118
1,4-DICHLOROBENZENE	50.00	47.85	ug/l	96	2	16	74-108
2-BUTANONE	50.00	50.47	ug/l	101	8	20	68-134
2-HEXANONE	50.00	51.19	ug/l	102	4	20	70-133
4-METHYL-2-PENTANONE	50.00	51.02	ug/l	102	4	19	69-135
ACETONE	50.00	55.29	ug/l	111	16	23	64-149
BENZENE	50.00	49.44	ug/l	99	2	15	77-114
BROMODICHLOROMETHANE	50.00	49.35	ug/l	99	4	16	76-123
BROMOFORM	50.00	50.56	ug/l	101	2	17	74-124
BROMOMETHANE	50.00	46.66	ug/l	93	3	22	64-121

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63127  
MS/MSD : MS12090513-05:63127  
MSD12090513-05:63127

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	42.54	ug/l	85	4	21	59-124
CARBON TETRACHLORIDE	50.00	52.32	ug/l	105	3	18	72-126
CHLOROBENZENE	50.00	48.09	ug/l	96	2	15	74-113
CHLOROETHANE	50.00	45.60	ug/l	91	4	17	71-121
CHLOROFORM	50.00	90.50	ug/l	108	2	14	76-119
CHLOROMETHANE	50.00	48.71	ug/l	97	5	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	52.82	ug/l	106	3	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	52.74	ug/l	105	2	16	83-125
CYCLOHEXANE	50.00	51.24	ug/l	102	5	17	59-126
DIBROMOCHLOROMETHANE	50.00	50.44	ug/l	101	3	16	77-121
DICHLORODIFLUOROMETHANE	50.00	56.76	ug/l	114	7	20	53-141
ETHYLBENZENE	50.00	48.94	ug/l	98	2	20	70-130
ISOPROPYL BENZENE	50.00	49.67	ug/l	99	3	17	74-114
METHYL ACETATE	50.00	49.50	ug/l	99	6	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	48.96	ug/l	98	4	16	74-119
METHYLCYCLOHEXANE	50.00	50.07	ug/l	100	3	16	61-126
METHYLENE CHLORIDE	50.00	49.56	ug/l	99	5	17	71-115
STYRENE	50.00	49.04	ug/l	98	3	17	75-116
TETRACHLOROETHENE	50.00	49.23	ug/l	98	1	16	69-121
TOLUENE	50.00	49.13	ug/l	98	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	48.60	ug/l	97	2	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	46.73	ug/l	93	4	16	73-112
TRICHLOROETHENE	50.00	49.41	ug/l	99	0	15	74-120
TRICHLOROFLUOROMETHANE	50.00	51.07	ug/l	102	4	18	70-134
VINYL ACETATE	50.00	49.88	ug/l	100	6	19	59-146
VINYL CHLORIDE	50.00	51.86	ug/l	104	4	16	63-124
XYLENE (TOTAL)	150.0	145.9	ug/l	97	3	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63127  
LCS : LCS63127:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	48.85	ug/l	98	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	47.89	ug/l	96	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	45.64	ug/l	91	65-125
1,1,2-TRICHLOROETHANE	50.00	46.30	ug/l	93	78-117
1,1-DICHLOROETHANE	50.00	48.19	ug/l	96	75-117
1,1-DICHLOROETHENE	50.00	47.51	ug/l	95	72-125
1,2,3-TRICHLOROBENZENE	50.00	47.78	ug/l	96	75-113
1,2,4-TRICHLOROBENZENE	50.00	48.10	ug/l	96	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.92	ug/l	100	77-122
1,2-DIBROMOETHANE	50.00	46.24	ug/l	92	80-116
1,2-DICHLOROBENZENE	50.00	46.42	ug/l	93	76-110
1,2-DICHLOROETHANE	50.00	48.01	ug/l	96	75-121
1,2-DICHLOROPROPANE	50.00	47.48	ug/l	95	79-115
1,3-DICHLOROBENZENE	50.00	46.64	ug/l	93	74-113
1,4-DICHLOROBENZENE	50.00	46.44	ug/l	93	74-109
2-BUTANONE	50.00	51.88	ug/l	104	72-129
2-HEXANONE	50.00	51.50	ug/l	103	73-132
4-METHYL-2-PENTANONE	50.00	51.01	ug/l	102	75-131
ACETONE	50.00	55.92	ug/l	112	70-138
BENZENE	50.00	47.03	ug/l	94	77-116
BROMODICHLOROMETHANE	50.00	47.50	ug/l	95	79-120
BROMOFORM	50.00	48.82	ug/l	98	79-121
BROMOMETHANE	50.00	45.39	ug/l	91	67-122
CARBON DISULFIDE	50.00	41.52	ug/l	83	59-125
CARBON TETRACHLORIDE	50.00	49.43	ug/l	99	74-124
CHLOROBENZENE	50.00	46.27	ug/l	93	75-113
CHLOROETHANE	50.00	43.08	ug/l	86	73-120
CHLOROFORM	50.00	48.77	ug/l	98	75-121
CHLOROMETHANE	50.00	45.31	ug/l	91	60-122
CIS-1,2-DICHLOROETHENE	50.00	47.31	ug/l	95	74-119
CIS-1,3-DICHLOROPROPENE	50.00	49.55	ug/l	99	83-126
CYCLOHEXANE	50.00	46.61	ug/l	93	60-123
DIBROMOCHLOROMETHANE	50.00	47.78	ug/l	96	779-121
DICHLORODIFLUOROMETHANE	50.00	52.84	ug/l	106	55-139
ETHYLBENZENE	50.00	46.76	ug/l	94	70-130
ISOPROPYL BENZENE	50.00	47.92	ug/l	96	74-113
METHYL ACETATE	50.00	48.42	ug/l	97	67-123
METHYL-TERT-BUTYL ETHER	50.00	47.14	ug/l	94	75-120

SC Certification Number: 24110001

Client : AECOM  
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 SUITE 170  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63127  
 LCS : LCS63127:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	47.15	ug/l	94	62-123
METHYLENE CHLORIDE	50.00	49.73	ug/l	99	70-120
STYRENE	50.00	47.41	ug/l	95	78-113
TETRACHLOROETHENE	50.00	46.70	ug/l	93	70-120
TOLUENE	50.00	46.86	ug/l	94	75-116
TRANS-1,2-DICHLOROETHENE	50.00	46.60	ug/l	93	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	45.07	ug/l	90	73-114
TRICHLOROETHENE	50.00	46.52	ug/l	93	75-119
TRICHLOROFLUOROMETHANE	50.00	47.98	ug/l	96	71-128
VINYL ACETATE	50.00	49.42	ug/l	99	65-142
VINYL CHLORIDE	50.00	49.20	ug/l	98	64-122
XYLENE (TOTAL)	150.0	140.0	ug/l	93	73-116

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63169**  
 Description: **WC/NO3NO2**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12090513-01	D12-10-29	1		09/12/2012 1359	LES	2
L12090513-02	D12-10-29-A	1		09/12/2012 1401	LES	2
L12090513-03	D12-12-39	1		09/12/2012 1404	LES	2
L12090513-04	D12-12-49	1		09/12/2012 1406	LES	2
L12090513-05	D12-11-25	1		09/12/2012 1409	LES	2
MB63169:1	Method Blank	1		09/12/2012 1354	LES	1
LCS63169:1	Laboratory Control Spike	1		09/12/2012 1347	LES	1
MS12091001-01:63169	Matrix Spike	1		09/12/2012 1413	LES	2
MS12091201-04:63169	Matrix Spike	1		09/12/2012 1450	LES	2
MSD12091001-01:63169	Matrix Spike Duplicate	1		09/12/2012 1416	LES	2
MSD12091201-04:63169	Matrix Spike Duplicate	1		09/12/2012 1452	LES	2

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63169  
 Blank : MB63169:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1354 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) < 0.0200 U 0.0200 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
 MS/MSD : MS12091001-01:63169  
 MSD12091001-01:63169

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.75	2.76	mg/l	100	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.74	mg/l	99	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
 MS/MSD : MS12091201-04:63169  
 MSD12091201-04:63169

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.78	2.89	mg/l	110	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.87	mg/l	109	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63169  
 LCS : LCS63169:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.484	mg/l	97	90-110

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63143  
 Description: Alkalinity

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12090513-01	D12-10-29	1		09/06/2012 1434	CDC	1
L12090513-02	D12-10-29-A	1		09/06/2012 1443	CDC	1
L12090513-03	D12-12-39	1		09/06/2012 1502	CDC	1
L12090513-04	D12-12-49	1		09/06/2012 1549	CDC	1
L12090513-05	D12-11-25	1		09/06/2012 1610	CDC	1
D12083001-01:63143	Duplicate	1		09/06/2012 1128	CDC	1
D12090513-01:63143	Duplicate	1		09/06/2012 1618	CDC	1
MB63143:1	Method Blank	1		09/06/2012 1040	CDC	1
LCS63143:1	Laboratory Control Spike	1		09/06/2012 1052	CDC	1



SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63143  
Blank : MB63143:1

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

#### Wet Chemistry

SM 2320B

Date/Time: 09/06/2012 1040 Analyst: CDC Dilution: 1

ALKALINITY, TOTAL	<	1.00	U	1.00	mg/l
ENDPOINT PH		4.18			su

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 34 of 45 Report ID: AK2003

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63143  
 LCS : LCS63143:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	1045	mg/l	104	90-110

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 35 of 45 Report ID: AK2003

### QC Batch Report - Sample Duplicates

WorkGroup: WG63143  
Duplicate: D12083001-01:63143

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	93.53	101.5	2.00	mg/l	8	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

*SC Certification Number: 24110001*

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : **BRYON DAHLGREN**

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 36 of 45 Report ID: AK2003

### *QC Batch Report - Sample Duplicates*

WorkGroup: **WG63143**  
 Duplicate: **D12090513-01:63143**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SM 2320B**

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	3.48	3.48	1.00	mg/l		10

**NOTE:** Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63176  
 Description: Sulfide-GW

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12090513-01	D12-10-29	1		09/10/2012 1542	CDC	1
L12090513-02	D12-10-29-A	1		09/10/2012 1543	CDC	1
L12090513-03	D12-12-39	1		09/10/2012 1544	CDC	1
L12090513-04	D12-12-49	1		09/10/2012 1545	CDC	1
L12090513-05	D12-11-25	1		09/10/2012 1546	CDC	1
MB63176:1	Method Blank	1		09/10/2012 1554	CDC	1
LCS63176:1	Laboratory Control Spike	1		09/10/2012 1540	CDC	1
MS12091001-01:63176	Matrix Spike	1		09/10/2012 1551	CDC	1
MS12091001-13:63176	Matrix Spike	1		09/10/2012 1604	CDC	1
MSD12091001-01:63176	Matrix Spike Duplicate	1		09/10/2012 1552	CDC	1
MSD12091001-13:63176	Matrix Spike Duplicate	1		09/10/2012 1605	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 38 of 45 Report ID: AK2003

### QC Batch Report - Method Blanks

WorkGroup: WG63176  
Blank : MB63176:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/10/2012 1554 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 39 of 45 Report ID: AK2003

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63176  
 MS/MSD : MS12091001-01:63176  
 MSD12091001-01:63176

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.482	mg/l	96	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.491	mg/l	98	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 40 of 45 Report ID: AK2003

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63176  
 MS/MSD : MS12091001-13:63176  
 MSD12091001-13:63176

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.517	mg/l	103	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD %REC
SULFIDE, TOTAL	0.500	0.511	mg/l	102	1	10 81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 41 of 45 Report ID: AK2003

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63176**  
 LCS : **LCS63176:1**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SM 4500-S2-D**

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.520	mg/l	104	90-110



# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 42 of 45 Report ID: AK2003

## QC Batch Report - Batch Sample List

WorkGroup : WG63172  
Description: IC-GW

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12090513-01	D12-10-29	1		09/12/2012 1752	CDC	1
L12090513-02	D12-10-29-A	1		09/12/2012 1822	CDC	1
L12090513-03	D12-12-39	1		09/12/2012 1954	CDC	1
L12090513-04	D12-12-49	1		09/12/2012 2024	CDC	1
L12090513-05	D12-11-25	1		09/12/2012 2055	CDC	1
MB63172:1	Method Blank	1		09/12/2012 1110	CDC	1
LCS63172:1	Laboratory Control Spike	1		09/12/2012 1140	CDC	1
MS12091001-01:63172	Matrix Spike	1		09/12/2012 2156	CDC	1
MSD12091001-01:63172	Matrix Spike Duplicate	1		09/12/2012 2226	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 43 of 45 Report ID: AK2003

### QC Batch Report - Method Blanks

WorkGroup: WG63172  
Blank : MB63172:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry

SWB46 9056A

Date/Time: 09/12/2012 1110 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 20, 2012  
 Page 44 of 45 Report ID: AK2003

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63172  
 MS/MSD : MS12091001-01:63172  
 MSD12091001-01:63172

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	9.84	mg/l	98	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	9.86	mg/l	99	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 20, 2012  
Page 45 of 45 Report ID: AK2003

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63172  
LCS : LCS63172:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.85	mg/l	99	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

**<** Less Than

**>** Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

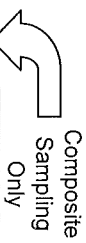
**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

Client: **AECOM** Project / Site Location: **061576.08** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934**  
 Report To: **Auriga - Spbtg. SC** Copy To: **Byron Dahlgren** Reporting Requirements:  Standard  Data Package (Specify Level: 1 2 3 4)  
 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (854) 229-7119  
 Email: [Laboratory@davisfloyd.com](mailto:Laboratory@davisfloyd.com) Internet: [www.davisfloyd.com](http://www.davisfloyd.com)

Contact: **Mark Hartford** Report To: **Byron Dahlgren** Turnaround Requirements:  Standard  Rush (Specify: \_\_\_\_\_)  
 Collected By: **Mark Hartford** Required Parameters: Containers and Preservatives (P)

*Mark Hartford*

**NOTICE:**



Sample Description	Time	Date	Sample Collection Date	Time	Atmospheric Conditions (Optional)			PARAMETERS			CONTAINERS	HOT	Comments	Fraction	
					Composite	Grab	Matrix Type	Number of Containers	A	B					C
<del>D12-10-29</del>	<del>1225</del>		9/4/12	1215	X			6	X	X					01
D12-10-29-a			9/4/12	1215	X			6	X	X					02
D12-12-34			9/4/12	1415	X			6	X	X					03
D12-12-49			9/4/12	1500	X			6	X	X					04
D12-11-25			9/5/12	925	X			6	X	X					05
Trap Blank								2							06

ENTER NUMBER OF SAMPLE CONTAINERS

Relinquished By: *Mark Hartford* Date: **09SEP12** Time: **1252** Relinquished By: *Byron Dahlgren* Date: **09SEP12** Time: **1620**  
 Received By: *Byron Dahlgren* Date: **09SEP12** Time: **1852** Received In Laboratory By: *Jason S. McCall* Date: **9.5.12** Time: **16:30**

Comments: \_\_\_\_\_

Sample Chamber Temp. at Harvest: \_\_\_\_\_  
 Circle: C or F \_\_\_\_\_

Flow Measurement (Note 1)  
 Beginning: \_\_\_\_\_  
 Ending: \_\_\_\_\_  
 Start Date: \_\_\_\_\_  
 Multiplier: \_\_\_\_\_

Note: Indicate immediate delivery for these shipments in which the temperature does not have adequate time to reach 4°C.

Receipt Information  
 Cooler ID (if available): \_\_\_\_\_  
 On Ice:  Yes  No Temp(C): **4**  
 Immediate Delivery: Yes  No  
 Custody Seal: Intact / Broken / None

Matrix Type Definitions 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air  
 (P) Preservative Definitions A - None B - H2SO4 C - HCl D - HNO3 E - Zn Acetate, NaOH F - Filtered G - Na2S2O3 (Note 1) For Discharge Measurements Davis & Floyd, Inc. FLO2\_03 (04/10)

September 27, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2076  
Page 1 of 60

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Login Number :L12091001  
Project Number :61576.08  
Description :AURIGA - SPARTANBURG, SC

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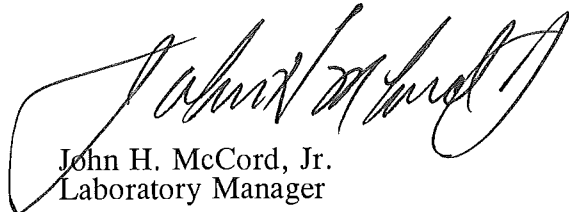
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 07, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 67 pages, including attachments.

Initials: 



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

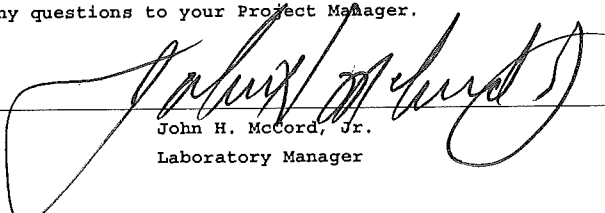
Project Number: 61576.08  
Report Date : September 27, 2012  
Page 2 of 60 Report ID: AK2076

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12091001-01	D12-8-29 MS/MSD	09/06/2012 1220	09/07/2012
L12091001-02	D12-6-27	09/06/2012 1435	09/07/2012
L12091001-03	D12-5-23	09/06/2012 1530	09/07/2012
L12091001-04	D12-9-16	09/06/2012 1630	09/07/2012
L12091001-05	D12-9-16A	09/06/2012 1630	09/07/2012
L12091001-06	D12-7-17	09/06/2012 1720	09/07/2012
L12091001-07	D12-16-49	09/07/2012 0925	09/07/2012
L12091001-08	D12-26-30	09/07/2012 1115	09/07/2012
L12091001-09	D12-25-26	09/07/2012 1210	09/07/2012
L12091001-10	D12-24-37	09/07/2012 1515	09/07/2012
L12091001-11	TRIP BLANK #1	09/03/2012 0730	09/07/2012
L12091001-12	TRIP BLANK #2	09/03/2012 0730	09/07/2012
L12091001-13	D12-16-49A	09/07/2012 0925	09/07/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 3 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-8-29 MS/MSD  
 Sample ID: L12091001-01

Date Collected: 09/06/2012 1220  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1229 Analyst: PAF Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 4 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-8-29 MS/MSD  
 Sample ID: L12091001-01

Date Collected: 09/06/2012 1220  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		116 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		110 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1411 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.75 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1047 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL < 1.00 U 1.00 mg/l  
 ENDPOINT PH 4.16 su

SM 4500-S2-D

Date/Time: 09/10/2012 1547 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 2125 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 5 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-6-27  
Sample ID: L12091001-02

Date Collected: 09/06/2012 1435  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SWB46 8260B				
Date/Time: 09/10/2012 1255 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	16.2	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 6 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-6-27  
 Sample ID: L12091001-02

Date Collected: 09/06/2012 1435  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		121 %	(74-140)	
Surr: BROMOFLUOROBENZENE		112 %	(77-133)	
Surr: TOLUENE-D8		112 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1418 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.01 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1100 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 4.52 1.00 mg/l  
 ENDPOINT PH 4.20 su

SM 4500-S2-D

Date/Time: 09/10/2012 1548 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 2257 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 7 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-5-23  
 Sample ID: L12091001-03

Date Collected: 09/06/2012 1530  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1321 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 8 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: **D12-5-23**  
 Sample ID: L12091001-03

Date Collected: 09/06/2012 1530  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		123 %		(74-140)
Surr: BROMOFLUOROBENZENE		111 %		(77-133)
Surr: TOLUENE-D8		112 %		(77-131)
<b>Date/Time: 09/11/2012 1139 Analyst: PAP/JVB Dilution: 1</b>				
1,4-DIOXANE	<	10.0	U	10.0 ug/l
Surr: 1,4-DIOXANE-D8		116 %		(61-131)

#### Wet Chemistry

EPA 353.2

**Date/Time: 09/12/2012 1421 Analyst: LES Dilution: 2**  
 NITRATE + NITRITE NITROGEN (AS N) 3.44 0.0400 mg/l

SM 2320B

**Date/Time: 09/19/2012 1106 Analyst: CDC Dilution: 1**  
 ALKALINITY, TOTAL 38.2 1.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

**Date/Time: 09/10/2012 1549 Analyst: CDC Dilution: 1**  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

**Date/Time: 09/12/2012 2327 Analyst: CDC Dilution: 1**  
 SULFATE 17.3 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 9 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-9-16  
Sample ID: L12091001-04

Date Collected: 09/06/2012 1630  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1347 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	54.2	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	14.7	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 10 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-9-16  
 Sample ID: L12091001-04

Date Collected: 09/06/2012 1630  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		120 %		(74-140)
Surr: BROMOFLUOROBENZENE		108 %		(77-133)
Surr: TOLUENE-D8		110 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1423 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.52 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1115 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 7.04 1.00 mg/l  
 ENDPOINT PH 4.16 su

SM 4500-S2-D

Date/Time: 09/10/2012 1556 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/12/2012 2358 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 11 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-9-16A  
Sample ID: L12091001-05

Date Collected: 09/06/2012 1630  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1444 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	56.4	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	15.5	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 12 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: **D12-9-16A**  
 Sample ID: L12091001-05

Date Collected: 09/06/2012 1630  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		122 %		(74-140)
Surr: BROMOFLUOROBENZENE		110 %		(77-133)
Surr: TOLUENE-D8		110 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1425 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.51 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1129 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 5.03 1.00 mg/l  
 ENDPOINT PH 4.18 su

SM 4500-S2-D

Date/Time: 09/10/2012 1557 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0028 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 13 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-7-17  
 Sample ID: L12091001-06

Date Collected: 09/06/2012 1720  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1510 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 14 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-7-17  
Sample ID: L12091001-06

Date Collected: 09/06/2012 1720  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		122 %		(74-140)
Surr: BROMOFLUOROBENZENE		111 %		(77-133)
Surr: TOLUENE-D8		111 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1507 Analyst: LES Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.972 0.0200 mg/l

SM 2320B

Date/Time: 09/19/2012 1133 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 4.02 1.00 mg/l  
ENDPOINT PH 4.16 su

SM 4500-S2-D

Date/Time: 09/10/2012 1558 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0200 Analyst: CDC Dilution: 1  
SULFATE 12.6 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 15 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-16-49  
 Sample ID: L12091001-07

Date Collected: 09/07/2012 0925  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1536 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	27.8	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 16 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-16-49  
 Sample ID: L12091001-07

Date Collected: 09/07/2012 0925  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		120 %		(74-140)
Surr: BROMOFLUOROBENZENE		111 %		(77-133)
Surr: TOLUENE-D8		111 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1509 Analyst: LES Dilution: 10  
 NITRATE + NITRITE NITROGEN (AS N) 8.09 0.200 mg/l

SM 2320B

Date/Time: 09/19/2012 1145 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 3.02 1.00 mg/l  
 ENDPOINT PH 4.20 su

SM 4500-S2-D

Date/Time: 09/10/2012 1559 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0231 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 17 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: **D12-26-30**  
 Sample ID: L12091001-08

Date Collected: 09/07/2012 1115  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1603 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	126	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 18 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: **D12-26-30**  
 Sample ID: L12091001-08

Date Collected: 09/07/2012 1115  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		122 %	(74-140)	
Surr: BROMOFLUOROBENZENE		111 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1438 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.01 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1203 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 38.2 1.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/10/2012 1600 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0301 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 19 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-25-26  
Sample ID: L12091001-09

Date Collected: 09/07/2012 1210  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1629 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 20 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-25-26  
 Sample ID: L12091001-09

Date Collected: 09/07/2012 1210  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		124 %	(74-140)	
Surr: BROMOFLUOROBENZENE		111 %	(77-133)	
Surr: TOLUENE-D8		111 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1512 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.334 0.0200 mg/l

SM 2320B

Date/Time: 09/19/2012 1213 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 24.1 1.00 mg/l  
 ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 09/10/2012 1601 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0332 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 21 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: **D12-24-37**  
 Sample ID: L12091001-10

Date Collected: 09/07/2012 1515  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1655 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	20.6	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 22 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-24-37  
 Sample ID: L12091001-10

Date Collected: 09/07/2012 1515  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		122 %	(74-140)	
Surr: BROMOFLUOROBENZENE		108 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1514 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.194 0.0200 mg/l

SM 2320B

Date/Time: 09/19/2012 1228 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 56.8 1.00 mg/l  
 ENDPOINT PH 4.47 su

SM 4500-S2-D

Date/Time: 09/10/2012 1602 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SWB46 9056A

Date/Time: 09/13/2012 0402 Analyst: CDC Dilution: 1  
 SULFATE 1.85 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
Sample ID: L12091001-11

Date Collected: 09/03/2012 0730  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1110 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12091001-11

Date Collected: 09/03/2012 0730  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		115 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		107 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #2  
 Sample ID: L12091001-12

Date Collected: 09/03/2012 0730  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/11/2012 1111 Analyst: PAP/JVB Dilution: 1				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		117 %	(61-131)	



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-16-49A  
Sample ID: L12091001-13

Date Collected: 09/07/2012 0925  
Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 1721 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	28.5	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 27 of 60 Report ID: AK2076

### Certificate of Analysis

Client ID: D12-16-49A  
 Sample ID: L12091001-13

Date Collected: 09/07/2012 0925  
 Date Received : 09/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		122 %	(74-140)	
Surr: BROMOFLUOROBENZENE		110 %	(77-133)	
Surr: TOLUENE-D8		111 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1517 Analyst: LES Dilution: 10  
 NITRATE + NITRITE NITROGEN (AS N) 8.12 0.200 mg/l

SM 2320B

Date/Time: 09/19/2012 1409 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 4.02 1.00 mg/l  
 ENDPOINT PH 4.20 su

SM 4500-S2-D

Date/Time: 09/10/2012 1603 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0433 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08

Report Date : September 27, 2012

Page 28 of 60 Report ID: AK2076

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 29 of 60 Report ID: AK2076

### QC Batch Report - Batch Sample List

WorkGroup : WG63135  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091001-01	D12-8-29 MS/MSD	1		09/10/2012 1229	PAP	1
L12091001-02	D12-6-27	1		09/10/2012 1255	PAP	1
L12091001-03	D12-5-23	1		09/10/2012 1321	PAP	1
L12091001-04	D12-9-16	1		09/10/2012 1347	PAP	1
L12091001-05	D12-9-16A	1		09/10/2012 1444	PAP	1
L12091001-06	D12-7-17	1		09/10/2012 1510	PAP	1
L12091001-07	D12-16-49	1		09/10/2012 1536	PAP	1
L12091001-08	D12-26-30	1		09/10/2012 1603	PAP	1
L12091001-09	D12-25-26	1		09/10/2012 1629	PAP	1
L12091001-10	D12-24-37	1		09/10/2012 1655	PAP	1
L12091001-11	TRIP BLANK #1	1		09/10/2012 1110	PAP	1
L12091001-13	D12-16-49A	1		09/10/2012 1721	PAP	1
MB63135:1	Method Blank	1		09/10/2012 0948	PAP	1
LCS63135:1	Laboratory Control Spike	1		09/10/2012 1906	PAP	1
MS12091001-01:63135	Matrix Spike	1		09/10/2012 1814	PAP	1
MSD12091001-01:63135	Matrix Spike Duplicate	1		09/10/2012 1840	PAP	1

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: **WG63135**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12091001-01	09/10/2012 1229	116	109	110
L12091001-02	09/10/2012 1255	121	112	112
L12091001-03	09/10/2012 1321	123	111	112
L12091001-04	09/10/2012 1347	120	108	110
L12091001-05	09/10/2012 1444	122	110	110
L12091001-06	09/10/2012 1510	122	111	111
L12091001-07	09/10/2012 1536	120	111	111
L12091001-08	09/10/2012 1603	122	111	108
L12091001-09	09/10/2012 1629	124	111	111
L12091001-10	09/10/2012 1655	122	108	108
L12091001-11	09/10/2012 1110	115	109	107
L12091001-13	09/10/2012 1721	122	110	111
MB63135:1	09/10/2012 0948	115	108	108
LCS63135:1	09/10/2012 1906	121	112	111
MS12091001-01:63135	09/10/2012 1814	122	111	110
MSD12091001-01:63135	09/10/2012 1840	121	112	111

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: **WG63135**  
 Blank : **MB63135:1**

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/10/2012 0948 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: **WG63135**  
 Blank : **MB63135:1**

Parameter		Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l
ETHYLBENZENE	<	5.00	U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00	ug/l
METHYL ACETATE	<	10.0	U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00	ug/l
STYRENE	<	5.00	U	5.00	ug/l
TETRACHLOROETHENE	<	5.00	U	5.00	ug/l
TOLUENE	<	5.00	U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
TRICHLOROETHENE	<	5.00	U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00	ug/l
VINYL ACETATE	<	10.0	U	10.0	ug/l
VINYL CHLORIDE	<	10.0	U	10.0	ug/l
XYLENE (TOTAL)	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		115	%	(74-140)	
Surr: BROMOFLUOROBENZENE		108	%	(77-133)	
Surr: TOLUENE-D8		108	%	(77-131)	

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63135**  
MS/MSD : **MS12091001-01:63135**  
**MSD12091001-01:63135**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	53.35	ug/l	107	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	50.07	ug/l	100	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	48.21	ug/l	96	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	49.73	ug/l	99	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	53.70	ug/l	107	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	50.59	ug/l	101	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	49.74	ug/l	99	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	48.94	ug/l	98	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	49.24	ug/l	98	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	48.50	ug/l	97	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	47.19	ug/l	94	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	54.40	ug/l	109	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	50.99	ug/l	102	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	47.56	ug/l	95	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	47.26	ug/l	95	74-108
2-BUTANONE	50.00	< 10.00	52.57	ug/l	105	68-134
2-HEXANONE	50.00	< 10.00	49.57	ug/l	99	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	49.20	ug/l	98	69-135
ACETONE	50.00	< 10.00	60.92	ug/l	122	64-149
BENZENE	50.00	< 5.00	50.18	ug/l	100	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	50.27	ug/l	101	76-123
BROMOFORM	50.00	< 5.00	49.44	ug/l	99	74-124
BROMOMETHANE	50.00	< 10.00	47.05	ug/l	94	64-121
CARBON DISULFIDE	50.00	< 5.00	38.76	ug/l	78	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	54.68	ug/l	109	72-126
CHLOROBENZENE	50.00	< 5.00	47.68	ug/l	95	74-113
CHLOROETHANE	50.00	< 10.00	46.30	ug/l	93	71-121
CHLOROFORM	50.00	< 5.00	58.27	ug/l	117	76-119
CHLOROMETHANE	50.00	< 10.00	51.79	ug/l	104	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	56.33	ug/l	113	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	53.18	ug/l	106	83-125
CYCLOHEXANE	50.00	< 5.00	51.05	ug/l	102	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	50.41	ug/l	101	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	59.92	ug/l	120	53-141
ETHYLBENZENE	50.00	< 5.00	48.83	ug/l	98	70-130
ISOPROPYL BENZENE	50.00	< 5.00	49.12	ug/l	98	74-114
METHYL ACETATE	50.00	< 10.00	51.50	ug/l	103	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	52.67	ug/l	105	74-119



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63135  
MS/MSD : MS12091001-01:63135  
MSD12091001-01:63135

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	48.93	ug/l	98	61-126
METHYLENE CHLORIDE	50.00	< 5.00	53.20	ug/l	106	71-115
STYRENE	50.00	< 5.00	49.49	ug/l	99	75-116
TETRACHLOROETHENE	50.00	< 5.00	48.45	ug/l	97	69-121
TOLUENE	50.00	< 5.00	49.80	ug/l	100	74-115
TRANS-1, 2-DICHLOROETHENE	50.00	< 5.00	50.53	ug/l	101	74-119
TRANS-1, 3-DICHLOROPROPENE	50.00	< 5.00	47.11	ug/l	94	73-112
TRICHLOROETHENE	50.00	< 5.00	48.78	ug/l	98	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	51.24	ug/l	102	70-134
VINYL ACETATE	50.00	< 10.00	52.42	ug/l	105	59-146
VINYL CHLORIDE	50.00	< 10.00	53.63	ug/l	107	63-124
XYLENE (TOTAL)	150.0	< 5.00	146.8	ug/l	98	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1, 1, 1-TRICHLOROETHANE	50.00	54.92	ug/l	110	3	16	75-121
1, 1, 2, 2-TETRACHLOROETHANE	50.00	51.89	ug/l	104	4	18	78-114
1, 1, 2-TRICHLORO-1, 2, 2-TRIFLUOROETHANE	50.00	49.20	ug/l	98	2	18	64-130
1, 1, 2-TRICHLOROETHANE	50.00	51.66	ug/l	103	4	14	78-113
1, 1-DICHLOROETHANE	50.00	54.89	ug/l	110	2	15	76-116
1, 1-DICHLOROETHENE	50.00	51.83	ug/l	104	2	16	71-127
1, 2, 3-TRICHLOROBENZENE	50.00	51.63	ug/l	103	4	20	75-112
1, 2, 4-TRICHLOROBENZENE	50.00	50.94	ug/l	102	4	18	76-114
1, 2-DIBROMO-3-CHLOROPROPANE	50.00	50.38	ug/l	101	2	20	73-124
1, 2-DIBROMOETHANE	50.00	49.97	ug/l	100	3	16	79-114
1, 2-DICHLOROBENZENE	50.00	47.94	ug/l	96	2	15	76-109
1, 2-DICHLOROETHANE	50.00	54.65	ug/l	109	0	16	74-122
1, 2-DICHLOROPROPANE	50.00	51.88	ug/l	104	2	15	79-113
1, 3-DICHLOROBENZENE	50.00	49.23	ug/l	98	3	17	69-118
1, 4-DICHLOROBENZENE	50.00	49.54	ug/l	99	5	16	74-108
2-BUTANONE	50.00	54.14	ug/l	108	3	20	68-134
2-HEXANONE	50.00	51.41	ug/l	103	4	20	70-133
4-METHYL-2-PENTANONE	50.00	52.10	ug/l	104	6	19	69-135
ACETONE	50.00	55.95	ug/l	112	9	23	64-149
BENZENE	50.00	51.85	ug/l	104	3	15	77-114
BROMODICHLOROMETHANE	50.00	53.62	ug/l	107	6	16	76-123
BROMOFORM	50.00	51.77	ug/l	104	5	17	74-124
BROMOMETHANE	50.00	49.34	ug/l	99	5	22	64-121

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63135**  
MS/MSD : **MS12091001-01:63135**  
**MSD12091001-01:63135**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	41.27	ug/l	83	6	21	59-124
CARBON TETRACHLORIDE	50.00	55.10	ug/l	110	1	18	72-126
CHLOROBENZENE	50.00	49.39	ug/l	99	4	15	74-113
CHLOROETHANE	50.00	47.29	ug/l	95	2	17	71-121
CHLOROFORM	50.00	58.77	ug/l	118	1	14	76-119
CHLOROMETHANE	50.00	51.68	ug/l	103	0	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	56.71	ug/l	113	1	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	54.91	ug/l	110	3	16	83-125
CYCLOHEXANE	50.00	52.37	ug/l	105	3	17	59-126
DIBROMOCHLOROMETHANE	50.00	52.73	ug/l	105	4	16	77-121
DICHLORODIFLUOROMETHANE	50.00	61.07	ug/l	122	2	20	53-141
ETHYLBENZENE	50.00	49.87	ug/l	100	2	20	70-130
ISOPROPYL BENZENE	50.00	50.42	ug/l	101	3	17	74-114
METHYL ACETATE	50.00	52.25	ug/l	105	1	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	53.00	ug/l	106	1	16	74-119
METHYLCYCLOHEXANE	50.00	50.53	ug/l	101	3	16	61-126
METHYLENE CHLORIDE	50.00	53.88	ug/l	108	1	17	71-115
STYRENE	50.00	50.41	ug/l	101	2	17	75-116
TETRACHLOROETHENE	50.00	50.31	ug/l	101	4	16	69-121
TOLUENE	50.00	51.32	ug/l	103	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	52.18	ug/l	104	3	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	49.36	ug/l	99	5	16	73-112
TRICHLOROETHENE	50.00	50.29	ug/l	101	3	15	74-120
TRICHLOROFLUOROMETHANE	50.00	52.56	ug/l	105	3	18	70-134
VINYL ACETATE	50.00	53.24	ug/l	106	2	19	59-146
VINYL CHLORIDE	50.00	54.06	ug/l	108	1	16	63-124
XYLENE (TOTAL)	150.0	149.1	ug/l	99	2	17	73-116

**NOTE:** MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63135**  
LCS : **LCS63135:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	53.80	ug/l	108	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	50.49	ug/l	101	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	45.16	ug/l	90	65-125
1,1,2-TRICHLOROETHANE	50.00	50.56	ug/l	101	78-117
1,1-DICHLOROETHANE	50.00	53.82	ug/l	108	75-117
1,1-DICHLOROETHENE	50.00	49.48	ug/l	99	72-125
1,2,3-TRICHLOROBENZENE	50.00	50.12	ug/l	100	75-113
1,2,4-TRICHLOROBENZENE	50.00	49.87	ug/l	100	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	48.59	ug/l	97	77-122
1,2-DIBROMOETHANE	50.00	49.84	ug/l	100	80-116
1,2-DICHLOROBENZENE	50.00	47.62	ug/l	95	76-110
1,2-DICHLOROETHANE	50.00	54.11	ug/l	108	75-121
1,2-DICHLOROPROPANE	50.00	51.22	ug/l	102	79-115
1,3-DICHLOROBENZENE	50.00	48.33	ug/l	97	74-113
1,4-DICHLOROBENZENE	50.00	47.79	ug/l	96	74-109
2-BUTANONE	50.00	48.99	ug/l	98	72-129
2-HEXANONE	50.00	46.71	ug/l	93	73-132
4-METHYL-2-PENTANONE	50.00	46.68	ug/l	93	75-131
ACETONE	50.00	51.58	ug/l	103	70-138
BENZENE	50.00	50.85	ug/l	102	77-116
BROMODICHLOROMETHANE	50.00	51.87	ug/l	104	79-120
BROMOFORM	50.00	50.75	ug/l	102	79-121
BROMOMETHANE	50.00	48.66	ug/l	97	67-122
CARBON DISULFIDE	50.00	37.54	ug/l	75	59-125
CARBON TETRACHLORIDE	50.00	52.96	ug/l	106	74-124
CHLOROBENZENE	50.00	48.08	ug/l	96	75-113
CHLOROETHANE	50.00	45.60	ug/l	91	73-120
CHLOROFORM	50.00	54.21	ug/l	108	75-121
CHLOROMETHANE	50.00	50.55	ug/l	101	60-122
CIS-1,2-DICHLOROETHENE	50.00	52.57	ug/l	105	74-119
CIS-1,3-DICHLOROPROPENE	50.00	54.39	ug/l	109	83-126
CYCLOHEXANE	50.00	47.70	ug/l	95	60-123
DIBROMOCHLOROMETHANE	50.00	51.80	ug/l	104	779-121
DICHLORODIFLUOROMETHANE	50.00	54.57	ug/l	109	55-139
ETHYLBENZENE	50.00	48.62	ug/l	97	70-130
ISOPROPYL BENZENE	50.00	49.14	ug/l	98	74-113
METHYL ACETATE	50.00	50.71	ug/l	101	67-123
METHYL-TERT-BUTYL ETHER	50.00	52.58	ug/l	105	75-120

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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Project Number: 61576.08  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63135**  
 LCS : **LCS63135:1**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	46.01	ug/l	92	62-123
METHYLENE CHLORIDE	50.00	53.11	ug/l	106	70-120
STYRENE	50.00	49.85	ug/l	100	78-113
TETRACHLOROETHENE	50.00	48.13	ug/l	96	70-120
TOLUENE	50.00	50.31	ug/l	101	75-116
TRANS-1,2-DICHLOROETHENE	50.00	51.54	ug/l	103	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	48.70	ug/l	97	73-114
TRICHLOROETHENE	50.00	48.66	ug/l	97	75-119
TRICHLOROFLUOROMETHANE	50.00	49.12	ug/l	98	71-128
VINYL ACETATE	50.00	48.11	ug/l	96	65-142
VINYL CHLORIDE	50.00	52.68	ug/l	105	64-122
XYLENE (TOTAL)	150.0	145.9	ug/l	97	73-116

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63145  
 Description: VO/DIOXANE

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091001-03	D12-5-23	2		09/11/2012 1139	PAP/JVB	1
L12091001-12	TRIP BLANK #2	1		09/11/2012 1111	PAP/JVB	1
MB63145:1	Method Blank	1		09/11/2012 0921	PAP/JVB	1
MS12091001-03:63145	Matrix Spike	1		09/11/2012 1453	PAP/JVB	1

SC Certification Number: 24110001

Client : AECOM  
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ROSWELL, GA 30076  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63145

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DOXD8
		61-131
L12091001-03	09/11/2012 1139	116
L12091001-12	09/11/2012 1111	117
MB63145:1	09/11/2012 0921	119
MS12091001-03:63145	09/11/2012 1453	107

DOXD8 - 1,4-DIOXANE-D8

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: WG63145  
Blank : MB63145:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Volatile Organics

SW846 8260B

Date/Time: 09/11/2012 0921	Analyst: PAP/JVB	Dilution: 1		
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		119 %	(61-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### *QC Batch Report - Matrix Spikes and Duplicates*

WorkGroup: WG63145  
MS : MS12091001-03:63145

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,4-DIOXANE	100.0	< 10.00	111.8	ug/l	112	63-132

**NOTE:** MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.





# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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Report Date : September 27, 2012  
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## QC Batch Report - Batch Sample List

WorkGroup : WG63169  
Description: WC/NO3NO2

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091001-01	D12-8-29 MS/MSD	1		09/12/2012 1411	LES	2
L12091001-02	D12-6-27	1		09/12/2012 1418	LES	2
L12091001-03	D12-5-23	1		09/12/2012 1421	LES	2
L12091001-04	D12-9-16	1		09/12/2012 1423	LES	2
L12091001-05	D12-9-16A	1		09/12/2012 1425	LES	2
L12091001-06	D12-7-17	1		09/12/2012 1507	LES	1
L12091001-07	D12-16-49	1		09/12/2012 1509	LES	10
L12091001-08	D12-26-30	1		09/12/2012 1438	LES	2
L12091001-09	D12-25-26	1		09/12/2012 1512	LES	1
L12091001-10	D12-24-37	1		09/12/2012 1514	LES	1
L12091001-13	D12-16-49A	1		09/12/2012 1517	LES	10
MB63169:1	Method Blank	1		09/12/2012 1354	LES	1
LCS63169:1	Laboratory Control Spike	1		09/12/2012 1347	LES	1
MS12091001-01:63169	Matrix Spike	1		09/12/2012 1413	LES	2
MS12091201-04:63169	Matrix Spike	1		09/12/2012 1450	LES	2
MSD12091001-01:63169	Matrix Spike Duplicate	1		09/12/2012 1416	LES	2
MSD12091201-04:63169	Matrix Spike Duplicate	1		09/12/2012 1452	LES	2



# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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## QC Batch Report - Method Blanks

WorkGroup: WG63169  
Blank : MB63169:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry  
EPA 353.2

