VOLUNTARY COMPLIANCE STATUS REPORT

HUNTING CREEK SHOPPING PLAZA
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, ROCKDALE COUNTY, GEORGIA
HSI SITE NO. 10832

Submitted to:

Georgia Department of Natural Resources
Hazardous Waste Management Branch
Suite 1462, East Tower
2 Martin Luther King Jr. Drive SE
Atlanta, Georgia 30334

Prepared for:

F.S. Associates, L.P.
c/o Kazmarek Geiger & Laseter LLP
One Securities Center
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Atlanta, Georgia 30305

Prepared by:

MACTEC Engineering and Consulting, Inc.
396 Plasters Avenue
Atlanta, Georgia 30324
MACTEC Project No. 6121-10-0013

June 2011

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engineering and constructing a better tomorrow

June 6, 2011

Ms. Alex Cleary
Program Manager
Georgia Department of Natural Resources
Hazardous Waste Management Branch
Suite 1462, East Tower
2 Martin Luther King Jr. Drive SE
Atlanta, Georgia 30334

Subject: **Voluntary Compliance Status Report**
Hunting Creek Shopping Plaza
1820 Georgia Highway 20 South
Conyers, Rockdale County, Georgia
HSI Site No. 10832

Dear Ms. Cleary:

MACTEC Engineering and Consulting, Inc. (MACTEC – which merged with AMEC plc on June 3, 2011) is please to submit this Voluntary Compliance Status Report (CSR) on behalf of F.S. Associates, L.P. ("F.S. Associates") as the responsible party, and with the expressed consent of Fred Damavandi, principal of the property owner, Rose City Village Affordable Housing Limited Partnership ("Rose City"). This CSR summarizes the existing soil, groundwater and vapor conditions on the subject Site and is submitted in-lieu of the first semi-annual progress report and in completion of the Voluntary Remediation Program corrective action process per the application submitted by FS Associates on October 8, 2010 and accepted by EPD on December 6, 2010.

Based on the findings to date: (1) the Site is in compliance with Type 1 risk reduction standards for soil, (2) groundwater conditions have been delineated and fate and transport modeling of impacted groundwater illustrates no human or environmental receptors will be impacted by this release, (3) groundwater is in compliance with Type 1 risk reduction standards at the point of compliance, (4) site specific data illustrates an incomplete pathway for vapor intrusion and there is no unacceptable risk for human exposure, and (5) there are no non-qualifying properties affected by the release. On behalf of F.S. Associates and Rose City, MACTEC respectfully requests the EPD delist Hunting Creek Plaza from the Hazardous Site Inventory.

Please contact Chuck Ferry at 404-873-4761 with any questions you may have regarding this submittal.

Sincerely,

MACTEC Engineering and Consulting, Inc.

Tyler J. Boyles
Project Geologist

Charles T. Ferry, P.E.
Senior Principal Engineer

cc: Mr. Scott Lasester, Kazmarek Geiger & Laseter LLP

Project No. 6121-10-0013

CERTIFICATION STATEMENT

I certify under penalty of law that this report and all attachments were prepared under my direction in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Based on my review of the findings of this report with respect to the risk reduction standards of the Rules for Hazardous Site Response, Rule 391-3-19-.07, I have determined that soil and groundwater at the subject Site located at 1820 SE Highway 20 in Conyers, Georgia, are in compliance with Type 1 risk reduction standards as calculated pursuant to the Voluntary Remediation Program.

Mitchell M Wirth

Mr. Mitchell Wirth
F.S. Associates, L.P.

6/6/11

Date

GROUNDWATER SCIENTIST STATEMENT

I certify under penalty of law that this report and all attachments were prepared by me or under my direct in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, etseq.). I am a qualified groundwater scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport.

I further certify that this report was prepared in conjunction with others working under my direction. In compliance with the Voluntary Remediation Program Act, a summary of hours invoiced and a description of services provided is included in Appendix H to document my direct oversight of the implementation of the Voluntary Remediation Plan and preparation of this Voluntary Compliance Status Report.