Date/Time: 09/12/2012 1354      Analyst: LES      Dilution: 1

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NITRATE + NITRITE NITROGEN (AS N)      <      0.0200      U      0.0200      mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 44 of 60 Report ID: AK2076

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
 MS/MSD : MS12091001-01:63169  
 MSD12091001-01:63169

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.75	2.76	mg/l	100	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.74	mg/l	99	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
 MS/MSD : MS12091201-04:63169  
 MSD12091201-04:63169

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.78	2.89	mg/l	110	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.87	mg/l	109	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63169  
 LCS : LCS63169:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.484	mg/l	97	90-110

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63254**  
 Description: **Alkalinity**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091001-01	D12-8-29 MS/MSD	1		09/19/2012 1047	CDC	1
L12091001-02	D12-6-27	1		09/19/2012 1100	CDC	1
L12091001-03	D12-5-23	1		09/19/2012 1106	CDC	1
L12091001-04	D12-9-16	1		09/19/2012 1115	CDC	1
L12091001-05	D12-9-16A	1		09/19/2012 1129	CDC	1
L12091001-06	D12-7-17	1		09/19/2012 1133	CDC	1
L12091001-07	D12-16-49	1		09/19/2012 1145	CDC	1
L12091001-08	D12-26-30	1		09/19/2012 1203	CDC	1
L12091001-09	D12-25-26	1		09/19/2012 1213	CDC	1
L12091001-10	D12-24-37	1		09/19/2012 1228	CDC	1
L12091001-13	D12-16-49A	1		09/19/2012 1409	CDC	1
D12091001-01:63254	Duplicate	1		09/19/2012 1053	CDC	1
D12091701-04:63254	Duplicate	1		09/19/2012 1539	CDC	1
MB63254:1	Method Blank	1		09/19/2012 0952	CDC	1
LCS63254:1	Laboratory Control Spike	1		09/19/2012 0959	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63254  
Blank : MB63254:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry

SM 2320B

Date/Time: 09/19/2012 0952	Analyst: CDC	Dilution: 1		
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.16		su

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63254  
LCS : LCS63254:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	974.9	mg/l	97	90-110





# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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## QC Batch Report - Sample Duplicates

WorkGroup: WG63254  
Duplicate: D12091001-01:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	0.00	0.00	1.00	mg/l		10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG63254  
Duplicate: D12091701-04:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	69.35	68.34	2.00	mg/l	1	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63176**  
 Description: **Sulfide-GW**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091001-01	D12-8-29 MS/MSD	1		09/10/2012 1547	CDC	1
L12091001-02	D12-6-27	1		09/10/2012 1548	CDC	1
L12091001-03	D12-5-23	1		09/10/2012 1549	CDC	1
L12091001-04	D12-9-16	1		09/10/2012 1556	CDC	1
L12091001-05	D12-9-16A	1		09/10/2012 1557	CDC	1
L12091001-06	D12-7-17	1		09/10/2012 1558	CDC	1
L12091001-07	D12-16-49	1		09/10/2012 1559	CDC	1
L12091001-08	D12-26-30	1		09/10/2012 1600	CDC	1
L12091001-09	D12-25-26	1		09/10/2012 1601	CDC	1
L12091001-10	D12-24-37	1		09/10/2012 1602	CDC	1
L12091001-13	D12-16-49A	1		09/10/2012 1603	CDC	1
MB63176:1	Method Blank	1		09/10/2012 1554	CDC	1
LCS63176:1	Laboratory Control Spike	1		09/10/2012 1540	CDC	1
MS12091001-01:63176	Matrix Spike	1		09/10/2012 1551	CDC	1
MS12091001-13:63176	Matrix Spike	1		09/10/2012 1604	CDC	1
MSD12091001-01:63176	Matrix Spike Duplicate	1		09/10/2012 1552	CDC	1
MSD12091001-13:63176	Matrix Spike Duplicate	1		09/10/2012 1605	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63176  
Blank : MB63176:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/10/2012 1554 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63176  
 MS/MSD : MS12091001-01:63176  
 MSD12091001-01:63176

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
SULFIDE, TOTAL	0.500	< 0.0500	0.482	mg/l	96	81-121	

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %REC	
SULFIDE, TOTAL	0.500	0.491	mg/l	98	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63176**  
 MS/MSD : **MS12091001-13:63176**  
**MSD12091001-13:63176**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.517	mg/l	103	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.511	mg/l	102	1	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63176**  
 LCS : **LCS63176:1**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.520	mg/l	104	90-110

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63172**  
 Description: **IC-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 9056A**

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091001-01	D12-8-29 MS/MSD	1		09/12/2012 2125	CDC	1
L12091001-02	D12-6-27	1		09/12/2012 2257	CDC	1
L12091001-03	D12-5-23	1		09/12/2012 2327	CDC	1
L12091001-04	D12-9-16	1		09/12/2012 2358	CDC	1
L12091001-05	D12-9-16A	1		09/13/2012 0028	CDC	1
L12091001-06	D12-7-17	1		09/13/2012 0200	CDC	1
L12091001-07	D12-16-49	1		09/13/2012 0231	CDC	1
L12091001-08	D12-26-30	1		09/13/2012 0301	CDC	1
L12091001-09	D12-25-26	1		09/13/2012 0332	CDC	1
L12091001-10	D12-24-37	1		09/13/2012 0402	CDC	1
L12091001-13	D12-16-49A	1		09/13/2012 0433	CDC	1
MB63172:1	Method Blank	1		09/12/2012 1110	CDC	1
LCS63172:1	Laboratory Control Spike	1		09/12/2012 1140	CDC	1
MS12091001-01:63172	Matrix Spike	1		09/12/2012 2156	CDC	1
MSD12091001-01:63172	Matrix Spike Duplicate	1		09/12/2012 2226	CDC	1



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63172  
Blank : MB63172:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry  
SW846 9056A

Date/Time: 09/12/2012 1110	Analyst: CDC	Dilution: 1
SULFATE	< 1.00	U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63172  
 MS/MSD : MS12091001-01:63172  
 MSD12091001-01:63172

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	9.84	mg/l	98	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	9.86	mg/l	99	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63172  
LCS : LCS63172:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.85	mg/l	99	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

*Davis & Floyd, Inc.  
AD07\_06 (01/12)*

Client: **AECOM** Project / Site Location: **061576.08** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934** Office Use Only  
 Contract: **Mark Hartford** Report To: **Bryon Dahlgren** Copy To: **816 E. Durst Avenue, Greenwood, SC 29649** (864) 229-4413 Fax: (864) 229-7119 Laboratory Work Request  
 Email: **Laboratory@davisfloyd.com** Reporting Requirements:  Standard  Data Package (Specify Level: 1 2 3 4) Internet: **www.davisfloyd.com** Turnaround Requirements:  Standard  Rush (Specify: \_\_\_\_\_) Required Parameters: Containers and Preservatives (P\*) Special Instructions

Collected By: **Mark Hartford** Atmospheric Conditions: (Optional)  
 Composite Type:  Grab Matrix Type: \_\_\_\_\_ Number of Containers: \_\_\_\_\_  
 CONTAINERS: 3x40 G TFE, 500 P, 125 P, 125 P, 3x40 G TFE  
 PARAMETERS: VOC's, SO4, Alkalinity, Sulfide, NO3/NO2, 1,4-Dioxane  
 Indicate any known or expected hazards with a "X".  
 State: **SC** Fraction: **01**

Sample Description	Date Initiated	Time	Sample Collection		Composite Type	Matrix Type	Number of Containers	PARAMETERS			HOT	Comments	Fraction
			Date	Time				A	B	C			
D12-8-29			9-6-12	1220	X		6	3	1	1			01
D12-8-29-MS			9-6-12	1220	X		6	3	1	1			01
D12-8-29-MSD			9-6-12	1220	X		6	3	1	1			01
D12-6-27			9-6-12	1435	X		6	3	1	1			01
D12-5-23			9-6-12	1530	X		9	3	1	1			03
D12-9-16			9-6-12	1630	X		6	3	1	1			04
D12-9-16-a			9-6-12	1630	X		6	3	1	1			05
D12-7-17			9-6-12	1720	X		6	3	1	1			06
D12-16-49			9-7-12	925	X		6	3	1	1			07
D12-26-30			9-7-12	1115	X		6	3	1	1			08
D12-24-37			9-7-12	1515	X		6	3	1	1			09
TAP Block			9-30-0730				2	2	1	1			10
TAP Block			9-30-0730				2	2	1	1			11
TAP Block			9-30-0730				2	2	1	1			12

Relinquished By: **Mark Hartford** Date: **9-7-12** Time: **1600** Relinquished By: **Mark Hartford** Date: **9-7-12** Time: **1740**  
 Received By: **Mark Hartford** Date: **9-7-12** Time: **1600** Received By: **Mark Hartford** Date: **9-7-12** Time: **1740**  
 Comments: \_\_\_\_\_

Matrix Type Definitions: 1 - Drinking Water, 2 - Clean Water, 5 - Groundwater, 7 - Soil/Sediment, 8 - Liquid Sludge, 9 - Oil, 12 - Air  
 (P) Preservative Definitions: A - None, B - H2SO4, C - HCl, D - HNO3, E - Zn Acetate, NaOH, F - Filtered, G - Na2S2O3  
 (Note 1) For Discharge Measurements: \_\_\_\_\_  
 Receipt Information: Cooler ID (if available): \_\_\_\_\_, On Ice: Yes / No, Temp (C): \_\_\_\_\_, Immediate Delivery: Yes / No, Intact / Broken / None: \_\_\_\_\_  
 Shipped Via: UPS FEDEX CLIENT COURIER OTHER, Tracking Number: \_\_\_\_\_, D & F: \_\_\_\_\_

September 27, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2078  
Page 1 of 63

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Login Number :L12091201  
Project Number :61576.08  
Description :AURIGA - SPARTANBURG, SC

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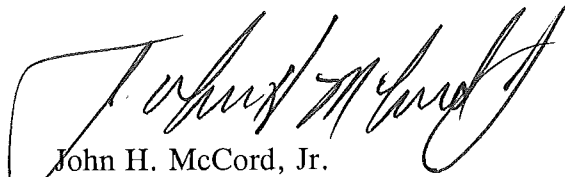
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 12, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 60 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

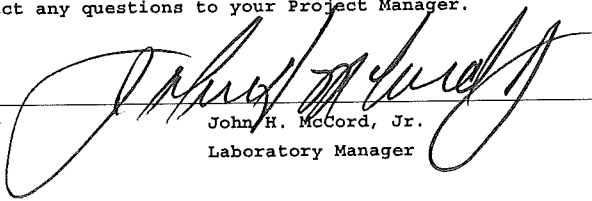
Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 2 of 63 Report ID: AK2078

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12091201-01	D12-3-39 MS/MSD	09/10/2012 1010	09/12/2012
L12091201-02	D12-3-39A	09/10/2012 1010	09/12/2012
L12091201-03	D12-4-44	09/10/2012 1215	09/12/2012
L12091201-04	D12-15-49	09/10/2012 1540	09/12/2012
L12091201-05	D12-14-49	09/10/2012 1655	09/12/2012
L12091201-06	D12-10-58.5	09/11/2012 1245	09/12/2012
L12091201-07	D12-1-44	09/11/2012 1200	09/12/2012
L12091201-08	D12-15-69.5	09/11/2012 1635	09/12/2012
L12091201-09	TRIP BLANK #1	09/03/2012 0730	09/12/2012
L12091201-10	TRIP BLANK #2	09/03/2012 0730	09/12/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
 John H. McCord, Jr.  
 Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-3-39 MS/MSD  
Sample ID: L12091201-01

Date Collected: 09/10/2012 1010  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/14/2012 1011      Analyst: PAP      Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: **D12-3-39 MS/MSD**  
 Sample ID: L12091201-01

Date Collected: 09/10/2012 1010  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		107 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	
<b>Date/Time: 09/18/2012 1255      Analyst: PAP      Dilution: 1</b>				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		100 %	(61-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-3-39A  
Sample ID: L12091201-02

Date Collected: 09/10/2012 1010  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/14/2012 1037 Analyst: PAP Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 6 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: D12-3-39A  
 Sample ID: L12091201-02

Date Collected: 09/10/2012 1010  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		107 %	(74-140)	
Surr: BROMOFLUOROBENZENE		110 %	(77-133)	
Surr: TOLUENE-D8		109 %	(77-131)	
<b>Date/Time: 09/18/2012 1513      Analyst: PAP      Dilution: 1</b>				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		105 %	(61-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
Page 7 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: D12-4-44  
Sample ID: L12091201-03

Date Collected: 09/10/2012 1215  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/14/2012 1103 Analyst: PAF Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	6.24	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	52.0	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 8 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: D12-4-44  
 Sample ID: L12091201-03

Date Collected: 09/10/2012 1215  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE		40.8		5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE		19.9		5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		108	%	(74-140)
Surr: BROMOFLUOROBENZENE		110	%	(77-133)
Surr: TOLUENE-D8		110	%	(77-131)
<b>Date/Time: 09/18/2012 1541      Analyst: PAP      Dilution: 1</b>				
1,4-DIOXANE		24.8		10.0 ug/l
Surr: 1,4-DIOXANE-D8		104	%	(61-131)

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 9 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: D12-15-49  
 Sample ID: L12091201-04

Date Collected: 09/10/2012 1540  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW946 8260B				
Date/Time: 09/14/2012 1129 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 10 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: D12-15-49  
 Sample ID: L12091201-04

Date Collected: 09/10/2012 1540  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		111	%	(74-140)
Surr: BROMOFLUOROBENZENE		112	%	(77-133)
Surr: TOLUENE-D8		112	%	(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1447 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.78 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1417 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 32.7 1.00 mg/l  
 ENDPOINT PH 4.46 su

SM 4500-S2-D

Date/Time: 09/17/2012 1520 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0503 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-14-49  
 Sample ID: L12091201-05

Date Collected: 09/10/2012 1655  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/14/2012 1155 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	30.2	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: **D12-14-49**  
 Sample ID: L12091201-05

Date Collected: 09/10/2012 1655  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		111 %	(74-140)	
Surr: BROMOFLUOROBENZENE		113 %	(77-133)	
Surr: TOLUENE-D8		112 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1455 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 2.54 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1423 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 26.6 1.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/17/2012 1521 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/13/2012 0534 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-10-58.5  
 Sample ID: L12091201-06

Date Collected: 09/11/2012 1245  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/14/2012 1222 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	20.9	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	10.4	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-10-58.5  
 Sample ID: L12091201-06

Date Collected: 09/11/2012 1245  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE		13.1		5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		113 %		(74-140)
Surr: BROMOFLUOROBENZENE		112 %		(77-133)
Surr: TOLUENE-D8		112 %		(77-131)
<b>Date/Time: 09/18/2012 1319 Analyst: PAP/JVB Dilution: 10</b>				
CHLOROFORM		1460		50.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		104 %		(74-140)
Surr: BROMOFLUOROBENZENE		95 %		(77-133)
Surr: TOLUENE-D8		96 %		(77-131)
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/12/2012 1519 Analyst: LES Dilution: 5</b>				
NITRATE + NITRITE NITROGEN (AS N)		4.24		0.100 mg/l
SM 2320B				
<b>Date/Time: 09/19/2012 1443 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		123		1.00 mg/l
ENDPOINT PH		4.50		su
SM 4500-S2-D				
<b>Date/Time: 09/17/2012 1522 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-10-58.5  
Sample ID: L12091201-06

Date Collected: 09/11/2012 1245  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/13/2012 0604 Analyst: CDC Dilution: 1				
SULFATE	3.82		1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-1-44  
 Sample ID: L12091201-07

Date Collected: 09/11/2012 1200  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/14/2012 1248 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
 Page 17 of 63 Report ID: AK2078

### Certificate of Analysis

Client ID: **D12-1-44**  
 Sample ID: L12091201-07

Date Collected: 09/11/2012 1200  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		111 %	(74-140)	
Surr: BROMOFLUOROBENZENE		112 %	(77-133)	
Surr: TOLUENE-D8		112 %	(77-131)	
<b>Date/Time: 09/18/2012 1608 Analyst: PAP Dilution: 1</b>				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		102 %	(61-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-15-69.5  
Sample ID: L12091201-08

Date Collected: 09/11/2012 1635  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/14/2012 1315 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: D12-15-69.5  
 Sample ID: L12091201-08

Date Collected: 09/11/2012 1635  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE		9.07		5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		112 %		(74-140)
Surr: BROMOFLUOROBENZENE		111 %		(77-133)
Surr: TOLUENE-D8		111 %		(77-131)

Date/Time: 09/18/2012 1346 Analyst: PAP/JVB Dilution: 10

CHLOROFORM	1510		50.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %		(74-140)
Surr: BROMOFLUOROBENZENE		97 %		(77-133)
Surr: TOLUENE-D8		98 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/12/2012 1459 Analyst: LES Dilution: 2

NITRATE + NITRITE NITROGEN (AS N)	2.42		0.0400	mg/l
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SM 2320B

Date/Time: 09/19/2012 1450 Analyst: CDC Dilution: 1

ALKALINITY, TOTAL	88.4		2.00	mg/l
ENDPOINT PH	4.49			su

SM 4500-S2-D

Date/Time: 09/17/2012 1523 Analyst: CDC Dilution: 1

SULFIDE, TOTAL	0.0835		0.0500	mg/l
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SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### *Certificate of Analysis*

Client ID: D12-15-69.5  
Sample ID: L12091201-08

Date Collected: 09/11/2012 1635  
Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/13/2012 0635 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12091201-09

Date Collected: 09/03/2012 0730  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/14/2012 0944 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12091201-09

Date Collected: 09/03/2012 0730  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		106 %	(74-140)	
Surr: BROMOFLUOROBENZENE		107 %	(77-133)	
Surr: TOLUENE-D8		109 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #2  
 Sample ID: L12091201-10

Date Collected: 09/03/2012 0730  
 Date Received : 09/12/2012

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Volatile Organics  
 SW846 8260B

Date/Time: 09/18/2012 1228	Analyst: PAP	Dilution: 1	
1,4-DIOXANE	<	10.0 U	10.0 ug/l
Surr: 1,4-DIOXANE-D8		98 %	(61-131)

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.08

Report Date : September 27, 2012

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : September 27, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63188  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091201-01	D12-3-39 MS/MSD	1		09/14/2012 1011	PAP	1
L12091201-02	D12-3-39A	1		09/14/2012 1037	PAP	1
L12091201-03	D12-4-44	1		09/14/2012 1103	PAP	1
L12091201-04	D12-15-49	1		09/14/2012 1129	PAP	1
L12091201-05	D12-14-49	1		09/14/2012 1155	PAP	1
L12091201-06	D12-10-58.5	1		09/14/2012 1222	PAP	1
L12091201-07	D12-1-44	1		09/14/2012 1248	PAP	1
L12091201-08	D12-15-69.5	1		09/14/2012 1315	PAP	1
L12091201-09	TRIP BLANK #1	1		09/14/2012 0944	PAP	1
MB63188:1	Method Blank	1		09/14/2012 0918	PAP	1
LCS63188:1	Laboratory Control Spike	1		09/14/2012 1500	PAP	1
MS12091201-01:63188	Matrix Spike	1		09/14/2012 1407	PAP	1
MSD12091201-01:63188	Matrix Spike Duplicate	1		09/14/2012 1433	PAP	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63188

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12091201-01	09/14/2012 1011	107	109	108
L12091201-02	09/14/2012 1037	107	110	109
L12091201-03	09/14/2012 1103	108	110	110
L12091201-04	09/14/2012 1129	111	112	112
L12091201-05	09/14/2012 1155	111	113	112
L12091201-06	09/14/2012 1222	113	112	112
L12091201-07	09/14/2012 1248	111	112	112
L12091201-08	09/14/2012 1315	112	111	111
L12091201-09	09/14/2012 0944	106	107	109
MB63188:1	09/14/2012 0918	103	106	107
LCS63188:1	09/14/2012 1500	112	117	115
MS12091201-01:63188	09/14/2012 1407	113	118	114
MSD12091201-01:63188	09/14/2012 1433	110	117	111

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: WG63188  
Blank : MB63188:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/14/2012 0918 Analyst: PAP Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: **WG63188**  
 Blank : **MB63188:1**

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %	(74-140)	
Surr: BROMOFLUOROBENZENE		106 %	(77-133)	
Surr: TOLUENE-D8		107 %	(77-131)	

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63188**  
MS/MSD : **MS12091201-01:63188**  
**MSD12091201-01:63188**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	52.09	ug/l	104	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	49.91	ug/l	100	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	45.83	ug/l	92	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	48.92	ug/l	98	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	49.20	ug/l	98	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	49.11	ug/l	98	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	47.44	ug/l	95	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	48.06	ug/l	96	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	48.38	ug/l	97	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	48.62	ug/l	97	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	48.66	ug/l	97	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	52.59	ug/l	105	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	48.50	ug/l	97	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	49.65	ug/l	99	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	47.73	ug/l	95	74-108
2-BUTANONE	50.00	< 10.00	48.80	ug/l	98	68-134
2-HEXANONE	50.00	< 10.00	49.08	ug/l	98	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	48.52	ug/l	97	69-135
ACETONE	50.00	< 10.00	47.41	ug/l	95	64-149
BENZENE	50.00	< 5.00	48.95	ug/l	98	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	51.03	ug/l	102	76-123
BROMOFORM	50.00	< 5.00	49.90	ug/l	100	74-124
BROMOMETHANE	50.00	< 10.00	47.45	ug/l	95	64-121
CARBON DISULFIDE	50.00	< 5.00	41.34	ug/l	83	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	53.18	ug/l	106	72-126
CHLOROBENZENE	50.00	< 5.00	48.91	ug/l	98	74-113
CHLOROETHANE	50.00	< 10.00	45.28	ug/l	91	71-121
CHLOROFORM	50.00	< 5.00	50.61	ug/l	101	76-119
CHLOROMETHANE	50.00	< 10.00	46.82	ug/l	94	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	49.71	ug/l	99	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	52.45	ug/l	105	83-125
CYCLOHEXANE	50.00	< 5.00	48.07	ug/l	96	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	51.16	ug/l	102	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	58.65	ug/l	117	53-141
ETHYLBENZENE	50.00	< 5.00	50.48	ug/l	101	70-130
ISOPROPYL BENZENE	50.00	< 5.00	50.81	ug/l	102	74-114
METHYL ACETATE	50.00	< 10.00	42.80	ug/l	86	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	49.16	ug/l	98	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : September 27, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63188  
MS/MSD : MS12091201-01:63188  
MSD12091201-01:63188

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	50.85	ug/l	102	61-126
METHYLENE CHLORIDE	50.00	< 5.00	44.53	ug/l	89	71-115
STYRENE	50.00	< 5.00	47.93	ug/l	96	75-116
TETRACHLOROETHENE	50.00	< 5.00	49.70	ug/l	99	69-121
TOLUENE	50.00	< 5.00	50.54	ug/l	101	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	47.81	ug/l	96	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	48.08	ug/l	96	73-112
TRICHLOROETHENE	50.00	< 5.00	48.44	ug/l	97	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	52.57	ug/l	105	70-134
VINYL ACETATE	50.00	< 10.00	47.44	ug/l	95	59-146
VINYL CHLORIDE	50.00	< 10.00	48.41	ug/l	97	63-124
XYLENE (TOTAL)	150.0	< 5.00	148.3	ug/l	99	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	55.78	ug/l	112	7	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	55.29	ug/l	111	10	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	47.79	ug/l	96	4	18	64-130
1,1,2-TRICHLOROETHANE	50.00	52.65	ug/l	105	7	14	78-113
1,1-DICHLOROETHANE	50.00	52.75	ug/l	106	7	15	76-116
1,1-DICHLOROETHENE	50.00	53.06	ug/l	106	8	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	50.83	ug/l	102	7	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	51.55	ug/l	103	7	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	53.48	ug/l	107	10	20	73-124
1,2-DIBROMOETHANE	50.00	52.53	ug/l	105	8	16	79-114
1,2-DICHLOROBENZENE	50.00	51.89	ug/l	104	6	15	76-109
1,2-DICHLOROETHANE	50.00	56.12	ug/l	112	6	16	74-122
1,2-DICHLOROPROPANE	50.00	53.28	ug/l	107	9	15	79-113
1,3-DICHLOROBENZENE	50.00	53.78	ug/l	108	8	17	69-118
1,4-DICHLOROBENZENE	50.00	51.34	ug/l	103	7	16	74-108
2-BUTANONE	50.00	50.73	ug/l	101	4	20	68-134
2-HEXANONE	50.00	53.07	ug/l	106	8	20	70-133
4-METHYL-2-PENTANONE	50.00	51.78	ug/l	104	7	19	69-135
ACETONE	50.00	48.68	ug/l	97	3	23	64-149
BENZENE	50.00	52.45	ug/l	105	7	15	77-114
BROMODICHLOROMETHANE	50.00	54.95	ug/l	110	7	16	76-123
BROMOFORM	50.00	55.97	ug/l	112	11	17	74-124
BROMOMETHANE	50.00	50.94	ug/l	102	7	22	64-121

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Client : **AECOM**  
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 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63188**  
 MS/MSD : **MS12091201-01:63188**  
**MSD12091201-01:63188**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	42.90	ug/l	86	4	21	59-124
CARBON TETRACHLORIDE	50.00	55.82	ug/l	112	5	18	72-126
CHLOROBENZENE	50.00	52.91	ug/l	106	8	15	74-113
CHLOROETHANE	50.00	49.74	ug/l	99	9	17	71-121
CHLOROFORM	50.00	53.63	ug/l	107	6	14	76-119
CHLOROMETHANE	50.00	51.85	ug/l	104	10	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	53.02	ug/l	106	6	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	56.21	ug/l	112	7	16	83-125
CYCLOHEXANE	50.00	50.38	ug/l	101	5	17	59-126
DIBROMOCHLOROMETHANE	50.00	55.30	ug/l	111	8	16	77-121
DICHLORODIFLUOROMETHANE	50.00	59.76	ug/l	120	2	20	53-141
ETHYLBENZENE	50.00	53.91	ug/l	108	7	20	70-130
ISOPROPYL BENZENE	50.00	55.07	ug/l	110	8	17	74-114
METHYL ACETATE	50.00	47.70	ug/l	95	11	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	52.83	ug/l	106	7	16	74-119
METHYLCYCLOHEXANE	50.00	52.57	ug/l	105	3	16	61-126
METHYLENE CHLORIDE	50.00	49.10	ug/l	98	10	17	71-115
STYRENE	50.00	52.53	ug/l	105	9	17	75-116
TETRACHLOROETHENE	50.00	53.44	ug/l	107	7	16	69-121
TOLUENE	50.00	53.47	ug/l	107	6	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	51.66	ug/l	103	8	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	51.92	ug/l	104	8	16	73-112
TRICHLOROETHENE	50.00	52.87	ug/l	106	9	15	74-120
TRICHLOROFLUOROMETHANE	50.00	54.69	ug/l	109	4	18	70-134
VINYL ACETATE	50.00	49.23	ug/l	98	4	19	59-146
VINYL CHLORIDE	50.00	53.25	ug/l	107	10	16	63-124
XYLENE (TOTAL)	150.0	160.5	ug/l	107	8	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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Client : **AECOM**  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63188**  
LCS : **LCS63188:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	54.65	ug/l	109	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	53.46	ug/l	107	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	47.63	ug/l	95	65-125
1,1,2-TRICHLOROETHANE	50.00	53.47	ug/l	107	78-117
1,1-DICHLOROETHANE	50.00	52.17	ug/l	104	75-117
1,1-DICHLOROETHENE	50.00	51.62	ug/l	103	72-125
1,2,3-TRICHLOROBENZENE	50.00	50.96	ug/l	102	75-113
1,2,4-TRICHLOROBENZENE	50.00	51.40	ug/l	103	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	54.48	ug/l	109	77-122
1,2-DIBROMOETHANE	50.00	53.28	ug/l	107	80-116
1,2-DICHLOROBENZENE	50.00	51.39	ug/l	103	76-110
1,2-DICHLOROETHANE	50.00	55.51	ug/l	111	75-121
1,2-DICHLOROPROPANE	50.00	52.54	ug/l	105	79-115
1,3-DICHLOROBENZENE	50.00	53.11	ug/l	106	74-113
1,4-DICHLOROBENZENE	50.00	50.33	ug/l	101	74-109
2-BUTANONE	50.00	52.04	ug/l	104	72-129
2-HEXANONE	50.00	53.85	ug/l	108	73-132
4-METHYL-2-PENTANONE	50.00	53.67	ug/l	107	75-131
ACETONE	50.00	50.89	ug/l	102	70-138
BENZENE	50.00	52.36	ug/l	105	77-116
BROMODICHLOROMETHANE	50.00	54.97	ug/l	110	79-120
BROMOFORM	50.00	55.06	ug/l	110	79-121
BROMOMETHANE	50.00	55.37	ug/l	111	67-122
CARBON DISULFIDE	50.00	44.28	ug/l	89	59-125
CARBON TETRACHLORIDE	50.00	54.61	ug/l	109	74-124
CHLOROBENZENE	50.00	52.52	ug/l	105	75-113
CHLOROETHANE	50.00	49.80	ug/l	100	73-120
CHLOROFORM	50.00	53.52	ug/l	107	75-121
CHLOROMETHANE	50.00	51.79	ug/l	104	60-122
CIS-1,2-DICHLOROETHENE	50.00	52.21	ug/l	104	74-119
CIS-1,3-DICHLOROPROPENE	50.00	56.47	ug/l	113	83-126
CYCLOHEXANE	50.00	48.45	ug/l	97	60-123
DIBROMOCHLOROMETHANE	50.00	55.56	ug/l	111	779-121
DICHLORODIFLUOROMETHANE	50.00	59.16	ug/l	118	55-139
ETHYLBENZENE	50.00	52.74	ug/l	105	70-130
ISOPROPYL BENZENE	50.00	53.51	ug/l	107	74-113
METHYL ACETATE	50.00	50.34	ug/l	101	67-123
METHYL-TERT-BUTYL ETHER	50.00	52.52	ug/l	105	75-120

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63188**  
 LCS : **LCS63188:1**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	51.89	ug/l	104	62-123
METHYLENE CHLORIDE	50.00	48.73	ug/l	97	70-120
STYRENE	50.00	51.69	ug/l	103	78-113
TETRACHLOROETHENE	50.00	53.30	ug/l	107	70-120
TOLUENE	50.00	53.26	ug/l	107	75-116
TRANS-1,2-DICHLOROETHENE	50.00	50.38	ug/l	101	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	51.93	ug/l	104	73-114
TRICHLOROETHENE	50.00	52.76	ug/l	106	75-119
TRICHLOROFLUOROMETHANE	50.00	53.55	ug/l	107	71-128
VINYL ACETATE	50.00	50.29	ug/l	101	65-142
VINYL CHLORIDE	50.00	52.97	ug/l	106	64-122
XYLENE (TOTAL)	150.0	157.9	ug/l	105	73-116

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63204**  
 Description: **VO/DIOXANE**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091201-01	D12-3-39 MS/MSD	2		09/18/2012 1255	PAP	1
L12091201-02	D12-3-39A	2		09/18/2012 1513	PAP	1
L12091201-03	D12-4-44	2		09/18/2012 1541	PAP	1
L12091201-07	D12-1-44	2		09/18/2012 1608	PAP	1
L12091201-10	TRIP BLANK #2	1		09/18/2012 1228	PAP	1
MB63204:1	Method Blank	1		09/18/2012 1148	PAP	1
LCS63204:1	Laboratory Control Spike	1		09/18/2012 1759	PAP	1
MS12091201-01:63204	Matrix Spike	1		09/18/2012 1704	PAP	1
MSD12091201-01:63204	Matrix Spike Duplicate	1		09/18/2012 1731	PAP	1

SC Certification Number: 24110001

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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63204

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DOXD8
		61-131
L12091201-01	09/18/2012 1255	100
L12091201-02	09/18/2012 1513	105
L12091201-03	09/18/2012 1541	104
L12091201-07	09/18/2012 1608	102
L12091201-10	09/18/2012 1228	98
MB63204:1	09/18/2012 1148	90
LCS63204:1	09/18/2012 1759	107
MS12091201-01:63204	09/18/2012 1704	110
MSD12091201-01:63204	09/18/2012 1731	113

DOXD8 - 1,4-DIOXANE-D8



SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63204  
 Blank : MB63204:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<i>Volatile Organics</i>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/18/2012 1148 Analyst: PAP Dilution: 1</i>				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,4-DIOXANE-D8		90 %	(61-131)	

SC Certification Number: 24110001

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63204  
 MS/MSD : MS12091201-01:63204  
 MSD12091201-01:63204

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,4-DIOXANE	100.0	< 10.00	106.2	ug/l	106	63-132

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
1,4-DIOXANE	100.0	112.8	ug/l	113	6	18	63-132

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

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WorkGroup: WG63204  
LCS : LCS63204:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,4-DIOXANE	100.0	108.7	ug/l	109	67-133

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Client : **AECOM**  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63217**  
Description: **VO/8260/TCL**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091201-06	D12-10-58.5	2		09/18/2012 1319	PAP/JVB	10
L12091201-08	D12-15-69.5	2		09/18/2012 1346	PAP/JVB	10
MB63217:1	Method Blank	1		09/18/2012 1121	PAP/JVB	1
LCS63217:1	Laboratory Control Spike	1		09/18/2012 1514	PAP/JVB	1

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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63217

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12091201-06	09/18/2012 1319	104	95	96
L12091201-08	09/18/2012 1346	103	97	98
MB63217:1	09/18/2012 1121	102	97	97
LCS63217:1	09/18/2012 1514	101	101	100

DCA - 1,2-DICHLOROETHANE-D4  
BFB - BROMOFLUOROBENZENE  
TOL - TOLUENE-D8

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### QC Batch Report - Method Blanks

WorkGroup: WG63217  
 Blank : MB63217:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/18/2012 1121 Analyst: PAP/JVB Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

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### QC Batch Report - Method Blanks

WorkGroup: WG63217  
 Blank : MB63217:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		97 %	(77-131)	

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63217  
LCS : LCS63217:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	53.51	ug/l	107	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	50.95	ug/l	102	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	53.14	ug/l	106	65-125
1,1,2-TRICHLOROETHANE	50.00	52.67	ug/l	105	78-117
1,1-DICHLOROETHANE	50.00	53.03	ug/l	106	75-117
1,1-DICHLOROETHENE	50.00	56.52	ug/l	113	72-125
1,2,3-TRICHLOROBENZENE	50.00	48.79	ug/l	98	75-113
1,2,4-TRICHLOROBENZENE	50.00	50.97	ug/l	102	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.62	ug/l	99	77-122
1,2-DIBROMOETHANE	50.00	53.26	ug/l	107	80-116
1,2-DICHLOROBENZENE	50.00	51.97	ug/l	104	76-110
1,2-DICHLOROETHANE	50.00	54.38	ug/l	109	75-121
1,2-DICHLOROPROPANE	50.00	53.56	ug/l	107	79-115
1,3-DICHLOROBENZENE	50.00	51.92	ug/l	104	74-113
1,4-DICHLOROBENZENE	50.00	51.68	ug/l	103	74-109
2-BUTANONE	50.00	49.10	ug/l	98	72-129
2-HEXANONE	50.00	47.68	ug/l	95	73-132
4-METHYL-2-PENTANONE	50.00	49.27	ug/l	99	75-131
ACETONE	50.00	49.38	ug/l	99	70-138
BENZENE	50.00	53.74	ug/l	107	77-116
BROMODICHLOROMETHANE	50.00	54.39	ug/l	109	79-120
BROMOFORM	50.00	53.93	ug/l	108	79-121
BROMOMETHANE	50.00	61.03	ug/l	122	67-122
CARBON DISULFIDE	50.00	49.59	ug/l	99	59-125
CARBON TETRACHLORIDE	50.00	54.80	ug/l	110	74-124
CHLOROBENZENE	50.00	52.92	ug/l	106	75-113
CHLOROETHANE	50.00	56.80	ug/l	114	73-120
CHLOROFORM	50.00	54.19	ug/l	108	75-121
CHLOROMETHANE	50.00	55.40	ug/l	111	60-122
CIS-1,2-DICHLOROETHENE	50.00	54.45	ug/l	109	74-119
CIS-1,3-DICHLOROPROPENE	50.00	58.23	ug/l	116	83-126
CYCLOHEXANE	50.00	51.99	ug/l	104	60-123
DIBROMOCHLOROMETHANE	50.00	54.26	ug/l	109	779-121
DICHLORODIFLUOROMETHANE	50.00	66.57	ug/l	133	55-139
ETHYLBENZENE	50.00	53.32	ug/l	107	70-130
ISOPROPYL BENZENE	50.00	52.05	ug/l	104	74-113
METHYL ACETATE	50.00	49.57	ug/l	99	67-123
METHYL-TERT-BUTYL ETHER	50.00	50.63	ug/l	101	75-120



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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63217  
 LCS : LCS63217:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	54.85	ug/l	110	62-123
METHYLENE CHLORIDE	50.00	53.26	ug/l	107	70-120
STYRENE	50.00	54.07	ug/l	108	78-113
TETRACHLOROETHENE	50.00	52.73	ug/l	105	70-120
TOLUENE	50.00	53.00	ug/l	106	75-116
TRANS-1,2-DICHLOROETHENE	50.00	53.59	ug/l	107	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	52.04	ug/l	104	73-114
TRICHLOROETHENE	50.00	53.37	ug/l	107	75-119
TRICHLOROFLUOROMETHANE	50.00	59.27	ug/l	119	71-128
VINYL ACETATE	50.00	51.36	ug/l	103	65-142
VINYL CHLORIDE	50.00	58.40	ug/l	117	64-122
XYLENE (TOTAL)	150.0	158.9	ug/l	106	73-116

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63169**  
 Description: **WC/NO3NO2**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **EPA 353.2**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091201-04	D12-15-49	1	09/12/2012 1447	09/12/2012 1447	LES	2
L12091201-05	D12-14-49	1	09/12/2012 1455	09/12/2012 1455	LES	2
L12091201-06	D12-10-58.5	1	09/12/2012 1519	09/12/2012 1519	LES	5
L12091201-08	D12-15-69.5	1	09/12/2012 1459	09/12/2012 1459	LES	2
MB63169:1	Method Blank	1	09/12/2012 1354	09/12/2012 1354	LES	1
LCS63169:1	Laboratory Control Spike	1	09/12/2012 1347	09/12/2012 1347	LES	1
MS12091001-01:63169	Matrix Spike	1	09/12/2012 1413	09/12/2012 1413	LES	2
MS12091201-04:63169	Matrix Spike	1	09/12/2012 1450	09/12/2012 1450	LES	2
MSD12091001-01:63169	Matrix Spike Duplicate	1	09/12/2012 1416	09/12/2012 1416	LES	2
MSD12091201-04:63169	Matrix Spike Duplicate	1	09/12/2012 1452	09/12/2012 1452	LES	2

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### QC Batch Report - Method Blanks

WorkGroup: WG63169  
Blank : MB63169:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
EPA 353.2				
Date/Time: 09/12/2012 1354 Analyst: LES Dilution: 1				
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200	U	0.0200 mg/l

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
 MS/MSD : MS12091001-01:63169  
 MSD12091001-01:63169

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.75	2.76	mg/l	100	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.74	mg/l	99	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



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## QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63169  
MS/MSD : MS12091201-04:63169  
MSD12091201-04:63169

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.78	2.89	mg/l	110	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.87	mg/l	109	1	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63169  
LCS : LCS63169;1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.484	mg/l	97	90-110

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63254**  
 Description: **Alkalinity**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091201-04	D12-15-49	1		09/19/2012 1417	CDC	1
L12091201-05	D12-14-49	1		09/19/2012 1423	CDC	1
L12091201-06	D12-10-58.5	1		09/19/2012 1443	CDC	1
L12091201-08	D12-15-69.5	1		09/19/2012 1450	CDC	1
D12091001-01:63254	Duplicate	1		09/19/2012 1053	CDC	1
D12091701-04:63254	Duplicate	1		09/19/2012 1539	CDC	1
MB63254:1	Method Blank	1		09/19/2012 0952	CDC	1
LCS63254:1	Laboratory Control Spike	1		09/19/2012 0959	CDC	1



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## QC Batch Report - Method Blanks

WorkGroup: WG63254  
Blank : MB63254:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

### Wet Chemistry

SM 2320B

Date/Time: 09/19/2012 0952	Analyst: CDC	Dilution: 1		
ALKALINITY, TOTAL	<	1.00	U	1.00 mg/l
ENDPOINT PH		4.16		su



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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63254  
LCS : LCS63254:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	974.9	mg/l	97	90-110

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63254  
Duplicate: D12091001-01:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	0.00	0.00	1.00	mg/l		10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63254  
Duplicate: D12091701-04:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	69.35	68.34	2.00	mg/l	1	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Batch Sample List

WorkGroup : WG63215  
 Description: Sulfide

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091201-04	D12-15-49	1		09/17/2012 1520	CDC	1
L12091201-05	D12-14-49	1		09/17/2012 1521	CDC	1
L12091201-06	D12-10-58.5	1		09/17/2012 1522	CDC	1
L12091201-08	D12-15-69.5	1		09/17/2012 1523	CDC	1
MB63215:1	Method Blank	1		09/17/2012 1533	CDC	1
LCS63215:1	Laboratory Control Spike	1		09/17/2012 1519	CDC	1
MS12091701-04:63215	Matrix Spike	1		09/17/2012 1530	CDC	1
MS12091701-11:63215	Matrix Spike	1		09/17/2012 1536	CDC	1
MSD12091701-04:63215	Matrix Spike Duplicate	1		09/17/2012 1531	CDC	1
MSD12091701-11:63215	Matrix Spike Duplicate	1		09/17/2012 1537	CDC	1

SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63215  
Blank : MB63215:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/17/2012 1533 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63215  
 MS/MSD : MS12091701-04:63215  
 MSD12091701-04:63215

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.534	mg/l	107	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.517	mg/l	103	3	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63215  
 MS/MSD : MS12091701-11:63215  
 MSD12091701-11:63215

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
SULFIDE, TOTAL	0.500	< 0.0500	0.493	mg/l	99	81-121	

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD %REC	
SULFIDE, TOTAL	0.500	0.503	mg/l	101	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63215  
LCS : LCS63215:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.511	mg/l	102	90-110





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## QC Batch Report - Batch Sample List

WorkGroup : WG63172  
Description: IC-GW

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091201-04	D12-15-49	1		09/13/2012 0503	CDC	1
L12091201-05	D12-14-49	1		09/13/2012 0534	CDC	1
L12091201-06	D12-10-58.5	1		09/13/2012 0604	CDC	1
L12091201-08	D12-15-69.5	1		09/13/2012 0635	CDC	1
MB63172:1	Method Blank	1		09/12/2012 1110	CDC	1
LCS63172:1	Laboratory Control Spike	1		09/12/2012 1140	CDC	1
MS12091001-01:63172	Matrix Spike	1		09/12/2012 2156	CDC	1
MSD12091001-01:63172	Matrix Spike Duplicate	1		09/12/2012 2226	CDC	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63172  
Blank : MB63172:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SW846 9056A				
Date/Time: 09/12/2012 1110 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

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Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63172  
 MS/MSD : MS12091001-01:63172  
 MSD12091001-01:63172

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	9.84	mg/l	98	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	9.86	mg/l	99	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63172  
LCS : LCS63172:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.85	mg/l	99	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

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# DAVIS FLOYD

## Chain of Custody Record

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Client: **AECOM** Project/ Site Location: **061576.08** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934**  
 Auriga - Spbg, SC Report To: **Bryon Dahlgren** 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119  
 Email: [Laboratory@davisfloyd.com](mailto:Laboratory@davisfloyd.com) Internet: [www.davisfloyd.com](http://www.davisfloyd.com)

Contact: **Mark Hartford** Copy To: **Reporting Requirements:** [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4) PO / Quote Number: **0**  
 Collected By: **Mark Hartford** Turnaround Requirements: [ ] Standard [ ] Rush (Specify: \_\_\_\_\_) Required Parameters, Containers and Preservatives (P<sup>2</sup>) Laboratory Work Request: \_\_\_\_\_  
 Special Instructions: \_\_\_\_\_

*Mark Hartford*

NOTICE: Composite Sampling Only  
 Date Initiated: \_\_\_\_\_  
 Sample Collection Date: \_\_\_\_\_  
 Composite Type: \_\_\_\_\_  
 Matrix Type: \_\_\_\_\_  
 Number of Containers: \_\_\_\_\_  
 Total: \_\_\_\_\_

Sample Description	Time	Date	Time	Sample Collection Date	Time	Composite		Number of Containers		PARAMETERS				CONTAINERS	Comments	Fraction
						Type	Grab	Total	D	A	B	C	3x40 G TFE			
D12-3-39		9-10-12	1410			X	5	6			3	3	3			01
D12-3-39-a		9-10-12	1410			X	5	6			3	3	3			02
D12-3-39-m5		9-10-12	1410			X	5	6			3	3	3			03
D12-3-39-m50		9-10-12	1215			X	5	6			3	3	3			04
D12-4-44		9-10-12	1540			X	5	6			3	3	3			05
D12-15-44		9-10-12	1655			X	5	6			3	3	3			06
D12-14-49		9-10-12	1655			X	5	6			3	3	3			07
Trip 9/10/12		9-3-12	0730				2	2			2	2	2			08
Trip 9/10/12		9-11-12	1245			X	5	6			3	3	3			09
D12-10-58.5		9-11-12	1200			X	5	6			3	3	3			10
D12-1-44		9-11-12	1635			X	5	6			3	3	3			01
D12-15-69.5		9-11-12	1711			X	5	6			3	3	3			02

Relinquished By: *Mark Hartford* Date: *9-11-12* Time: *1710*  
 Received By: *Mark Hartford* Date: *9-11-12* Time: *1711*  
 Relinquished By: *Mark Hartford* Date: *9-17-12* Time: *0730*  
 Received By: *159 S. McCall* Date: *9-18-12* Time: *0730*

Comments: \_\_\_\_\_  
 Sample Chamber Temp. at Harvest: \_\_\_\_\_  
 Circle: C or F \_\_\_\_\_  
 Flow Measurement (Note 1): \_\_\_\_\_  
 Beginning: \_\_\_\_\_  
 Ending: \_\_\_\_\_  
 Start Date: \_\_\_\_\_  
 Multiplier: \_\_\_\_\_  
 Note: Indicate immediate delivery for those shipments in which the temperature does not have adequate time to reach 4°C.  
 Cooler ID (if available): \_\_\_\_\_  
 On Ice: \_\_\_\_\_  
 Immediate Delivery: Yes/No \_\_\_\_\_  
 Intact / Broken / None: \_\_\_\_\_

Matrix Type Definitions: 1 - Drinking Water 2 - Clean Water 3 - Groundwater 4 - Soil/Sediment 5 - Liquid Sludge 6 - Oil 7 - Air  
 (P) Preservative Definitions: A - None B - H2SO4 C - HCl D - HNO3 E - Zn Acetate, NaOH F - Filtered G - Na2S2O3  
 (Note 1) For Discharge Measurements  
 D & F  
 DAVIS & FLOYD, INC.  
 FL02\_03 (04/10)

October 08, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2147  
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Login Number	:L12092001
Project Number	:61576.08
Description	:AURIGA - SPARTANBURG, SC

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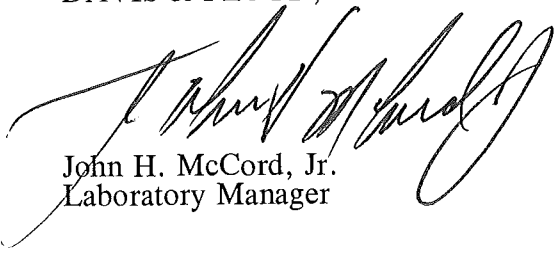
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 20, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 05 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08

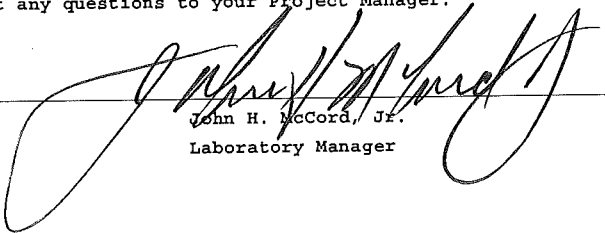
Report Date : October 08, 2012  
Page 2 of 53 Report ID: AK2147

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12092001-01	D12-8-50	09/17/2012 1140	09/20/2012
L12092001-02	D12-26-60	09/17/2012 1440	09/20/2012
L12092001-03	D12-26-60A	09/17/2012 1440	09/20/2012
L12092001-04	D12-25-57.5	09/17/2012 1700	09/20/2012
L12092001-05	D12-24-54	09/19/2012 1025	09/20/2012
L12092001-06	D12-23-69	09/19/2012 1340	09/20/2012
L12092001-07	TRIP BLANK	09/03/2012 0730	09/20/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
 Page 3 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: **D12-8-50**  
 Sample ID: L12092001-01

Date Collected: 09/17/2012 1140  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/21/2012 1424 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	15.6	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	17.4	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
Page 4 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: D12-8-50  
Sample ID: L12092001-01

Date Collected: 09/17/2012 1140  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %		(74-140)
Surr: BROMOFLUOROBENZENE		102 %		(77-133)
Surr: TOLUENE-D8		101 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1633 Analyst: LES Dilution: 2  
NITRATE + NITRITE NITROGEN (AS N) 2.00 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1500 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 33.2 1.00 mg/l  
ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/24/2012 1108 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 2222 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
 Page 5 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: **D12-26-60**  
 Sample ID: L12092001-02

Date Collected: 09/17/2012 1440  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SWB46 8260B				
Date/Time: 09/20/2012 1710 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
 Page 6 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: D12-26-60  
 Sample ID: L12092001-02

Date Collected: 09/17/2012 1440  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %		(74-140)
Surr: BROMOFLUOROBENZENE		101 %		(77-133)
Surr: TOLUENE-D8		102 %		(77-131)
<b>Date/Time: 09/20/2012 2118 Analyst: PAP/JVB Dilution: 2</b>				
CHLOROFORM		285		10.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		107 %		(74-140)
Surr: BROMOFLUOROBENZENE		100 %		(77-133)
Surr: TOLUENE-D8		101 %		(77-131)
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/27/2012 1635 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		1.33		0.0400 mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/26/2012 1534 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		37.7		1.00 mg/l
ENDPOINT PH		4.49		su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/24/2012 1109 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
Page 7 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: D12-26-60  
Sample ID: L12092001-02

Date Collected: 09/17/2012 1440  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 2253 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
Page 8 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: D12-26-60A  
Sample ID: L12092001-03

Date Collected: 09/17/2012 1440  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/20/2012 1900      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
 Page 9 of 53 Report ID: AK2147

### Certificate of Analysis

Client ID: **D12-26-60A**  
 Sample ID: L12092001-03

Date Collected: 09/17/2012 1440  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	108 %		(74-140)	
Surr: BROMOFLUOROBENZENE	103 %		(77-133)	
Surr: TOLUENE-D8	104 %		(77-131)	
<b>Date/Time: 09/21/2012 1451     Analyst: PAP/JVB     Dilution: 2</b>				
CHLOROFORM	270		10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4	108 %		(74-140)	
Surr: BROMOFLUOROBENZENE	104 %		(77-133)	
Surr: TOLUENE-D8	103 %		(77-131)	
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/27/2012 1643     Analyst: LES     Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)	1.37		0.0400	mg/l
SM 2320B				
<b>Date/Time: 09/26/2012 1542     Analyst: CDC     Dilution: 1</b>				
ALKALINITY, TOTAL	34.7		1.00	mg/l
ENDPOINT PH	4.49			su
SM 4500-S2-D				
<b>Date/Time: 09/24/2012 1110     Analyst: CDC     Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### *Certificate of Analysis*

Client ID: D12-26-60A  
Sample ID: L12092001-03

Date Collected: 09/17/2012 1440  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 2323      Analyst: CDC      Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-25-57.5  
Sample ID: L12092001-04

Date Collected: 09/17/2012 1700  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/20/2012 1928 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	6.44	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-25-57.5  
 Sample ID: L12092001-04

Date Collected: 09/17/2012 1700  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		109 %		(74-140)
Surr: BROMOFLUOROBENZENE		105 %		(77-133)
Surr: TOLUENE-D8		104 %		(77-131)
<b>Date/Time: 09/21/2012 1519 Analyst: PAP/JVB Dilution: 2</b>				
CHLOROFORM		221		10.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		108 %		(74-140)
Surr: BROMOFLUOROBENZENE		101 %		(77-133)
Surr: TOLUENE-D8		101 %		(77-131)
<b>Wet Chemistry</b>				
<b>EPA 353.2</b>				
<b>Date/Time: 09/27/2012 1645 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		1.03		0.0400 mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/26/2012 1548 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		46.2		1.00 mg/l
ENDPOINT PH		4.47		su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/24/2012 1111 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-25-57.5  
Sample ID: L12092001-04

Date Collected: 09/17/2012 1700  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 2354 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: D12-24-54  
Sample ID: L12092001-05

Date Collected: 09/19/2012 1025  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/20/2012 1955      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### Certificate of Analysis

Client ID: D12-24-54  
Sample ID: L12092001-05

Date Collected: 09/19/2012 1025  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		107 %		(74-140)
Surr: BROMOFLUOROBENZENE		99 %		(77-133)
Surr: TOLUENE-D8		100 %		(77-131)
<b>Date/Time: 09/21/2012 1547 Analyst: PAP/JVB Dilution: 40</b>				
CHLOROFORM		4150		200 ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %		(74-140)
Surr: BROMOFLUOROBENZENE		100 %		(77-133)
Surr: TOLUENE-D8		100 %		(77-131)
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/27/2012 1648 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		2.24		0.0400 mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/26/2012 1556 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		30.2		1.00 mg/l
ENDPOINT PH		4.48		su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/24/2012 1112 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-24-54  
Sample ID: L12092001-05

Date Collected: 09/19/2012 1025  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/27/2012 0125 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### Certificate of Analysis

Client ID: **D12-23-69**  
 Sample ID: L12092001-06

Date Collected: 09/19/2012 1340  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/20/2012 2023 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	26.3	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### Certificate of Analysis

Client ID: D12-23-69  
Sample ID: L12092001-06

Date Collected: 09/19/2012 1340  
Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		100 %	(74-140)	
Surr: BROMOFLUOROBENZENE		95 %	(77-133)	
Surr: TOLUENE-D8		95 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1650 Analyst: LES Dilution: 2  
NITRATE + NITRITE NITROGEN (AS N) 1.75 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1605 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 57.3 2.00 mg/l  
ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/24/2012 1113 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0156 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### Certificate of Analysis

Client ID: **TRIP BLANK**  
 Sample ID: L12092001-07

Date Collected: 09/03/2012 0730  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/20/2012 1805      Analyst: PAP/JVB      Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: **TRIP BLANK**  
 Sample ID: L12092001-07

Date Collected: 09/03/2012 0730  
 Date Received : 09/20/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		99	%	(74-140)
Surr: BROMOFLUOROBENZENE		95	%	(77-133)
Surr: TOLUENE-D8		96	%	(77-131)

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.08

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## *QC Summary Data*

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : **BRYON DAHLGREN**

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63240**  
 Description: **VO/8260/TCL**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092001-01	D12-8-50	1		09/21/2012 1424	PAP/JVB	1
L12092001-02	D12-26-60	1		09/20/2012 2118	PAP/JVB	2
L12092001-02	D12-26-60	2		09/20/2012 1710	PAP/JVB	1
L12092001-03	D12-26-60A	1		09/20/2012 1900	PAP/JVB	1
L12092001-03	D12-26-60A	2		09/21/2012 1451	PAP/JVB	2
L12092001-04	D12-25-57.5	1		09/20/2012 1928	PAP/JVB	1
L12092001-04	D12-25-57.5	2		09/21/2012 1519	PAP/JVB	2
L12092001-05	D12-24-54	1		09/20/2012 1955	PAP/JVB	1
L12092001-05	D12-24-54	2		09/21/2012 1547	PAP/JVB	40
L12092001-06	D12-23-69	1		09/20/2012 2023	PAP/JVB	1
L12092001-07	TRIP BLANK	1		09/20/2012 1805	PAP/JVB	1
MB63240:1	Method Blank	1		09/20/2012 1643	PAP/JVB	1
MB63240:2	Method Blank	1		09/21/2012 1356	PAP/JVB	1
LCS63240:1	Laboratory Control Spike	1		09/20/2012 2241	PAP/JVB	1
LCS63240:2	Laboratory Control Spike	1		09/21/2012 1614	PAP/JVB	1
MS12092001-02:63240	Matrix Spike	1		09/20/2012 2146	PAP/JVB	2
MSD12092001-02:63240	Matrix Spike Duplicate	1		09/20/2012 2213	PAP/JVB	2

SC Certification Number: 24110001

Client : **AECOM**  
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 SUITE 170  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: **WG63240**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12092001-01	09/21/2012 1424	105	102	101
L12092001-02	09/20/2012 2118	107	100	101
L12092001-02	09/20/2012 1710	102	101	102
L12092001-03	09/20/2012 1900	108	103	104
L12092001-03	09/21/2012 1451	108	104	103
L12092001-04	09/20/2012 1928	109	105	104
L12092001-04	09/21/2012 1519	108	101	101
L12092001-05	09/20/2012 1955	107	99	100
L12092001-05	09/21/2012 1547	105	100	100
L12092001-06	09/20/2012 2023	100	95	95
L12092001-07	09/20/2012 1805	99	95	96
MB63240:1	09/20/2012 1643	102	102	102
MB63240:2	09/21/2012 1356	102	100	98
LCS63240:1	09/20/2012 2241	98	97	96
LCS63240:2	09/21/2012 1614	105	103	102
MS12092001-02:63240	09/20/2012 2146	103	103	103
MSD12092001-02:63240	09/20/2012 2213	99	100	99

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: WG63240  
 Blank : MB63240:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/20/2012 1643 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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### QC Batch Report - Method Blanks

WorkGroup: WG63240  
 Blank : MB63240:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		102 %	(77-133)	
Surr: TOLUENE-D8		102 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: WG63240  
Blank : MB63240:2

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/21/2012 1356	Analyst: PAP/JVB		Dilution: 1	
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: WG63240  
Blank : MB63240:2

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		100 %	(77-133)	
Surr: TOLUENE-D8		98 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63240  
MS/MSD : MS12092001-02:63240  
MSD12092001-02:63240

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	100.0	< 10.00	105.7	ug/l	106	75-121
1,1,2,2-TETRACHLOROETHANE	100.0	< 10.00	102.4	ug/l	102	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	100.0	< 20.00	110.2	ug/l	110	64-130
1,1,2-TRICHLOROETHANE	100.0	< 10.00	103.7	ug/l	104	78-113
1,1-DICHLOROETHANE	100.0	< 10.00	104.1	ug/l	104	76-116
1,1-DICHLOROETHENE	100.0	< 10.00	112.7	ug/l	113	71-127
1,2,3-TRICHLOROBENZENE	100.0	< 10.00	104.8	ug/l	105	75-112
1,2,4-TRICHLOROBENZENE	100.0	< 10.00	102.8	ug/l	103	76-114
1,2-DIBROMO-3-CHLOROPROPANE	100.0	< 10.00	99.25	ug/l	99	73-124
1,2-DIBROMOETHANE	100.0	< 10.00	103.5	ug/l	104	79-114
1,2-DICHLOROBENZENE	100.0	< 10.00	91.59	ug/l	92	76-109
1,2-DICHLOROETHANE	100.0	< 10.00	104.7	ug/l	105	74-122
1,2-DICHLOROPROPANE	100.0	< 10.00	104.9	ug/l	105	79-113
1,3-DICHLOROBENZENE	100.0	< 10.00	90.46	ug/l	90	69-118
1,4-DICHLOROBENZENE	100.0	< 10.00	101.1	ug/l	101	74-108
2-BUTANONE	100.0	< 20.00	109.0	ug/l	109	68-134
2-HEXANONE	100.0	< 20.00	105.6	ug/l	106	70-133
4-METHYL-2-PENTANONE	100.0	< 10.00	107.3	ug/l	107	69-135
ACETONE	100.0	< 20.00	114.8	ug/l	115	64-149
BENZENE	100.0	< 10.00	104.9	ug/l	105	77-114
BROMODICHLOROMETHANE	100.0	< 10.00	105.9	ug/l	106	76-123
BROMOFORM	100.0	< 10.00	108.9	ug/l	109	74-124
BROMOMETHANE	100.0	< 20.00	105.2	ug/l	105	64-121
CARBON DISULFIDE	100.0	< 10.00	104.6	ug/l	105	59-124
CARBON TETRACHLORIDE	100.0	< 10.00	112.3	ug/l	112	72-126
CHLOROBENZENE	100.0	< 10.00	92.06	ug/l	92	74-113
CHLOROETHANE	100.0	< 20.00	114.8	ug/l	115	71-121
CHLOROFORM	100.0	284.6	370.8	ug/l	86	76-119
CHLOROMETHANE	100.0	< 20.00	102.6	ug/l	103	59-123
CIS-1,2-DICHLOROETHENE	100.0	< 10.00	106.5	ug/l	106	74-118
CIS-1,3-DICHLOROPROPENE	100.0	< 10.00	115.1	ug/l	115	83-125
CYCLOHEXANE	100.0	< 10.00	102.1	ug/l	102	59-126
DIBROMOCHLOROMETHANE	100.0	< 10.00	106.8	ug/l	107	77-121
DICHLORODIFLUOROMETHANE	100.0	< 10.00	103.1	ug/l	103	53-141
ETHYLBENZENE	100.0	< 10.00	103.3	ug/l	103	70-130
ISOPROPYL BENZENE	100.0	< 10.00	93.48	ug/l	93	74-114
METHYL ACETATE	100.0	< 20.00	99.11	ug/l	99	68-122
METHYL-TERT-BUTYL ETHER	100.0	< 10.00	98.98	ug/l	99	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63240  
MS/MSD : MS12092001-02:63240  
MSD12092001-02:63240

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	100.0	< 10.00	105.0	ug/l	105	61-126
METHYLENE CHLORIDE	100.0	< 10.00	102.3	ug/l	102	71-115
STYRENE	100.0	< 10.00	105.4	ug/l	105	75-116
TETRACHLOROETHENE	100.0	< 10.00	104.9	ug/l	105	69-121
TOLUENE	100.0	< 10.00	103.3	ug/l	103	74-115
TRANS-1,2-DICHLOROETHENE	100.0	< 10.00	104.6	ug/l	105	74-119
TRANS-1,3-DICHLOROPROPENE	100.0	< 10.00	102.6	ug/l	103	73-112
TRICHLOROETHENE	100.0	< 10.00	103.8	ug/l	104	74-120
TRICHLOROFLUOROMETHANE	100.0	< 10.00	115.4	ug/l	115	70-134
VINYL ACETATE	100.0	< 20.00	107.9	ug/l	108	59-146
VINYL CHLORIDE	100.0	< 20.00	104.8	ug/l	105	63-124
XYLENE (TOTAL)	300.0	< 10.00	290.1	ug/l	97	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	100.0	106.1	ug/l	106	0	16	75-121
1,1,2,2-TETRACHLOROETHANE	100.0	99.88	ug/l	100	3	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	100.0	105.4	ug/l	105	5	18	64-130
1,1,2-TRICHLOROETHANE	100.0	103.4	ug/l	103	0	14	78-113
1,1-DICHLOROETHANE	100.0	104.2	ug/l	104	0	15	76-116
1,1-DICHLOROETHENE	100.0	109.6	ug/l	110	3	16	71-127
1,2,3-TRICHLOROBENZENE	100.0	102.8	ug/l	103	2	20	75-112
1,2,4-TRICHLOROBENZENE	100.0	102.1	ug/l	102	1	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	100.0	99.44	ug/l	99	0	20	73-124
1,2-DIBROMOETHANE	100.0	102.3	ug/l	102	1	16	79-114
1,2-DICHLOROBENZENE	100.0	90.24	ug/l	90	1	15	76-109
1,2-DICHLOROETHANE	100.0	104.7	ug/l	105	0	16	74-122
1,2-DICHLOROPROPANE	100.0	104.9	ug/l	105	0	15	79-113
1,3-DICHLOROBENZENE	100.0	90.30	ug/l	90	0	17	69-118
1,4-DICHLOROBENZENE	100.0	99.75	ug/l	100	1	16	74-108
2-BUTANONE	100.0	106.6	ug/l	107	2	20	68-134
2-HEXANONE	100.0	106.2	ug/l	106	1	20	70-133
4-METHYL-2-PENTANONE	100.0	108.1	ug/l	108	1	19	69-135
ACETONE	100.0	107.6	ug/l	108	6	23	64-149
BENZENE	100.0	103.8	ug/l	104	1	15	77-114
BROMODICHLOROMETHANE	100.0	104.9	ug/l	105	1	16	76-123
BROMOFORM	100.0	106.7	ug/l	107	2	17	74-124
BROMOMETHANE	100.0	106.2	ug/l	106	1	22	64-121

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63240**  
 MS/MSD : **MS12092001-02:63240**  
**MSD12092001-02:63240**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	100.0	107.2	ug/l	107	2	21	59-124
CARBON TETRACHLORIDE	100.0	111.3	ug/l	111	1	18	72-126
CHLOROBENZENE	100.0	91.41	ug/l	91	1	15	74-113
CHLOROETHANE	100.0	114.3	ug/l	114	0	17	71-121
CHLOROFORM	100.0	386.1	ug/l	101	4	14	76-119
CHLOROMETHANE	100.0	101.0	ug/l	101	2	18	59-123
CIS-1,2-DICHLOROETHENE	100.0	107.5	ug/l	108	1	15	74-118
CIS-1,3-DICHLOROPROPENE	100.0	114.5	ug/l	115	1	16	83-125
CYCLOHEXANE	100.0	98.83	ug/l	99	3	17	59-126
DIBROMOCHLOROMETHANE	100.0	107.5	ug/l	107	1	16	77-121
DICHLORODIFLUOROMETHANE	100.0	97.72	ug/l	98	5	20	53-141
ETHYLBENZENE	100.0	102.9	ug/l	103	0	20	70-130
ISOPROPYL BENZENE	100.0	92.25	ug/l	92	1	17	74-114
METHYL ACETATE	100.0	97.01	ug/l	97	2	19	68-122
METHYL-TERT-BUTYL ETHER	100.0	100.3	ug/l	100	1	16	74-119
METHYLCYCLOHEXANE	100.0	102.0	ug/l	102	3	16	61-126
METHYLENE CHLORIDE	100.0	103.1	ug/l	103	1	17	71-115
STYRENE	100.0	105.3	ug/l	105	0	17	75-116
TETRACHLOROETHENE	100.0	103.3	ug/l	103	2	16	69-121
TOLUENE	100.0	103.1	ug/l	103	0	15	74-115
TRANS-1,2-DICHLOROETHENE	100.0	105.1	ug/l	105	0	16	74-119
TRANS-1,3-DICHLOROPROPENE	100.0	103.4	ug/l	103	1	16	73-112
TRICHLOROETHENE	100.0	104.1	ug/l	104	0	15	74-120
TRICHLOROFLUOROMETHANE	100.0	111.3	ug/l	111	4	18	70-134
VINYL ACETATE	100.0	111.4	ug/l	111	3	19	59-146
VINYL CHLORIDE	100.0	103.9	ug/l	104	1	16	63-124
XYLENE (TOTAL)	300.0	288.7	ug/l	96	0	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63240  
LCS : LCS63240:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	49.94	ug/l	100	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	47.30	ug/l	95	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	46.38	ug/l	93	65-125
1,1,2-TRICHLOROETHANE	50.00	48.86	ug/l	98	78-117
1,1-DICHLOROETHANE	50.00	49.53	ug/l	99	75-117
1,1-DICHLOROETHENE	50.00	51.15	ug/l	102	72-125
1,2,3-TRICHLOROBENZENE	50.00	49.93	ug/l	100	75-113
1,2,4-TRICHLOROBENZENE	50.00	49.56	ug/l	99	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	48.53	ug/l	97	77-122
1,2-DIBROMOETHANE	50.00	47.92	ug/l	96	80-116
1,2-DICHLOROBENZENE	50.00	43.34	ug/l	87	76-110
1,2-DICHLOROETHANE	50.00	49.65	ug/l	99	75-121
1,2-DICHLOROPROPANE	50.00	49.29	ug/l	99	79-115
1,3-DICHLOROBENZENE	50.00	43.32	ug/l	87	74-113
1,4-DICHLOROBENZENE	50.00	47.87	ug/l	96	74-109
2-BUTANONE	50.00	54.33	ug/l	109	72-129
2-HEXANONE	50.00	53.33	ug/l	107	73-132
4-METHYL-2-PENTANONE	50.00	53.62	ug/l	107	75-131
ACETONE	50.00	53.46	ug/l	107	70-138
BENZENE	50.00	49.26	ug/l	99	77-116
BROMODICHLOROMETHANE	50.00	50.12	ug/l	100	79-120
BROMOFORM	50.00	50.15	ug/l	100	79-121
BROMOMETHANE	50.00	50.32	ug/l	101	67-122
CARBON DISULFIDE	50.00	52.28	ug/l	105	59-125
CARBON TETRACHLORIDE	50.00	52.54	ug/l	105	74-124
CHLOROBENZENE	50.00	42.93	ug/l	86	75-113
CHLOROETHANE	50.00	52.23	ug/l	104	73-120
CHLOROFORM	50.00	49.29	ug/l	99	75-121
CHLOROMETHANE	50.00	47.98	ug/l	96	60-122
CIS-1,2-DICHLOROETHENE	50.00	50.49	ug/l	101	74-119
CIS-1,3-DICHLOROPROPENE	50.00	53.83	ug/l	108	83-126
CYCLOHEXANE	50.00	45.23	ug/l	90	60-123
DIBROMOCHLOROMETHANE	50.00	50.69	ug/l	101	779-121
DICHLORODIFLUOROMETHANE	50.00	44.08	ug/l	88	55-139
ETHYLBENZENE	50.00	48.89	ug/l	98	70-130
ISOPROPYL BENZENE	50.00	43.87	ug/l	88	74-113
METHYL ACETATE	50.00	47.33	ug/l	95	67-123
METHYL-TERT-BUTYL ETHER	50.00	47.43	ug/l	95	75-120

SC Certification Number: 24110001

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63240  
 LCS : LCS63240:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	46.45	ug/l	93	62-123
METHYLENE CHLORIDE	50.00	48.20	ug/l	96	70-120
STYRENE	50.00	49.36	ug/l	99	78-113
TETRACHLOROETHENE	50.00	49.01	ug/l	98	70-120
TOLUENE	50.00	48.40	ug/l	97	75-116
TRANS-1,2-DICHLOROETHENE	50.00	49.70	ug/l	99	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	48.48	ug/l	97	73-114
TRICHLOROETHENE	50.00	49.18	ug/l	98	75-119
TRICHLOROFLUOROMETHANE	50.00	50.15	ug/l	100	71-128
VINYL ACETATE	50.00	54.64	ug/l	109	65-142
VINYL CHLORIDE	50.00	47.93	ug/l	96	64-122
XYLENE (TOTAL)	150.0	135.9	ug/l	91	73-116

SC Certification Number: 24110001

Client : **AECOM**  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63240**  
LCS : **LCS63240:2**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	53.22	ug/l	106	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	56.09	ug/l	112	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	50.65	ug/l	101	65-125
1,1,2-TRICHLOROETHANE	50.00	53.33	ug/l	107	78-117
1,1-DICHLOROETHANE	50.00	53.22	ug/l	106	75-117
1,1-DICHLOROETHENE	50.00	54.77	ug/l	110	72-125
1,2,3-TRICHLOROBENZENE	50.00	58.50	ug/l	117	75-113
1,2,4-TRICHLOROBENZENE	50.00	53.66	ug/l	107	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	60.02	ug/l	120	77-122
1,2-DIBROMOETHANE	50.00	54.06	ug/l	108	80-116
1,2-DICHLOROBENZENE	50.00	46.26	ug/l	93	76-110
1,2-DICHLOROETHANE	50.00	54.17	ug/l	108	75-121
1,2-DICHLOROPROPANE	50.00	52.65	ug/l	105	79-115
1,3-DICHLOROBENZENE	50.00	46.27	ug/l	93	74-113
1,4-DICHLOROBENZENE	50.00	50.74	ug/l	101	74-109
2-BUTANONE	50.00	61.81	ug/l	124	72-129
2-HEXANONE	50.00	61.33	ug/l	123	73-132
4-METHYL-2-PENTANONE	50.00	59.24	ug/l	118	75-131
ACETONE	50.00	65.05	ug/l	130	70-138
BENZENE	50.00	52.85	ug/l	106	77-116
BROMODICHLOROMETHANE	50.00	54.00	ug/l	108	79-120
BROMOFORM	50.00	57.77	ug/l	116	79-121
BROMOMETHANE	50.00	54.28	ug/l	109	67-122
CARBON DISULFIDE	50.00	52.89	ug/l	106	59-125
CARBON TETRACHLORIDE	50.00	55.70	ug/l	111	74-124
CHLOROBENZENE	50.00	46.43	ug/l	93	75-113
CHLOROETHANE	50.00	56.47	ug/l	113	73-120
CHLOROFORM	50.00	53.03	ug/l	106	75-121
CHLOROMETHANE	50.00	50.75	ug/l	102	60-122
CIS-1,2-DICHLOROETHENE	50.00	53.98	ug/l	108	74-119
CIS-1,3-DICHLOROPROPENE	50.00	56.99	ug/l	114	83-126
CYCLOHEXANE	50.00	50.31	ug/l	101	60-123
DIBROMOCHLOROMETHANE	50.00	55.24	ug/l	110	779-121
DICHLORODIFLUOROMETHANE	50.00	47.94	ug/l	96	55-139
ETHYLBENZENE	50.00	52.68	ug/l	105	70-130
ISOPROPYL BENZENE	50.00	46.30	ug/l	93	74-113
METHYL ACETATE	50.00	57.06	ug/l	114	67-123
METHYL-TERT-BUTYL ETHER	50.00	52.69	ug/l	105	75-120

SC Certification Number: 24110001

Client : **AECOM**  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63240**  
 LCS : **LCS63240:2**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	51.24	ug/l	102	62-123
METHYLENE CHLORIDE	50.00	51.98	ug/l	104	70-120
STYRENE	50.00	52.84	ug/l	106	78-113
TETRACHLOROETHENE	50.00	52.52	ug/l	105	70-120
TOLUENE	50.00	52.54	ug/l	105	75-116
TRANS-1, 2-DICHLOROETHENE	50.00	54.61	ug/l	109	73-121
TRANS-1, 3-DICHLOROPROPENE	50.00	52.03	ug/l	104	73-114
TRICHLOROETHENE	50.00	52.51	ug/l	105	75-119
TRICHLOROFLUOROMETHANE	50.00	55.09	ug/l	110	71-128
VINYL ACETATE	50.00	54.27	ug/l	109	65-142
VINYL CHLORIDE	50.00	51.60	ug/l	103	64-122
XYLENE (TOTAL)	150.0	145.9	ug/l	97	73-116



SC Certification Number: 24110001

Client : **AECOM**  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63223**  
 Description: **WC/NO3NO2 (5)**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092001-01	D12-8-50	1		09/27/2012 1633	LES	2
L12092001-02	D12-26-60	1		09/27/2012 1635	LES	2
L12092001-03	D12-26-60A	1		09/27/2012 1643	LES	2
L12092001-04	D12-25-57.5	1		09/27/2012 1645	LES	2
L12092001-05	D12-24-54	1		09/27/2012 1648	LES	2
L12092001-06	D12-23-69	1		09/27/2012 1650	LES	2
MB63223:1	Method Blank	1		09/27/2012 1603	LES	1
LCS63223:1	Laboratory Control Spike	1		09/27/2012 1555	LES	1
MS12091701-04:63223	Matrix Spike	1		09/27/2012 1613	LES	2
MS12092401-02:63223	Matrix Spike	1		09/27/2012 1658	LES	2
MSD12091701-04:63223	Matrix Spike Duplicate	1		09/27/2012 1615	LES	2
MSD12092401-02:63223	Matrix Spike Duplicate	1		09/27/2012 1700	LES	2

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63223  
Blank : MB63223:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1603	Analyst: LES	Dilution: 1		
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200 U	0.0200	mg/l

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63223  
 MS/MSD : MS12091701-04:63223  
 MSD12091701-04:63223

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	3.15	4.18	mg/l	103	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	4.17	mg/l	102	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : **AECOM**  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63223**  
 MS/MSD : **MS12092401-02:63223**  
**MSD12092401-02:63223**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.85	2.93	mg/l	108	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.93	mg/l	108	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63223  
LCS : LCS63223:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.502	mg/l	100	90-110

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63334  
 Description: Alkalinity-GW

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092001-01	D12-8-50	1		09/26/2012 1500	CDC	1
L12092001-02	D12-26-60	1		09/26/2012 1534	CDC	1
L12092001-03	D12-26-60A	1		09/26/2012 1542	CDC	1
L12092001-04	D12-25-57.5	1		09/26/2012 1548	CDC	1
L12092001-05	D12-24-54	1		09/26/2012 1556	CDC	1
L12092001-06	D12-23-69	1		09/26/2012 1605	CDC	1
D12091908-08:63334	Duplicate	1		09/26/2012 1456	CDC	1
D12092401-02:63334	Duplicate	1		09/26/2012 1632	CDC	1
MB63334:1	Method Blank	1		09/26/2012 1406	CDC	1
LCS63334:1	Laboratory Control Spike	1		09/26/2012 1411	CDC	1

SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63334  
 Blank : MB63334:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Wet Chemistry

SM 2320B

Date/Time: 09/26/2012 1406	Analyst: CDC	Dilution: 1			
ALKALINITY, TOTAL	<	1.00	U	1.00	mg/l
ENDPOINT PH		4.16			su

SC Certification Number: 24110001

Client : **AECOM**  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63334**  
 LCS : **LCS63334:1**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SM 2320B**

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	964.8	mg/l	96	90-110



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG63334  
Duplicate: D12091908-08:63334

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	21.11	21.61	1.00	mg/l	2	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### *QC Batch Report - Sample Duplicates*

WorkGroup: WG63334  
Duplicate: D12092401-02:63334

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	43.22	45.23	2.00	mg/l	5	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63322  
 Description: Sulfide

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092001-01	D12-8-50	1		09/24/2012 1108	CDC	1
L12092001-02	D12-26-60	1		09/24/2012 1109	CDC	1
L12092001-03	D12-26-60A	1		09/24/2012 1110	CDC	1
L12092001-04	D12-25-57.5	1		09/24/2012 1111	CDC	1
L12092001-05	D12-24-54	1		09/24/2012 1112	CDC	1
L12092001-06	D12-23-69	1		09/24/2012 1113	CDC	1
MB63322:1	Method Blank	1		09/24/2012 1120	CDC	1
LCS63322:1	Laboratory Control Spike	1		09/24/2012 1107	CDC	1
MS12092401-02:63322	Matrix Spike	1		09/24/2012 1118	CDC	1
MS12092401-09:63322	Matrix Spike	1		09/24/2012 1123	CDC	1
MSD12092401-02:63322	Matrix Spike Duplicate	1		09/24/2012 1119	CDC	1
MSD12092401-09:63322	Matrix Spike Duplicate	1		09/24/2012 1123	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63322  
Blank : MB63322:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/24/2012 1120 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63322  
 MS/MSD : MS12092401-02:63322  
 MSD12092401-02:63322

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.528	mg/l	106	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.536	mg/l	107	1	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63322  
 MS/MSD : MS12092401-09:63322  
 MSD12092401-09:63322

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.532	mg/l	106	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.523	mg/l	105	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63322  
LCS : LCS63322:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.516	mg/l	103	90-110

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63295  
 Description: IC-GW

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092001-01	D12-8-50	1		09/26/2012 2222	CDC	1
L12092001-02	D12-26-60	1		09/26/2012 2253	CDC	1
L12092001-03	D12-26-60A	1		09/26/2012 2323	CDC	1
L12092001-04	D12-25-57.5	1		09/26/2012 2354	CDC	1
L12092001-05	D12-24-54	1		09/27/2012 0125	CDC	1
L12092001-06	D12-23-69	1		09/27/2012 0156	CDC	1
MB63295:1	Method Blank	1		09/26/2012 1040	CDC	1
LCS63295:1	Laboratory Control Spike	1		09/26/2012 1111	CDC	1
MS12091701-04:63295	Matrix Spike	1		09/26/2012 1717	CDC	1
MSD12091701-04:63295	Matrix Spike Duplicate	1		09/26/2012 1747	CDC	1



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63295  
Blank : MB63295:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SW846 9056A				
Date/Time: 09/26/2012 1040 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 08, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63295  
 MS/MSD : MS12091701-04:63295  
 MSD12091701-04:63295

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	10.24	mg/l	102	80-120

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	10.21	mg/l	102	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 08, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63295  
LCS : LCS63295:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.82	mg/l	98	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

**<** Less Than

**>** Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

*Davis & Floyd, Inc.  
AD07\_06 (01/12)*

Client: AECCOM Project / Site Location: 061576.08 Auriga - Sptbg, SC

Contact: Mark Hartford Report To: Bryon Dahlgren Copy To: [ ]

Lab Certification ID: SC - 24110, NC - 25, NE LAP - E87633, NY - 11996, TN - 2923, VA - 934

816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119

Email: Laboratory@davisfloyd.com Internet: www.davisfloyd.com

Reporting Requirements: [X] Standard [ ] Data Package (Specify Level: 1 2 3 4)

Turnaround Requirements: [X] Standard [ ] Rush (Specify: )

Required Parameters: Containers and Preservatives (P\*)

Office Use Only Laboratory Work Request PO / Quote Number Special Instructions

State: SC

LOGIN: 13098001

NOTICE: Composite Sampling Only

Sample Description Time Date Initiated Sample Collection Date Time Composite Type Matrix Type Number of Containers Total

D12-8-50 9-17-12 1140 X S 6

D12-26-60 9-17-12 1440 X S 6

D12-26-60-a 9-17-12 1440 X S 6

D12-25-57.5 9-19-12 1340 X S 6

D12-24-54 9-19-12 1340 X S 6

D12-23-69 9-19-12 1340 X S 6

Trap Blank 9-3-12 0730 X 2 2

ENTER NUMBER OF SAMPLE CONTAINERS

PARAMETERS CONTAINERS VOC's A 3 1 1 1

SO4, Alkalinity A 3 1 1 1

Sulfide E 3 1 1 1

NO3/NO2 B 3 1 1 1

1,4-Dioxane C 3 1 1 1

Indicate any known or expected hazards with a "X".

Comments Fraction

01

02

03

04

05

06

07

Relinquished By: Mark Hartford Date: 9-19-12 Time: 1630

Received By: [Signature] Date: 9-19-12 Time: 1631

Relinquished By: [Signature] Date: 9-19-12 Time: 1810

Received in Laboratory By: Tsa S. McCall Date: 9-19-12 Time: 0740

Shipped Via: UPS FEDEX CLIENT COURIER Tracking Number: [Blank]

Receipt Information: Cooler ID (if available): [Blank] On Ice: [Blank] Immediate Delivery: [Blank] Custody Seal: Intact / Broken / None

Sample Chamber Temp. at Harvest: [Blank] Circle: C or F

Flow Measurement (Note 1): Beginning: [Blank] Ending: [Blank] Start Date: [Blank] Multiplier: [Blank]

Note: Indicate immediate delivery for those shipments in which the temperature does not have adequate time to reach 4°C.