Mr. Charles T. Ferry, P.E.
Georgia Registration No. 10957

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LIST OF APPENDICIES

1.0 INTRODUCTION

The subject site is located at 1820 Georgia Highway 20 South in Conyers, Rockdale County, Georgia, and is currently developed with a strip shopping center and associated parking. The subject shopping center, Hunting Creek Shopping Plaza, contains of a variety of retail tenant spaces. A former dry cleaner, Esquire Cleaners, operated on the south end of the building from 1988 to 2005. A site location/topographic map and aerial photograph are presented as Figures 1 and 2, respectively in Appendix B.

Hunting Creek Shopping Plaza consists of approximately 12 acres, comprised of three parcels identified on the Rockdale County Tax Assessor's website as Tax Parcel IDs 075001034A, 075001034T and 075001034U. On behalf of F.S. Associates, MACTEC prepared and submitted a Voluntary Remediation Plan Application to the Georgia Voluntary Remediation Program ("VRP") on October 8, 2010, for Tax Parcel 075001034A only, as Tax Parcels 075001034T and 075001034U were determined to be ineligible under Section 12-8-105 of the VRP statute. Therefore, for purposes of this compliance status report, the "Site" refers to Tax Parcel 075001034A. A legal description of the Site and plat map are included in Appendix A.

Several previous environmental assessments have been conducted at the property since 1997 which revealed the presence of volatile organic compounds (VOCs) in soil and groundwater in the area of the former dry cleaner. Results of an initial soil assessment conducted at the subject site in 1997 were submitted to the Georgia Environmental Protection Division (EPD) as part of a Hazardous Site Response Act (HSRA) Release Notification. At that time, the Site was not listed on the Hazardous Site Inventory (HSI).

Follow-up environmental assessments were conducted in 2005, as part of a potential property transaction, which consisted of both a soil and groundwater assessment. Results of the 2005 soil and groundwater assessments were submitted to the Georgia EPD. The Georgia EPD listed the subject site on the HSI as site number 10832 due to the presence of VOCs in groundwater at levels exceeding reportable quantities and the presence of a private drinking water well located approximately ½-mile to the west, which the most recent data confirms is in an up-gradient direction from the Site.

The Site has been the subject of several rounds of corrective action focused primarily on soil impacts in and around the former dry cleaner. These activities have included enhanced vapor recovery, both

excavation and off-site disposal and in situ chemical oxidation. Although focused on soil impacts, these corrective action measures were also intended to benefit groundwater conditions. As shown below, these activities have brought both soil and groundwater into compliance with applicable risk reduction standards as calculated pursuant to the VRP protocols.

1.1 PREVIOUS DOCUMENTS

The Site has been the subject of a number of environmental assessments conducted by various consultants between 1997 and 2010 which identified regulated substances in soil and groundwater at the Site. The following lists the previous documents from which data and other information were utilized for this report.

- Initial HSRP Initial Release Notification, submitted by F.S. Associates, L.P., dated December 19, 1997.
- Letter by Georgia EPD to F.S. Associates, L.P., "No Listing" on Hazardous Site Inventory, dated December 24, 1997.
- HSRP Release Notification, submitted by F.S. Associates, L.P., dated January 30, 2006.
- Letter by Georgia EPD to F.S. Associates, L.P., Listing of Hunting Creek Plaza on Hazardous Site Inventory, dated March 21, 2006.
- Prospective Purchaser Corrective Action Plan, prepared by Peachtree Environmental for Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc., dated August 2006.
- Letter by Georgia EPD to Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc., Approval of Prospective Purchaser Corrective Action Plan, dated September 6, 2006.
- Prospective Purchaser Compliance Status Report, prepared by Peachtree Environmental for Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc., dated July 2007.
- Amended Prospective Purchaser Compliance Status Report, prepared by Peachtree Environmental for Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc., dated March 2008,
- Summary of Corrective Actions for Hunting Creek Shopping Center, prepared by Peachtree Environmental for F.S. Associates, L.P., dated August 29, 2008.
- Draft Petition for the Site to be "delisted" from the Hazardous Site Inventory, prepared by Kazmarek Geiger & Laseter LLP, dated February 9, 2009.
- Letter by Georgia EPD to Kazmarek Geiger & Laseter LLP, requesting additional information, dated April 9, 2009.
- Response to Georgia EPD request for additional information, prepared by Peachtree Environmental, dated May 20, 2009.