Matrix Type Definitions: 1-Drinking Water 2-Clean Water 5-Groundwater 7-Soil/Sediment 8-Liquid Sludge 9-Oil 12-Air

(P) Preservative Definitions A-None B-H2SO4 C-HCl D-HNO3 E-Zn Acetate, NaOH F-Filtered G-Na2S2O3

(Note 1) For Discharge Measurements

Davis & Floyd, Inc. FL02\_03 (04/10)

October 10, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2183  
Page 1 of 71

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Login Number	:L12091701
Project Number	:61576.08
Description	:AURIGA - SPARTANBURG, SC

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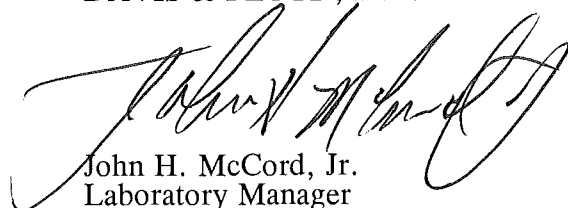
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 17, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 73 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

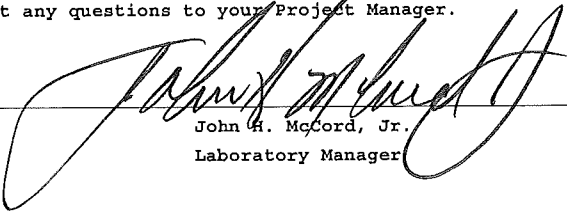
Project Number: 61576.08  
Report Date : October 10, 2012  
Page 2 of 71 Report ID: AK2183

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12091701-01	D12-15-60	09/12/2012 1035	09/17/2012
L12091701-02	0010F-4-SW	09/12/2012 1115	09/17/2012
L12091701-03	NORTH HEAD WALL - SW	09/12/2012 1150	09/17/2012
L12091701-04	D12-14-64 MS/MSD	09/12/2012 1225	09/17/2012
L12091701-05	D12-11-40.5	09/12/2012 1700	09/17/2012
L12091701-06	D12-12-60	09/13/2012 1040	09/17/2012
L12091701-07	WTN16-0010F-SW	09/13/2012 1350	09/17/2012
L12091701-08	D12-16-64	09/13/2012 1400	09/17/2012
L12091701-09	D12-13-47.5	09/14/2012 0945	09/17/2012
L12091701-10	D12-13-37	09/14/2012 1150	09/17/2012
L12091701-11	D12-6-45	09/14/2012 1550	09/17/2012
L12091701-12	TRIP BLANK #1	09/03/2012 0730	09/17/2012
L12091701-13	TRIP BLANK #2	09/03/2012 0730	09/17/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
 Page 3 of 71 Report ID: AK2183

### Certificate of Analysis

Client ID: D12-15-60  
 Sample ID: L12091701-01

Date Collected: 09/12/2012 1035  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1622 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
Page 4 of 71 Report ID: AK2183

### Certificate of Analysis

Client ID: D12-15-60  
Sample ID: L12091701-01

Date Collected: 09/12/2012 1035  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	115 %		(74-140)	
Surr: BROMOFLUOROBENZENE	101 %		(77-133)	
Surr: TOLUENE-D8	99 %		(77-131)	
<b>Date/Time: 09/18/2012 1156 Analyst: PAP/JVB Dilution: 100</b>				
CHLOROFORM	10600		500	ug/l
Surr: 1,2-DICHLOROETHANE-D4	104 %		(74-140)	
Surr: BROMOFLUOROBENZENE	99 %		(77-133)	
Surr: TOLUENE-D8	99 %		(77-131)	
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/27/2012 1608 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)	2.41		0.0400	mg/l
SM 2320B				
<b>Date/Time: 09/19/2012 1456 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL	10.6		1.00	mg/l
ENDPOINT PH	4.16			su
SM 4500-S2-D				
<b>Date/Time: 09/17/2012 1524 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-15-60  
Sample ID: L12091701-01

Date Collected: 09/12/2012 1035  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 1616 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: 0010F-4-SW  
Sample ID: L12091701-02

Date Collected: 09/12/2012 1115  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
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Matrix : WW/STW/SFW

#### Volatile Organics

SW846 8260B

Date/Time: 09/17/2012 2319	Analyst: PAP	Dilution: 1		
1,4-DIOXANE	221	10.0	ug/l	
Surr: 1,4-DIOXANE-D8	111 %	(D-)		

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: NORTH HEAD WALL - SW  
Sample ID: L12091701-03

Date Collected: 09/12/2012 1150  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : WW/STW/SFW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/18/2012 0110      Analyst: PAP      Dilution: 1</i>				
1,4-DIOXANE	73.4		10.0	ug/l
Surr: 1,4-DIOXANE-D8	103 %		(D-)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWEEL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-14-64 MS/MSD  
Sample ID: L12091701-04

Date Collected: 09/12/2012 1225  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 2031 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-14-64 MS/MSD  
 Sample ID: L12091701-04

Date Collected: 09/12/2012 1225  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		97 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1610 Analyst: LES Dilution: 2  
 -----  
 NITRATE + NITRITE NITROGEN (AS N) 3.15 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1534 Analyst: CDC Dilution: 1  
 -----  
 ALKALINITY, TOTAL 69.3 1.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/17/2012 1525 Analyst: CDC Dilution: 1  
 -----  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 1646 Analyst: CDC Dilution: 1  
 -----  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-11-40.5  
Sample ID: L12091701-05

Date Collected: 09/12/2012 1700  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1717 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	18.2	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	16.0	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	25.7	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-11-40.5  
 Sample ID: L12091701-05

Date Collected: 09/12/2012 1700  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %	(74-140)	
Surr: BROMOFLUOROBENZENE		100 %	(77-133)	
Surr: TOLUENE-D8		100 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1618 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 2.06 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1550 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 46.2 2.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/17/2012 1526 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 1919 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-12-60  
Sample ID: L12091701-06

Date Collected: 09/13/2012 1040  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1745 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		14.0	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM		134	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-12-60  
Sample ID: L12091701-06

Date Collected: 09/13/2012 1040  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		106 %		(74-140)
Surr: BROMOFLUOROBENZENE		100 %		(77-133)
Surr: TOLUENE-DB		100 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1620 Analyst: LES Dilution: 2  
NITRATE + NITRITE NITROGEN (AS N) 2.13 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1555 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 13.1 1.00 mg/l  
ENDPOINT PH 4.19 su

SM 4500-S2-D

Date/Time: 09/17/2012 1527 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 1950 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: WTN16-0010F-SW  
Sample ID: L12091701-07

Date Collected: 09/13/2012 1350  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
Matrix : WW/STW/SFW				
Volatile Organics				
SW846 8260B				
Date/Time: 09/18/2012 0137 Analyst: PAP Dilution: 1				
1,4-DIOXANE	97.2		10.0	ug/l
Surr: 1,4-DIOXANE-D8	109 %		(D-)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-16-64  
Sample ID: L12091701-08

Date Collected: 09/13/2012 1400  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1812 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-16-64  
 Sample ID: L12091701-08

Date Collected: 09/13/2012 1400  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		104 %		(74-140)
Surr: BROMOFLUOROBENZENE		98 %		(77-133)
Surr: TOLUENE-D8		98 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1623 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 2.73 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1604 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 55.3 2.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/17/2012 1528 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 2020 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-47.5  
 Sample ID: L12091701-09

Date Collected: 09/14/2012 0945  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1840 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	13.3	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	58.2	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	7.02	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-47.5  
 Sample ID: L12091701-09

Date Collected: 09/14/2012 0945  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	41.4		5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %		(74-140)
Surr: BROMOFLUOROBENZENE		100 %		(77-133)
Surr: TOLUENE-D8		98 %		(77-131)
<b>Date/Time: 09/18/2012 1446 Analyst: PAP/JVB Dilution: 50</b>				
CHLOROFORM		4210		250 ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %		(74-140)
Surr: BROMOFLUOROBENZENE		97 %		(77-133)
Surr: TOLUENE-D8		97 %		(77-131)
<b>Wet Chemistry</b>				
EPA 353.2				
<b>Date/Time: 09/27/2012 1625 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		2.03		0.0400 mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/19/2012 1631 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		66.3		2.00 mg/l
ENDPOINT PH		4.50		su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/17/2012 1529 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-47.5  
Sample ID: L12091701-09

Date Collected: 09/14/2012 0945  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 2051 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-37  
 Sample ID: L12091701-10

Date Collected: 09/14/2012 1150  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 9260B				
Date/Time: 09/17/2012 1908 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	16.1	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.01	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-37  
Sample ID: L12091701-10

Date Collected: 09/14/2012 1150  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE		18.4		5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %		(74-140)
Surr: BROMOFLUOROBENZENE		97 %		(77-133)
Surr: TOLUENE-D8		97 %		(77-131)
<b>Date/Time: 09/18/2012 1251 Analyst: PJP/JVB Dilution: 20</b>				
CHLOROFORM		3140		100 ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %		(74-140)
Surr: BROMOFLUOROBENZENE		98 %		(77-133)
Surr: TOLUENE-D8		98 %		(77-131)
<b>Wet Chemistry</b>				
<b>EPA 353.2</b>				
<b>Date/Time: 09/27/2012 1628 Analyst: LES Dilution: 2</b>				
NITRATE + NITRITE NITROGEN (AS N)		2.27		0.0400 mg/l
<b>SM 2320B</b>				
<b>Date/Time: 09/19/2012 1642 Analyst: CDC Dilution: 1</b>				
ALKALINITY, TOTAL		45.7		1.00 mg/l
ENDPOINT PH		4.47		su
<b>SM 4500-S2-D</b>				
<b>Date/Time: 09/17/2012 1534 Analyst: CDC Dilution: 1</b>				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-13-37  
Sample ID: L12091701-10

Date Collected: 09/14/2012 1150  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
SW846 9056A				
Date/Time: 09/26/2012 2121 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-6-45  
Sample ID: L12091701-11

Date Collected: 09/14/2012 1550  
Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1936 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		13.2	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE		48.3	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: D12-6-45  
 Sample ID: L12091701-11

Date Collected: 09/14/2012 1550  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		97 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1630 Analyst: LES Dilution: 2  
 -----  
 NITRATE + NITRITE NITROGEN (AS N) 1.96 0.0400 mg/l

SM 2320B

Date/Time: 09/19/2012 1704 Analyst: CDC Dilution: 1  
 -----  
 ALKALINITY, TOTAL 82.4 2.00 mg/l  
 ENDPOINT PH 4.46 su

SM 4500-S2-D

Date/Time: 09/17/2012 1535 Analyst: CDC Dilution: 1  
 -----  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/26/2012 2152 Analyst: CDC Dilution: 1  
 -----  
 SULFATE 1.30 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 10, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12091701-12

Date Collected: 09/03/2012 0730  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1554 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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 Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12091701-12

Date Collected: 09/03/2012 0730  
 Date Received : 09/17/2012

Parameter		Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00	ug/l
METHYL ACETATE	<	10.0	U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00	ug/l
STYRENE	<	5.00	U	5.00	ug/l
TETRACHLOROETHENE	<	5.00	U	5.00	ug/l
TOLUENE	<	5.00	U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
TRICHLOROETHENE	<	5.00	U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00	ug/l
VINYL ACETATE	<	10.0	U	10.0	ug/l
VINYL CHLORIDE	<	10.0	U	10.0	ug/l
XYLENE (TOTAL)	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		100	%	(74-140)	
Surr: BROMOFLUOROBENZENE		98	%	(77-133)	
Surr: TOLUENE-D8		97	%	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### Certificate of Analysis

Client ID: TRIP BLANK #2  
 Sample ID: L12091701-13

Date Collected: 09/03/2012 0730  
 Date Received : 09/17/2012

Parameter	Result	Qual	RDL	Units
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Matrix : WW/STW/SFW

#### Volatile Organics

SW846 8260B

Date/Time: 09/17/2012 1748	Analyst: PAP	Dilution: 1	
1,4-DIOXANE	<	10.0 U	10.0 ug/l
Surr: 1,4-DIOXANE-D8		116 %	(D-)



*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.08  
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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63208  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091701-01	D12-15-60	1		09/17/2012 1622	PAP/JVB	1
L12091701-04	D12-14-64 MS/MSD	1		09/17/2012 2031	PAP/JVB	1
L12091701-05	D12-11-40.5	1		09/17/2012 1717	PAP/JVB	1
L12091701-06	D12-12-60	1		09/17/2012 1745	PAP/JVB	1
L12091701-08	D12-16-64	1		09/17/2012 1812	PAP/JVB	1
L12091701-09	D12-13-47.5	1		09/17/2012 1840	PAP/JVB	1
L12091701-10	D12-13-37	1		09/17/2012 1908	PAP/JVB	1
L12091701-11	D12-6-45	1		09/17/2012 1936	PAP/JVB	1
L12091701-12	TRIP BLANK #1	1		09/17/2012 1554	PAP/JVB	1
MB63208:1	Method Blank	1		09/17/2012 1457	PAP/JVB	1
LCS63208:1	Laboratory Control Spike	1		09/17/2012 2318	PAP/JVB	1
MS12091701-04:63208	Matrix Spike	1		09/17/2012 2059	PAP/JVB	1
MSD12091701-04:63208	Matrix Spike Duplicate	1		09/17/2012 2126	PAP/JVB	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63208

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12091701-01	09/17/2012 1622	115	101	99
L12091701-04	09/17/2012 2031	103	97	97
L12091701-05	09/17/2012 1717	105	100	100
L12091701-06	09/17/2012 1745	106	100	100
L12091701-08	09/17/2012 1812	104	98	98
L12091701-09	09/17/2012 1840	105	100	98
L12091701-10	09/17/2012 1908	103	97	97
L12091701-11	09/17/2012 1936	101	97	97
L12091701-12	09/17/2012 1554	100	98	97
MB63208:1	09/17/2012 1457	99	97	97
LCS63208:1	09/17/2012 2318	100	97	96
MS12091701-04:63208	09/17/2012 2059	97	96	95
MSD12091701-04:63208	09/17/2012 2126	99	97	96

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: WG63208  
Blank : MB63208:1

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/17/2012 1457 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
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Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: WG63208  
 Blank : MB63208:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		99 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		97 %	(77-131)	

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63208**  
 MS/MSD : **MS12091701-04:63208**  
**MSD12091701-04:63208**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	51.48	ug/l	103	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	49.34	ug/l	99	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	50.74	ug/l	101	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	50.88	ug/l	102	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	51.45	ug/l	103	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	53.43	ug/l	107	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	47.80	ug/l	96	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	49.23	ug/l	98	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	46.47	ug/l	93	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	50.13	ug/l	100	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	50.75	ug/l	102	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	51.88	ug/l	104	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	51.01	ug/l	102	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	50.70	ug/l	101	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	50.00	ug/l	100	74-108
2-BUTANONE	50.00	< 10.00	48.91	ug/l	98	68-134
2-HEXANONE	50.00	< 10.00	46.13	ug/l	92	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	47.23	ug/l	94	69-135
ACETONE	50.00	< 10.00	54.23	ug/l	108	64-149
BENZENE	50.00	< 5.00	51.23	ug/l	102	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	51.72	ug/l	103	76-123
BROMOFORM	50.00	< 5.00	50.10	ug/l	100	74-124
BROMOMETHANE	50.00	< 10.00	56.52	ug/l	113	64-121
CARBON DISULFIDE	50.00	< 5.00	47.99	ug/l	96	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	52.39	ug/l	105	72-126
CHLOROBENZENE	50.00	< 5.00	51.19	ug/l	102	74-113
CHLOROETHANE	50.00	< 10.00	53.23	ug/l	106	71-121
CHLOROFORM	50.00	< 5.00	52.47	ug/l	105	76-119
CHLOROMETHANE	50.00	< 10.00	53.26	ug/l	107	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	56.22	ug/l	112	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	55.58	ug/l	111	83-125
CYCLOHEXANE	50.00	< 5.00	50.38	ug/l	101	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	51.27	ug/l	103	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	62.42	ug/l	125	53-141
ETHYLBENZENE	50.00	< 5.00	51.41	ug/l	103	70-130
ISOPROPYL BENZENE	50.00	< 5.00	51.05	ug/l	102	74-114
METHYL ACETATE	50.00	< 10.00	46.97	ug/l	94	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	48.83	ug/l	98	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63208  
MS/MSD : MS12091701-04:63208  
MSD12091701-04:63208

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	52.76	ug/l	106	61-126
METHYLENE CHLORIDE	50.00	< 5.00	49.97	ug/l	100	71-115
STYRENE	50.00	< 5.00	51.52	ug/l	103	75-116
TETRACHLOROETHENE	50.00	< 5.00	54.88	ug/l	110	69-121
TOLUENE	50.00	< 5.00	50.73	ug/l	101	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	51.71	ug/l	103	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	48.92	ug/l	98	73-112
TRICHLOROETHENE	50.00	< 5.00	51.61	ug/l	103	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	55.55	ug/l	111	70-134
VINYL ACETATE	50.00	< 10.00	49.48	ug/l	99	59-146
VINYL CHLORIDE	50.00	< 10.00	55.95	ug/l	112	63-124
XYLENE (TOTAL)	150.0	< 5.00	152.4	ug/l	102	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	51.18	ug/l	102	1	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	50.20	ug/l	100	2	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	48.63	ug/l	97	4	18	64-130
1,1,2-TRICHLOROETHANE	50.00	50.79	ug/l	102	0	14	78-113
1,1-DICHLOROETHANE	50.00	51.04	ug/l	102	1	15	76-116
1,1-DICHLOROETHENE	50.00	50.47	ug/l	101	6	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	50.85	ug/l	102	6	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	50.46	ug/l	101	2	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	50.41	ug/l	101	8	20	73-124
1,2-DIBROMOETHANE	50.00	51.24	ug/l	102	2	16	79-114
1,2-DICHLOROBENZENE	50.00	49.72	ug/l	99	2	15	76-109
1,2-DICHLOROETHANE	50.00	52.38	ug/l	105	1	16	74-122
1,2-DICHLOROPROPANE	50.00	51.82	ug/l	104	2	15	79-113
1,3-DICHLOROBENZENE	50.00	49.67	ug/l	99	2	17	69-118
1,4-DICHLOROBENZENE	50.00	48.63	ug/l	97	3	16	74-108
2-BUTANONE	50.00	53.81	ug/l	108	10	20	68-134
2-HEXANONE	50.00	49.21	ug/l	98	6	20	70-133
4-METHYL-2-PENTANONE	50.00	50.56	ug/l	101	7	19	69-135
ACETONE	50.00	59.24	ug/l	118	9	23	64-149
BENZENE	50.00	51.55	ug/l	103	1	15	77-114
BROMODICHLOROMETHANE	50.00	52.42	ug/l	105	1	16	76-123
BROMOFORM	50.00	51.47	ug/l	103	3	17	74-124
BROMOMETHANE	50.00	52.68	ug/l	105	7	22	64-121

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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 Contact : **BRYON DAHLGREN**

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63208**  
 MS/MSD : **MS12091701-04:63208**  
**MSD12091701-04:63208**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	46.43	ug/l	93	3	21	59-124
CARBON TETRACHLORIDE	50.00	51.46	ug/l	103	2	18	72-126
CHLOROBENZENE	50.00	50.24	ug/l	100	2	15	74-113
CHLOROETHANE	50.00	50.28	ug/l	101	6	17	71-121
CHLOROFORM	50.00	51.97	ug/l	104	1	14	76-119
CHLOROMETHANE	50.00	51.85	ug/l	104	3	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	56.11	ug/l	112	0	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	55.47	ug/l	111	0	16	83-125
CYCLOHEXANE	50.00	49.44	ug/l	99	2	17	59-126
DIBROMOCHLOROMETHANE	50.00	52.17	ug/l	104	2	16	77-121
DICHLORODIFLUOROMETHANE	50.00	60.71	ug/l	121	3	20	53-141
ETHYLBENZENE	50.00	50.38	ug/l	101	2	20	70-130
ISOPROPYL BENZENE	50.00	49.02	ug/l	98	4	17	74-114
METHYL ACETATE	50.00	50.61	ug/l	101	7	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	49.48	ug/l	99	1	16	74-119
METHYLCYCLOHEXANE	50.00	51.89	ug/l	104	2	16	61-126
METHYLENE CHLORIDE	50.00	50.24	ug/l	100	1	17	71-115
STYRENE	50.00	51.26	ug/l	103	1	17	75-116
TETRACHLOROETHENE	50.00	54.16	ug/l	108	1	16	69-121
TOLUENE	50.00	50.67	ug/l	101	0	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	51.06	ug/l	102	1	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	49.19	ug/l	98	1	16	73-112
TRICHLOROETHENE	50.00	52.87	ug/l	106	2	15	74-120
TRICHLOROFLUOROMETHANE	50.00	51.66	ug/l	103	7	18	70-134
VINYL ACETATE	50.00	50.44	ug/l	101	2	19	59-146
VINYL CHLORIDE	50.00	54.22	ug/l	108	3	16	63-124
XYLENE (TOTAL)	150.0	151.3	ug/l	101	1	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: **WG63208**  
LCS : **LCS63208:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	52.51	ug/l	105	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	51.78	ug/l	104	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	46.15	ug/l	92	65-125
1,1,2-TRICHLOROETHANE	50.00	52.34	ug/l	105	78-117
1,1-DICHLOROETHANE	50.00	52.14	ug/l	104	75-117
1,1-DICHLOROETHENE	50.00	51.96	ug/l	104	72-125
1,2,3-TRICHLOROBENZENE	50.00	53.80	ug/l	108	75-113
1,2,4-TRICHLOROBENZENE	50.00	51.20	ug/l	102	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	52.28	ug/l	105	77-122
1,2-DIBROMOETHANE	50.00	51.98	ug/l	104	80-116
1,2-DICHLOROBENZENE	50.00	51.60	ug/l	103	76-110
1,2-DICHLOROETHANE	50.00	53.90	ug/l	108	75-121
1,2-DICHLOROPROPANE	50.00	52.90	ug/l	106	79-115
1,3-DICHLOROBENZENE	50.00	51.28	ug/l	103	74-113
1,4-DICHLOROBENZENE	50.00	51.14	ug/l	102	74-109
2-BUTANONE	50.00	53.30	ug/l	107	72-129
2-HEXANONE	50.00	51.36	ug/l	103	73-132
4-METHYL-2-PENTANONE	50.00	52.06	ug/l	104	75-131
ACETONE	50.00	55.31	ug/l	111	70-138
BENZENE	50.00	52.52	ug/l	105	77-116
BROMODICHLOROMETHANE	50.00	53.38	ug/l	107	79-120
BROMOFORM	50.00	52.95	ug/l	106	79-121
BROMOMETHANE	50.00	57.73	ug/l	115	67-122
CARBON DISULFIDE	50.00	49.17	ug/l	98	59-125
CARBON TETRACHLORIDE	50.00	52.48	ug/l	105	74-124
CHLOROBENZENE	50.00	52.23	ug/l	104	75-113
CHLOROETHANE	50.00	53.71	ug/l	107	73-120
CHLOROFORM	50.00	53.65	ug/l	107	75-121
CHLOROMETHANE	50.00	53.03	ug/l	106	60-122
CIS-1,2-DICHLOROETHENE	50.00	53.76	ug/l	108	74-119
CIS-1,3-DICHLOROPROPENE	50.00	55.55	ug/l	111	83-126
CYCLOHEXANE	50.00	47.59	ug/l	95	60-123
DIBROMOCHLOROMETHANE	50.00	52.85	ug/l	106	779-121
DICHLORODIFLUOROMETHANE	50.00	60.78	ug/l	122	55-139
ETHYLBENZENE	50.00	52.45	ug/l	105	70-130
ISOPROPYL BENZENE	50.00	51.65	ug/l	103	74-113
METHYL ACETATE	50.00	50.41	ug/l	101	67-123
METHYL-TERT-BUTYL ETHER	50.00	50.76	ug/l	102	75-120

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63208  
 LCS : LCS63208:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	49.39	ug/l	99	62-123
METHYLENE CHLORIDE	50.00	56.54	ug/l	113	70-120
STYRENE	50.00	52.96	ug/l	106	78-113
TETRACHLOROETHENE	50.00	50.96	ug/l	102	70-120
TOLUENE	50.00	51.70	ug/l	103	75-116
TRANS-1,2-DICHLOROETHENE	50.00	52.83	ug/l	106	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	49.59	ug/l	99	73-114
TRICHLOROETHENE	50.00	52.72	ug/l	105	75-119
TRICHLOROFLUOROMETHANE	50.00	52.78	ug/l	106	71-128
VINYL ACETATE	50.00	50.83	ug/l	102	65-142
VINYL CHLORIDE	50.00	54.93	ug/l	110	64-122
XYLENE (TOTAL)	150.0	155.9	ug/l	104	73-116

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63217  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091701-01	D12-15-60	2		09/18/2012 1156	PAP/JVB	100
L12091701-09	D12-13-47.5	2		09/18/2012 1446	PAP/JVB	50
L12091701-10	D12-13-37	2		09/18/2012 1251	PAP/JVB	20
MB63217:1	Method Blank	1		09/18/2012 1121	PAP/JVB	1
LCS63217:1	Laboratory Control Spike	1		09/18/2012 1514	PAP/JVB	1

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63217

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12091701-01	09/18/2012 1156	104	99	99
L12091701-09	09/18/2012 1446	101	97	97
L12091701-10	09/18/2012 1251	105	98	98
MB63217:1	09/18/2012 1121	102	97	97
LCS63217:1	09/18/2012 1514	101	101	100

DCA - 1,2-DICHLOROETHANE-D4

BFB - BROMOFLUOROBENZENE

TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63217  
 Blank : MB63217:1

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/18/2012 1121 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63217  
 Blank : MB63217:1

Parameter		Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l
ETHYLBENZENE	<	5.00	U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00	ug/l
METHYL ACETATE	<	10.0	U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00	ug/l
STYRENE	<	5.00	U	5.00	ug/l
TETRACHLOROETHENE	<	5.00	U	5.00	ug/l
TOLUENE	<	5.00	U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
TRICHLOROETHENE	<	5.00	U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00	ug/l
VINYL ACETATE	<	10.0	U	10.0	ug/l
VINYL CHLORIDE	<	10.0	U	10.0	ug/l
XYLENE (TOTAL)	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %		(74-140)	
Surr: BROMOFLUOROBENZENE		97 %		(77-133)	
Surr: TOLUENE-D8		97 %		(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63217  
LCS : LCS63217:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	53.51	ug/l	107	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	50.95	ug/l	102	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	53.14	ug/l	106	65-125
1,1,2-TRICHLOROETHANE	50.00	52.67	ug/l	105	78-117
1,1-DICHLOROETHANE	50.00	53.03	ug/l	106	75-117
1,1-DICHLOROETHENE	50.00	56.52	ug/l	113	72-125
1,2,3-TRICHLOROBENZENE	50.00	48.79	ug/l	98	75-113
1,2,4-TRICHLOROBENZENE	50.00	50.97	ug/l	102	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.62	ug/l	99	77-122
1,2-DIBROMOETHANE	50.00	53.26	ug/l	107	80-116
1,2-DICHLOROBENZENE	50.00	51.97	ug/l	104	76-110
1,2-DICHLOROETHANE	50.00	54.38	ug/l	109	75-121
1,2-DICHLOROPROPANE	50.00	53.56	ug/l	107	79-115
1,3-DICHLOROBENZENE	50.00	51.92	ug/l	104	74-113
1,4-DICHLOROBENZENE	50.00	51.68	ug/l	103	74-109
2-BUTANONE	50.00	49.10	ug/l	98	72-129
2-HEXANONE	50.00	47.68	ug/l	95	73-132
4-METHYL-2-PENTANONE	50.00	49.27	ug/l	99	75-131
ACETONE	50.00	49.38	ug/l	99	70-138
BENZENE	50.00	53.74	ug/l	107	77-116
BROMODICHLOROMETHANE	50.00	54.39	ug/l	109	79-120
BROMOFORM	50.00	53.93	ug/l	108	79-121
BROMOMETHANE	50.00	61.03	ug/l	122	67-122
CARBON DISULFIDE	50.00	49.59	ug/l	99	59-125
CARBON TETRACHLORIDE	50.00	54.80	ug/l	110	74-124
CHLOROBENZENE	50.00	52.92	ug/l	106	75-113
CHLOROETHANE	50.00	56.80	ug/l	114	73-120
CHLOROFORM	50.00	54.19	ug/l	108	75-121
CHLOROMETHANE	50.00	55.40	ug/l	111	60-122
CIS-1,2-DICHLOROETHENE	50.00	54.45	ug/l	109	74-119
CIS-1,3-DICHLOROPROPENE	50.00	58.23	ug/l	116	83-126
CYCLOHEXANE	50.00	51.99	ug/l	104	60-123
DIBROMOCHLOROMETHANE	50.00	54.26	ug/l	109	779-121
DICHLORODIFLUOROMETHANE	50.00	66.57	ug/l	133	55-139
ETHYLBENZENE	50.00	53.32	ug/l	107	70-130
ISOPROPYL BENZENE	50.00	52.05	ug/l	104	74-113
METHYL ACETATE	50.00	49.57	ug/l	99	67-123
METHYL-TERT-BUTYL ETHER	50.00	50.63	ug/l	101	75-120

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63217  
 LCS : LCS63217:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	54.85	ug/l	110	62-123
METHYLENE CHLORIDE	50.00	53.26	ug/l	107	70-120
STYRENE	50.00	54.07	ug/l	108	78-113
TETRACHLOROETHENE	50.00	52.73	ug/l	105	70-120
TOLUENE	50.00	53.00	ug/l	106	75-116
TRANS-1,2-DICHLOROETHENE	50.00	53.59	ug/l	107	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	52.04	ug/l	104	73-114
TRICHLOROETHENE	50.00	53.37	ug/l	107	75-119
TRICHLOROFLUOROMETHANE	50.00	59.27	ug/l	119	71-128
VINYL ACETATE	50.00	51.36	ug/l	103	65-142
VINYL CHLORIDE	50.00	58.40	ug/l	117	64-122
XYLENE (TOTAL)	150.0	158.9	ug/l	106	73-116



SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63223 Matrix : GW/ChemW  
 Description: WC/NO3NO2 (5) Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091701-01	D12-15-60	1		09/27/2012 1608	LES	2
L12091701-04	D12-14-64 MS/MSD	1		09/27/2012 1610	LES	2
L12091701-05	D12-11-40.5	1		09/27/2012 1618	LES	2
L12091701-06	D12-12-60	1		09/27/2012 1620	LES	2
L12091701-08	D12-16-64	1		09/27/2012 1623	LES	2
L12091701-09	D12-13-47.5	1		09/27/2012 1625	LES	2
L12091701-10	D12-13-37	1		09/27/2012 1628	LES	2
L12091701-11	D12-6-45	1		09/27/2012 1630	LES	2
MB63223:1	Method Blank	1		09/27/2012 1603	LES	1
LCS63223:1	Laboratory Control Spike	1		09/27/2012 1555	LES	1
MS12091701-04:63223	Matrix Spike	1		09/27/2012 1613	LES	2
MS12092401-02:63223	Matrix Spike	1		09/27/2012 1658	LES	2
MSD12091701-04:63223	Matrix Spike Duplicate	1		09/27/2012 1615	LES	2
MSD12092401-02:63223	Matrix Spike Duplicate	1		09/27/2012 1700	LES	2

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63223  
Blank : MB63223:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
EPA 353.2				
Date/Time: 09/27/2012 1603 Analyst: LES Dilution: 1				
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200	U	0.0200 mg/l

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63223  
 MS/MSD : MS12091701-04:63223  
 MSD12091701-04:63223

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	3.15	4.18	mg/l	103	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	4.17	mg/l	102	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63223  
 MS/MSD : MS12092401-02:63223  
 MSD12092401-02:63223

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.85	2.93	mg/l	108	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.93	mg/l	108	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63223  
LCS : LCS63223:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.502	mg/l	100	90-110

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### QC Batch Report - Batch Sample List

WorkGroup : WG63254  
 Description: Alkalinity

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091701-01	D12-15-60	1		09/19/2012 1456	CDC	1
L12091701-04	D12-14-64 MS/MSD	1		09/19/2012 1534	CDC	1
L12091701-05	D12-11-40.5	1		09/19/2012 1550	CDC	1
L12091701-06	D12-12-60	1		09/19/2012 1555	CDC	1
L12091701-08	D12-16-64	1		09/19/2012 1604	CDC	1
D12091001-01:63254	Duplicate	1		09/19/2012 1053	CDC	1
D12091701-04:63254	Duplicate	1		09/19/2012 1539	CDC	1
MB63254:1	Method Blank	1		09/19/2012 0952	CDC	1
LCS63254:1	Laboratory Control Spike	1		09/19/2012 0959	CDC	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63254  
Blank : MB63254:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Wet Chemistry</b>				
<i>SM 2320B</i>				
<i>Date/Time: 09/19/2012 0952 Analyst: CDC Dilution: 1</i>				
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH	4.16			su

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63254**  
LCS : **LCS63254:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	974.9	mg/l	97	90-110



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### *QC Batch Report - Sample Duplicates*

WorkGroup: WG63254  
Duplicate: D12091001-01:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	0.00	0.00	1.00	mg/l		10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63254  
Duplicate: D12091701-04:63254

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	69.35	68.34	2.00	mg/l	1	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Batch Sample List

WorkGroup : WG63255  
 Description: Alkalinity

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091701-09	D12-13-47.5	1		09/19/2012 1631	CDC	1
L12091701-10	D12-13-37	1		09/19/2012 1642	CDC	1
L12091701-11	D12-6-45	1		09/19/2012 1704	CDC	1
D12091701-11:63255	Duplicate	1		09/19/2012 1716	CDC	1
MB63255:1	Method Blank	1		09/19/2012 1622	CDC	1
LCS63255:1	Laboratory Control Spike	1		09/19/2012 1719	LES	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63255  
Blank : MB63255:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry  
SM 2320B

Date/Time: 09/19/2012 1622	Analyst: CDC	Dilution: 1		
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.19		su

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63255  
 LCS : LCS63255:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	974.9	mg/l	97	90-110

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63255  
Duplicate: D12091701-11:63255

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	82.41	81.41	2.00	mg/l	1	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Batch Sample List

WorkGroup : WG63215  
 Description: Sulfide

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091701-01	D12-15-60	1		09/17/2012 1524	CDC	1
L12091701-04	D12-14-64 MS/MSD	1		09/17/2012 1525	CDC	1
L12091701-05	D12-11-40.5	1		09/17/2012 1526	CDC	1
L12091701-06	D12-12-60	1		09/17/2012 1527	CDC	1
L12091701-08	D12-16-64	1		09/17/2012 1528	CDC	1
L12091701-09	D12-13-47.5	1		09/17/2012 1529	CDC	1
L12091701-10	D12-13-37	1		09/17/2012 1534	CDC	1
L12091701-11	D12-6-45	1		09/17/2012 1535	CDC	1
MB63215:1	Method Blank	1		09/17/2012 1533	CDC	1
LCS63215:1	Laboratory Control Spike	1		09/17/2012 1519	CDC	1
MS12091701-04:63215	Matrix Spike	1		09/17/2012 1530	CDC	1
MS12091701-11:63215	Matrix Spike	1		09/17/2012 1536	CDC	1
MSD12091701-04:63215	Matrix Spike Duplicate	1		09/17/2012 1531	CDC	1
MSD12091701-11:63215	Matrix Spike Duplicate	1		09/17/2012 1537	CDC	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63215  
Blank : MB63215:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/17/2012 1533 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l



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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63215**  
 MS/MSD : **MS12091701-04:63215**  
**MSD12091701-04:63215**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.534	mg/l	107	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.517	mg/l	103	3	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



# LABORATORY ANALYSIS REPORT

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## QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63215**  
MS/MSD : **MS12091701-11:63215**  
**MSD12091701-11:63215**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
SULFIDE, TOTAL	0.500	< 0.0500	0.493	mg/l	99	81-121	

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %REC	
SULFIDE, TOTAL	0.500	0.503	mg/l	101	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

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WorkGroup: WG63215  
LCS : LCS63215:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.511	mg/l	102	90-110

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63295**  
 Description: **IC-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 9056A**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12091701-01	D12-15-60	1		09/26/2012 1616	CDC	1
L12091701-04	D12-14-64 MS/MSD	1		09/26/2012 1646	CDC	1
L12091701-05	D12-11-40.5	1		09/26/2012 1919	CDC	1
L12091701-06	D12-12-60	1		09/26/2012 1950	CDC	1
L12091701-08	D12-16-64	1		09/26/2012 2020	CDC	1
L12091701-09	D12-13-47.5	1		09/26/2012 2051	CDC	1
L12091701-10	D12-13-37	1		09/26/2012 2121	CDC	1
L12091701-11	D12-6-45	1		09/26/2012 2152	CDC	1
MB63295:1	Method Blank	1		09/26/2012 1040	CDC	1
LCS63295:1	Laboratory Control Spike	1		09/26/2012 1111	CDC	1
MS12091701-04:63295	Matrix Spike	1		09/26/2012 1717	CDC	1
MSD12091701-04:63295	Matrix Spike Duplicate	1		09/26/2012 1747	CDC	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63295  
Blank : MB63295:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SW846 9056A				
Date/Time: 09/26/2012 1040 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63295  
 MS/MSD : MS12091701-04:63295  
 MSD12091701-04:63295

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	10.24	mg/l	102	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	10.21	mg/l	102	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

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WorkGroup: WG63295  
LCS : LCS63295:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.82	mg/l	98	80-120

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63209**  
 Description: **VO/DIOXANE**

Matrix : **WW/STW/SFW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12091701-02	0010F-4-SW	1		09/17/2012 2319	PAP	1
L12091701-03	NORTH HEAD WALL - SW	1		09/18/2012 0110	PAP	1
L12091701-07	WTN16-0010F-SW	1		09/18/2012 0137	PAP	1
L12091701-13	TRIP BLANK #2	1		09/17/2012 1748	PAP	1
MB63209:1	Method Blank	1		09/17/2012 1653	PAP	1
LCS63209:1	Laboratory Control Spike	1		09/18/2012 0232	PAP	1
MS12091701-02:63209	Matrix Spike	1		09/17/2012 2347	PAP	1
MSD12091701-02:63209	Matrix Spike Duplicate	1		09/18/2012 0015	PAP	1



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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63209

Matrix : WW/STW/SFW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DOXD8	NE
L12091701-02	09/17/2012 2319	111	
L12091701-03	09/18/2012 0110	103	
L12091701-07	09/18/2012 0137	109	
L12091701-13	09/17/2012 1748	116	
MB63209:1	09/17/2012 1653	109	
LCS63209:1	09/18/2012 0232	106	
MS12091701-02:63209	09/17/2012 2347	109	
MSD12091701-02:63209	09/18/2012 0015	107	

DOXD8 - 1,4-DIOXANE-D8

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### QC Batch Report - Method Blanks

WorkGroup: WG63209  
 Blank : MB63209:1

Parameter	Result	Qual	RDL	Units
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Matrix : WW/STW/SFW

#### Volatile Organics

SW846 8260B

Date/Time: 09/17/2012 1653	Analyst: PAP	Dilution: 1	
1,4-DIOXANE	<	10.0 U	10.0 ug/l
Surr: 1,4-DIOXANE-D8	109 %	(D-)	

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63209  
 MS/MSD : MS12091701-02:63209  
 MSD12091701-02:63209

Matrix : WW/STW/SFW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,4-DIOXANE	100.0	221.4	331.2	ug/l	110	70-130

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
1,4-DIOXANE	100.0	326.1	ug/l	105	2	20	70-130

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63209  
LCS : LCS63209:1

Matrix : WW/STW/SFW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,4-DIOXANE	100.0	110.3	ug/l	110	70-130

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

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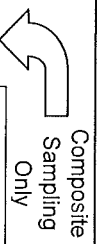
Client: **AECOM** Project / Site Location: **061576.08** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934** Office Use Only

Contact: **Mark Hartford** Report To: **Bryon Dahlgren** Copy To: **Atmospheric Conditions** 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119 Internet: www.davisfloyd.com Laboratory Work Request

Reporting Requirements: [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4) PO / Quote Number: **0**

*Mark Hartford and Leah Lewis*

NOTICE:



Sample Description	Time	Sample Collection Date	Time	Composite		Number of Containers	PARAMETERS			CONTAINERS	HOT	Comments	Fraction
				Type	Matrix Type		Total	A	A				
D12-15-60		9/12/12	1035	X	S	6	3	1	1	1			01
G016-4-5L		9/12/12	1115	X	SW	3							02
North Head Well - 5L		9/12/12	1150	X	SW	3							03
D12-14-64		9/12/12	1225	X	S	6	3	1	1	1			04
D12-14-64-MSD		9/12/12	1225	Y	S	6	3	1	1	1			↓
D12-14-16-MSD		9/12/12	1225	Y	S	6	3	1	1	1			12
Triph blank		9/12/12	730			2	2						13
Triph blank		9/12/12	730			2							13
D12-11-40.5		9/12/12	1250	X	S	6	3	1	1	1			05
D12-12-60		9/12/12	1040	X	S	6	3	1	1	1			06
W1216-0010F-5W		9/12/12	1350	X	SW	3							07
D12-16-64		9/12/12	1400	X	S	6	3	1	1	1			08
D12-13-47.5		9/12/12	945	X	S	6	3	1	1	1			09
D12-13-37		9/12/12	1150	X	S	6	3	1	1	1			10
D12-6-45		9/12/12	1550	X	S	6	3	1	1	1			11

Relinquished By: *Mark Hartford* Date: 9/14/12 Time: 1600  
 Relinquished By: *Bryon Dahlgren* Date: 9/14/12 Time: 1845

Received in Laboratory By: *Tisa S. McCall* Date: 9.17.12 Time: 0730

Sample Chamber Temp. at Harvest:      Circle: C or F

Flow Measurement (Note 1): Beginning      Ending      Start Date:      Multiplier     

Note: Indicate immediate delivery for those shipments in which the temperature does not have adequate time to reach 4°C

Receipt Information: Cooler ID (if available):      On Ice:      Immediate Delivery:      Custody Seal:      Intact / Broken /     

Matrix Type Definitions: 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air  
 (P) Preservative Definitions: A - None B - H2SO4 C - HCl D - HNO3 E - Zn Acetate, NaOH F - Filtered G - Na2S2O3

(Note 1) For Discharge Measurements

D & F  
 UPS FEDEX CLIENT COURIER  
 Tracking Number  
 DAVIS FLOYD  
 4

October 15, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2231  
Page 1 of 49

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Login Number :L12092603  
Project Number :61576.08  
Description :AURIGA - SPARTANBURG, SC

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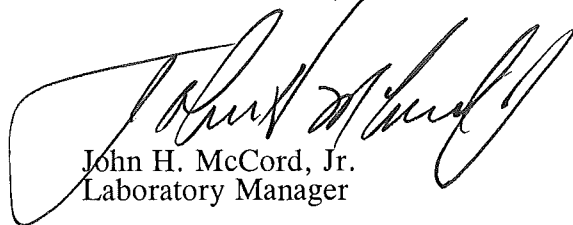
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 26, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 51 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

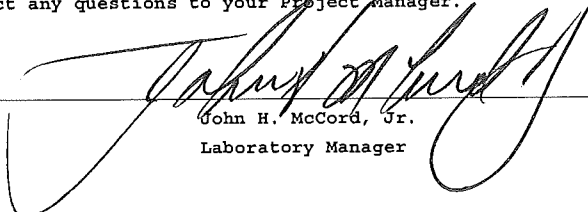
Project Number: 61576.08  
Report Date : October 15, 2012  
Page 2 of 49 Report ID: AK2231

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12092603-01	D12-19-80	09/24/2012 0955	09/26/2012
L12092603-02	D12-19-63	09/24/2012 1140	09/26/2012
L12092603-03	D12-22-63	09/24/2012 1505	09/26/2012
L12092603-04	D12-22-74.5	09/24/2012 1535	09/26/2012
L12092603-05	D12-17-63	09/25/2012 0845	09/26/2012
L12092603-06	D12-17-74	09/25/2012 1120	09/26/2012
L12092603-07	D12-21-63	09/25/2012 1355	09/26/2012
L12092603-08	D12-18-63	09/25/2012 1710	09/26/2012
L12092603-09	D12-18-74.5	09/25/2012 1830	09/26/2012
L12092603-10	D12-22-11	09/24/2012 1725	09/26/2012
L12092603-11	TRIP BLANK	09/03/2012 0730	09/26/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 3 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-19-80  
 Sample ID: L12092603-01

Date Collected: 09/24/2012 0955  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1018 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08

Report Date : October 15, 2012  
Page 4 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-19-80  
Sample ID: L12092603-01

Date Collected: 09/24/2012 0955  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		130 %	(74-140)	
Surr: BROMOFLUOROBENZENE		124 %	(77-133)	
Surr: TOLUENE-D8		130 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1514 Analyst: LES Dilution: 1  
-----

NITRATE + NITRITE NITROGEN (AS N) < 0.0200 U 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1403 Analyst: CDC Dilution: 1  
-----

ALKALINITY, TOTAL 78.4 2.00 mg/l  
ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/27/2012 1410 Analyst: CDC Dilution: 1  
-----

SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0131 Analyst: CDC Dilution: 1  
-----

SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 5 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-19-63  
 Sample ID: L12092603-02

Date Collected: 09/24/2012 1140  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1054      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	8.28	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 6 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-19-63  
 Sample ID: L12092603-02

Date Collected: 09/24/2012 1140  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		96 %	(77-133)	
Surr: TOLUENE-D8		102 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1517 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.0269 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1410 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 43.2 2.00 mg/l  
 ENDPOINT PH 4.46 su

SM 4500-S2-D

Date/Time: 09/27/2012 1412 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0202 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 7 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-22-63  
 Sample ID: L12092603-03