- Revised Voluntary Remediation Plan Application, prepared by MACTEC for F.S. Associates, L.P., dated October 8, 2010.
- Letter by Georgia EPD to F.S. Associates, L.P., accepting Tax Parcel 075001034A into the Voluntary Remediation Program, dated December 6, 2010.

1.2 BACKGROUND

In December 1997, a limited environmental investigation was performed at the subject site, which focused on the area of Esquire Cleaners. At that time, only soil samples were collected during the investigation and tetrachloroethene (PCE) was detected above the HSRA notification concentration. No groundwater samples were collected. The Georgia EPD was notified as to the presence of PCE in soil. Because no groundwater impact was reported, the EPD scored the Site as having a "suspected" release to groundwater with the nearest drinking water well within ½-mile of the Site. Based on EPD's evaluation, the Site was not listed on the HSI and a "no listing" letter was issued on December 24, 1997.

In September 2005 and again in November and December 2005, follow-up limited environmental investigations were performed which included the installation of twelve direct push borings, five hand augered borings, five soil test borings (three of which were converted to shallow groundwater monitoring wells and two of which were converted to deep bedrock groundwater monitoring wells) and two soil vapor extraction wells. PCE was detected above the notification concentration of 0.18 milligrams per kilogram (mg/kg) in seven soil borings. Additionally, PCE was also detected in two of the five groundwater wells around the dry cleaner at concentrations of 92 and 2,400 micrograms per liter (µg/l). As a result, a second HSRA release notification was submitted to the Georgia EPD in January 2006. The Site was listed on the HSI as Site No. 10832 because the PCE detected in groundwater was at a concentration above 1% of solubility, which EPD interpreted as indicative of the possible presence of a dense non-aqueous phase liquid (DNAPL), combined with the previous finding of a drinking water well present within ½-mile of the Site.

A Prospective Purchaser Corrective Action Plan (PPCAP) was submitted to EPD in August 2006 on behalf of Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc. This PPCAP was approved by EPD in September 2006. The PPCAP was implemented from August to December 2006. The soil corrective actions implemented at the Site consisted of the excavation and off-site disposal of approximately 45 tons of impacted soil and in-situ chemical oxidation treatments of the remaining impacted soil.

Following completion of the soil corrective action activities, a Prospective Purchaser Compliance Status Report (PPCSR) was submitted to EPD in July 2007. In response to Georgia EPD's notice of deficiency letter dated December 6, 2007, an amended PPCSR was submitted in March 2008. EPD concurred in a July 29, 2008 letter and again in March 26 and September 13, 2010 comment letters to previous VRPA submittals pursuant to the Voluntary Remediation Program, that the soil on-Site is in compliance with the Type 1 risk reduction standards (RRS).

Subsequent to submittal of the PPCSR, Peachtree Environmental performed supplemental chemical treatments using infiltration piping installed during the remediation. These efforts included both injection of heated water to remobilize precipitated potassium permanganate and additional persulfate injections, all intended to address any residual impacts not reached by the direct soil remedy.

The Revised Voluntary Remediation Plan Application dated October 8, 2010, was approved by EPD in a letter dated December 6, 2010 which set a schedule for further submittals. This Voluntary Compliance Status Report is submitted in-lieu of the first semi-annual progress report and in completion of the VRP process.

2.0 PURPOSE

The purpose of this Compliance Status Report (CSR) is to document the current status of the Site with regard to the VRP for all regulated substances associated with a release at the property. This CSR was compiled on the basis of property conditions which were characterized through a series of investigations and remedial actions performed at the site by Peachtree Environmental, MACTEC Engineering and Consulting, Inc. and others between 1997 and 2011.