Date Collected: 09/24/2012 1505  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1122 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 8 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-22-63  
Sample ID: L12092603-03

Date Collected: 09/24/2012 1505  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		116 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		112 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1519 Analyst: LES Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.206 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1415 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 24.6 1.00 mg/l  
ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/27/2012 1412 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0232 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 9 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-22-74.5  
 Sample ID: L12092603-04

Date Collected: 09/24/2012 1535  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1149 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		10.7	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 10 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-22-74.5  
 Sample ID: L12092603-04

Date Collected: 09/24/2012 1535  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		132 %		(74-140)
Surr: BROMOFLUOROBENZENE		122 %		(77-133)
Surr: TOLUENE-D8		127 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1522 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.982 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1425 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 39.7 1.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/27/2012 1413 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0303 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 11 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-17-63  
Sample ID: L12092603-05

Date Collected: 09/25/2012 0845  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1217 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 12 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-17-63  
 Sample ID: L12092603-05

Date Collected: 09/25/2012 0845  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		132 %	(74-140)	
Surr: BROMOFLUOROBENZENE		124 %	(77-133)	
Surr: TOLUENE-D8		127 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1524 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.759 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1430 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 23.6 1.00 mg/l  
 ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 09/27/2012 1414 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0333 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 13 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: **D12-17-74**  
 Sample ID: L12092603-06

Date Collected: 09/25/2012 1120  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1245 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 14 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-17-74  
 Sample ID: L12092603-06

Date Collected: 09/25/2012 1120  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		130 %	(74-140)	
Surr: BROMOFLUOROBENZENE		118 %	(77-133)	
Surr: TOLUENE-D8		123 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1527 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.182 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1436 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 35.2 1.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/27/2012 1415 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0404 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 15 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-21-63  
Sample ID: L12092603-07

Date Collected: 09/25/2012 1355  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1313 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 16 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-21-63  
 Sample ID: L12092603-07

Date Collected: 09/25/2012 1355  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		133 %		(74-140)
Surr: BROMOFLUOROBENZENE		121 %		(77-133)
Surr: TOLUENE-D8		126 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1529 Analyst: LES Dilution: 1  
 -----  
 NITRATE + NITRITE NITROGEN (AS N) 0.445 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1448 Analyst: CDC Dilution: 1  
 -----  
 ALKALINITY, TOTAL 23.1 1.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/27/2012 1416 Analyst: CDC Dilution: 1  
 -----  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0434 Analyst: CDC Dilution: 1  
 -----  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 17 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-18-63  
Sample ID: L12092603-08

Date Collected: 09/25/2012 1710  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1341 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### Certificate of Analysis

Client ID: D12-18-63  
 Sample ID: L12092603-08

Date Collected: 09/25/2012 1710  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		120 %	(74-140)	
Surr: BROMOFLUOROBENZENE		111 %	(77-133)	
Surr: TOLUENE-D8		114 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1532 Analyst: LES Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.123 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1524 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 32.2 1.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/27/2012 1417 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0505 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### Certificate of Analysis

Client ID: D12-18-74.5  
 Sample ID: L12092603-09

Date Collected: 09/25/2012 1830  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1409 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 20 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: D12-18-74.5  
Sample ID: L12092603-09

Date Collected: 09/25/2012 1830  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		129 %	(74-140)	
Surr: BROMOFLUOROBENZENE		116 %	(77-133)	
Surr: TOLUENE-D8		121 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 10/02/2012 1534 Analyst: LES Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.345 0.0200 mg/l

SM 2320B

Date/Time: 10/03/2012 1530 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 21.6 1.00 mg/l  
ENDPOINT PH 4.46 su

SM 4500-S2-D

Date/Time: 09/27/2012 1418 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 10/05/2012 0535 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### Certificate of Analysis

Client ID: D12-22-11  
 Sample ID: L12092603-10

Date Collected: 09/24/2012 1725  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/28/2012 1437 Analyst: PAP/JVB Dilution: 1</i>				
CHLOROFORM	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		135 %	(74-140)	
Surr: BROMOFLUOROBENZENE		123 %	(77-133)	
Surr: TOLUENE-D8		127 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK  
Sample ID: L12092603-11

Date Collected: 09/03/2012 0730  
Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 1533      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 23 of 49 Report ID: AK2231

### Certificate of Analysis

Client ID: TRIP BLANK  
 Sample ID: L12092603-11

Date Collected: 09/03/2012 0730  
 Date Received : 09/26/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		136 %	(74-140)	
Surr: BROMOFLUOROBENZENE		122 %	(77-133)	
Surr: TOLUENE-D8		126 %	(77-131)	

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 24 of 49 Report ID: AK2231

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63304  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092603-01	D12-19-80	1		09/28/2012 1018	PAP/JVB	1
L12092603-02	D12-19-63	1		09/28/2012 1054	PAP/JVB	1
L12092603-03	D12-22-63	1		09/28/2012 1122	PAP/JVB	1
L12092603-04	D12-22-74.5	1		09/28/2012 1149	PAP/JVB	1
L12092603-05	D12-17-63	1		09/28/2012 1217	PAP/JVB	1
L12092603-06	D12-17-74	1		09/28/2012 1245	PAP/JVB	1
L12092603-07	D12-21-63	1		09/28/2012 1313	PAP/JVB	1
L12092603-08	D12-18-63	1		09/28/2012 1341	PAP/JVB	1
L12092603-09	D12-18-74.5	1		09/28/2012 1409	PAP/JVB	1
L12092603-10	D12-22-11	1		09/28/2012 1437	PAP/JVB	1
L12092603-11	TRIP BLANK	1		09/28/2012 1533	PAP/JVB	1
MB63304:1	Method Blank	1		09/28/2012 0946	PAP/JVB	1
LCS63304:1	Laboratory Control Spike	1		09/28/2012 1657	PAP/JVB	1
MS12092603-01:63304	Matrix Spike	1		09/28/2012 1601	PAP/JVB	1
MSD12092603-01:63304	Matrix Spike Duplicate	1		09/28/2012 1629	PAP/JVB	1

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: **WG63304**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12092603-01	09/28/2012 1018	130	124	130
L12092603-02	09/28/2012 1054	102	96	102
L12092603-03	09/28/2012 1122	116	109	112
L12092603-04	09/28/2012 1149	132	122	127
L12092603-05	09/28/2012 1217	132	124	127
L12092603-06	09/28/2012 1245	130	118	123
L12092603-07	09/28/2012 1313	133	121	126
L12092603-08	09/28/2012 1341	120	111	114
L12092603-09	09/28/2012 1409	129	116	121
L12092603-10	09/28/2012 1437	135	123	127
L12092603-11	09/28/2012 1533	136	122	126
MB63304:1	09/28/2012 0946	131	126	129
LCS63304:1	09/28/2012 1657	129	120	123
MS12092603-01:63304	09/28/2012 1601	132	125	128
MSD12092603-01:63304	09/28/2012 1629	128	122	125

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63304  
 Blank : MB63304:1

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/28/2012 0946 Analyst: PAF/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIPLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63304  
 Blank : MB63304:1

Parameter		Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l
ETHYLBENZENE	<	5.00	U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00	ug/l
METHYL ACETATE	<	10.0	U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00	ug/l
STYRENE	<	5.00	U	5.00	ug/l
TETRACHLOROETHENE	<	5.00	U	5.00	ug/l
TOLUENE	<	5.00	U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
TRICHLOROETHENE	<	5.00	U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00	ug/l
VINYL ACETATE	<	10.0	U	10.0	ug/l
VINYL CHLORIDE	<	10.0	U	10.0	ug/l
XYLENE (TOTAL)	<	5.00	U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		131	%	(74-140)	
Surr: BROMOFLUOROBENZENE		126	%	(77-133)	
Surr: TOLUENE-D8		129	%	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63304  
MS/MSD : MS12092603-01:63304  
MSD12092603-01:63304

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	56.23	ug/l	112	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	54.73	ug/l	109	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	54.12	ug/l	108	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	52.71	ug/l	105	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	54.39	ug/l	109	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	58.02	ug/l	116	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	58.11	ug/l	116	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	53.79	ug/l	108	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	56.28	ug/l	113	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	53.48	ug/l	107	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	47.02	ug/l	94	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	56.13	ug/l	112	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	53.46	ug/l	107	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	47.44	ug/l	95	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	52.50	ug/l	105	74-108
2-BUTANONE	50.00	< 10.00	59.33	ug/l	119	68-134
2-HEXANONE	50.00	< 10.00	55.78	ug/l	112	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	56.15	ug/l	112	69-135
ACETONE	50.00	< 10.00	63.11	ug/l	126	64-149
BENZENE	50.00	< 5.00	54.00	ug/l	108	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	54.58	ug/l	109	76-123
BROMOFORM	50.00	< 5.00	55.91	ug/l	112	74-124
BROMOMETHANE	50.00	< 10.00	56.56	ug/l	113	64-121
CARBON DISULFIDE	50.00	< 5.00	52.79	ug/l	106	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	57.53	ug/l	115	72-126
CHLOROBENZENE	50.00	< 5.00	46.02	ug/l	92	74-113
CHLOROETHANE	50.00	< 10.00	60.10	ug/l	120	71-121
CHLOROFORM	50.00	< 5.00	55.39	ug/l	111	76-119
CHLOROMETHANE	50.00	< 10.00	49.45	ug/l	99	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	59.28	ug/l	119	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	57.09	ug/l	114	83-125
CYCLOHEXANE	50.00	< 5.00	51.20	ug/l	102	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	53.76	ug/l	108	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	47.33	ug/l	95	53-141
ETHYLBENZENE	50.00	< 5.00	52.56	ug/l	105	70-130
ISOPROPYL BENZENE	50.00	< 5.00	47.74	ug/l	95	74-114
METHYL ACETATE	50.00	< 10.00	53.36	ug/l	107	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	49.97	ug/l	100	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63304  
MS/MSD : MS12092603-01:63304  
MSD12092603-01:63304

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	52.44	ug/l	105	61-126
METHYLENE CHLORIDE	50.00	< 5.00	52.59	ug/l	105	71-115
STYRENE	50.00	< 5.00	52.92	ug/l	106	75-116
TETRACHLOROETHENE	50.00	< 5.00	53.30	ug/l	107	69-121
TOLUENE	50.00	< 5.00	51.98	ug/l	104	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	54.94	ug/l	110	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	51.39	ug/l	103	73-112
TRICHLOROETHENE	50.00	< 5.00	52.89	ug/l	106	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	60.68	ug/l	121	70-134
VINYL ACETATE	50.00	< 10.00	54.04	ug/l	108	59-146
VINYL CHLORIDE	50.00	< 10.00	50.17	ug/l	100	63-124
XYLENE (TOTAL)	150.0	< 5.00	145.9	ug/l	97	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	54.38	ug/l	109	3	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	53.71	ug/l	107	2	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	50.71	ug/l	101	7	18	64-130
1,1,2-TRICHLOROETHANE	50.00	52.45	ug/l	105	0	14	78-113
1,1-DICHLOROETHANE	50.00	53.21	ug/l	106	2	15	76-116
1,1-DICHLOROETHENE	50.00	54.63	ug/l	109	6	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	57.61	ug/l	115	1	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	52.43	ug/l	105	3	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	57.46	ug/l	115	2	20	73-124
1,2-DIBROMOETHANE	50.00	53.39	ug/l	107	0	16	79-114
1,2-DICHLOROBENZENE	50.00	45.72	ug/l	91	3	15	76-109
1,2-DICHLOROETHANE	50.00	53.96	ug/l	108	4	16	74-122
1,2-DICHLOROPROPANE	50.00	53.00	ug/l	106	1	15	79-113
1,3-DICHLOROBENZENE	50.00	45.61	ug/l	91	4	17	69-118
1,4-DICHLOROBENZENE	50.00	51.00	ug/l	102	3	16	74-108
2-BUTANONE	50.00	58.18	ug/l	116	2	20	68-134
2-HEXANONE	50.00	56.84	ug/l	114	2	20	70-133
4-METHYL-2-PENTANONE	50.00	56.31	ug/l	113	0	19	69-135
ACETONE	50.00	62.42	ug/l	125	1	23	64-149
BENZENE	50.00	52.85	ug/l	106	2	15	77-114
BROMODICHLOROMETHANE	50.00	53.77	ug/l	108	1	16	76-123
BROMOFORM	50.00	55.64	ug/l	111	0	17	74-124
BROMOMETHANE	50.00	52.69	ug/l	105	7	22	64-121

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63304  
MS/MSD : MS12092603-01:63304  
MSD12092603-01:63304

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	50.64	ug/l	101	4	21	59-124
CARBON TETRACHLORIDE	50.00	56.60	ug/l	113	2	18	72-126
CHLOROBENZENE	50.00	45.92	ug/l	92	0	15	74-113
CHLOROETHANE	50.00	54.68	ug/l	109	9	17	71-121
CHLOROFORM	50.00	54.08	ug/l	108	2	14	76-119
CHLOROMETHANE	50.00	47.46	ug/l	95	4	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	57.72	ug/l	115	3	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	56.06	ug/l	112	2	16	83-125
CYCLOHEXANE	50.00	48.80	ug/l	98	5	17	59-126
DIBROMOCHLOROMETHANE	50.00	53.92	ug/l	108	0	16	77-121
DICHLORODIFLUOROMETHANE	50.00	44.54	ug/l	89	6	20	53-141
ETHYLBENZENE	50.00	51.67	ug/l	103	2	20	70-130
ISOPROPYL BENZENE	50.00	46.19	ug/l	92	3	17	74-114
METHYL ACETATE	50.00	53.19	ug/l	106	0	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	50.17	ug/l	100	0	16	74-119
METHYLCYCLOHEXANE	50.00	50.94	ug/l	102	3	16	61-126
METHYLENE CHLORIDE	50.00	51.28	ug/l	103	3	17	71-115
STYRENE	50.00	52.83	ug/l	106	0	17	75-116
TETRACHLOROETHENE	50.00	52.08	ug/l	104	2	16	69-121
TOLUENE	50.00	51.46	ug/l	103	1	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	53.85	ug/l	108	2	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	50.83	ug/l	102	1	16	73-112
TRICHLOROETHENE	50.00	52.56	ug/l	105	1	15	74-120
TRICHLOROFLUOROMETHANE	50.00	55.74	ug/l	111	8	18	70-134
VINYL ACETATE	50.00	53.29	ug/l	107	1	19	59-146
VINYL CHLORIDE	50.00	48.22	ug/l	96	4	16	63-124
XYLENE (TOTAL)	150.0	144.7	ug/l	96	1	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63304  
LCS : LCS63304:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	52.06	ug/l	104	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	53.30	ug/l	107	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	47.69	ug/l	95	65-125
1,1,2-TRICHLOROETHANE	50.00	52.57	ug/l	105	78-117
1,1-DICHLOROETHANE	50.00	52.17	ug/l	104	75-117
1,1-DICHLOROETHENE	50.00	51.93	ug/l	104	72-125
1,2,3-TRICHLOROBENZENE	50.00	55.09	ug/l	110	75-113
1,2,4-TRICHLOROBENZENE	50.00	50.59	ug/l	101	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	56.82	ug/l	114	77-122
1,2-DIBROMOETHANE	50.00	52.93	ug/l	106	80-116
1,2-DICHLOROBENZENE	50.00	44.51	ug/l	89	76-110
1,2-DICHLOROETHANE	50.00	53.64	ug/l	107	75-121
1,2-DICHLOROPROPANE	50.00	52.60	ug/l	105	79-115
1,3-DICHLOROBENZENE	50.00	43.64	ug/l	87	74-113
1,4-DICHLOROBENZENE	50.00	48.67	ug/l	97	74-109
2-BUTANONE	50.00	56.44	ug/l	113	72-129
2-HEXANONE	50.00	55.38	ug/l	111	73-132
4-METHYL-2-PENTANONE	50.00	55.61	ug/l	111	75-131
ACETONE	50.00	58.97	ug/l	118	70-138
BENZENE	50.00	51.46	ug/l	103	77-116
BROMODICHLOROMETHANE	50.00	53.40	ug/l	107	79-120
BROMOFORM	50.00	54.62	ug/l	109	79-121
BROMOMETHANE	50.00	50.96	ug/l	102	67-122
CARBON DISULFIDE	50.00	47.78	ug/l	96	59-125
CARBON TETRACHLORIDE	50.00	53.27	ug/l	107	74-124
CHLOROBENZENE	50.00	44.21	ug/l	88	75-113
CHLOROETHANE	50.00	53.96	ug/l	108	73-120
CHLOROFORM	50.00	53.29	ug/l	107	75-121
CHLOROMETHANE	50.00	45.28	ug/l	91	60-122
CIS-1,2-DICHLOROETHENE	50.00	53.99	ug/l	108	74-119
CIS-1,3-DICHLOROPROPENE	50.00	56.01	ug/l	112	83-126
CYCLOHEXANE	50.00	46.24	ug/l	92	60-123
DIBROMOCHLOROMETHANE	50.00	53.84	ug/l	108	779-121
DICHLORODIFLUOROMETHANE	50.00	42.33	ug/l	85	55-139
ETHYLBENZENE	50.00	49.22	ug/l	98	70-130
ISOPROPYL BENZENE	50.00	44.02	ug/l	88	74-113
METHYL ACETATE	50.00	52.36	ug/l	105	67-123
METHYL-TERT-BUTYL ETHER	50.00	49.99	ug/l	100	75-120

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63304  
 LCS : LCS63304:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	48.10	ug/l	96	62-123
METHYLENE CHLORIDE	50.00	51.95	ug/l	104	70-120
STYRENE	50.00	51.01	ug/l	102	78-113
TETRACHLOROETHENE	50.00	49.51	ug/l	99	70-120
TOLUENE	50.00	50.10	ug/l	100	75-116
TRANS-1,2-DICHLOROETHENE	50.00	52.77	ug/l	106	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	49.98	ug/l	100	73-114
TRICHLOROETHENE	50.00	50.57	ug/l	101	75-119
TRICHLOROFLUOROMETHANE	50.00	52.18	ug/l	104	71-128
VINYL ACETATE	50.00	50.94	ug/l	102	65-142
VINYL CHLORIDE	50.00	46.22	ug/l	92	64-122
XYLENE (TOTAL)	150.0	139.6	ug/l	93	73-116

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63331  
 Description: WC/NO3NO2

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092603-01	D12-19-80	1		10/02/2012 1514	LES	1
L12092603-02	D12-19-63	1		10/02/2012 1517	LES	1
L12092603-03	D12-22-63	1		10/02/2012 1519	LES	1
L12092603-04	D12-22-74.5	1		10/02/2012 1522	LES	1
L12092603-05	D12-17-63	1		10/02/2012 1524	LES	1
L12092603-06	D12-17-74	1		10/02/2012 1527	LES	1
L12092603-07	D12-21-63	1		10/02/2012 1529	LES	1
L12092603-08	D12-18-63	1		10/02/2012 1532	LES	1
L12092603-09	D12-18-74.5	1		10/02/2012 1534	LES	1
MB63331:1	Method Blank	1		10/02/2012 1509	LES	1
LCS63331:1	Laboratory Control Spike	1		10/02/2012 1502	LES	1
MS12092603-09:63331	Matrix Spike	1		10/02/2012 1547	LES	1
MSD12092603-09:63331	Matrix Spike Duplicate	1		10/02/2012 1550	LES	1



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63331  
Blank : MB63331:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
EPA 353.2				
Date/Time: 10/02/2012 1509 Analyst: LES Dilution: 1				
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200	U	0.0200 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63331  
 MS/MSD : MS12092603-09:63331  
 MSD12092603-09:63331

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.345	0.868	mg/l	105	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.869	mg/l	105	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 37 of 49 Report ID: AK2231

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63331  
LCS : LCS63331:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.518	mg/l	104	90-110

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : **BRYON DAHLGREN**

Project Number: 61576.08  
 Report Date : October 15, 2012  
 Page 38 of 49 Report ID: AK2231

### *QC Batch Report - Batch Sample List*

WorkGroup : **WG63365**  
 Description: **Alkalinity-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SM 2320B**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092603-01	D12-19-80	1		10/03/2012 1403	CDC	1
L12092603-02	D12-19-63	1		10/03/2012 1410	CDC	1
L12092603-03	D12-22-63	1		10/03/2012 1415	CDC	1
L12092603-04	D12-22-74.5	1		10/03/2012 1425	CDC	1
L12092603-05	D12-17-63	1		10/03/2012 1430	CDC	1
L12092603-06	D12-17-74	1		10/03/2012 1436	CDC	1
L12092603-07	D12-21-63	1		10/03/2012 1448	CDC	1
L12092603-08	D12-18-63	1		10/03/2012 1524	CDC	1
L12092603-09	D12-18-74.5	1		10/03/2012 1530	CDC	1
D12092603-01:63365	Duplicate	1		10/03/2012 1535	CDC	1
MB63365:1	Method Blank	1		10/03/2012 1331	CDC	1
LCS63365:1	Laboratory Control Spike	1		10/03/2012 1336	CDC	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63365  
 Blank : MB63365:1

Parameter	Result	Qual	RDL	Units
-----------	--------	------	-----	-------

Matrix : GW/ChemW

Wet Chemistry

SM 2320B

Date/Time: 10/03/2012 1331	Analyst: CDC	Dilution: 1			
ALKALINITY, TOTAL	<	1.00	U	1.00	mg/l
ENDPOINT PH		4.16			su

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63365  
LCS : LCS63365:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	1025	mg/l	103	90-110

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG63365  
Duplicate: D12092603-01:63365

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	78.39	77.39	2.00	mg/l	1	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63335**  
 Description: **Sulfide**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092603-01	D12-19-80	1		09/27/2012 1410	CDC	1
L12092603-02	D12-19-63	1		09/27/2012 1412	CDC	1
L12092603-03	D12-22-63	1		09/27/2012 1412	CDC	1
L12092603-04	D12-22-74.5	1		09/27/2012 1413	CDC	1
L12092603-05	D12-17-63	1		09/27/2012 1414	CDC	1
L12092603-06	D12-17-74	1		09/27/2012 1415	CDC	1
L12092603-07	D12-21-63	1		09/27/2012 1416	CDC	1
L12092603-08	D12-18-63	1		09/27/2012 1417	CDC	1
L12092603-09	D12-18-74.5	1		09/27/2012 1418	CDC	1
MB63335:1	Method Blank	1		09/27/2012 1421	CDC	1
LCS63335:1	Laboratory Control Spike	1		09/27/2012 1409	CDC	1
MS12092603-09:63335	Matrix Spike	1		09/27/2012 1419	CDC	1
MSD12092603-09:63335	Matrix Spike Duplicate	1		09/27/2012 1420	CDC	1



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63335  
Blank : MB63335:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/27/2012 1421 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63335  
 MS/MSD : MS12092603-09:63335  
 MSD12092603-09:63335

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.586	mg/l	117	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.581	mg/l	116	1	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 45 of 49 Report ID: AK2231

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63335  
LCS : LCS63335:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.482	mg/l	96	90-110

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63377**  
 Description: **IC-GW**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092603-01	D12-19-80	1		10/05/2012 0131	CDC	1
L12092603-02	D12-19-63	1		10/05/2012 0202	CDC	1
L12092603-03	D12-22-63	1		10/05/2012 0232	CDC	1
L12092603-04	D12-22-74.5	1		10/05/2012 0303	CDC	1
L12092603-05	D12-17-63	1		10/05/2012 0333	CDC	1
L12092603-06	D12-17-74	1		10/05/2012 0404	CDC	1
L12092603-07	D12-21-63	1		10/05/2012 0434	CDC	1
L12092603-08	D12-18-63	1		10/05/2012 0505	CDC	1
L12092603-09	D12-18-74.5	1		10/05/2012 0535	CDC	1
MB63377:1	Method Blank	1		10/04/2012 1617	CDC	1
LCS63377:1	Laboratory Control Spike	1		10/04/2012 1647	CDC	1
MS12092603-09:63377	Matrix Spike	1		10/05/2012 0707	CDC	1
MSD12092603-09:63377	Matrix Spike Duplicate	1		10/05/2012 0737	CDC	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Method Blanks

WorkGroup: WG63377  
 Blank : MB63377:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Wet Chemistry</b>				
SW846 9056A				
Date/Time: 10/04/2012 1617 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 15, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63377**  
 MS/MSD : **MS12092603-09:63377**  
**MSD12092603-09:63377**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 9056A**

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	10.37	mg/l	104	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	10.27	mg/l	103	1	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 15, 2012  
Page 49 of 49 Report ID: AK2231

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63377  
LCS : LCS63377:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.82	mg/l	98	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

**<** Less Than

**>** Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

*Davis & Floyd, Inc.  
AD07\_06 (01/12)*



Client: **AECOM** Project / Site Location: **Auriga - Sptbg, SC** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934** Office Use Only  
 061576.08  
 Reporting Requirements: [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4)  
 Laboratory Work Request

Contact: **Mark Hartford** Report To: **Bryon Dahlgren** Copy To: **Atmospheric Conditions**  
 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119 Internet: www.davisfloyd.com  
 Email: Laboratory@davisfloyd.com Reporting Requirements: [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4)  
 Tumoround Requirements: [ ] Standard [ ] Rush (Specify: )  
 Required Parameters: Containers and Preservatives (P\*)

Collected By: **Mark Hartford** State: **SC**  
 PO / Quote Number: **0**  
 Special Instructions: **13093603**

NOTICE: Composite Sampling Only  
 Date Initiated: **9-24-12** Sample Collection Date: **9-24-12**  
 Date: **9-24-12** Time: **0730** Composite Type: **X** Grab Type: **2** Matrix Type: **2** Number of Containers: **2**

Sample Description	Date	Time	Sample Collection Date	Time	Composite		Total	PARAMETERS			CONTAINERS	Indicate any known or expected hazards with a "X".	Comments	Fraction
					Type	Grab		VOC's	SO4, Alkalinity	Sulfide				
D12-19-80			9-24-12	0730	X	2	2	3	1	1	1			01
Thy 8/awk			9-24-12	1140	X	5	6	3	1	1	1			11
D12-22-63			9-24-12	1505	X	5	6	3	1	1	1			03
D12-22-94.5			9-24-12	1535	X	5	6	3	1	1	1			04
<del>D12-17-63</del>			<del>9-24-12</del>	<del>1845</del>	<del>X</del>	<del>5</del>	<del>6</del>	<del>3</del>	<del>1</del>	<del>1</del>	<del>1</del>			<del>0</del>
D12-17-74			9-25-12	1120	X	5	6	3	1	1	1			05
D12-21-63			9-25-12	1355	X	5	6	3	1	1	1			06
D12-18-63			9-25-12	1710	X	5	6	3	1	1	1			07
D12-18-74.5			9-25-12	1830	X	5	6	3	1	1	1			08
D12-22-11			9-24-12	1725	X	5	6	3	1	1	1			09
														10

Relinquished By: **Mark Hartford** Date: **9-25-12** Time: **1020** Relinquished By: **John D** Date: **9-16-12** Time: **1205**  
 Received By: **John D** Date: **9-26-12** Time: **1030** Received in Laboratory By: **1595 McCall** Date: **9-26-12** Time: **1305**

Sample Chamber Temp. at Harvest: **C or F** Flow Measurement (Note 1): **Beginning** Ending: **Start Date:** **Multiplier:**  
 Note: Indicate immediate delivery for those shipments in which the temperature does not have adequate time to reach 4°C.  
 Receipt Information: Cooler ID (if available): **Temp(C): 4** Immediate Delivery: **Yes / No**  
 Tracking Number: **Intact / Broken / None**

Matrix Type Definitions 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air  
 (P) Preservative Definitions A - None B - H2SO4 C - HCl D - HNO3 E - Zn Acetate, NaOH F - Filtered G - Na2S2O3  
 (Note 1) For Discharge Measurements  
 Davis & Floyd, Inc. FLO2\_03 (04/10)

October 29, 2012

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AK2349  
Page 1 of 55

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Login Number	:L12092401
Project Number	:61576.08
Description	:AURIGA - SPARTANBURG, SC

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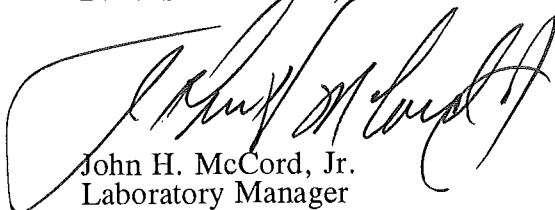
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on September 24, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 57 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08

Report Date : October 29, 2012

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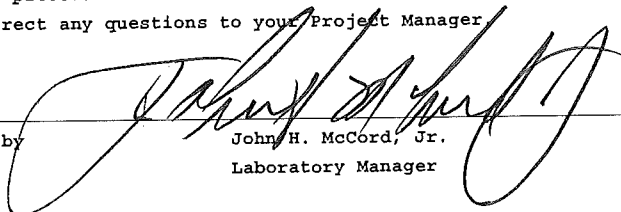
### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12092401-01	D12-23-59	09/19/2012 1700	09/24/2012
L12092401-02	D12-9-47 MS/MSD	09/20/2012 1025	09/24/2012
L12092401-03	D12-9-47A	09/20/2012 1025	09/24/2012
L12092401-04	D12-7-33	09/20/2012 1155	09/24/2012
L12092401-05	D12-4-58	09/20/2012 1420	09/24/2012
L12092401-06	D12-3-53	09/20/2012 1625	09/24/2012
L12092401-07	D12-1-72.5	09/21/2012 0941	09/24/2012
L12092401-08	D12-2-37.5	09/21/2012 1320	09/24/2012
L12092401-09	D12-20-59	09/21/2012 1550	09/24/2012
L12092401-10	TRIP BLANK #1	09/03/2012 0730	09/24/2012
L12092401-11	TRIP BLANK #2	09/03/2012 0730	09/24/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested.

Please direct any questions to your Project Manager

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 3 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-23-59  
 Sample ID: L12092401-01

Date Collected: 09/19/2012 1700  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1627 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 4 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-23-59  
 Sample ID: L12092401-01

Date Collected: 09/19/2012 1700  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		96 %	(77-133)	
Surr: TOLUENE-D8		98 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1710 Analyst: LBS Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.317 0.0200 mg/l

SM 2320B

Date/Time: 09/26/2012 1622 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 88.4 2.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/24/2012 1115 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0327 Analyst: CDC Dilution: 1  
 SULFATE 1.16 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 5 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-9-47 MS/MSD  
 Sample ID: L12092401-02

Date Collected: 09/20/2012 1025  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Volatile Organics

SW846 8260B

Date/Time: 09/24/2012 1524	Analyst: PAP/JVB	Dilution: 1			
1,1,1-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0	U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00	U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00	U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00	U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
2-BUTANONE	<	10.0	U	10.0	ug/l
2-HEXANONE	<	10.0	U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00	U	5.00	ug/l
ACETONE	<	10.0	U	10.0	ug/l
BENZENE	<	5.00	U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00	U	5.00	ug/l
BROMOFORM	<	5.00	U	5.00	ug/l
BROMOMETHANE	<	10.0	U	10.0	ug/l
CARBON DISULFIDE	<	5.00	U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00	U	5.00	ug/l
CHLOROBENZENE	<	5.00	U	5.00	ug/l
CHLOROETHANE	<	10.0	U	10.0	ug/l
CHLOROFORM	<	17.1		5.00	ug/l
CHLOROMETHANE	<	10.0	U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	33.9		5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 6 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-9-47 MS/MSD  
 Sample ID: L12092401-02

Date Collected: 09/20/2012 1025  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %	(74-140)	
Surr: BROMOFLUOROBENZENE		98 %	(77-133)	
Surr: TOLUENE-D8		98 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1655 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.85 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1629 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 43.2 2.00 mg/l  
 ENDPOINT PH 4.49 su

SM 4500-S2-D

Date/Time: 09/24/2012 1116 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0358 Analyst: CDC Dilution: 1  
 SULFATE 1.20 1.00 mg/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 7 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: **D12-9-47A**  
 Sample ID: L12092401-03

Date Collected: 09/20/2012 1025  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1655 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	17.1	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	33.5	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 8 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-9-47A  
 Sample ID: L12092401-03

Date Collected: 09/20/2012 1025  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %	(74-140)	
Surr: BROMOFLUOROBENZENE		94 %	(77-133)	
Surr: TOLUENE-D8		96 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1703 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.88 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1639 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 57.3 2.00 mg/l  
 ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/24/2012 1117 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0529 Analyst: CDC Dilution: 1  
 SULFATE 1.04 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 9 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-7-33  
 Sample ID: L12092401-04

Date Collected: 09/20/2012 1155  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1722 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
Page 10 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-7-33  
Sample ID: L12092401-04

Date Collected: 09/20/2012 1155  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		98 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1705 Analyst: LES Dilution: 2  
NITRATE + NITRITE NITROGEN (AS N) 2.65 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1645 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 45.2 2.00 mg/l  
ENDPOINT PH 4.48 su

SM 4500-S2-D

Date/Time: 09/24/2012 1121 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0600 Analyst: CDC Dilution: 1  
SULFATE 2.51 1.00 mg/l



# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
Page 11 of 55 Report ID: AK2349

## Certificate of Analysis

Client ID: D12-4-58  
Sample ID: L12092401-05

Date Collected: 09/20/2012 1420  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1750      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.85	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	76.4	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 12 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: **D12-4-58**  
 Sample ID: L12092401-05

Date Collected: 09/20/2012 1420  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE		<b>52.9</b>		5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE		<b>22.6</b>		5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %		(74-140)
Surr: BROMOFLUOROBENZENE		96 %		(77-133)
Surr: TOLUENE-D8		97 %		(77-131)
<b>Date/Time: 10/25/2012 1408      Analyst: JMT/JVB      Dilution: 1</b>				
1,4-DIOXANE		<b>21.8</b>		10.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		99 %		(70-131)

Sample Comments: L12092401-05

The 1,4-Dioxanes were analyzed out of the 14 day holding time.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-3-53  
Sample ID: L12092401-06

Date Collected: 09/20/2012 1625  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Volatile Organics

SW846 8260B

Date/Time: 09/24/2012 1818	Analyst: PAP/JVB	Dilution: 1			
1,1,1-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0	U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00	U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00	U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00	U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
2-BUTANONE	<	10.0	U	10.0	ug/l
2-HEXANONE	<	10.0	U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00	U	5.00	ug/l
ACETONE	<	10.0	U	10.0	ug/l
BENZENE	<	5.00	U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00	U	5.00	ug/l
BROMOFORM	<	5.00	U	5.00	ug/l
BROMOMETHANE	<	10.0	U	10.0	ug/l
CARBON DISULFIDE	<	5.00	U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00	U	5.00	ug/l
CHLOROBENZENE	<	5.00	U	5.00	ug/l
CHLOROETHANE	<	10.0	U	10.0	ug/l
CHLOROFORM	<	5.00	U	5.00	ug/l
CHLOROMETHANE	<	10.0	U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-3-53  
 Sample ID: L12092401-06

Date Collected: 09/20/2012 1625  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %		(74-140)
Surr: BROMOFLUOROBENZENE		97 %		(77-133)
Surr: TOLUENE-D8		96 %		(77-131)
<b>Date/Time: 10/25/2012 1438      Analyst: JMT/JVB      Dilution: 1</b>				
1,4-DIOXANE	<	10.0	U	10.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %		(70-131)

**Sample Comments: L12092401-06**

The 1,4-Dioxanes were analyzed out of the 14 day holding time.

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-1-72.5  
 Sample ID: L12092401-07

Date Collected: 09/21/2012 0941  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1846      Analyst: PAP/JVB      Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-1-72.5  
 Sample ID: L12092401-07

Date Collected: 09/21/2012 0941  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	
Surr: BROMOFLUOROBENZENE		95 %	(77-133)	
Surr: TOLUENE-D8		95 %	(77-131)	
<b>Date/Time: 10/25/2012 1508      Analyst: JMT/JVB      Dilution: 1</b>				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(70-131)	

**Sample Comments: L12092401-07**

The 1,4-Dioxanes were analyzed out of the 14 day holding time.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-2-37.5  
 Sample ID: L12092401-08

Date Collected: 09/21/2012 1320  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Volatile Organics

SW846 8260B

Date/Time: 09/24/2012 1914	Analyst: PAP/JVB	Dilution: 1			
1,1,1-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00	U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0	U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00	U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00	U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00	U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00	U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00	U	5.00	ug/l
2-BUTANONE	<	10.0	U	10.0	ug/l
2-HEXANONE	<	10.0	U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00	U	5.00	ug/l
ACETONE	<	15.1		10.0	ug/l
BENZENE	<	5.00	U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00	U	5.00	ug/l
BROMOFORM	<	5.00	U	5.00	ug/l
BROMOMETHANE	<	10.0	U	10.0	ug/l
CARBON DISULFIDE	<	5.00	U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00	U	5.00	ug/l
CHLOROBENZENE	<	5.00	U	5.00	ug/l
CHLOROETHANE	<	10.0	U	10.0	ug/l
CHLOROFORM	<	5.00	U	5.00	ug/l
CHLOROMETHANE	<	10.0	U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00	U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00	ug/l
CYCLOHEXANE	<	5.00	U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 18 of 55 Report ID: AK2349

### Certificate of Analysis

Client ID: D12-2-37.5  
 Sample ID: L12092401-08

Date Collected: 09/21/2012 1320  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		104 %		(74-140)
Surr: BROMOFLUOROBENZENE		96 %		(77-133)
Surr: TOLUENE-D8		96 %		(77-131)
<b>Date/Time: 10/25/2012 1538      Analyst: JMT/JVB      Dilution: 1</b>				
1,4-DIOXANE	<	10.0	U	10.0 ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %		(70-131)

**Sample Comments: L12092401-08**

The 1,4-Dioxanes were analyzed out of the 14 day holding time.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-20-59  
Sample ID: L12092401-09

Date Collected: 09/21/2012 1550  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1941 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.1	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	46.6	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	118	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: D12-20-59  
 Sample ID: L12092401-09

Date Collected: 09/21/2012 1550  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %		(74-140)
Surr: BROMOFLUOROBENZENE		95 %		(77-133)
Surr: TOLUENE-D8		94 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1708 Analyst: LES Dilution: 2  
 NITRATE + NITRITE NITROGEN (AS N) 1.72 0.0400 mg/l

SM 2320B

Date/Time: 09/26/2012 1649 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 46.2 2.00 mg/l  
 ENDPOINT PH 4.47 su

SM 4500-S2-D

Date/Time: 09/24/2012 1122 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 09/27/2012 0732 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
Sample ID: L12092401-10

Date Collected: 09/03/2012 0730  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 09/24/2012 1456 Analyst: PAP/JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROPROM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### Certificate of Analysis

Client ID: TRIP BLANK #1  
 Sample ID: L12092401-10

Date Collected: 09/03/2012 0730  
 Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		100 %	(74-140)	
Surr: BROMOFLUOROBENZENE		95 %	(77-133)	
Surr: TOLUENE-D8		96 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
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### Certificate of Analysis

Client ID: TRIP BLANK #2  
Sample ID: L12092401-11

Date Collected: 09/03/2012 0730  
Date Received : 09/24/2012

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Volatile Organics

SW846 8260B

Date/Time: 10/25/2012 1036 Analyst: JMT/JVB Dilution: 1

1,4-DIOXANE	<	10.0	U	10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %		(70-131)	

Sample Comments: L12092401-11

The 1,4-Dioxanes were analyzed out of the 14 day holding time.



*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
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Contact : **BRYON DAHLGREN**

Project Number: 61576.08

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63269  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092401-01	D12-23-59	1		09/24/2012 1627	PAP/JVB	1
L12092401-02	D12-9-47 MS/MSD	1		09/24/2012 1524	PAP/JVB	1
L12092401-03	D12-9-47A	1		09/24/2012 1655	PAP/JVB	1
L12092401-04	D12-7-33	1		09/24/2012 1722	PAP/JVB	1
L12092401-05	D12-4-58	1		09/24/2012 1750	PAP/JVB	1
L12092401-06	D12-3-53	1		09/24/2012 1818	PAP/JVB	1
L12092401-07	D12-1-72.5	1		09/24/2012 1846	PAP/JVB	1
L12092401-08	D12-2-37.5	1		09/24/2012 1914	PAP/JVB	1
L12092401-09	D12-20-59	1		09/24/2012 1941	PAP/JVB	1
L12092401-10	TRIP BLANK #1	1		09/24/2012 1456	PAP/JVB	1
MB63269:1	Method Blank	1		09/24/2012 1427	PAP/JVB	1
MS12092401-02:63269	Matrix Spike	1		09/24/2012 2037	PAP/JVB	1
MSD12092401-02:63269	Matrix Spike Duplicate	1		09/24/2012 2104	PAP/JVB	1

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63269

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12092401-01	09/24/2012 1627	102	96	98
L12092401-02	09/24/2012 1524	101	98	98
L12092401-03	09/24/2012 1655	101	94	96
L12092401-04	09/24/2012 1722	102	97	98
L12092401-05	09/24/2012 1750	102	96	97
L12092401-06	09/24/2012 1818	103	97	96
L12092401-07	09/24/2012 1846	102	95	95
L12092401-08	09/24/2012 1914	104	96	96
L12092401-09	09/24/2012 1941	102	95	94
L12092401-10	09/24/2012 1456	100	95	96
MB63269:1	09/24/2012 1427	101	97	98
MS12092401-02:63269	09/24/2012 2037	101	96	96
MSD12092401-02:63269	09/24/2012 2104	100	95	94

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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Project Number: 61576.08  
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### QC Batch Report - Method Blanks

WorkGroup: WG63269  
 Blank : MB63269:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 09/24/2012 1427 Analyst: PAP/JVB Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
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### QC Batch Report - Method Blanks

WorkGroup: WG63269  
 Blank : MB63269:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		101 %	(74-140)	
Surr: BROMOFLUOROBENZENE		97 %	(77-133)	
Surr: TOLUENE-D8		98 %	(77-131)	

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63269**  
MS/MSD : **MS12092401-02:63269**  
**MSD12092401-02:63269**

Matrix : **GW/ChemW**  
Prep Method :  
Analytical Method: **SW846 8260B**

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	52.96	ug/l	106	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	53.32	ug/l	107	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	48.18	ug/l	96	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	51.90	ug/l	104	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	52.60	ug/l	105	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	55.08	ug/l	110	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	56.77	ug/l	114	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	52.80	ug/l	106	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	57.95	ug/l	116	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	52.09	ug/l	104	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	45.10	ug/l	90	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	52.85	ug/l	106	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	51.44	ug/l	103	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	44.87	ug/l	90	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	49.29	ug/l	99	74-108
2-BUTANONE	50.00	< 10.00	58.61	ug/l	117	68-134
2-HEXANONE	50.00	< 10.00	56.92	ug/l	114	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	55.72	ug/l	111	69-135
ACETONE	50.00	< 10.00	64.55	ug/l	129	64-149
BENZENE	50.00	< 5.00	51.93	ug/l	104	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	52.82	ug/l	106	76-123
BROMOFORM	50.00	< 5.00	55.39	ug/l	111	74-124
BROMOMETHANE	50.00	< 10.00	53.58	ug/l	107	64-121
CARBON DISULFIDE	50.00	< 5.00	51.32	ug/l	103	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	55.15	ug/l	110	72-126
CHLOROBENZENE	50.00	< 5.00	44.31	ug/l	89	74-113
CHLOROETHANE	50.00	< 10.00	56.49	ug/l	113	71-121
CHLOROFORM	50.00	17.08	69.38	ug/l	105	76-119
CHLOROMETHANE	50.00	< 10.00	49.36	ug/l	99	59-123
CIS-1,2-DICHLOROETHENE	50.00	33.88	85.72	ug/l	104	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	55.35	ug/l	111	83-125
CYCLOHEXANE	50.00	< 5.00	48.06	ug/l	96	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	53.33	ug/l	107	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	45.39	ug/l	91	53-141
ETHYLBENZENE	50.00	< 5.00	51.30	ug/l	103	70-130
ISOPROPYL BENZENE	50.00	< 5.00	45.03	ug/l	90	74-114
METHYL ACETATE	50.00	< 10.00	54.23	ug/l	108	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	51.26	ug/l	103	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : October 29, 2012  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63269  
MS/MSD : MS12092401-02:63269  
MSD12092401-02:63269

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	49.08	ug/l	98	61-126
METHYLENE CHLORIDE	50.00	< 5.00	51.08	ug/l	102	71-115
STYRENE	50.00	< 5.00	50.88	ug/l	102	75-116
TETRACHLOROETHENE	50.00	< 5.00	51.23	ug/l	102	69-121
TOLUENE	50.00	< 5.00	50.32	ug/l	101	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	53.45	ug/l	107	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	49.81	ug/l	100	73-112
TRICHLOROETHENE	50.00	< 5.00	53.22	ug/l	106	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	55.74	ug/l	111	70-134
VINYL ACETATE	50.00	< 10.00	52.73	ug/l	105	59-146
VINYL CHLORIDE	50.00	< 10.00	49.67	ug/l	99	63-124
XYLENE (TOTAL)	150.0	< 5.00	141.3	ug/l	94	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	51.97	ug/l	104	2	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	53.93	ug/l	108	1	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	48.80	ug/l	98	1	18	64-130
1,1,2-TRICHLOROETHANE	50.00	51.40	ug/l	103	1	14	78-113
1,1-DICHLOROETHANE	50.00	51.35	ug/l	103	2	15	76-116
1,1-DICHLOROETHENE	50.00	51.56	ug/l	103	7	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	57.14	ug/l	114	1	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	52.18	ug/l	104	1	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	60.57	ug/l	121	4	20	73-124
1,2-DIBROMOETHANE	50.00	51.60	ug/l	103	1	16	79-114
1,2-DICHLOROBENZENE	50.00	43.64	ug/l	87	3	15	76-109
1,2-DICHLOROETHANE	50.00	52.04	ug/l	104	2	16	74-122
1,2-DICHLOROPROPANE	50.00	50.36	ug/l	101	2	15	79-113
1,3-DICHLOROBENZENE	50.00	43.52	ug/l	87	3	17	69-118
1,4-DICHLOROBENZENE	50.00	47.22	ug/l	94	4	16	74-108
2-BUTANONE	50.00	62.95	ug/l	126	7	20	68-134
2-HEXANONE	50.00	60.58	ug/l	121	6	20	70-133
4-METHYL-2-PENTANONE	50.00	59.08	ug/l	118	6	19	69-135
ACETONE	50.00	68.75	ug/l	138	6	23	64-149
BENZENE	50.00	50.32	ug/l	101	3	15	77-114
BROMODICHLOROMETHANE	50.00	51.79	ug/l	104	2	16	76-123
BROMOFORM	50.00	55.73	ug/l	111	1	17	74-124
BROMOMETHANE	50.00	49.32	ug/l	99	8	22	64-121

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63269  
MS/MSD : MS12092401-02:63269  
MSD12092401-02:63269

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	49.75	ug/l	100	3	21	59-124
CARBON TETRACHLORIDE	50.00	53.87	ug/l	108	2	18	72-126
CHLOROBENZENE	50.00	43.32	ug/l	87	2	15	74-113
CHLOROETHANE	50.00	52.49	ug/l	105	7	17	71-121
CHLOROFORM	50.00	68.31	ug/l	102	2	14	76-119
CHLOROMETHANE	50.00	47.20	ug/l	94	4	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	83.01	ug/l	98	3	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	54.73	ug/l	109	1	16	83-125
CYCLOHEXANE	50.00	47.63	ug/l	95	1	17	59-126
DIBROMOCHLOROMETHANE	50.00	52.41	ug/l	105	2	16	77-121
DICHLORODIFLUOROMETHANE	50.00	44.40	ug/l	89	2	20	53-141
ETHYLBENZENE	50.00	49.46	ug/l	99	4	20	70-130
ISOPROPYL BENZENE	50.00	43.62	ug/l	87	3	17	74-114
METHYL ACETATE	50.00	56.92	ug/l	114	5	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	51.02	ug/l	102	0	16	74-119
METHYLCYCLOHEXANE	50.00	48.94	ug/l	98	0	16	61-126
METHYLENE CHLORIDE	50.00	50.05	ug/l	100	2	17	71-115
STYRENE	50.00	49.95	ug/l	100	2	17	75-116
TETRACHLOROETHENE	50.00	50.27	ug/l	101	2	16	69-121
TOLUENE	50.00	48.93	ug/l	98	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	52.71	ug/l	105	1	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	48.64	ug/l	97	2	16	73-112
TRICHLOROETHENE	50.00	52.07	ug/l	104	2	15	74-120
TRICHLOROFLUOROMETHANE	50.00	52.43	ug/l	105	6	18	70-134
VINYL ACETATE	50.00	53.94	ug/l	108	2	19	59-146
VINYL CHLORIDE	50.00	47.60	ug/l	95	4	16	63-124
XYLENE (TOTAL)	150.0	136.9	ug/l	91	3	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



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### QC Batch Report - Batch Sample List

WorkGroup : **WG63498**  
 Description: **VO/DIOXANE -- 1025TA**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092401-05	D12-4-58	2		10/25/2012 1408	JMT/JVB	1
L12092401-06	D12-3-53	2		10/25/2012 1438	JMT/JVB	1
L12092401-07	D12-1-72.5	2		10/25/2012 1508	JMT/JVB	1
L12092401-08	D12-2-37.5	2		10/25/2012 1538	JMT/JVB	1
L12092401-11	TRIP BLANK #2	1		10/25/2012 1036	JMT/JVB	1
MB63498:1	Method Blank	1		10/25/2012 0936	JMT/JVB	1
LCS63498:1	Laboratory Control Spike	1		10/25/2012 2008	JMT/JVB	1
MS12101701-15:63498	Matrix Spike	1		10/25/2012 1908	JMT/JVB	1
MSD12101701-15:63498	Matrix Spike Duplicate	1		10/25/2012 1938	JMT/JVB	1

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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63498

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA
		70-131
L12092401-05	10/25/2012 1408	99
L12092401-06	10/25/2012 1438	101
L12092401-07	10/25/2012 1508	102
L12092401-08	10/25/2012 1538	101
L12092401-11	10/25/2012 1036	105
MB63498:1	10/25/2012 0936	103
LCS63498:1	10/25/2012 2008	98
MS12101701-15:63498	10/25/2012 1908	97
MSD12101701-15:63498	10/25/2012 1938	96

DCA - 1,2-DICHLOROETHANE-D4

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### QC Batch Report - Method Blanks

WorkGroup: WG63498  
Blank : MB63498:1

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 10/25/2012 0936 Analyst: JMT/JVB Dilution: 1				
1,4-DIOXANE	<	10.0 U	10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %	(70-131)	

SC Certification Number: 24110001

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63498  
 MS/MSD : MS12101701-15:63498  
 MSD12101701-15:63498

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,4-DIOXANE	100.0	< 10.00	92.66	ug/l	93	63-132

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
1,4-DIOXANE	100.0	89.63	ug/l	90	3	18	63-132

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63498  
LCS : LCS63498:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,4-DIOXANE	100.0	82.47	ug/l	82	67-133

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### QC Batch Report - Batch Sample List

WorkGroup : WG63223  
 Description: WC/NO3NO2 (5)

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12092401-01	D12-23-59	1		09/27/2012 1710	LES	1
L12092401-02	D12-9-47 MS/MSD	1		09/27/2012 1655	LES	2
L12092401-03	D12-9-47A	1		09/27/2012 1703	LES	2
L12092401-04	D12-7-33	1		09/27/2012 1705	LES	2
L12092401-09	D12-20-59	1		09/27/2012 1708	LES	2
MB63223:1	Method Blank	1		09/27/2012 1603	LES	1
LCS63223:1	Laboratory Control Spike	1		09/27/2012 1555	LES	1
MS12091701-04:63223	Matrix Spike	1		09/27/2012 1613	LES	2
MS12092401-02:63223	Matrix Spike	1		09/27/2012 1658	LES	2
MSD12091701-04:63223	Matrix Spike Duplicate	1		09/27/2012 1615	LES	2
MSD12092401-02:63223	Matrix Spike Duplicate	1		09/27/2012 1700	LES	2

SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63223  
 Blank : MB63223:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry

EPA 353.2

Date/Time: 09/27/2012 1603 Analyst: LES Dilution: 1

NITRATE + NITRITE NITROGEN (AS N)	<	0.0200	U	0.0200	mg/l
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63223  
 MS/MSD : MS12091701-04:63223  
 MSD12091701-04:63223

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	3.15	4.18	mg/l	103	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	4.17	mg/l	102	0	10	90-110

**NOTE:** MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63223**  
 MS/MSD : **MS12092401-02:63223**  
**MSD12092401-02:63223**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **EPA 353.2**

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.85	2.93	mg/l	108	90-110

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.93	mg/l	108	0	10	90-110

**NOTE:** MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63223  
 LCS : LCS63223:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.502	mg/l	100	90-110

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63334**  
 Description: **Alkalinity-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SM 2320B**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092401-01	D12-23-59	1		09/26/2012 1622	CDC	1
L12092401-02	D12-9-47 MS/MSD	1		09/26/2012 1629	CDC	1
L12092401-03	D12-9-47A	1		09/26/2012 1639	CDC	1
L12092401-04	D12-7-33	1		09/26/2012 1645	CDC	1
L12092401-09	D12-20-59	1		09/26/2012 1649	CDC	1
D12091908-08:63334	Duplicate	1		09/26/2012 1456	CDC	1
D12092401-02:63334	Duplicate	1		09/26/2012 1632	CDC	1
MB63334:1	Method Blank	1		09/26/2012 1406	CDC	1
LCS63334:1	Laboratory Control Spike	1		09/26/2012 1411	CDC	1

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### QC Batch Report - Method Blanks

WorkGroup: WG63334  
Blank : MB63334:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 2320B				
Date/Time: 09/26/2012 1406 Analyst: CDC Dilution: 1				
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.16		su

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63334  
LCS : LCS63334:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	964.8	mg/l	96	90-110

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63334  
Duplicate: D12091908-08:63334

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	21.11	21.61	1.00	mg/l	2	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Sample Duplicates

WorkGroup: WG63334  
Duplicate: D12092401-02:63334

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	43.22	45.23	2.00	mg/l	5	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63322  
 Description: Sulfide

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092401-01	D12-23-59	1		09/24/2012 1115	CDC	1
L12092401-02	D12-9-47 MS/MSD	1		09/24/2012 1116	CDC	1
L12092401-03	D12-9-47A	1		09/24/2012 1117	CDC	1
L12092401-04	D12-7-33	1		09/24/2012 1121	CDC	1
L12092401-09	D12-20-59	1		09/24/2012 1122	CDC	1
MB63322:1	Method Blank	1		09/24/2012 1120	CDC	1
LCS63322:1	Laboratory Control Spike	1		09/24/2012 1107	CDC	1
MS12092401-02:63322	Matrix Spike	1		09/24/2012 1118	CDC	1
MS12092401-09:63322	Matrix Spike	1		09/24/2012 1123	CDC	1
MSD12092401-02:63322	Matrix Spike Duplicate	1		09/24/2012 1119	CDC	1
MSD12092401-09:63322	Matrix Spike Duplicate	1		09/24/2012 1123	CDC	1



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### QC Batch Report - Method Blanks

WorkGroup: WG63322  
Blank : MB63322:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 09/24/2012 1120 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63322  
 MS/MSD : MS12092401-02:63322  
 MSD12092401-02:63322

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
SULFIDE, TOTAL	0.500	< 0.0500	0.528	mg/l	106	81-121	

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD %REC	
SULFIDE, TOTAL	0.500	0.536	mg/l	107	1	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63322  
 MS/MSD : MS12092401-09:63322  
 MSD12092401-09:63322

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.532	mg/l	106	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.523	mg/l	105	2	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63322  
LCS : LCS63322:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.516	mg/l	103	90-110

SC Certification Number: 24110001

Client : **AECOM**  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63296**  
 Description: **ic-GW**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12092401-01	D12-23-59	1		09/27/2012 0327	CDC	1
L12092401-02	D12-9-47 MS/MSD	1		09/27/2012 0358	CDC	1
L12092401-03	D12-9-47A	1		09/27/2012 0529	CDC	1
L12092401-04	D12-7-33	1		09/27/2012 0600	CDC	1
L12092401-09	D12-20-59	1		09/27/2012 0732	CDC	1
MB63296:1	Method Blank	1		09/27/2012 0257	CDC	1
LCS63296:1	Laboratory Control Spike	1		09/27/2012 1035	CDC	1
MS12092401-02:63296	Matrix Spike	1		09/27/2012 0934	CDC	1
MSD12092401-02:63296	Matrix Spike Duplicate	1		09/27/2012 1105	CDC	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 53 of 55 Report ID: AK2349

### QC Batch Report - Method Blanks

WorkGroup: WG63296  
 Blank : MB63296:1

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Wet Chemistry</b>				
<i>SW846 9056A</i>				
<i>Date/Time: 09/27/2012 0257</i>	<i>Analyst: CDC</i>		<i>Dilution: 1</i>	
CHLORIDE, TOTAL	<	1.00 U	1.00	mg/l
NITRATE NITROGEN (AS N)	<	0.100 U	0.100	mg/l
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 54 of 55 Report ID: AK2349

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63296  
 MS/MSD : MS12092401-02:63296  
 MSD12092401-02:63296

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
CHLORIDE, TOTAL	10.00	4.29	14.35	mg/l	101	80-120	
NITRATE NITROGEN (AS N)	0.500	1.72	2.26	mg/l	108	80-120	
SULFATE	10.00	1.20	10.60	mg/l	94	80-120	

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD %REC	
CHLORIDE, TOTAL	10.00	14.34	mg/l	100	0	15	80-120
NITRATE NITROGEN (AS N)	0.500	2.22	mg/l	102	1	15	80-120
SULFATE	10.00	10.57	mg/l	94	0	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : October 29, 2012  
 Page 55 of 55 Report ID: AK2349

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63296**  
 LCS : **LCS63296:1**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
CHLORIDE, TOTAL	10.00	9.85	mg/l	98	80-120
NITRATE NITROGEN (AS N)	0.500	0.511	mg/l	102	80-120
SULFATE	10.00	9.69	mg/l	97	80-120



### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

**<** Less Than

**>** Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### **Data Qualifiers:**


- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratory personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

Client: **AECOM** Project / Site Location: **Auriga - Spbtg. SC** Lab Certification ID: **SC - 24110, NC - 25, NELAP - E87633, NY - 11996, TN - 2923, VA - 934**  
 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119 Internet: www.davisfloyd.com  
 Email: Laboratory@davisfloyd.com

Reported By: **Mark Hartford** Copy To: **Byron Dahlgren** Reporting Requirements:  Standard  Data Package (Specify Level: 1 2 3 4)  Turnaround Requirements:  Standard  Rush (Specify: )  
 PO / Quote Number: **0** Office Use Only  
 Laboratory Work Request

NOTICE: Composite Sampling Only  Composite Sampling Only

Sample Description	Date Initiated	Sample Collection		Composite		Matrix Type		Number of Containers		PARAMETERS			CONTAINERS	Indicate any known or expected hazards with a "X".	Comments	Fraction
		Date	Time	Type	Grab	Type	Total	P	A	B	C	3x40 G TFE				
D12-23-59		9-19-12	1700	X	5	6					3	1	1			01
D12-9-47		9-20-12	1015	X	5	6					3	1	1			02
D12-9-47-a		9-20-12	1015	X	5	6					3	1	1			03
D12-9-47-m		9-20-12	1015	X	5	6					3	1	1			04
D12-9-47-MSD		9-20-12	1015	X	5	6					3	1	1			05
D12-7-33		9-20-12	1155	X	5	6					3	1	1			06
Trip Blank		9-3-12	0730	X	2	2					2					07
Trip Blank		9-3-12	0730	X	2	2					2					08
D12-4-58		9-20-12	1420	X	5	6					3					09
D12-3-53		9-20-12	1625	X	5	6					3					10
D12-1-73.5		9-21-12	0940	X	5	6					3					11
D12-2-37.5		9-21-12	1320	X	5	6					3					12
D12-20-59		9-21-12	1550	X	5	6					3					13

Relinquished By: **Mark Hartford** Date: **9-21-12** Time: **1630** Received By: **Byron Dahlgren** Date: **9-21-12** Time: **0730**  
 Relinquished By: **Byron Dahlgren** Date: **9-21-12** Time: **0730** Received By: **Byron Dahlgren** Date: **9-21-12** Time: **0730**

Comments: **ENTER NUMBER OF SAMPLE CONTAINERS**

Matrix Type Definitions: 1 - Drinking Water, 2 - Clean Water, 5 - Groundwater, 7 - Soil/Sediment, 8 - Liquid Sludge, 9 - Oil, 12 - Air  
 (P) Preservative Definitions: A - None, B - H2SO4, C - HCl, D - HNO3, E - Zn Acetate, NaOH, F - Filtered, G - Na2S2O3  
 Sample Chamber Temp. at Harvest: **4**  
 Circle: C or F  
 Flow Measurement (Note 1): **1595.00**  
 Start Date: **9-24-12** Time: **0730**  
 Note: Indicate immediate delivery for those shipments in which the temperature does not have adequate time to reach 4°C.  
 Receipt Information: Cooler ID (if available): **4**  
 On Ice: **Yes** No **Temp(C)**  
 Immediate Delivery: **Yes** No **Temp(C)**  
 Custody Seal: Intact / Broken / None  
 Shipped Via: **UPS FEDEX CLIENT COURIER OTHER**  
 Tracking Number: **10186081**  
 D.S.F.

January 03, 2013

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AL17  
Page 1 of 50

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Login Number	:L12121302
Project Number	:61576.08
Description	:AURIGA POLYMERS - SPARTANBURG, SC

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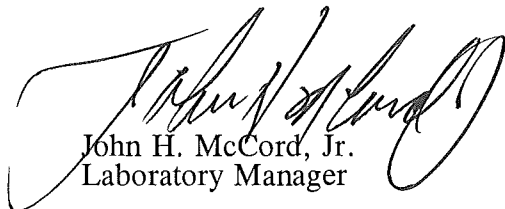
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on December 12, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 52 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

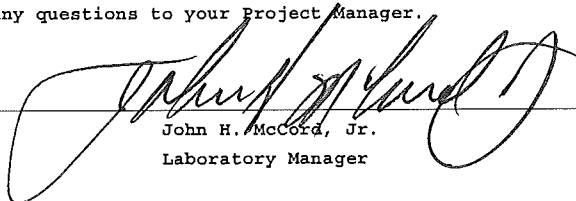
Project Number: 61576.08  
Report Date : January 03, 2013  
Page 2 of 50 Report ID: AL17

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12121302-01	D12-28-87	12/10/2012 1205	12/12/2012
L12121302-02	D12-28-66	12/11/2012 0930	12/12/2012
L12121302-03	MW-200	12/11/2012 1030	12/12/2012
L12121302-04	D12-27-75	12/11/2012 1255	12/12/2012
L12121302-05	D12-27-61	12/11/2012 1645	12/12/2012
L12121302-06	D12-29-50	12/12/2012 1130	12/12/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 3 of 50 Report ID: AL17

### Certificate of Analysis

Client ID: D12-28-87  
Sample ID: L12121302-01

Date Collected: 12/10/2012 1205  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1407 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		14.9	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 4 of 50 Report ID: AL17

### Certificate of Analysis

Client ID: D12-28-87  
 Sample ID: L12121302-01

Date Collected: 12/10/2012 1205  
 Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	94 %		(74-140)	
Surr: BROMOFLUOROBENZENE	92 %		(77-133)	
Surr: TOLUENE-D8	93 %		(77-131)	
<b>Date/Time: 12/14/2012 1539 Analyst: PAP Dilution: 20</b>				
CHLOROFORM	1120		100	ug/l
Surr: 1,2-DICHLOROETHANE-D4	125 %		(74-140)	

#### Wet Chemistry

EPA 353.2

**Date/Time: 12/19/2012 1642 Analyst: LVICKERY Dilution: 1**  
 NITRATE + NITRITE NITROGEN (AS N) 1.26 0.0200 mg/l

SM 2320B

**Date/Time: 12/18/2012 1435 Analyst: CDC Dilution: 1**  
 ALKALINITY, TOTAL 86.1 2.00 mg/l  
 ENDPOINT PH 4.50 su

SM 4500-S2-D

**Date/Time: 12/17/2012 1146 Analyst: CDC Dilution: 1**  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

**Date/Time: 12/13/2012 1008 Analyst: CDC Dilution: 1**  
 SULFATE 3.27 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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ROSWELL, GA 30076  
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Project Number: 61576.08  
Report Date : January 03, 2013  
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### Certificate of Analysis

Client ID: D12-28-66  
Sample ID: L12121302-02

Date Collected: 12/11/2012 0930  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 12/13/2012 1434      Analyst: JVB      Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	10.8	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
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### Certificate of Analysis

Client ID: D12-28-66  
Sample ID: L12121302-02

Date Collected: 12/11/2012 0930  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	94 %		(74-140)	
Surr: BROMOFLUOROBENZENE	92 %		(77-133)	
Surr: TOLUENE-D8	92 %		(77-131)	
<b>Date/Time: 12/14/2012 1605 Analyst: PAP Dilution: 20</b>				
CHLOROFORM	1040		100	ug/l
Surr: 1,2-DICHLOROETHANE-D4	117 %		(74-140)	

#### Wet Chemistry

EPA 353.2

**Date/Time: 12/19/2012 1644 Analyst: LVICKERY Dilution: 1**

NITRATE + NITRITE NITROGEN (AS N) 1.67 0.0200 mg/l

SM 2320B

**Date/Time: 12/18/2012 1442 Analyst: CDC Dilution: 1**

ALKALINITY, TOTAL 67.7 2.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

**Date/Time: 12/17/2012 1147 Analyst: CDC Dilution: 1**

SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

**Date/Time: 12/13/2012 0837 Analyst: CDC Dilution: 1**

SULFATE < 1.00 U 1.00 mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 7 of 50 Report ID: AL17

### Certificate of Analysis

Client ID: MW-200  
Sample ID: L12121302-03

Date Collected: 12/11/2012 1030  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1341 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: MW-200  
 Sample ID: L12121302-03

Date Collected: 12/11/2012 1030  
 Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		96 %	(74-140)	
Surr: BROMOFLUOROBENZENE		92 %	(77-133)	
Surr: TOLUENE-D8		96 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-27-75  
Sample ID: L12121302-04

Date Collected: 12/11/2012 1255  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1500 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: D12-27-75  
Sample ID: L12121302-04

Date Collected: 12/11/2012 1255  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4	96 %			(74-140)
Surr: BROMOFLUOROBENZENE	93 %			(77-133)
Surr: TOLUENE-D8	97 %			(77-131)
<b>Date/Time: 12/14/2012 1216 Analyst: PAP Dilution: 2</b>				
CHLOROFORM	361		10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4	107 %			(74-140)

#### Wet Chemistry

EPA 353.2

**Date/Time: 12/19/2012 1647 Analyst: LVICKERY Dilution: 1**  
NITRATE + NITRITE NITROGEN (AS N) 0.919 0.0200 mg/l

SM 2320B

**Date/Time: 12/18/2012 1549 Analyst: CDC Dilution: 1**  
ALKALINITY, TOTAL 56.4 2.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

**Date/Time: 12/17/2012 1148 Analyst: CDC Dilution: 1**  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

**Date/Time: 12/13/2012 1039 Analyst: CDC Dilution: 1**  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-27-61  
Sample ID: L12121302-05

Date Collected: 12/11/2012 1645  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1526 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE		17.9	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: D12-27-61  
Sample ID: L12121302-05

Date Collected: 12/11/2012 1645  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4	94 %		(74-140)	
Surr: BROMOFLUOROBENZENE	92 %		(77-133)	
Surr: TOLUENE-D8	92 %		(77-131)	
<b>Date/Time: 12/14/2012 1241 Analyst: PAP Dilution: 2</b>				
CHLOROFORM	299		10.0	ug/l
Surr: 1,2-DICHLOROETHANE-D4	111 %		(74-140)	

#### Wet Chemistry

EPA 353.2

**Date/Time: 12/19/2012 1649 Analyst: LVICKERY Dilution: 1**

NITRATE + NITRITE NITROGEN (AS N) 1.18 0.0200 mg/l

SM 2320B

**Date/Time: 12/18/2012 1604 Analyst: CDC Dilution: 1**

ALKALINITY, TOTAL 75.9 2.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

**Date/Time: 12/17/2012 1149 Analyst: CDC Dilution: 1**

SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

**Date/Time: 12/13/2012 1110 Analyst: CDC Dilution: 1**

SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### Certificate of Analysis

Client ID: D12-29-50  
Sample ID: L12121302-06

Date Collected: 12/12/2012 1130  
Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1552 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	9.02	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
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### Certificate of Analysis

Client ID: **D12-29-50**  
 Sample ID: L12121302-06

Date Collected: 12/12/2012 1130  
 Date Received : 12/12/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		97 %		(74-140)
Surr: BROMOFLUOROBENZENE		94 %		(77-133)
Surr: TOLUENE-D8		96 %		(77-131)

#### Wet Chemistry

EPA 353.2

Date/Time: 12/19/2012 1652 Analyst: LVICKERY Dilution: 1  
 NITRATE + NITRITE NITROGEN (AS N) 0.963 0.0200 mg/l

SM 2320B

Date/Time: 12/18/2012 1609 Analyst: CDC Dilution: 1  
 ALKALINITY, TOTAL 41.0 2.00 mg/l  
 ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 12/17/2012 1150 Analyst: CDC Dilution: 1  
 SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 12/13/2012 1413 Analyst: CDC Dilution: 1  
 SULFATE < 1.00 U 1.00 mg/l



*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.08

Report Date : January 03, 2013

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## *QC Summary Data*



# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
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## QC Batch Report - Batch Sample List

WorkGroup : WG63907  
Description: VO/8260/TCL

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP Date Time	ANALYTICAL Date Time	Analyst	Dilution
L12121302-01	D12-28-87	1		12/13/2012 1407	JVB	1
L12121302-01	D12-28-87	2		12/14/2012 1539	PAP	20
L12121302-02	D12-28-66	1		12/13/2012 1434	JVB	1
L12121302-02	D12-28-66	2		12/14/2012 1605	PAP	20
L12121302-03	MW-200	1		12/13/2012 1341	JVB	1
L12121302-04	D12-27-75	1		12/13/2012 1500	JVB	1
L12121302-04	D12-27-75	2		12/14/2012 1216	PAP	2
L12121302-05	D12-27-61	1		12/13/2012 1526	JVB	1
L12121302-05	D12-27-61	2		12/14/2012 1241	PAP	2
L12121302-06	D12-29-50	1		12/13/2012 1552	JVB	1
MB63907:1	Method Blank	1		12/13/2012 1033	JVB	1
MB63907:2	Method Blank	1		12/14/2012 0927	PAP	1
LCS63907:1	Laboratory Control Spike	1		12/13/2012 1921	JVB	1
LCS63907:2	Laboratory Control Spike	1		12/14/2012 1630	PAP	1
MS12121002-19:63907	Matrix Spike	1		12/13/2012 1737	JVB	1
MSD12121002-19:63907	Matrix Spike Duplicate	1		12/13/2012 1803	JVB	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63907

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12121302-01	12/13/2012 1407	94	92	93
L12121302-01	12/14/2012 1539	125		
L12121302-02	12/13/2012 1434	94	92	92
L12121302-02	12/14/2012 1605	117		
L12121302-03	12/13/2012 1341	96	92	96
L12121302-04	12/13/2012 1500	96	93	97
L12121302-04	12/14/2012 1216	107		
L12121302-05	12/13/2012 1526	94	92	92
L12121302-05	12/14/2012 1241	111		
L12121302-06	12/13/2012 1552	97	94	96
MB63907:1	12/13/2012 1033	99	98	100
MB63907:2	12/14/2012 0927	108		
LCS63907:1	12/13/2012 1921	95	92	95
LCS63907:2	12/14/2012 1630	116		
MS12121002-19:63907	12/13/2012 1737	95	91	92
MSD12121002-19:63907	12/13/2012 1803	96	93	95

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
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 Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: **WG63907**  
 Blank : **MB63907:1**

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 12/13/2012 1033 Analyst: JVB Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
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 Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: **WG63907**  
 Blank : **MB63907:1**

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
CYCLOHEXANE	<	5.00	U	5.00 ug/l
DIBROMOCHLOROMETHANE	<	5.00	U	5.00 ug/l
DICHLORODIFLUOROMETHANE	<	5.00	U	5.00 ug/l
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		99 %		(74-140)
Surr: BROMOFLUOROBENZENE		98 %		(77-133)
Surr: TOLUENE-D8		100 %		(77-131)

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63907  
Blank : MB63907:2

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

#### Volatile Organics

SW846 8260B

Date/Time: 12/14/2012 0927	Analyst: PAP	Dilution: 1		
CHLOROFORM	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		108 %	(74-140)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63907  
MS/MSD : MS12121002-19:63907  
MSD12121002-19:63907

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	47.88	ug/l	96	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	49.54	ug/l	99	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	45.13	ug/l	90	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	48.92	ug/l	98	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	47.77	ug/l	96	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	46.53	ug/l	93	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	44.82	ug/l	90	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	44.71	ug/l	89	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	46.99	ug/l	94	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	48.97	ug/l	98	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	51.45	ug/l	103	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	48.41	ug/l	97	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	48.31	ug/l	97	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	50.82	ug/l	102	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	43.74	ug/l	87	74-108
2-BUTANONE	50.00	< 10.00	48.89	ug/l	98	68-134
2-HEXANONE	50.00	< 10.00	49.76	ug/l	100	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	50.82	ug/l	102	69-135
ACETONE	50.00	< 10.00	55.59	ug/l	111	64-149
BENZENE	50.00	< 5.00	47.70	ug/l	95	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	48.78	ug/l	98	76-123
BROMOFORM	50.00	< 5.00	48.77	ug/l	98	74-124
BROMOMETHANE	50.00	< 10.00	40.78	ug/l	82	64-121
CARBON DISULFIDE	50.00	< 5.00	37.03	ug/l	74	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	46.84	ug/l	94	72-126
CHLOROBENZENE	50.00	< 5.00	52.83	ug/l	106	74-113
CHLOROETHANE	50.00	< 10.00	43.54	ug/l	87	71-121
CHLOROFORM	50.00	< 5.00	48.07	ug/l	96	76-119
CHLOROMETHANE	50.00	< 10.00	46.59	ug/l	93	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	48.49	ug/l	97	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	51.06	ug/l	102	83-125
CYCLOHEXANE	50.00	< 5.00	44.46	ug/l	89	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	49.70	ug/l	99	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	43.20	ug/l	86	53-141
ETHYLBENZENE	50.00	< 5.00	46.87	ug/l	94	70-130
ISOPROPYL BENZENE	50.00	< 5.00	52.09	ug/l	104	74-114
METHYL ACETATE	50.00	< 10.00	50.16	ug/l	100	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	48.55	ug/l	97	74-119

SC Certification Number: 24110001

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63907  
MS/MSD : MS12121002-19:63907  
MSD12121002-19:63907

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	45.08	ug/l	90	61-126
METHYLENE CHLORIDE	50.00	< 5.00	46.19	ug/l	92	71-115
STYRENE	50.00	< 5.00	47.52	ug/l	95	75-116
TETRACHLOROETHENE	50.00	6.64	52.44	ug/l	92	69-121
TOLUENE	50.00	< 5.00	47.19	ug/l	94	74-115
TRANS-1, 2-DICHLOROETHENE	50.00	< 5.00	43.52	ug/l	87	74-119
TRANS-1, 3-DICHLOROPROPENE	50.00	< 5.00	45.96	ug/l	92	73-112
TRICHLOROETHENE	50.00	< 5.00	47.11	ug/l	94	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	49.06	ug/l	98	70-134
VINYL ACETATE	50.00	< 10.00	50.29	ug/l	101	59-146
VINYL CHLORIDE	50.00	< 10.00	43.05	ug/l	86	63-124
XYLENE (TOTAL)	150.0	< 5.00	152.1	ug/l	101	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1, 1, 1-TRICHLOROETHANE	50.00	48.56	ug/l	97	1	16	75-121
1, 1, 2, 2-TETRACHLOROETHANE	50.00	49.86	ug/l	100	1	18	78-114
1, 1, 2-TRICHLORO-1, 2, 2-TRIFLUOROETHANE	50.00	46.82	ug/l	94	4	18	64-130
1, 1, 2-TRICHLOROETHANE	50.00	49.62	ug/l	99	1	14	78-113
1, 1-DICHLOROETHANE	50.00	48.47	ug/l	97	1	15	76-116
1, 1-DICHLOROETHENE	50.00	47.14	ug/l	94	1	16	71-127
1, 2, 3-TRICHLOROBENZENE	50.00	47.55	ug/l	95	6	20	75-112
1, 2, 4-TRICHLOROBENZENE	50.00	46.98	ug/l	94	5	18	76-114
1, 2-DIBROMO-3-CHLOROPROPANE	50.00	51.19	ug/l	102	9	20	73-124
1, 2-DIBROMOETHANE	50.00	49.84	ug/l	100	2	16	79-114
1, 2-DICHLOROBENZENE	50.00	52.50	ug/l	105	2	15	76-109
1, 2-DICHLOROETHANE	50.00	48.68	ug/l	97	1	16	74-122
1, 2-DICHLOROPROPANE	50.00	49.24	ug/l	98	2	15	79-113
1, 3-DICHLOROBENZENE	50.00	52.30	ug/l	105	3	17	69-118
1, 4-DICHLOROBENZENE	50.00	45.91	ug/l	92	5	16	74-108
2-BUTANONE	50.00	51.12	ug/l	102	4	20	68-134
2-HEXANONE	50.00	52.63	ug/l	105	6	20	70-133
4-METHYL-2-PENTANONE	50.00	52.04	ug/l	104	2	19	69-135
ACETONE	50.00	58.85	ug/l	118	6	23	64-149
BENZENE	50.00	48.45	ug/l	97	2	15	77-114
BROMODICHLOROMETHANE	50.00	49.54	ug/l	99	2	16	76-123
BROMOFORM	50.00	49.52	ug/l	99	2	17	74-124
BROMOMETHANE	50.00	44.66	ug/l	89	9	22	64-121



SC Certification Number: 24110001

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63907  
MS/MSD : MS12121002-19:63907  
MSD12121002-19:63907

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	39.93	ug/l	80	8	21	59-124
CARBON TETRACHLORIDE	50.00	48.37	ug/l	97	3	18	72-126
CHLOROBENZENE	50.00	53.82	ug/l	108	2	15	74-113
CHLOROETHANE	50.00	45.10	ug/l	90	4	17	71-121
CHLOROFORM	50.00	48.32	ug/l	97	1	14	76-119
CHLOROMETHANE	50.00	46.74	ug/l	93	0	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	49.27	ug/l	99	2	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	52.78	ug/l	106	3	16	83-125
CYCLOHEXANE	50.00	45.44	ug/l	91	2	17	59-126
DIBROMOCHLOROMETHANE	50.00	50.99	ug/l	102	3	16	77-121
DICHLORODIFLUOROMETHANE	50.00	43.56	ug/l	87	1	20	53-141
ETHYLBENZENE	50.00	47.78	ug/l	96	2	20	70-130
ISOPROPYL BENZENE	50.00	53.67	ug/l	107	3	17	74-114
METHYL ACETATE	50.00	51.29	ug/l	103	2	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	49.25	ug/l	99	1	16	74-119
METHYLCYCLOHEXANE	50.00	46.80	ug/l	94	4	16	61-126
METHYLENE CHLORIDE	50.00	46.56	ug/l	93	1	17	71-115
STYRENE	50.00	48.25	ug/l	97	2	17	75-116
TETRACHLOROETHENE	50.00	54.48	ug/l	96	4	16	69-121
TOLUENE	50.00	48.42	ug/l	97	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	44.90	ug/l	90	3	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	46.98	ug/l	94	2	16	73-112
TRICHLOROETHENE	50.00	49.26	ug/l	99	4	15	74-120
TRICHLOROFLUOROMETHANE	50.00	50.02	ug/l	100	2	18	70-134
VINYL ACETATE	50.00	51.58	ug/l	103	3	19	59-146
VINYL CHLORIDE	50.00	43.54	ug/l	87	1	16	63-124
XYLENE (TOTAL)	150.0	154.6	ug/l	103	2	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63907  
LCS : LCS63907:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	48.61	ug/l	97	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	49.71	ug/l	99	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	45.04	ug/l	90	65-125
1,1,2-TRICHLOROETHANE	50.00	48.95	ug/l	98	78-117
1,1-DICHLOROETHANE	50.00	48.18	ug/l	96	75-117
1,1-DICHLOROETHENE	50.00	46.90	ug/l	94	72-125
1,2,3-TRICHLOROBENZENE	50.00	46.88	ug/l	94	75-113
1,2,4-TRICHLOROBENZENE	50.00	46.83	ug/l	94	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.83	ug/l	100	77-122
1,2-DIBROMOETHANE	50.00	49.30	ug/l	99	80-116
1,2-DICHLOROBENZENE	50.00	53.43	ug/l	107	76-110
1,2-DICHLOROETHANE	50.00	48.80	ug/l	98	75-121
1,2-DICHLOROPROPANE	50.00	48.53	ug/l	97	79-115
1,3-DICHLOROBENZENE	50.00	53.18	ug/l	106	74-113
1,4-DICHLOROBENZENE	50.00	46.20	ug/l	92	74-109
2-BUTANONE	50.00	52.16	ug/l	104	72-129
2-HEXANONE	50.00	52.65	ug/l	105	73-132
4-METHYL-2-PENTANONE	50.00	53.52	ug/l	107	75-131
ACETONE	50.00	59.68	ug/l	119	70-138
BENZENE	50.00	47.97	ug/l	96	77-116
BROMODICHLOROMETHANE	50.00	49.06	ug/l	98	79-120
BROMOFORM	50.00	50.34	ug/l	101	79-121
BROMOMETHANE	50.00	43.89	ug/l	88	67-122
CARBON DISULFIDE	50.00	39.93	ug/l	80	59-125
CARBON TETRACHLORIDE	50.00	47.73	ug/l	95	74-124
CHLOROBENZENE	50.00	53.67	ug/l	107	75-113
CHLOROETHANE	50.00	44.18	ug/l	88	73-120
CHLOROFORM	50.00	48.43	ug/l	97	75-121
CHLOROMETHANE	50.00	46.11	ug/l	92	60-122
CIS-1,2-DICHLOROETHENE	50.00	46.51	ug/l	93	74-119
CIS-1,3-DICHLOROPROPENE	50.00	51.69	ug/l	103	83-126
CYCLOHEXANE	50.00	44.20	ug/l	88	60-123
DIBROMOCHLOROMETHANE	50.00	49.51	ug/l	99	779-121
DICHLORODIFLUOROMETHANE	50.00	41.91	ug/l	84	55-139
ETHYLBENZENE	50.00	48.06	ug/l	96	70-130
ISOPROPYL BENZENE	50.00	53.69	ug/l	107	74-113
METHYL ACETATE	50.00	51.41	ug/l	103	67-123
METHYL-TERT-BUTYL ETHER	50.00	49.34	ug/l	99	75-120

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63907  
 LCS : LCS63907:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	44.76	ug/l	90	62-123
METHYLENE CHLORIDE	50.00	46.55	ug/l	93	70-120
STYRENE	50.00	48.71	ug/l	97	78-113
TETRACHLOROETHENE	50.00	47.40	ug/l	95	70-120
TOLUENE	50.00	47.93	ug/l	96	75-116
TRANS-1,2-DICHLOROETHENE	50.00	45.02	ug/l	90	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	46.52	ug/l	93	73-114
TRICHLOROETHENE	50.00	47.70	ug/l	95	75-119
TRICHLOROFLUOROMETHANE	50.00	49.13	ug/l	98	71-128
VINYL ACETATE	50.00	50.07	ug/l	100	65-142
VINYL CHLORIDE	50.00	43.32	ug/l	87	64-122
XYLENE (TOTAL)	150.0	155.2	ug/l	103	73-116

SC Certification Number: 24110001

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG63907**  
LCS : **LCS63907:2**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
CHLOROFORM	50.00	56.64	ug/l	113	75-121

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 Contact : BRYON DAHLGREN

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### QC Batch Report - Batch Sample List

WorkGroup : **WG63970**  
 Description: **WC/NO3NO2(5)**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **EPA 353.2**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121302-01	D12-28-87	1		12/19/2012 1642	LVICKERY	1
L12121302-02	D12-28-66	1		12/19/2012 1644	LVICKERY	1
L12121302-04	D12-27-75	1		12/19/2012 1647	LVICKERY	1
L12121302-05	D12-27-61	1		12/19/2012 1649	LVICKERY	1
L12121302-06	D12-29-50	1		12/19/2012 1652	LVICKERY	1
MB63970:1	Method Blank	1		12/19/2012 1639	LVICKERY	1
LCS63970:1	Laboratory Control Spike	1		12/19/2012 1637	LVICKERY	1
MS12121401-01:63970	Matrix Spike	1		12/19/2012 1656	LVICKERY	1
MS12121904-01:63970	Matrix Spike	1		12/19/2012 1726	LVICKERY	2
MSD12121401-01:63970	Matrix Spike Duplicate	1		12/19/2012 1659	LVICKERY	1
MSD12121904-01:63970	Matrix Spike Duplicate	1		12/19/2012 1728	LVICKERY	2

SC Certification Number: 24110001

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### QC Batch Report - Method Blanks

WorkGroup: WG63970  
Blank : MB63970:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
EPA 353.2				
Date/Time: 12/19/2012 1639 Analyst: LVICKERY Dilution: 1				
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200	U	0.0200 mg/l

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63970  
 MS/MSD : MS12121401-01:63970  
 MSD12121401-01:63970

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.942	1.43	mg/l	97	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	1.42	mg/l	96	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63970  
 MS/MSD : MS12121904-01:63970  
 MSD12121904-01:63970

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.73	2.66	mg/l	93	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.66	mg/l	93	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



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Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63970  
 LCS : LCS63970:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.498	mg/l	100	90-110

SC Certification Number: 24110001

Client : **AECOM**  
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### *QC Batch Report - Batch Sample List*