3.0 SITE SETTING

Understanding the site setting is important in evaluating the fate and transport of contaminants in the subsurface. The geology and hydrogeology of the Site discussed below are based on the information obtained during investigative activities at the Site, from numerous previous reports on the Site, and from reviews of published literature.

3.1 REGIONAL GEOLOGY

The subject site is located in the Piedmont Physiographic Province. The Piedmont parallels the eastern edge of the North American continent south of New England and east of the Blue Ridge Province. The Piedmont is the non-mountainous part of the Appalachians, and slopes generally from the mountains toward the Coastal Plain. In general, the northwest boundary of the Piedmont is at the foot of the mountains. The southeastern boundary is located where the crystalline rocks of the Piedmont are overlain by the younger sediments of the Coastal Plain. The Piedmont landscape typically consists of rolling terrain of gentle slope, cut or bounded by valleys of steeper slop and greater depth.

3.2 SITE SPECIFIC GEOLOGY

The subject site is underlain by late Precambrian to early Paleozoic bedrock of the Clairmont Formation of the Atlanta Group: The Clairmont Formation in the area of the Site is mapped as consisting of interlayered medium-grained biotite-plagioclase gneiss and fine to medium grained hornblende-plagioclase amphibolite. The residual soils present in this geologic area have been formed by the in-place chemical and physical weathering of the parent rock types. Weathering is facilitated by fractures, joints, and by the presence of less resistant rock types. The typical residual soil profile consists of clayey soils near the ground surface, where soil weathering is more advanced, transitioning to sandy silts and silty sands that generally become harder with depth to the top of parent rock.

Numerous investigative borings have been completed at the Site. Across the Site, 2 to 10 feet of fill comprises the upper portion of the soil profile. The fill is underlain by typical residual soils consisting of silty sands and sandy silts. Drilling refusal on bedrock was encountered in two on-Site wells (MW-3 and MW-8), one upgradient well (MW-2) and two down-gradient wells (MW-6 and MW-7) at depths of 7 and 15 feet. The refusal material was penetrated by air hammering in MW-2, MW-3, MW-6 and MW-8.

3.3 GROUNDWATER FLOW

In the Piedmont Geologic Region, groundwater generally occurs under water table conditions and is stored in the overlying mantle of residuum and in the structural features (i.e., joints, fractures, faults) present in the underlying rock. Recharge to the water table occurs primarily through precipitation infiltrating the upper soils and percolating downward, under the influence of gravity, to the groundwater table. Typically, the water table is not a level surface, but a subdued reflection of the land surface. Depth to the water table is variable, being dependent on many factors which include: the amount of rainfall, the permeability of the soil, the extent of fracturing in the underlying rock, and the amount of groundwater being pumped from the underlying aquifer.

Groundwater generally flows in directions subparallel to the ground surface slopes under the influence of gravity towards points of discharge such as creeks, swamps, drainage swales or pumped groundwater wells. Based on our review of the topographic maps, we initially interpreted the natural groundwater flow across the property to be generally to the southeast.

In support for the preparation of the Voluntary Remediation Plan Application dated February 25, 2010, amended July 9 and October 8, 2010, the depth to groundwater was measured by MACTEC in five monitoring wells installed by Peachtree Environmental. Groundwater depths measured on January 21, 2010 ranged from 5.4 feet to 13.7. The groundwater flow direction was interpreted to be toward the southeast.

In April and May 2011, MACTEC installed one additional bedrock well (MW-8) on-site and two monitoring wells (MW-6 and MW-7) on the adjacent property which is currently occupied by Best Rate Self Storage. Following well installation, the five monitoring wells remaining from the Peachtree Environmental investigation, and the additional on-site well and two off-site wells, installed by MACTEC, were surveyed relative to documented elevation points to establish the top of casing elevation for each well. Water level measurements were made in the new and existing wells using an electronic water level indicator from the top of the casing. The water level data are tabulated on Table 4 in Appendix C and are illustrated, along with interpreted water table contours, on Figure 8 in Appendix B.