WorkGroup : **WG64020**  
 Description: **Total Alkalinity**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121302-01	D12-28-87	1		12/18/2012 1435	CDC	1
L12121302-02	D12-28-66	1		12/18/2012 1442	CDC	1
D12121002-11:64020	Duplicate	1		12/18/2012 1056	CDC	1
D12121002-20:64020	Duplicate	1		12/18/2012 1423	CDC	1
MB64020:1	Method Blank	1		12/18/2012 0850	CDC	1
LCS64020:1	Laboratory Control Spike	1		12/18/2012 0901	CDC	1



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## QC Batch Report - Method Blanks

WorkGroup: WG64020  
Blank : MB64020:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

### Wet Chemistry

SM 2320B

Date/Time: 12/18/2012 0850	Analyst: CDC	Dilution: 1
ALKALINITY, TOTAL	< 1.00	U 1.00 mg/l
ENDPOINT PH	4.20	su

SC Certification Number: 24110001

Client : **AECOM**  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG64020**  
LCS : **LCS64020:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	1035	mg/l	104	90-110

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Client : AECOM  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG64020  
Duplicate: D12121002-11:64020

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	34.34	34.34	1.00	mg/l	0	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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### QC Batch Report - Sample Duplicates

WorkGroup: WG64020  
 Duplicate: D12121002-20:64020

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	62.53	63.55	1.00	mg/l	2	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

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Client : **AECOM**  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG64021**  
 Description: **Total Alkalinity**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121302-04	D12-27-75	1		12/18/2012 1549	CDC	1
L12121302-05	D12-27-61	1		12/18/2012 1604	CDC	1
L12121302-06	D12-29-50	1		12/18/2012 1609	CDC	1
D12121302-04:64021	Duplicate	1		12/18/2012 0553	CDC	1
D12121401-01:64021	Duplicate	1		12/18/2012 1623	CDC	1
MB64021:1	Method Blank	1		12/18/2012 1457	CDC	1
LCS64021:1	Laboratory Control Spike	1		12/18/2012 1541	CDC	1



# LABORATORY ANALYSIS REPORT

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## QC Batch Report - Method Blanks

WorkGroup: WG64021  
Blank : MB64021:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

### Wet Chemistry

SM 2320B

Date/Time: 12/18/2012 1457	Analyst: CDC	Dilution: 1		
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.20		su



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Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG64021**  
 LCS : **LCS64021:1**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	1005	mg/l	100	90-110

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### QC Batch Report - Sample Duplicates

WorkGroup: WG64021  
Duplicate: D12121302-04:64021

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	56.38	55.35	2.00	mg/l	2	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

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### QC Batch Report - Sample Duplicates

WorkGroup: WG64021  
Duplicate: D12121401-01:64021

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	27.16	27.16	1.00	mg/l	0	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : **AECOM**  
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 Contact : **BRYON DAHLGREN**

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### QC Batch Report - Batch Sample List

WorkGroup : **WG64022**  
 Description: **Sulfide**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121302-01	D12-28-87	1		12/17/2012 1146	CDC	1
L12121302-02	D12-28-66	1		12/17/2012 1147	CDC	1
L12121302-04	D12-27-75	1		12/17/2012 1148	CDC	1
L12121302-05	D12-27-61	1		12/17/2012 1149	CDC	1
L12121302-06	D12-29-50	1		12/17/2012 1150	CDC	1
MB64022:1	Method Blank	1		12/17/2012 1158	CDC	1
LCS64022:1	Laboratory Control Spike	1		12/17/2012 1145	CDC	1
MS12121401-01:64022	Matrix Spike	1		12/17/2012 1152	CDC	1
MS12121701-05:64022	Matrix Spike	1		12/17/2012 1202	CDC	1
MSD12121401-01:64022	Matrix Spike Duplicate	1		12/17/2012 1152	CDC	1
MSD12121701-05:64022	Matrix Spike Duplicate	1		12/17/2012 1203	CDC	1

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG64022  
Blank : MB64022:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 12/17/2012 1158 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500	U	0.0500 mg/l

SC Certification Number: 24110001

Client : AECOM  
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 Contact : BRYON DAHLGREN

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG64022  
 MS/MSD : MS12121401-01:64022  
 MSD12121401-01:64022

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.471	mg/l	94	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.468	mg/l	94	1	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



# LABORATORY ANALYSIS REPORT

SC Certification Number: 24110001

Client : AECOM  
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## QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG64022  
MS/MSD : MS12121701-05:64022  
MSD12121701-05:64022

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.468	mg/l	94	81-121

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.452	mg/l	90	4	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: **WG64022**  
LCS : **LCS64022:1**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.458	mg/l	92	90-110



SC Certification Number: 24110001

Client : **AECOM**  
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 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : **WG63901**  
 Description: **IC-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 9056A**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121302-01	D12-28-87	1		12/13/2012 1008	CDC	1
L12121302-02	D12-28-66	1		12/13/2012 0837	CDC	1
L12121302-04	D12-27-75	1		12/13/2012 1039	CDC	1
L12121302-05	D12-27-61	1		12/13/2012 1110	CDC	1
L12121302-06	D12-29-50	1		12/13/2012 1413	CDC	1
MB63901:1	Method Blank	1		12/13/2012 1211	CDC	1
LCS63901:1	Laboratory Control Spike	1		12/13/2012 1241	CDC	1
MS12121302-06:63901	Matrix Spike	1		12/13/2012 1444	CDC	1
MSD12121302-06:63901	Matrix Spike Duplicate	1		12/13/2012 1514	CDC	1

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG63901  
Blank : MB63901:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SW846 9056A				
Date/Time: 12/13/2012 1211 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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 Contact : BRYON DAHLGREN

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63901  
 MS/MSD : MS12121302-06:63901  
 MSD12121302-06:63901

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	9.87	mg/l	99	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFATE	10.00	9.95	mg/l	99	1	15	80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

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WorkGroup: WG63901  
LCS : LCS63901:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	9.76	mg/l	98	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

Client: **AECOM** Project / Site Location: **061576.07 Auriga Polymers - Spbtg, SC** Laboratory Certification Numbers: **SC - 24110, NC - 25, NEIAP - E87633, TN - 2923, VA - 77** Office Use Only  
 816 E. Durst Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119 Laboratory Work Request  
 Email: [Laboratory@davisfloyd.com](mailto:Laboratory@davisfloyd.com) Internet: [www.davisfloyd.com](http://www.davisfloyd.com)

Contact: **Mark Hartford** Report To: **Bryon Dahlgren** Copy To: \_\_\_\_\_ Repeating Requirements: [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4)  
 Collected By: **Mark Hartford** Turnaround Requirements: [ ] Standard [ ] Rush (Specify: \_\_\_\_\_)  
 Required Parameters: Containers and Preservatives (P?) \_\_\_\_\_

Special Instructions: \_\_\_\_\_ State: **0**  
 PO / Quote Number: \_\_\_\_\_

Sample Description	Date Initiated	Sample Collection Date	Time	Composite		Matrix Type	Number of Containers Total	PARAMETERS			CONTAINERS	Comments	HOT	Fraction
				Type	Grab			VOC's Method 8260	SO4, Alkalinity, NO2	Sulfide				
D12-28-87		12-01-12	1205	X	5	6	3	1	1	1				01
D12-28-66		12-11-12	930	X	5	6	3	1	1	1				02
MW-200		12-11-12	1030	X	2	2	2	1	1	1				03
D12-27-75		12-11-12	1255	X	5	6	3	1	1	1				04
D12-27-61		12-11-12	1645	X	5	6	3	1	1	1				05
D12-29-50		12-21-12	1130	X	3	6	3	1	1	1				06

Relinquished By	Date	Time	Relinquished By	Date	Time	Relinquished By	Date	Time	Relinquished By	Date	Time	Relinquished By	Date	Time
Mark Hartford	12-12-12	1945	Mark Hartford	12-12-12	1710	Mark Hartford	12-12-12	1710	Mark Hartford	12-12-12	1710	Mark Hartford	12-12-12	1710

Comments: \_\_\_\_\_

Flow Measurement (Note 1) \_\_\_\_\_

Start Date: \_\_\_\_\_

Multiplier: \_\_\_\_\_

Receipt Information: \_\_\_\_\_

Cooler ID (if available): \_\_\_\_\_

On Ice:  Yes  No Temp(C): **4**

Immediate Delivery:  Yes  No

Custody Seal:  Intact /  Broken / Note \_\_\_\_\_

Matrix Type Definitions 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air  
 (P) Preservative Definitions A - None B - H2SO4 C - HCl D - HNO3 E - NaOH F - Filtered G - Zn Acetate  
 (Note 1) For Discharge Measurements  
 Davis & Floyd, Inc.  
 FL02\_03 (04/10)

January 03, 2013

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AL18  
Page 1 of 43

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Login Number	:L12121401
Project Number	:61576.08
Description	:AURIGA POLYMERS - SPARTANBURG, SC

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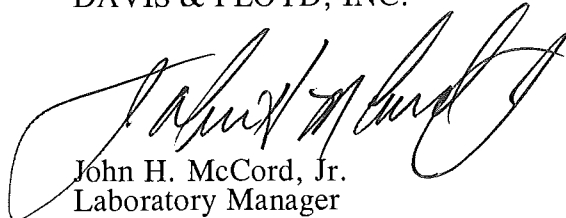
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on December 13, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.

Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 45 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08

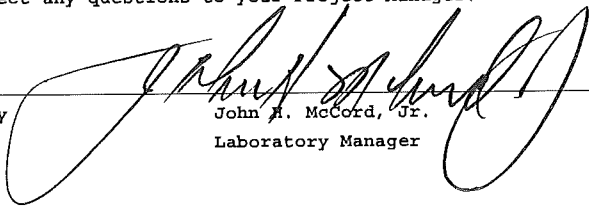
Report Date : January 03, 2013  
Page 2 of 43 Report ID: AL18

### Certificate of Analysis Report

Sample ID	Client ID	Date Collected	Date Received
L12121401-01	D12-29-41 MS/MSD	12/12/2012 1440	12/13/2012
L12121401-02	D12-29-00	12/12/2012 1500	12/13/2012
L12121401-03	MW-200	12/12/2012 1510	12/13/2012
L12121401-04	D12-30-50	12/13/2012 0935	12/13/2012
L12121401-05	D12-30-20	12/13/2012 1020	12/13/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by

  
John R. McCord, Jr.  
Laboratory Manager



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 3 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: D12-29-41 MS/MSD  
 Sample ID: L12121401-01

Date Collected: 12/12/2012 1440  
 Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/17/2012 1743 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.83	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 4 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: D12-29-41 MS/MSD  
Sample ID: L12121401-01

Date Collected: 12/12/2012 1440  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %	(74-140)	
Surr: BROMOFLUOROBENZENE		107 %	(77-133)	
Surr: TOLUENE-D8		105 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 12/19/2012 1654 Analyst: LVICKERY Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.942 0.0200 mg/l

SM 2320B

Date/Time: 12/18/2012 1615 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 27.2 1.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 12/17/2012 1151 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 12/14/2012 1644 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 5 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: D12-29-00  
Sample ID: L12121401-02

Date Collected: 12/12/2012 1500  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/17/2012 1809 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.81	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 6 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: D12-29-00  
Sample ID: L12121401-02

Date Collected: 12/12/2012 1500  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		103 %	(74-140)	
Surr: BROMOFLUOROBENZENE		106 %	(77-133)	
Surr: TOLUENE-D8		105 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 12/19/2012 1701 Analyst: LVICKERY Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.945 0.0200 mg/l

SM 2320B

Date/Time: 12/18/2012 1627 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 32.8 1.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 12/17/2012 1153 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 12/14/2012 1815 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 7 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: MW-200  
Sample ID: L12121401-03

Date Collected: 12/12/2012 1510  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/17/2012 1835 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROPFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 8 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: MW-200  
 Sample ID: L12121401-03

Date Collected: 12/12/2012 1510  
 Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		107 %	(74-140)	
Surr: BROMOFLUOROBENZENE		108 %	(77-133)	
Surr: TOLUENE-D8		108 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 9 of 43 Report ID: AL18

### Certificate of Analysis

Client ID: D12-30-50  
Sample ID: L12121401-04

Date Collected: 12/13/2012 0935  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/17/2012 1901 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	22.8	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### Certificate of Analysis

Client ID: D12-30-50  
Sample ID: L12121401-04

Date Collected: 12/13/2012 0935  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		105 %	(74-140)	
Surr: BROMOFLUOROBENZENE		105 %	(77-133)	
Surr: TOLUENE-D8		105 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 12/19/2012 1704 Analyst: LVICKERY Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.0802 0.0200 mg/l

SM 2320B

Date/Time: 12/18/2012 1633 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 108 2.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 12/17/2012 1154 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 12/14/2012 1947 Analyst: CDC Dilution: 1  
SULFATE 1.45 1.00 mg/l



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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### Certificate of Analysis

Client ID: D12-30-20  
Sample ID: L12121401-05

Date Collected: 12/13/2012 1020  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/17/2012 1927 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	73.3	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
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### Certificate of Analysis

Client ID: D12-30-20  
Sample ID: L12121401-05

Date Collected: 12/13/2012 1020  
Date Received : 12/13/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		108 %	(74-140)	
Surr: BROMOFLUOROBENZENE		109 %	(77-133)	
Surr: TOLUENE-D8		109 %	(77-131)	

#### Wet Chemistry

EPA 353.2

Date/Time: 12/19/2012 1706 Analyst: LVICKERY Dilution: 1  
NITRATE + NITRITE NITROGEN (AS N) 0.955 0.0200 mg/l

SM 2320B

Date/Time: 12/18/2012 1639 Analyst: CDC Dilution: 1  
ALKALINITY, TOTAL 60.5 2.00 mg/l  
ENDPOINT PH 4.50 su

SM 4500-S2-D

Date/Time: 12/17/2012 1155 Analyst: CDC Dilution: 1  
SULFIDE, TOTAL < 0.0500 U 0.0500 mg/l

SW846 9056A

Date/Time: 12/14/2012 2017 Analyst: CDC Dilution: 1  
SULFATE < 1.00 U 1.00 mg/l

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.08

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### QC Batch Report - Batch Sample List

WorkGroup : WG63939  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121401-01	D12-29-41 MS/MSD	1		12/17/2012 1743	JVB	1
L12121401-02	D12-29-00	1		12/17/2012 1809	JVB	1
L12121401-03	MW-200	1		12/17/2012 1835	JVB	1
L12121401-04	D12-30-50	1		12/17/2012 1901	JVB	1
L12121401-05	D12-30-20	1		12/17/2012 1927	JVB	1
MB63939:1	Method Blank	1		12/17/2012 1717	JVB	1
MB63939:2	Method Blank	1		12/18/2012 0947	PAP	1
LCS63939:1	Laboratory Control Spike	1		12/17/2012 2322	JVB	1
LCS63939:2	Laboratory Control Spike	1		12/18/2012 1242	PAP	1
MS12121401-01:63939	Matrix Spike	1		12/17/2012 2230	JVB	1
MSD12121401-01:63939	Matrix Spike Duplicate	1		12/17/2012 2256	JVB	1

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63939

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12121401-01	12/17/2012 1743	105	107	105
L12121401-02	12/17/2012 1809	103	106	105
L12121401-03	12/17/2012 1835	107	108	108
L12121401-04	12/17/2012 1901	105	105	105
L12121401-05	12/17/2012 1927	108	109	109
MB63939:1	12/17/2012 1717	96	96	96
MB63939:2	12/18/2012 0947	102		
LCS63939:1	12/17/2012 2322	107	109	106
LCS63939:2	12/18/2012 1242	102		
MS12121401-01:63939	12/17/2012 2230	103	104	103
MSD12121401-01:63939	12/17/2012 2256	106	106	106

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: WG63939  
Blank : MB63939:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 12/17/2012 1717 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### QC Batch Report - Method Blanks

WorkGroup: WG63939  
 Blank : MB63939:1

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		96 %	(74-140)	
Surr: BROMOFLUOROBENZENE		96 %	(77-133)	
Surr: TOLUENE-D8		96 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
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### QC Batch Report - Method Blanks

WorkGroup: WG63939  
Blank : MB63939:2

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SWB46 8260B				
Date/Time: 12/18/2012 0947 Analyst: PAP Dilution: 1				
CHLOROFORM	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		102 %	(74-140)	



SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63939  
MS/MSD : MS12121401-01:63939  
MSD12121401-01:63939

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	51.25	ug/l	103	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	52.16	ug/l	104	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	56.19	ug/l	112	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	51.00	ug/l	102	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	50.99	ug/l	102	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	50.68	ug/l	101	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	52.64	ug/l	105	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	51.36	ug/l	103	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	52.52	ug/l	105	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	51.44	ug/l	103	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	57.82	ug/l	116	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	51.27	ug/l	103	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	52.07	ug/l	104	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	57.43	ug/l	115	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	51.56	ug/l	103	74-108
2-BUTANONE	50.00	< 10.00	57.67	ug/l	115	68-134
2-HEXANONE	50.00	< 10.00	56.11	ug/l	112	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	56.06	ug/l	112	69-135
ACETONE	50.00	< 10.00	63.00	ug/l	126	64-149
BENZENE	50.00	< 5.00	51.67	ug/l	103	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	51.64	ug/l	103	76-123
BROMOFORM	50.00	< 5.00	52.06	ug/l	104	74-124
BROMOMETHANE	50.00	< 10.00	43.81	ug/l	88	64-121
CARBON DISULFIDE	50.00	< 5.00	51.60	ug/l	103	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	53.31	ug/l	107	72-126
CHLOROBENZENE	50.00	< 5.00	57.96	ug/l	116	74-113
CHLOROETHANE	50.00	< 10.00	46.80	ug/l	94	71-121
CHLOROFORM	50.00	5.83	57.64	ug/l	104	76-119
CHLOROMETHANE	50.00	< 10.00	53.14	ug/l	106	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	51.22	ug/l	102	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	55.60	ug/l	111	83-125
CYCLOHEXANE	50.00	< 5.00	55.13	ug/l	110	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	51.86	ug/l	104	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	55.84	ug/l	112	53-141
ETHYLBENZENE	50.00	< 5.00	51.42	ug/l	103	70-130
ISOPROPYL BENZENE	50.00	< 5.00	58.11	ug/l	116	74-114
METHYL ACETATE	50.00	< 10.00	54.71	ug/l	109	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	53.16	ug/l	106	74-119

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63939  
MS/MSD : MS12121401-01:63939  
MSD12121401-01:63939

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	57.57	ug/l	115	61-126
METHYLENE CHLORIDE	50.00	< 5.00	49.21	ug/l	98	71-115
STYRENE	50.00	< 5.00	52.19	ug/l	104	75-116
TETRACHLOROETHENE	50.00	< 5.00	51.01	ug/l	102	69-121
TOLUENE	50.00	< 5.00	51.27	ug/l	103	74-115
TRANS-1, 2-DICHLOROETHENE	50.00	< 5.00	50.40	ug/l	101	74-119
TRANS-1, 3-DICHLOROPROPENE	50.00	< 5.00	50.53	ug/l	101	73-112
TRICHLOROETHENE	50.00	< 5.00	51.73	ug/l	103	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	56.45	ug/l	113	70-134
VINYL ACETATE	50.00	< 10.00	61.93	ug/l	124	59-146
VINYL CHLORIDE	50.00	< 10.00	48.43	ug/l	97	63-124
XYLENE (TOTAL)	150.0	< 5.00	167.5	ug/l	112	73-116

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
1, 1, 1-TRICHLOROETHANE	50.00	52.49	ug/l	105	2	16	75-121
1, 1, 2, 2-TETRACHLOROETHANE	50.00	54.01	ug/l	108	3	18	78-114
1, 1, 2-TRICHLORO-1, 2, 2-TRIFLUOROETHANE	50.00	56.55	ug/l	113	1	18	64-130
1, 1, 2-TRICHLOROETHANE	50.00	53.14	ug/l	106	4	14	78-113
1, 1-DICHLOROETHANE	50.00	52.35	ug/l	105	3	15	76-116
1, 1-DICHLOROETHENE	50.00	51.67	ug/l	103	2	16	71-127
1, 2, 3-TRICHLOROENZENE	50.00	55.46	ug/l	111	5	20	75-112
1, 2, 4-TRICHLOROENZENE	50.00	54.68	ug/l	109	6	18	76-114
1, 2-DIBROMO-3-CHLOROPROPANE	50.00	56.05	ug/l	112	7	20	73-124
1, 2-DIBROMOETHANE	50.00	54.31	ug/l	109	5	16	79-114
1, 2-DICHLOROENZENE	50.00	60.88	ug/l	122	5	15	76-109
1, 2-DICHLOROETHANE	50.00	52.98	ug/l	106	3	16	74-122
1, 2-DICHLOROPROPANE	50.00	54.10	ug/l	108	4	15	79-113
1, 3-DICHLOROENZENE	50.00	59.87	ug/l	120	4	17	69-118
1, 4-DICHLOROENZENE	50.00	53.14	ug/l	106	3	16	74-108
2-BUTANONE	50.00	57.21	ug/l	114	1	20	68-134
2-HEXANONE	50.00	57.20	ug/l	114	2	20	70-133
4-METHYL-2-PENTANONE	50.00	57.75	ug/l	116	3	19	69-135
ACETONE	50.00	60.08	ug/l	120	5	23	64-149
BENZENE	50.00	53.85	ug/l	108	4	15	77-114
BROMODICHLOROMETHANE	50.00	54.86	ug/l	110	6	16	76-123
BROMOFORM	50.00	55.47	ug/l	111	6	17	74-124
BROMOMETHANE	50.00	46.38	ug/l	93	6	22	64-121

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63939  
MS/MSD : MS12121401-01:63939  
MSD12121401-01:63939

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD %REC	
CARBON DISULFIDE	50.00	54.02	ug/l	108	5	21	59-124
CARBON TETRACHLORIDE	50.00	53.70	ug/l	107	1	18	72-126
CHLOROBENZENE	50.00	59.55	ug/l	119	3	15	74-113
CHLOROETHANE	50.00	47.99	ug/l	96	3	17	71-121
CHLOROFORM	50.00	59.33	ug/l	107	3	14	76-119
CHLOROMETHANE	50.00	53.50	ug/l	107	1	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	52.48	ug/l	105	2	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	59.43	ug/l	119	7	16	83-125
CYCLOHEXANE	50.00	55.02	ug/l	110	0	17	59-126
DIBROMOCHLOROMETHANE	50.00	55.31	ug/l	111	6	16	77-121
DICHLORODIFLUOROMETHANE	50.00	53.84	ug/l	108	4	20	53-141
ETHYLBENZENE	50.00	52.63	ug/l	105	2	20	70-130
ISOPROPYL BENZENE	50.00	59.62	ug/l	119	3	17	74-114
METHYL ACETATE	50.00	55.66	ug/l	111	2	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	54.21	ug/l	108	2	16	74-119
METHYLCYCLOHEXANE	50.00	58.97	ug/l	118	2	16	61-126
METHYLENE CHLORIDE	50.00	50.58	ug/l	101	3	17	71-115
STYRENE	50.00	53.87	ug/l	108	3	17	75-116
TETRACHLOROETHENE	50.00	52.99	ug/l	106	4	16	69-121
TOLUENE	50.00	52.84	ug/l	106	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	53.02	ug/l	106	5	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	52.96	ug/l	106	5	16	73-112
TRICHLOROETHENE	50.00	54.23	ug/l	108	5	15	74-120
TRICHLOROFUOROMETHANE	50.00	57.26	ug/l	115	1	18	70-134
VINYL ACETATE	50.00	63.49	ug/l	127	2	19	59-146
VINYL CHLORIDE	50.00	49.68	ug/l	99	3	16	63-124
XYLENE (TOTAL)	150.0	172.1	ug/l	115	3	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63939  
LCS : LCS63939:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	52.68	ug/l	105	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	54.72	ug/l	109	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	55.13	ug/l	110	65-125
1,1,2-TRICHLOROETHANE	50.00	53.29	ug/l	107	78-117
1,1-DICHLOROETHANE	50.00	52.99	ug/l	106	75-117
1,1-DICHLOROETHENE	50.00	52.03	ug/l	104	72-125
1,2,3-TRICHLOROBENZENE	50.00	57.15	ug/l	114	75-113
1,2,4-TRICHLOROBENZENE	50.00	55.30	ug/l	111	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	56.61	ug/l	113	77-122
1,2-DIBROMOETHANE	50.00	54.58	ug/l	109	80-116
1,2-DICHLOROBENZENE	50.00	61.11	ug/l	122	76-110
1,2-DICHLOROETHANE	50.00	52.86	ug/l	106	75-121
1,2-DICHLOROPROPANE	50.00	53.95	ug/l	108	79-115
1,3-DICHLOROBENZENE	50.00	60.35	ug/l	121	74-113
1,4-DICHLOROBENZENE	50.00	52.92	ug/l	106	74-109
2-BUTANONE	50.00	59.67	ug/l	119	72-129
2-HEXANONE	50.00	59.15	ug/l	118	73-132
4-METHYL-2-PENTANONE	50.00	58.40	ug/l	117	75-131
ACETONE	50.00	57.80	ug/l	116	70-138
BENZENE	50.00	52.86	ug/l	106	77-116
BROMODICHLOROMETHANE	50.00	53.89	ug/l	108	79-120
BROMOFORM	50.00	55.96	ug/l	112	79-121
BROMOMETHANE	50.00	49.51	ug/l	99	67-122
CARBON DISULFIDE	50.00	54.88	ug/l	110	59-125
CARBON TETRACHLORIDE	50.00	54.09	ug/l	108	74-124
CHLOROBENZENE	50.00	60.23	ug/l	120	75-113
CHLOROETHANE	50.00	47.72	ug/l	95	73-120
CHLOROFORM	50.00	53.25	ug/l	107	75-121
CHLOROMETHANE	50.00	54.23	ug/l	108	60-122
CIS-1,2-DICHLOROETHENE	50.00	53.05	ug/l	106	74-119
CIS-1,3-DICHLOROPROPENE	50.00	58.90	ug/l	118	83-126
CYCLOHEXANE	50.00	53.79	ug/l	108	60-123
DIBROMOCHLOROMETHANE	50.00	54.70	ug/l	109	779-121
DICHLORODIFLUOROMETHANE	50.00	51.86	ug/l	104	55-139
ETHYLBENZENE	50.00	53.41	ug/l	107	70-130
ISOPROPYL BENZENE	50.00	60.09	ug/l	120	74-113
METHYL ACETATE	50.00	56.80	ug/l	114	67-123
METHYL-TERT-BUTYL ETHER	50.00	54.53	ug/l	109	75-120

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63939  
 LCS : LCS63939:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	56.03	ug/l	112	62-123
METHYLENE CHLORIDE	50.00	50.68	ug/l	101	70-120
STYRENE	50.00	54.15	ug/l	108	78-113
TETRACHLOROETHENE	50.00	52.87	ug/l	106	70-120
TOLUENE	50.00	53.05	ug/l	106	75-116
TRANS-1,2-DICHLOROETHENE	50.00	53.33	ug/l	107	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	53.08	ug/l	106	73-114
TRICHLOROETHENE	50.00	53.75	ug/l	108	75-119
TRICHLOROFLUOROMETHANE	50.00	55.97	ug/l	112	71-128
VINYL ACETATE	50.00	61.30	ug/l	123	65-142
VINYL CHLORIDE	50.00	49.13	ug/l	98	64-122
XYLENE (TOTAL)	150.0	174.5	ug/l	116	73-116

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63939  
LCS : LCS63939:2

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
CHLOROFORM	50.00	49.90	ug/l	100	75-121

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63970  
 Description: WC/NO3NO2(5)

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121401-01	D12-29-41 MS/MSD	1		12/19/2012 1654	LVICKERY	1
L12121401-02	D12-29-00	1		12/19/2012 1701	LVICKERY	1
L12121401-04	D12-30-50	1		12/19/2012 1704	LVICKERY	1
L12121401-05	D12-30-20	1		12/19/2012 1706	LVICKERY	1
MB63970:1	Method Blank	1		12/19/2012 1639	LVICKERY	1
LCS63970:1	Laboratory Control Spike	1		12/19/2012 1637	LVICKERY	1
MS12121401-01:63970	Matrix Spike	1		12/19/2012 1656	LVICKERY	1
MS12121904-01:63970	Matrix Spike	1		12/19/2012 1726	LVICKERY	2
MSD12121401-01:63970	Matrix Spike Duplicate	1		12/19/2012 1659	LVICKERY	1
MSD12121904-01:63970	Matrix Spike Duplicate	1		12/19/2012 1728	LVICKERY	2

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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ROSWELL, GA 30076  
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### QC Batch Report - Method Blanks

WorkGroup: WG63970  
Blank : MB63970:1

Parameter	Result	Qual	RDL	Units
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Matrix : GW/ChemW

Wet Chemistry  
EPA 353.2

Date/Time: 12/19/2012 1639	Analyst: LVICKERY	Dilution: 1		
NITRATE + NITRITE NITROGEN (AS N)	<	0.0200 U	0.0200	mg/l



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63970  
 MS/MSD : MS12121401-01:63970  
 MSD12121401-01:63970

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.942	1.43	mg/l	97	90-110

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	1.42	mg/l	96	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63970**  
 MS/MSD : **MS12121904-01:63970**  
**MSD12121904-01:63970**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	1.73	2.66	mg/l	93	90-110

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD	%REC
NITRATE + NITRITE NITROGEN (AS N)	1.00	2.66	mg/l	93	0	10	90-110

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63970  
 LCS : LCS63970:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: EPA 353.2

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
NITRATE + NITRITE NITROGEN (AS N)	0.500	0.498	mg/l	100	90-110

SC Certification Number: 24110001

Client : AECOM  
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 Contact : BRYON DAHLGREN

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### QC Batch Report - Batch Sample List

WorkGroup : WG64021  
 Description: Total Alkalinity

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121401-01	D12-29-41 MS/MSD	1		12/18/2012 1615	CDC	1
L12121401-02	D12-29-00	1		12/18/2012 1627	CDC	1
L12121401-04	D12-30-50	1		12/18/2012 1633	CDC	1
L12121401-05	D12-30-20	1		12/18/2012 1639	CDC	1
D12121302-04:64021	Duplicate	1		12/18/2012 0553	CDC	1
D12121401-01:64021	Duplicate	1		12/18/2012 1623	CDC	1
MB64021:1	Method Blank	1		12/18/2012 1457	CDC	1
LCS64021:1	Laboratory Control Spike	1		12/18/2012 1541	CDC	1

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Method Blanks

WorkGroup: WG64021  
Blank : MB64021:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 2320B				
Date/Time: 12/18/2012 1457 Analyst: CDC Dilution: 1				
ALKALINITY, TOTAL	<	1.00 U	1.00	mg/l
ENDPOINT PH		4.20		su

SC Certification Number: 24110001

Client : AECOM  
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### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG64021  
 LCS : LCS64021:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 2320B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
ALKALINITY, TOTAL	1000	1005	mg/l	100	90-110

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG64021  
Duplicate: D12121302-04:64021

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	56.38	55.35	2.00	mg/l	2	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.

SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Sample Duplicates

WorkGroup: WG64021  
Duplicate: D12121401-01:64021

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 2320B

Parameter	Sample Conc	DUP Conc	RDL	Units	%RPD	RPD
ALKALINITY, TOTAL	27.16	27.16	1.00	mg/l	0	10

NOTE: Calculation of %RPD is not required for concentrations less than 10X the RDL.



SC Certification Number: 24110001

Client : AECOM  
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### QC Batch Report - Batch Sample List

WorkGroup : WG64022  
 Description: Sulfide

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121401-01	D12-29-41 MS/MSD	1		12/17/2012 1151	CDC	1
L12121401-02	D12-29-00	1		12/17/2012 1153	CDC	1
L12121401-04	D12-30-50	1		12/17/2012 1154	CDC	1
L12121401-05	D12-30-20	1		12/17/2012 1155	CDC	1
MB64022:1	Method Blank	1		12/17/2012 1158	CDC	1
LCS64022:1	Laboratory Control Spike	1		12/17/2012 1145	CDC	1
MS12121401-01:64022	Matrix Spike	1		12/17/2012 1152	CDC	1
MS12121701-05:64022	Matrix Spike	1		12/17/2012 1202	CDC	1
MSD12121401-01:64022	Matrix Spike Duplicate	1		12/17/2012 1152	CDC	1
MSD12121701-05:64022	Matrix Spike Duplicate	1		12/17/2012 1203	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 36 of 43 Report ID: AL18

### QC Batch Report - Method Blanks

WorkGroup: WG64022  
Blank : MB64022:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SM 4500-S2-D				
Date/Time: 12/17/2012 1158 Analyst: CDC Dilution: 1				
SULFIDE, TOTAL	<	0.0500 U	0.0500	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 37 of 43 Report ID: AL18

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG64022**  
 MS/MSD : **MS12121401-01:64022**  
**MSD12121401-01:64022**

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC	
SULFIDE, TOTAL	0.500	< 0.0500	0.471	mg/l	94	81-121	

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits %RPD %REC	
SULFIDE, TOTAL	0.500	0.468	mg/l	94	1	10	81-121

**NOTE:** MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 38 of 43 Report ID: AL18

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG64022  
 MS/MSD : MS12121701-05:64022  
 MSD12121701-05:64022

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SM 4500-S2-D

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFIDE, TOTAL	0.500	< 0.0500	0.468	mg/l	94	81-121

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
SULFIDE, TOTAL	0.500	0.452	mg/l	90	4	10	81-121

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 39 of 43 Report ID: AL18

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG64022  
LCS : LCS64022:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SM 4500-S2-D

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFIDE, TOTAL	0.500	0.458	mg/l	92	90-110

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 40 of 43 Report ID: AL18

### *QC Batch Report - Batch Sample List*

WorkGroup : **WG63930**  
 Description: **IC-GW**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 9056A**

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121401-01	D12-29-41 MS/MSD	1		12/14/2012 1644	CDC	1
L12121401-02	D12-29-00	1		12/14/2012 1815	CDC	1
L12121401-04	D12-30-50	1		12/14/2012 1947	CDC	1
L12121401-05	D12-30-20	1		12/14/2012 2017	CDC	1
MB63930:1	Method Blank	1		12/14/2012 1037	CDC	1
LCS63930:1	Laboratory Control Spike	1		12/14/2012 1108	CDC	1
MS12121401-01:63930	Matrix Spike	1		12/14/2012 1714	CDC	1
MSD12121401-01:63930	Matrix Spike Duplicate	1		12/14/2012 1745	CDC	1

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.08  
Report Date : January 03, 2013  
Page 41 of 43 Report ID: AL18

### QC Batch Report - Method Blanks

WorkGroup: WG63930  
Blank : MB63930:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Wet Chemistry				
SW846 9056A				
Date/Time: 12/14/2012 1037 Analyst: CDC Dilution: 1				
SULFATE	<	1.00 U	1.00	mg/l

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 42 of 43 Report ID: AL18

### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63930  
 MS/MSD : MS12121401-01:63930  
 MSD12121401-01:63930

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
SULFATE	10.00	< 1.00	9.84	mg/l	98	80-120

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD %REC
SULFATE	10.00	9.90	mg/l	99	1	15 80-120

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.08  
 Report Date : January 03, 2013  
 Page 43 of 43 Report ID: AL18

### *QC Batch Report - Laboratory Control Standards and Duplicates*

WorkGroup: WG63930  
 LCS : LCS63930:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 9056A

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
SULFATE	10.00	10.05	mg/l	101	80-120

### Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

< Less Than

> Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

#### Data Qualifiers:

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV)
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.

Client: **AECOM** Project / Site Location: **061576-07-08** Auriga Polymers - Sptbg, SC  
 Laboratory Certification Numbers: SC - 24110, NC - 25, NELAP - E87633, TN - 2923, VA - 77  
 816 E. Dust Avenue, Greenwood, SC 29649 (864) 229-4413 Fax: (864) 229-7119  
 Email: Laboratory@davisfloyd.com Internet: www.davisfloyd.com

Contact: **Mark Hartford** Report To: **Bryon Dahlgren** Copy To: \_\_\_\_\_  
 Reporting Requirements: [ ] Standard [ ] Data Package (Specify Level: 1 2 3 4)  
 Required Parameters, Containers and Preservatives (P\*) \_\_\_\_\_

Collected By: **Mark Hartford** Atmospheric Conditions: \_\_\_\_\_  
 (Optional) CONTAINERS: 3x40 G TFE, 500 P, 125 P, 125 P, 3x40 G TFE  
 Special Instructions: **SLC**

NOTICE: Composite Sampling Only  
 Date Initiated: \_\_\_\_\_  
 Sample Collection Date: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Description	Time	Date	Time	Sample Collection Date	Time	Composite Type		Matrix Type	Number of Containers Total	PARAMETERS			CONTAINERS	HOT	Comments	Fraction
						Grab	Composite			A	A	E/G				
D12-29-41		12-12-12	1440			X	5	18	6	3	1	1	13		ms/lms	01
D12-29-00		12-12-12	1508			X	5	6	2	2	1	1	1			02
MW-200		12-12-12	1510			X	5	2	2	3	1	1	1			03
D12-30-50		12-13-12	935			X	5	6	6	3	1	1	1			04
D12-30-20		12-13-12	1020			X	5	6	6	3	1	1	1			05

Relinquished By: **Mark Hartford** Date: **12-13-12** Time: **1500**  
 Received By: **Mark Hartford** Date: **12-13-12** Time: **1720**  
 Relinquished By: **Mark Hartford** Date: **12-13-12** Time: **1720**  
 Received In Laboratory By: **Tracy S. McCall** Date: **12-13-12** Time: **1720**

Comments: \_\_\_\_\_  
 Sample Chamber Temp. at Harvest: \_\_\_\_\_  
 Circle: C or F \_\_\_\_\_  
 Start Date: \_\_\_\_\_  
 Multiplier: \_\_\_\_\_  
 Flow Measurement (Note 1) \_\_\_\_\_  
 Beginning \_\_\_\_\_  
 Ending \_\_\_\_\_  
 Receipt Information: Cooler ID (if available): \_\_\_\_\_  
 On Ice: (Yes/No) Temp(C) **4**  
 Immediate Delivery: Yes/No **NO**  
 Custody Seal: Intact / Broken / None \_\_\_\_\_

Matrix Type Definitions 1 - Drinking Water 2 - Clean Water 5 - Groundwater 7 - Soil/Sediment 8 - Liquid Sludge 9 - Oil 12 - Air  
 (P) Preservative Definitions A - None B - H2SO4 C - HCl D - HNO3 E - NaOH F - Filtered G - Zn Acetate  
 Davis & Floyd, Inc. FL02\_03 (04/10)

January 17, 2013

BRYON DAHLGREN  
AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076

Report ID : AL164  
Page 1 of 18

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Login Number :L12121002  
Project Number :61576.07  
Description :AURIGA POLYMERS - SPARTANBURG, SC

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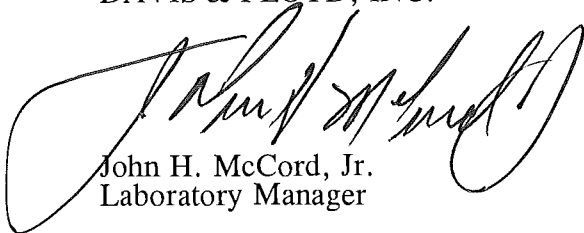
Dear Bryon Dahlgren:

We are pleased to provide the enclosed analytical results for the samples received by Davis & Floyd, Inc. on December 07, 2012.

A formal Quality Assurance/Quality Control program is maintained by Davis & Floyd, which is designed to meet or exceed the ISO/IEC 17025, EPA, NELAP or other appropriate regulatory requirements. All analytical analyses for this project met QA/QC criteria and the results are within the 99% confidence interval for each method unless otherwise stated in the footnotes. This report is to be reproduced only in full.


Feel free to contact our Client Services Representative at (864) 229-4413 if further explanation of the analysis is required. Unless other arrangements have been made, samples will be disposed of or returned 14 days from the date of the report. We appreciate the opportunity to provide services to your firm.

Sincerely,  
DAVIS & FLOYD, INC.



John H. McCord, Jr.  
Laboratory Manager

This report contains a TOTAL of 20 pages, including attachments.

Initials: 

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

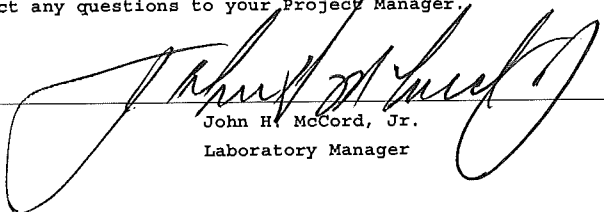
Project Number: 61576.07  
Report Date : January 17, 2013  
Page 2 of 18 Report ID: AL164

### *Certificate of Analysis Report*

Sample ID	Client ID	Date Collected	Date Received
L12121002-21	MW-200	12/05/2012 1400	12/07/2012
L12121002-22	MW-52	12/05/2012 1520	12/07/2012

This data report has been prepared and reviewed in accordance with standard operating procedures. Test results relate only to the sample tested. Please direct any questions to your Project Manager.

Reviewed by



John H. McCord, Jr.  
Laboratory Manager

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07  
 Report Date : January 17, 2013  
 Page 3 of 18 Report ID: AL164

### Certificate of Analysis

Client ID: MW-200  
 Sample ID: L12121002-21

Date Collected: 12/05/2012 1400  
 Date Received : 12/07/2012

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 12/13/2012 1156 Analyst: JVB Dilution: 1</i>				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07  
 Report Date : January 17, 2013  
 Page 4 of 18 Report ID: AL164

### Certificate of Analysis

Client ID: **MW-200**  
 Sample ID: L12121002-21

Date Collected: 12/05/2012 1400  
 Date Received : 12/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		95 %		(74-140)
Surr: BROMOFLUOROBENZENE		93 %		(77-133)
Surr: TOLUENE-D8		95 %		(77-131)

**Sample Comments:** L12121002-21

8260B VOCs  
 Analysis exceeded the 7 day holding time.

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.07  
Report Date : January 17, 2013  
Page 5 of 18 Report ID: AL164

### Certificate of Analysis

Client ID: MW-52  
Sample ID: L12121002-22

Date Collected: 12/05/2012 1520  
Date Received : 12/07/2012

Parameter	Result	Qual	RDL	Units
<b>Matrix : GW/ChemW</b>				
<b>Volatile Organics</b>				
SW846 8260B				
Date/Time: 12/13/2012 1223 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l



SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07  
 Report Date : January 17, 2013  
 Page 6 of 18 Report ID: AL164

### Certificate of Analysis

Client ID: MW-52  
 Sample ID: L12121002-22

Date Collected: 12/05/2012 1520  
 Date Received : 12/07/2012

Parameter	Result	Qual	RDL	Units
ETHYLBENZENE	<	5.00	U	5.00 ug/l
ISOPROPYL BENZENE	<	5.00	U	5.00 ug/l
METHYL ACETATE	<	10.0	U	10.0 ug/l
METHYL-TERT-BUTYL ETHER	<	5.00	U	5.00 ug/l
METHYLCYCLOHEXANE	<	5.00	U	5.00 ug/l
METHYLENE CHLORIDE	<	5.00	U	5.00 ug/l
STYRENE	<	5.00	U	5.00 ug/l
TETRACHLOROETHENE	<	5.00	U	5.00 ug/l
TOLUENE	<	5.00	U	5.00 ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00	U	5.00 ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00	U	5.00 ug/l
TRICHLOROETHENE	<	5.00	U	5.00 ug/l
TRICHLOROFLUOROMETHANE	<	5.00	U	5.00 ug/l
VINYL ACETATE	<	10.0	U	10.0 ug/l
VINYL CHLORIDE	<	10.0	U	10.0 ug/l
XYLENE (TOTAL)	<	5.00	U	5.00 ug/l
Surr: 1,2-DICHLOROETHANE-D4		96	%	(74-140)
Surr: BROMOFLUOROBENZENE		93	%	(77-133)
Surr: TOLUENE-D8		96	%	(77-131)

**Sample Comments:** L12121002-22

8260B VOCs  
 Analysis exceeded the 7 day holding time.

*SC Certification Number: 24110001*

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : **BRYON DAHLGREN**

Project Number: 61576.07

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## *QC Summary Data*

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07  
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### QC Batch Report - Batch Sample List

WorkGroup : WG63907  
 Description: VO/8260/TCL

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Sample ID	Client ID	Run#	PREP	ANALYTICAL	Analyst	Dilution
			Date Time	Date Time		
L12121002-21	MW-200	1		12/13/2012 1156	JVB	1
L12121002-22	MW-52	1		12/13/2012 1223	JVB	1
MB63907:1	Method Blank	1		12/13/2012 1033	JVB	1
MB63907:2	Method Blank	1		12/14/2012 0927	PAP	1
LCS63907:1	Laboratory Control Spike	1		12/13/2012 1921	JVB	1
LCS63907:2	Laboratory Control Spike	1		12/14/2012 1630	PAP	1
MS12121002-19:63907	Matrix Spike	1		12/13/2012 1737	JVB	1
MSD12121002-19:63907	Matrix Spike Duplicate	1		12/13/2012 1803	JVB	1

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### QC Batch Report - Surrogates % Recovery

WorkGroup: WG63907

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

SampleNumber	MeasureDate	DCA 74-140	BFB 77-133	TOL 77-131
L12121002-21	12/13/2012 1156	95	93	95
L12121002-22	12/13/2012 1223	96	93	96
MB63907:1	12/13/2012 1033	99	98	100
MB63907:2	12/14/2012 0927	108		
LCS63907:1	12/13/2012 1921	95	92	95
LCS63907:2	12/14/2012 1630	116		
MS12121002-19:63907	12/13/2012 1737	95	91	92
MSD12121002-19:63907	12/13/2012 1803	96	93	95

DCA - 1,2-DICHLOROETHANE-D4  
 BFB - BROMOFLUOROBENZENE  
 TOL - TOLUENE-D8

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
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### QC Batch Report - Method Blanks

WorkGroup: WG63907  
 Blank : MB63907:1

Parameter	Result	Qual	RDL	Units
Matrix : GW/ChemW				
Volatile Organics				
SW846 8260B				
Date/Time: 12/13/2012 1033 Analyst: JVB Dilution: 1				
1,1,1-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2,2-TETRACHLOROETHANE	<	5.00 U	5.00	ug/l
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	<	10.0 U	10.0	ug/l
1,1,2-TRICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,1-DICHLOROETHENE	<	5.00 U	5.00	ug/l
1,2,3-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2,4-TRICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DIBROMO-3-CHLOROPROPANE	<	5.00 U	5.00	ug/l
1,2-DIBROMOETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,2-DICHLOROETHANE	<	5.00 U	5.00	ug/l
1,2-DICHLOROPROPANE	<	5.00 U	5.00	ug/l
1,3-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
1,4-DICHLOROBENZENE	<	5.00 U	5.00	ug/l
2-BUTANONE	<	10.0 U	10.0	ug/l
2-HEXANONE	<	10.0 U	10.0	ug/l
4-METHYL-2-PENTANONE	<	5.00 U	5.00	ug/l
ACETONE	<	10.0 U	10.0	ug/l
BENZENE	<	5.00 U	5.00	ug/l
BROMODICHLOROMETHANE	<	5.00 U	5.00	ug/l
BROMOFORM	<	5.00 U	5.00	ug/l
BROMOMETHANE	<	10.0 U	10.0	ug/l
CARBON DISULFIDE	<	5.00 U	5.00	ug/l
CARBON TETRACHLORIDE	<	5.00 U	5.00	ug/l
CHLOROBENZENE	<	5.00 U	5.00	ug/l
CHLOROETHANE	<	10.0 U	10.0	ug/l
CHLOROFORM	<	5.00 U	5.00	ug/l
CHLOROMETHANE	<	10.0 U	10.0	ug/l
CIS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l

SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

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### QC Batch Report - Method Blanks

WorkGroup: **WG63907**  
 Blank : **MB63907:1**

Parameter	Result	Qual	RDL	Units
CIS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
CYCLOHEXANE	<	5.00 U	5.00	ug/l
DIBROMOCHLOROMETHANE	<	5.00 U	5.00	ug/l
DICHLORODIFLUOROMETHANE	<	5.00 U	5.00	ug/l
ETHYLBENZENE	<	5.00 U	5.00	ug/l
ISOPROPYL BENZENE	<	5.00 U	5.00	ug/l
METHYL ACETATE	<	10.0 U	10.0	ug/l
METHYL-TERT-BUTYL ETHER	<	5.00 U	5.00	ug/l
METHYLCYCLOHEXANE	<	5.00 U	5.00	ug/l
METHYLENE CHLORIDE	<	5.00 U	5.00	ug/l
STYRENE	<	5.00 U	5.00	ug/l
TETRACHLOROETHENE	<	5.00 U	5.00	ug/l
TOLUENE	<	5.00 U	5.00	ug/l
TRANS-1,2-DICHLOROETHENE	<	5.00 U	5.00	ug/l
TRANS-1,3-DICHLOROPROPENE	<	5.00 U	5.00	ug/l
TRICHLOROETHENE	<	5.00 U	5.00	ug/l
TRICHLOROFLUOROMETHANE	<	5.00 U	5.00	ug/l
VINYL ACETATE	<	10.0 U	10.0	ug/l
VINYL CHLORIDE	<	10.0 U	10.0	ug/l
XYLENE (TOTAL)	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		99 %	(74-140)	
Surr: BROMOFLUOROBENZENE		98 %	(77-133)	
Surr: TOLUENE-D8		100 %	(77-131)	

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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### QC Batch Report - Method Blanks

WorkGroup: WG63907  
Blank : MB63907:2

Parameter	Result	Qual	RDL	Units
<i>Matrix : GW/ChemW</i>				
<b>Volatile Organics</b>				
<i>SW846 8260B</i>				
<i>Date/Time: 12/14/2012 0927 Analyst: PAP Dilution: 1</i>				
CHLOROFORM	<	5.00 U	5.00	ug/l
Surr: 1,2-DICHLOROETHANE-D4		108 %	(74-140)	

SC Certification Number: 24110001

Client : **AECOM**  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63907**  
MS/MSD : **MS12121002-19:63907**  
**MSD12121002-19:63907**

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	< 5.00	47.88	ug/l	96	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	< 5.00	49.54	ug/l	99	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	< 10.00	45.13	ug/l	90	64-130
1,1,2-TRICHLOROETHANE	50.00	< 5.00	48.92	ug/l	98	78-113
1,1-DICHLOROETHANE	50.00	< 5.00	47.77	ug/l	96	76-116
1,1-DICHLOROETHENE	50.00	< 5.00	46.53	ug/l	93	71-127
1,2,3-TRICHLOROBENZENE	50.00	< 5.00	44.82	ug/l	90	75-112
1,2,4-TRICHLOROBENZENE	50.00	< 5.00	44.71	ug/l	89	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	< 5.00	46.99	ug/l	94	73-124
1,2-DIBROMOETHANE	50.00	< 5.00	48.97	ug/l	98	79-114
1,2-DICHLOROBENZENE	50.00	< 5.00	51.45	ug/l	103	76-109
1,2-DICHLOROETHANE	50.00	< 5.00	48.41	ug/l	97	74-122
1,2-DICHLOROPROPANE	50.00	< 5.00	48.31	ug/l	97	79-113
1,3-DICHLOROBENZENE	50.00	< 5.00	50.82	ug/l	102	69-118
1,4-DICHLOROBENZENE	50.00	< 5.00	43.74	ug/l	87	74-108
2-BUTANONE	50.00	< 10.00	48.89	ug/l	98	68-134
2-HEXANONE	50.00	< 10.00	49.76	ug/l	100	70-133
4-METHYL-2-PENTANONE	50.00	< 5.00	50.82	ug/l	102	69-135
ACETONE	50.00	< 10.00	55.59	ug/l	111	64-149
BENZENE	50.00	< 5.00	47.70	ug/l	95	77-114
BROMODICHLOROMETHANE	50.00	< 5.00	48.78	ug/l	98	76-123
BROMOFORM	50.00	< 5.00	48.77	ug/l	98	74-124
BROMOMETHANE	50.00	< 10.00	40.78	ug/l	82	64-121
CARBON DISULFIDE	50.00	< 5.00	37.03	ug/l	74	59-124
CARBON TETRACHLORIDE	50.00	< 5.00	46.84	ug/l	94	72-126
CHLOROBENZENE	50.00	< 5.00	52.83	ug/l	106	74-113
CHLOROETHANE	50.00	< 10.00	43.54	ug/l	87	71-121
CHLOROFORM	50.00	< 5.00	48.07	ug/l	96	76-119
CHLOROMETHANE	50.00	< 10.00	46.59	ug/l	93	59-123
CIS-1,2-DICHLOROETHENE	50.00	< 5.00	48.49	ug/l	97	74-118
CIS-1,3-DICHLOROPROPENE	50.00	< 5.00	51.06	ug/l	102	83-125
CYCLOHEXANE	50.00	< 5.00	44.46	ug/l	89	59-126
DIBROMOCHLOROMETHANE	50.00	< 5.00	49.70	ug/l	99	77-121
DICHLORODIFLUOROMETHANE	50.00	< 5.00	43.20	ug/l	86	53-141
ETHYLBENZENE	50.00	< 5.00	46.87	ug/l	94	70-130
ISOPROPYL BENZENE	50.00	< 5.00	52.09	ug/l	104	74-114
METHYL ACETATE	50.00	< 10.00	50.16	ug/l	100	68-122
METHYL-TERT-BUTYL ETHER	50.00	< 5.00	48.55	ug/l	97	74-119



SC Certification Number: 24110001

Client : **AECOM**  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: **WG63907**  
 MS/MSD : **MS12121002-19:63907**  
**MSD12121002-19:63907**

Matrix : **GW/ChemW**  
 Prep Method :  
 Analytical Method: **SW846 8260B**

Parameter	Spike Added	Sample Conc	MS Conc	Units	MS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	< 5.00	45.08	ug/l	90	61-126
METHYLENE CHLORIDE	50.00	< 5.00	46.19	ug/l	92	71-115
STYRENE	50.00	< 5.00	47.52	ug/l	95	75-116
TETRACHLOROETHENE	50.00	6.64	52.44	ug/l	92	69-121
TOLUENE	50.00	< 5.00	47.19	ug/l	94	74-115
TRANS-1,2-DICHLOROETHENE	50.00	< 5.00	43.52	ug/l	87	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	< 5.00	45.96	ug/l	92	73-112
TRICHLOROETHENE	50.00	< 5.00	47.11	ug/l	94	74-120
TRICHLOROFLUOROMETHANE	50.00	< 5.00	49.06	ug/l	98	70-134
VINYL ACETATE	50.00	< 10.00	50.29	ug/l	101	59-146
VINYL CHLORIDE	50.00	< 10.00	43.05	ug/l	86	63-124
XYLENE (TOTAL)	150.0	< 5.00	152.1	ug/l	101	73-116

Parameter	Spike Added	MSD Conc	MSD Units	MSD %REC	%RPD	Limits %RPD	%REC
1,1,1-TRICHLOROETHANE	50.00	48.56	ug/l	97	1	16	75-121
1,1,2,2-TETRACHLOROETHANE	50.00	49.86	ug/l	100	1	18	78-114
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	46.82	ug/l	94	4	18	64-130
1,1,2-TRICHLOROETHANE	50.00	49.62	ug/l	99	1	14	78-113
1,1-DICHLOROETHANE	50.00	48.47	ug/l	97	1	15	76-116
1,1-DICHLOROETHENE	50.00	47.14	ug/l	94	1	16	71-127
1,2,3-TRICHLOROBENZENE	50.00	47.55	ug/l	95	6	20	75-112
1,2,4-TRICHLOROBENZENE	50.00	46.98	ug/l	94	5	18	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	51.19	ug/l	102	9	20	73-124
1,2-DIBROMOETHANE	50.00	49.84	ug/l	100	2	16	79-114
1,2-DICHLOROBENZENE	50.00	52.50	ug/l	105	2	15	76-109
1,2-DICHLOROETHANE	50.00	48.68	ug/l	97	1	16	74-122
1,2-DICHLOROPROPANE	50.00	49.24	ug/l	98	2	15	79-113
1,3-DICHLOROBENZENE	50.00	52.30	ug/l	105	3	17	69-118
1,4-DICHLOROBENZENE	50.00	45.91	ug/l	92	5	16	74-108
2-BUTANONE	50.00	51.12	ug/l	102	4	20	68-134
2-HEXANONE	50.00	52.63	ug/l	105	6	20	70-133
4-METHYL-2-PENTANONE	50.00	52.04	ug/l	104	2	19	69-135
ACETONE	50.00	58.85	ug/l	118	6	23	64-149
BENZENE	50.00	48.45	ug/l	97	2	15	77-114
BROMODICHLOROMETHANE	50.00	49.54	ug/l	99	2	16	76-123
BROMOFORM	50.00	49.52	ug/l	99	2	17	74-124
BROMOMETHANE	50.00	44.66	ug/l	89	9	22	64-121

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
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Contact : BRYON DAHLGREN

Project Number: 61576.07

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### QC Batch Report - Matrix Spikes and Duplicates

WorkGroup: WG63907  
MS/MSD : MS12121002-19:63907  
MSD12121002-19:63907

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	MSD Conc	Units	MSD %REC	%RPD	Limits	
						%RPD	%REC
CARBON DISULFIDE	50.00	39.93	ug/l	80	8	21	59-124
CARBON TETRACHLORIDE	50.00	48.37	ug/l	97	3	18	72-126
CHLOROBENZENE	50.00	53.82	ug/l	108	2	15	74-113
CHLOROETHANE	50.00	45.10	ug/l	90	4	17	71-121
CHLOROFORM	50.00	48.32	ug/l	97	1	14	76-119
CHLOROMETHANE	50.00	46.74	ug/l	93	0	18	59-123
CIS-1,2-DICHLOROETHENE	50.00	49.27	ug/l	99	2	15	74-118
CIS-1,3-DICHLOROPROPENE	50.00	52.78	ug/l	106	3	16	83-125
CYCLOHEXANE	50.00	45.44	ug/l	91	2	17	59-126
DIBROMOCHLOROMETHANE	50.00	50.99	ug/l	102	3	16	77-121
DICHLORODIFLUOROMETHANE	50.00	43.56	ug/l	87	1	20	53-141
ETHYLBENZENE	50.00	47.78	ug/l	96	2	20	70-130
ISOPROPYL BENZENE	50.00	53.67	ug/l	107	3	17	74-114
METHYL ACETATE	50.00	51.29	ug/l	103	2	19	68-122
METHYL-TERT-BUTYL ETHER	50.00	49.25	ug/l	99	1	16	74-119
METHYLCYCLOHEXANE	50.00	46.80	ug/l	94	4	16	61-126
METHYLENE CHLORIDE	50.00	46.56	ug/l	93	1	17	71-115
STYRENE	50.00	48.25	ug/l	97	2	17	75-116
TETRACHLOROETHENE	50.00	54.48	ug/l	96	4	16	69-121
TOLUENE	50.00	48.42	ug/l	97	3	15	74-115
TRANS-1,2-DICHLOROETHENE	50.00	44.90	ug/l	90	3	16	74-119
TRANS-1,3-DICHLOROPROPENE	50.00	46.98	ug/l	94	2	16	73-112
TRICHLOROETHENE	50.00	49.26	ug/l	99	4	15	74-120
TRICHLOROFLUOROMETHANE	50.00	50.02	ug/l	100	2	18	70-134
VINYL ACETATE	50.00	51.58	ug/l	103	3	19	59-146
VINYL CHLORIDE	50.00	43.54	ug/l	87	1	16	63-124
XYLENE (TOTAL)	150.0	154.6	ug/l	103	2	17	73-116

NOTE: MS/MSD % recoveries are not evaluated if the sample concentration is greater than four times the spike added.

SC Certification Number: 24110001

Client : AECOM  
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Contact : BRYON DAHLGREN

Project Number: 61576.07

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### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63907  
LCS : LCS63907:1

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
1,1,1-TRICHLOROETHANE	50.00	48.61	ug/l	97	76-120
1,1,2,2-TETRACHLOROETHANE	50.00	49.71	ug/l	99	78-116
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	50.00	45.04	ug/l	90	65-125
1,1,2-TRICHLOROETHANE	50.00	48.95	ug/l	98	78-117
1,1-DICHLOROETHANE	50.00	48.18	ug/l	96	75-117
1,1-DICHLOROETHENE	50.00	46.90	ug/l	94	72-125
1,2,3-TRICHLOROBENZENE	50.00	46.88	ug/l	94	75-113
1,2,4-TRICHLOROBENZENE	50.00	46.83	ug/l	94	76-114
1,2-DIBROMO-3-CHLOROPROPANE	50.00	49.83	ug/l	100	77-122
1,2-DIBROMOETHANE	50.00	49.30	ug/l	99	80-116
1,2-DICHLOROBENZENE	50.00	53.43	ug/l	107	76-110
1,2-DICHLOROETHANE	50.00	48.80	ug/l	98	75-121
1,2-DICHLOROPROPANE	50.00	48.53	ug/l	97	79-115
1,3-DICHLOROBENZENE	50.00	53.18	ug/l	106	74-113
1,4-DICHLOROBENZENE	50.00	46.20	ug/l	92	74-109
2-BUTANONE	50.00	52.16	ug/l	104	72-129
2-HEXANONE	50.00	52.65	ug/l	105	73-132
4-METHYL-2-PENTANONE	50.00	53.52	ug/l	107	75-131
ACETONE	50.00	59.68	ug/l	119	70-138
BENZENE	50.00	47.97	ug/l	96	77-116
BROMODICHLOROMETHANE	50.00	49.06	ug/l	98	79-120
BROMOFORM	50.00	50.34	ug/l	101	79-121
BROMOMETHANE	50.00	43.89	ug/l	88	67-122
CARBON DISULFIDE	50.00	39.93	ug/l	80	59-125
CARBON TETRACHLORIDE	50.00	47.73	ug/l	95	74-124
CHLOROBENZENE	50.00	53.67	ug/l	107	75-113
CHLOROETHANE	50.00	44.18	ug/l	88	73-120
CHLOROFORM	50.00	48.43	ug/l	97	75-121
CHLOROMETHANE	50.00	46.11	ug/l	92	60-122
CIS-1,2-DICHLOROETHENE	50.00	46.51	ug/l	93	74-119
CIS-1,3-DICHLOROPROPENE	50.00	51.69	ug/l	103	83-126
CYCLOHEXANE	50.00	44.20	ug/l	88	60-123
DIBROMOCHLOROMETHANE	50.00	49.51	ug/l	99	779-121
DICHLORODIFLUOROMETHANE	50.00	41.91	ug/l	84	55-139
ETHYLBENZENE	50.00	48.06	ug/l	96	70-130
ISOPROPYL BENZENE	50.00	53.69	ug/l	107	74-113
METHYL ACETATE	50.00	51.41	ug/l	103	67-123
METHYL-TERT-BUTYL ETHER	50.00	49.34	ug/l	99	75-120

SC Certification Number: 24110001

Client : AECOM  
 1455 OLD ALABAMA RD.  
 SUITE 170  
 ROSWELL, GA 30076  
 Contact : BRYON DAHLGREN

Project Number: 61576.07  
 Report Date : January 17, 2013  
 Page 17 of 18 Report ID: AL164

### QC Batch Report - Laboratory Control Standards and Duplicates

WorkGroup: WG63907  
 LCS : LCS63907:1

Matrix : GW/ChemW  
 Prep Method :  
 Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
METHYLCYCLOHEXANE	50.00	44.76	ug/l	90	62-123
METHYLENE CHLORIDE	50.00	46.55	ug/l	93	70-120
STYRENE	50.00	48.71	ug/l	97	78-113
TETRACHLOROETHENE	50.00	47.40	ug/l	95	70-120
TOLUENE	50.00	47.93	ug/l	96	75-116
TRANS-1,2-DICHLOROETHENE	50.00	45.02	ug/l	90	73-121
TRANS-1,3-DICHLOROPROPENE	50.00	46.52	ug/l	93	73-114
TRICHLOROETHENE	50.00	47.70	ug/l	95	75-119
TRICHLOROFLUOROMETHANE	50.00	49.13	ug/l	98	71-128
VINYL ACETATE	50.00	50.07	ug/l	100	65-142
VINYL CHLORIDE	50.00	43.32	ug/l	87	64-122
XYLENE (TOTAL)	150.0	155.2	ug/l	103	73-116

SC Certification Number: 24110001

Client : AECOM  
1455 OLD ALABAMA RD.  
SUITE 170  
ROSWELL, GA 30076  
Contact : BRYON DAHLGREN

Project Number: 61576.07  
Report Date : January 17, 2013  
Page 18 of 18 Report ID: AL164

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### *QC Batch Report - Laboratory Control Standards and Duplicates*

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WorkGroup: WG63907  
LCS : LCS63907:2

Matrix : GW/ChemW  
Prep Method :  
Analytical Method: SW846 8260B

Parameter	Spike Added	LCS Conc	Units	LCS %REC	Limits %REC
CHLOROFORM	50.00	56.64	ug/l	113	75-121

**Explanation of Symbols and Abbreviations**

The following defines common symbols and abbreviations used in reporting technical data:

<b>RDL</b>	Report Detection Limit	<b>MDL</b>	Method Detection Limit
<b>PQL</b>	Practical Quantitation Limit	<b>DL</b>	Detection Limit
<b>LOQ</b>	Limit of Quantitation	<b>LOD</b>	Limit of Detection
<b>SQL</b>	Sample Quantitation Limit	<b>TIC</b>	Tentatively Identified Compound
<b>C</b>	Degrees Centigrade	<b>F</b>	Degrees Fahrenheit
<b>umhos/cm</b>	micromhos/cm	<b>meq</b>	milliequivalents
<b>su</b>	Standard Units		

**mg/l, mg/kg** Units of concentration in milligrams per liter for liquids and milligrams per kilogram for solids. Also referred to as Parts Per Million or "ppm".

**ug/l, ug/kg** Units of concentration in micrograms per liter for liquids and micrograms per kilograms for solids. Also referred to as Parts Per Billion or "ppb".

**<** Less Than

**>** Greater Than

Solid samples (i.e. soil, sludge, and solid waste) are reported on an as received basis unless otherwise noted.

**Data Qualifiers:**

- B** Analyte also detected in the method blank.
- C** Amendable Cyanide is a negative value due to an unknown interference.
- F** Surrogate Standard Recovery exceeds the laboratory established acceptance limits.
- J** The reported result is an estimated value (eg matrix interference observed or concentration outside the quantitation range).
- N** Non-target analyte. The analyte is TIC (using mass spectrometry).
- P** Concentration difference between primary and confirmation columns >40%.
- Q** One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV
- U** Final concentration is below the detection limit.
- \*** Defined in report comments.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or biological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of the material involved, the test results will be meaningless. If you have any questions regarding the proper techniques of collecting samples, please contact us. However, we cannot be held responsible for sample integrity unless sampling has been performed by a member of our staff.

**REPRESENTATION AND LIMITATION OF LIABILITY** – The accuracy of all analytical results for samples begins as it is received by the laboratory. Integrity of the sample begins at the time it is placed in the possession of authorized Davis & Floyd, Inc. Laboratories personnel. All other warranties, expressed or implied, are disclaimed. Liability is limited to the cost of the analysis.





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**Client:** Bryon Dahlgren  
AECOM  
1360 Peachtree Street  
Suite 500  
Atlanta, GA 30309

**Phone:**

**Fax:**

**Identifier:** 017JI

**Date Rec:** 09/13/2012

**Report Date:** 03/05/2013

**Client Project #:** 60242428.610

**Client Project Name:** Site Characterization/Auriga Spartanburg

**Purchase Order #:** 40523ACM

**Analysis Requested:** CENSUS

**Reviewed By:**

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**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-15-69.5 A	D12-15-69.5 B	D12-14-64	D12-11-40.5	D12-16-64
Sample Date:	09/11/2012	09/11/2012	09/12/2012	09/12/2012	09/13/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<1.58E+01	<1.82E+01	<1.36E+01	<1.30E+01	<4.29E+01
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**Legend:**

NA = Not Analyzed    NS = Not Sampled    J = Estimated gene copies below PQL but above LQL    I = Inhibited  
 < = Result not detected

**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-5-25	D12-26-60	D12-24-54	D12-23-69	D12-9-47
Sample Date:	09/17/2012	09/17/2012	09/20/2012	09/20/2012	09/20/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<3.53E+01	<1.76E+01	<6.98E+01	<6.98E+01	1.38E+02
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**Legend:**

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 < = Result not detected



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**Identifier:** 017JI

**Date Rec:** 09/13/2012

**Report Date:** 03/05/2013

**Client Project #:** 60242428.610

**Client Project Name:** Site Characterization/Auriga Spartanburg

**Purchase Order #:** 40523ACM

**Comments:** Two 1 liter sample containers were both submitted to lab with the same sample name listed as D12-15-69.5. Lab was informed by client to rename the more turbid orange hued 1 liter sample to D12-15-69.5 A and the other 1 liter sample to D12-15-69.5 B.



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**Client:** Bryon Dahlgren  
AECOM  
1360 Peachtree Street  
Suite 500  
Atlanta, GA 30309

**Phone:**

**Fax:**

**Identifier:** 017JI

**Date Rec:** 09/13/2012

**Report Date:** 03/05/2013

**Client Project #:** 60242428.610

**Client Project Name:** Site Characterization/Auriga Spartanburg

**Purchase Order #:** 40523ACM

**Analysis Requested:** CENSUS

**Reviewed By:**

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**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-15-69.5 A	D12-15-69.5 B	D12-14-64	D12-11-40.5	D12-16-64
Sample Date:	09/11/2012	09/11/2012	09/12/2012	09/12/2012	09/13/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<1.58E+01	<1.82E+01	<1.36E+01	<1.30E+01	<4.29E+01
--------------------------	-------------	-----------	-----------	-----------	-----------	-----------

**Legend:**

NA = Not Analyzed    NS = Not Sampled    J = Estimated gene copies below PQL but above LQL    I = Inhibited  
 < = Result not detected

**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-5-25	D12-26-60	D12-24-54	D12-23-69	D12-9-47
Sample Date:	09/17/2012	09/17/2012	09/20/2012	09/20/2012	09/20/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<3.53E+01	<1.76E+01	<6.98E+01	<6.98E+01	1.38E+02
--------------------------	-------------	-----------	-----------	-----------	-----------	----------

**Legend:**

NA = Not Analyzed    NS = Not Sampled    J = Estimated gene copies below PQL but above LQL    I = Inhibited  
 < = Result not detected



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**Identifier:** 017JI

**Date Rec:** 09/13/2012

**Report Date:** 03/05/2013

**Client Project #:** 60242428.610

**Client Project Name:** Site Characterization/Auriga Spartanburg

**Purchase Order #:** 40523ACM

**Comments:** Two of the DHB samples shipped to Microbial Insights on 9-12-12 were inadvertently labeled D12-15-69.5. Microbial Insights labeled the samples D12-15-69.5 A and D12-15-69.5 B and noted that the A suffix sample was more turbid and orange than the B sample. One of these samples was actually from location D12-10-58.5 which was listed on the COC. Based on turbidity and color descriptions from Microbial Insights and Davis and Floyd on or about 9-13-12, the sample with the A suffix matches the sample collected from D12-10-58.5.

**Client:** Bryon Dahlgren  
AECOM  
1360 Peachtree Street  
Suite 500  
Atlanta, GA 30309

**Phone:**

**Fax:**

**Identifier:** 017JI

**Date Rec:** 09/13/2012

**Report Date:** 09/27/2012

**Client Project #:** 60242428.610

**Client Project Name:** Site Characterization/Auriga Spartanburg

**Purchase Order #:** 40523ACM

**Analysis Requested:** CENSUS

**Reviewed By:**



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**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-15-69.5 A	D12-15-69.5 B	D12-14-64	D12-11-40.5	D12-16-64
Sample Date:	09/11/2012	09/11/2012	09/12/2012	09/12/2012	09/13/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<1.58E+01	<1.82E+01	<1.36E+01	<1.30E+01	<4.29E+01
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**Legend:**

NA = Not Analyzed    NS = Not Sampled    J = Estimated gene copies below PQL but above LQL    I = Inhibited  
 < = Result not detected

**Client:** AECOM  
**Project:** Site Characterization/Auriga Spartanburg, SC

**MI Project Number:** 017JI  
**Date Received:** 09/13/2012

**Sample Information**

Client Sample ID:	D12-5-25	D12-26-60	D12-24-54	D12-23-69	D12-9-47
Sample Date:	09/17/2012	09/17/2012	09/20/2012	09/20/2012	09/20/2012
Units:	cells/mL	cells/mL	cells/mL	cells/mL	cells/mL
Analyst:	RW	RW	RW	RW	RW

**Dechlorinating Bacteria**

<i>Dehalobacter spp.</i>	<i>DHBt</i>	<3.53E+01	<1.76E+01	<6.98E+01	<6.98E+01	1.38E+02
--------------------------	-------------	-----------	-----------	-----------	-----------	----------

**Legend:**

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 < = Result not detected



### GROUNDWATER SAMPLING LOG

Sample ID: D12-27-61

Date 12-11-12

Field Personnel Mark Hartford

Site Name Auriga Spartanburg

AECOM Job # 60280417

Weather Conditions cloudy

Air Temperature 55 ° F

Total Depth (TD) = 61 ft bgs

Depth to Ground Water (DGW) = 55.8 ft bgs

Length of Water Column (LWC) = TD - DGW = 5.2 ft bgs

1 Casing Volume (OCV)\* = LWC x 60 = 312 milliliters

3 Casing Volumes = \_\_\_\_\_ milliliters

Sample Collection Method Polyethylene Tubing and SS Check valve

Sample Collection Equipment Polyethylene Tubing and SS Check valve

Total Volume of Water Removed 300 milliliters

Rod Diameter 0.625 inches

Rod Material Steel ft bgs

Screened Interval 57 - 61 ft bgs

Sample Time: 1645

Analysis: VOCs and natural attenuation parameters

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

VOLUME PURGED (milliliters)	FIELD ANALYSES										
	Initial										
TIME (Military)	1630										
pH (S.U.)	6.08										
Sp. Cond. (mS/cm)	0.054										
Water Temp. (°C)	17.84										
ORP (mV)	-51.8										
DO - (mg/L)	2.57										
Turbidity (NTUs)	7100										

COMMENTS/OBSERVATIONS DRG

Ferrous Iron - 0.52 mg/L

**GROUNDWATER SAMPLING LOG**

**Sample ID: D12-27-75**

<p>Date <u>12-11-12</u></p> <p>Field Personnel <u>Mark Hartford</u></p> <p>Site Name <u>Auriga Spartanburg</u></p> <p>AECOM Job # <u>60280417</u></p> <p>Weather Conditions <u>Partly Cloudy</u></p> <p>Air Temperature <u>50</u> °F</p> <p>Total Depth (TD) = <u>25</u> ft bgs</p> <p>Depth to Ground Water (DGW) = <u>55.8</u> ft bgs</p> <p>Length of Water Column (LWC) = TD - DGW = <u>19.2</u> ft bgs</p> <p>1 Casing Volume (OCV)* = LWC x <u>60</u> = <u>1152</u> milliliters</p> <p>3 Casing Volumes = <u>35 3456</u> milliliters</p> <p>Sample Collection Method <u>Polyethylene Tubing and SS Check valve</u></p> <p>Sample Collection Equipment <u>Polyethylene Tubing and SS Check valve</u></p> <p>Total Volume of Water Removed <u>3800</u> milliliters</p>	<p>Rod Diameter <u>0.625</u> inches</p> <p>Rod Material <u>Steel</u> ft bgs</p> <p>Screened Interval <u>71-75</u> ft bgs</p> <p>Sample Time: <u>1255</u></p> <p>Analysis: <u>VOCs and natural attenuation parameters</u></p>
--	--

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

	FIELD ANALYSES									
	Initial	<u>1200</u>	<u>2400</u>	<u>3800</u>						
VOLUME PURGED (milliliters)		<u>1230</u>	<u>1240</u>	<u>3800</u>						
TIME (Military)	<u>1230</u>	<u>1237</u>	<u>1242</u>	<u>1251</u>						
pH (S.U.)	<u>6.19</u>	<u>6.34</u>	<u>6.26</u>	<u>6.21</u>						
Sp. Cond. (mS/cm)	<u>0.112</u>	<u>0.120</u>	<u>0.119</u>	<u>0.118</u>						
Water Temp. (°C)	<u>19.38</u>	<u>21.11</u>	<u>20.65</u>	<u>20.57</u>						
ORP (mV)	<u>-52.7</u>	<u>2.77</u>	<u>-9.2</u>	<u>7.5</u>						
DO - (mg/L)	<u>2.77</u>	<u>4.65</u>	<u>4.02</u>	<u>4.08</u>						
Turbidity (NTUs)	<u>21000</u>	<u>21000</u>	<u>21000</u>	<u>21000</u>						

COMMENTS/OBSERVATIONS Ferrous Iron - 0.34 mg/L Refused @ 75'



**GROUNDWATER SAMPLING LOG**

**Sample ID: D12-28-87**

<p>Date <u>12/10/12</u></p> <p>Field Personnel <u>Mark Hartford</u></p> <p>Site Name <u>Auriga Spartanburg</u></p> <p>AECOM Job # <u>60280417</u></p> <p>Weather Conditions <u>cloudy</u></p> <p>Air Temperature <u>60</u> ° F</p> <p>Total Depth (TD) = <u>87</u> ft bgs</p> <p>Depth to Ground Water (DGW) = <u>61.5</u> ft bgs</p> <p>Length of Water Column (LWC) = TD - DGW = <u>25.5</u> ft bgs</p> <p>1 Casing Volume (OCV)* = LWC x <u>60</u> = <u>1530</u> milliliters</p> <p>3 Casing Volumes = _____ milliliters</p> <p>Sample Collection Method <u>Polyethylene Tubing and SS Check valve</u></p> <p>Sample Collection Equipment <u>Polyethylene Tubing and SS Check valve</u></p> <p>Total Volume of Water Removed <u>4500</u> milliliters</p>	<p>Rod Diameter <u>0.625</u> inches</p> <p>Rod Material <u>Steel</u> ft bgs</p> <p>Screened Interval <u>83 - 87</u> ft bgs</p>  <p>Sample Time: <u>1205</u></p> <p>Analysis: <u>VOCs and natural attenuation parameters</u></p>
--	---

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

	FIELD ANALYSES									
	Initial	1500	3000	4500						
VOLUME PURGED (milliliters)										
TIME (Military)	1145	1150	1155	1200						
pH (S.U.)	6.48	6.59	6.54	6.51						
Sp. Cond. (mS/cm)	0.164	0.189	0.114	0.112						
Water Temp. (°C)	20.48	20.35	20.27	20.25						
ORP (mV)	-387.9	-183.2	-89.2	-96.2						
DO - (mg/L)	0.88	1.25	2.39	2.31						
Turbidity (NTUs)	71000	71000	71000	71000						

COMMENTS/OBSERVATIONS Ferrous Iron - 2.84 mg/L Refused at 87 ft

**GROUNDWATER SAMPLING LOG**

**Sample ID: D12-29-41**

Date 12-12-12

Field Personnel Mark Hartford

Site Name Auriga Spartanburg

AECOM Job # 60280417

Weather Conditions Drizzle

Air Temperature 45 °F

Total Depth (TD) = 41 ft bgs

Depth to Ground Water (DGW) = 36 ft bgs

Length of Water Column (LWC) = TD - DGW = 5 ft bgs

1 Casing Volume (OCV)\* = LWC x 60 = 300 milliliters

3 Casing Volumes = \_\_\_\_\_ milliliters

Sample Collection Method Polyethylene Tubing and SS Check valve

Sample Collection Equipment Polyethylene Tubing and SS Check valve

Total Volume of Water Removed \_\_\_\_\_ milliliters

Rod Diameter 0.625 inches

Rod Material Steel ft bgs

Screened Interval 37 - 41 ft bgs

Dup D12-29-00  
1500

Sample Time: 1440 Dup RMS MSD

Analysis: VOCs and natural attenuation parameters

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

**FIELD ANALYSES**

VOLUME PURGED (milliliters)	Initial	1000	2000	3000						
TIME (Military)	1415	1422	1430	1435						
pH (S.U.)	5.40	5.30	5.33	5.37						
Sp. Cond. (mS/cm)	0.052	0.044	0.045	0.041						
Water Temp. (°C)	15.06	16.41	16.21	16.50						
ORP (mV)	64.4	81.1	90.7	91.1						
DO - (mg/L)	2.95	4.36	4.30	4.34						
Turbidity (NTUs)	>1000	>1000	>1000	>1000						

COMMENTS/OBSERVATIONS Ferrous Iron - 0.47 mg/L



GROUNDWATER SAMPLING LOG

Sample ID: D12-29-50

Date	12-12-12		
Field Personnel	Mark Hartford		
Site Name	Auriga Spartanburg		
AECOM Job #	60280417		
Weather Conditions	Cloudy		
Air Temperature	45	° F	
Total Depth (TD) =	50	ft bgs	
Depth to Ground Water (DGW) =	36.0	ft bgs	
Length of Water Column (LWC) = TD - DGW =	50.14	ft bgs	
1 Casing Volume (OCV)* = LWC x	60	=	940
3 Casing Volumes =	2520	milliliters	
Sample Collection Method	Polyethylene Tubing and SS Check valve		
Sample Collection Equipment	Polyethylene Tubing and SS Check valve		
Total Volume of Water Removed	4500	milliliters	
Rod Diameter	0.625	inches	
Rod Material	Steel		
Screened Interval	46 - 50		
Sample Time:	1130		
Analysis:	VOCs and natural attenuation parameters		

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

FIELD ANALYSES

VOLUME PURGED (milliliters)	Initial	1500	3000	4500						
TIME (Military)	1116	1115	1120	1125						
pH (S.U.)	5.67	5.73	5.68	5.64						
Sp. Cond. (mS/cm)	0.099	0.082	0.079	0.075						
Water Temp. (°C)	18.10	18.93	17.65	17.60						
ORP (mV)	14.2	11.2	12.5	14.1						
DO - (mg/L)	1.61	2.77	2.91	2.75						
Turbidity (NTUs)	71000	71000	71000	71000						

COMMENTS/OBSERVATIONS Ferrous Iron - 1.63 mg/L



**GROUNDWATER SAMPLING LOG**

**Sample ID: D12-30-20**

Date <u>12-13-12</u>	
Field Personnel <u>Mark Hartford</u>	
Site Name <u>Auriga Spartanburg</u>	
AECOM Job # <u>60280417</u>	
Weather Conditions <u>Partly Cloudy</u>	
Air Temperature <u>35</u> °F	
Total Depth (TD) = <u>20</u> ft bgs	
Depth to Ground Water (DGW) = <u>18.9 11.9</u> ft bgs	
Length of Water Column (LWC) = TD - DGW = <u>2.1 8.1</u> ft bgs	
1 Casing Volume (OCV)* = LWC x <u>60</u> = <u>246 486</u> milliliters	
3 Casing Volumes = <u>230 1458</u> milliliters	
Sample Collection Method <u>Polyethylene Tubing and SS Check valve</u>	
Sample Collection Equipment <u>Polyethylene Tubing and SS Check valve</u>	
Total Volume of Water Removed _____ milliliters	
	Rod Diameter <u>0.625</u> inches
	Rod Material <u>Steel</u> ft bgs
	Screened Interval <u>16 - 20</u> ft bgs
	Sample Time: <u>1020</u>
	Analysis: <u>VOCs and natural attenuation parameters</u>

\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

	FIELD ANALYSES									
	Initial	500	1000	1500						
VOLUME PURGED (milliliters)		500	1000	1500						
TIME (Military)	1010	1012	1015							
pH (S.U.)	6.35	6.36	6.31							
Sp. Cond. (mS/cm)	0.101	0.106	0.099							
Water Temp. (°C)	14.04	15.54	15.26							
ORP (mV)	-6.7	3.9	26.2							
DO - (mg/L)	2.00	2.57	2.51							
Turbidity (NTUs)	71000	71000	692	71000						
			0.5							

COMMENTS/OBSERVATIONS Ferrous Iron - 0.62 mg/L

**GROUNDWATER SAMPLING LOG**

**Sample ID: D12-36-50**

<p>Date <u>12-12 12-13-12</u></p> <p>Field Personnel <u>Mark Hartford</u></p> <p>Site Name <u>Auriga Spartanburg</u></p> <p>AECOM Job # <u>60280417</u></p> <p>Weather Conditions <u>Cloudy Partly cloudy</u></p> <p>Air Temperature <u>45 35</u> ° F</p> <p>Total Depth (TD) = <u>50</u> ft bgs</p> <p>Depth to Ground Water (DGW) = <u>15.9</u> ft bgs</p> <p>Length of Water Column (LWC) = TD - DGW = <u>34.1</u> ft bgs</p> <p>1 Casing Volume (OCV)* = LWC x <u>60</u> = <u>2046</u> milliliters</p> <p>3 Casing Volumes = <u>6138</u> milliliters</p> <p>Sample Collection Method <u>Polyethylene Tubing and SS Check valve</u></p> <p>Sample Collection Equipment <u>Polyethylene Tubing and SS Check valve</u></p> <p>Total Volume of Water Removed <u>2100</u> milliliters</p>	<p>Rod Diameter <u>0.625</u> inches</p> <p>Rod Material <u>Steel</u> ft bgs</p> <p>Screened Interval <u>46 - 50</u> ft bgs</p>  <p>Sample Time: <u>935</u></p> <p>Analysis: <u>VOCs and natural attenuation parameters</u></p>
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\* - Milliliters per foot factors for diameters: 0.5/39; 0.625/60; 0.75/87; 1/154; 2/618; 4/2471

	FIELD ANALYSES									
	Initial	2100								
VOLUME PURGED (milliliters)	915	920								
TIME (Military)	6.72	6.85								
pH (S.U.)	0.156	0.153								
Sp. Cond. (mS/cm)	1473	1434								
Water Temp. (°C)	-85.8	-42.0								
ORP (mV)	3.71	4.42								
DO - (mg/L)	7100	7100								
Turbidity (NTUs)										

COMMENTS/OBSERVATIONS Ferrous Iron - 1.16 mg/L