From groundwater depths measured on May 5, 2011, the potentiometric surface elevations were calculated and the groundwater flow direction was interpreted to be to the east-southeast, toward an unnamed body of water approximately 550 feet from the Site. Groundwater in this region typically

discharges into creeks or impoundments that lie in topographically low areas and is expected to discharge to the unnamed body of water located east of the Site. No other obvious variations in the local geologic conditions were identified which would be expected to cause changes in the groundwater flow direction in the area.

Comparison of the groundwater elevations in MW-5 (screened at the water table) and adjacent MW-8 (screened in bedrock) indicate a slightly downward vertical flow component.

3.4 HYDRAULIC CONDUCTIVITY TESTING (SLUG TESTING)

Slug tests were performed in three wells (MW-1, MW-4 and MW-5) at the Site to evaluate hydraulic conductivity. The slug tests were performed by lowering a solid 'slug' into each well, allowing the water level to recover and stabilize. The slug was then removed and the rate at which the groundwater recovered to its static level was measured using a data logger.

The data were evaluated using AqteSolve which calculates hydraulic conductivity based on the data obtained during the slug tests and selected well construction parameters. The slug test results indicate that hydraulic conductivities (K) vary at the Site from approximately 2.721×10^{-4} centimeters per second (cm/sec) to 5.006×10^{-5} cm/sec in the shallow residual soil aquifer. This is equivalent to approximately 5 to $10x\ 10^{-4}$ feet per minute, with an average value of 1.27×10^{-4} ft/min or 1.83×10^{-1} ft/day. The slug test data are included in Appendix F.

Based on the data obtained from the May 2011 groundwater elevation measurements, the horizontal groundwater gradient within the shallow aquifer at the Site was calculated to be approximately 0.078 ft/ft between wells MW-1 and MW-7. This value was utilized for the purpose of calculating the groundwater flow rate.

The effective porosity was assumed to be 15%, a value typical of Piedmont soils. The following formula was used to calculate the groundwater flow rate (Applied Hydrology, C. W. Fetter, 1994):

$$\text{Velocity} = \frac{Ki}{n_e}$$

where: K = hydraulic conductivity (feet per day) = 0.156 average
i = hydraulic gradient (feet per foot) = 0.04
n_e = effective porosity (unitless) = 0.15

Based on the data input, an estimated groundwater velocity of 0.042 feet/day, or approximately 15 feet/year was calculated. We note, however, that PCE does not migrate at the same rate as groundwater and also is diluted as it migrates. This is evident through the horizontal delineation wells (MW-6 and MW-7) and the vertical delineation wells (MW-3 and MW-8), which exhibited no PCE impacts in groundwater. Although slug tests were not performed in well MW-8 screened in bedrock, the recharge time for this well during development was very slow, indicating a much lower K value in the bedrock. However, the similarity of groundwater elevations in MW-5 and MW-8 indicate a connectivity between the residual soil and bedrock.

4.0 DESCRIPTION OF THE RELEASE SOURCE

Results of soil and groundwater assessment activities indicate that a release of regulated substances to soil and groundwater has occurred at the Site. This section of the CSR provides a description of the source of the release.

4.1 REGULATED SUBSTANCES RELEASED

The regulated substances identified in soil are: tetrachloroethene (CAS No. 127-18-4), trichloroethene (CAS No. 79-01-6), acetone (CAS No. 67-64-1), methyl acetate (CAS No. 79-20-9), xylenes (CAS No. 133-020-7), ethylbenzene (CAS No. 100-41-4), toluene (CAS No. 108-88-3) and 2-butanone (CAS No. 78-93-3).

The regulated substances identified in groundwater are: tetrachloroethene (CAS No. 127-18-4), acetone (CAS No. 67-64-1) and chloroform (CAS No. 67-66-3).

4.2 SOURCE OF RELEASE

According to the July 2007 "Prospective Purchaser Compliance Status Report" prepared by Peachtree Environmental, Inc., the Site was developed with a strip shopping center in 1987. The only environmentally suspect tenant was a former dry cleaner which operated as Esquire Cleaners in the southernmost tenant space of the building from 1988 until 2005.

The impacted soils indentified on-Site were located in the immediate vicinity of the former dry cleaner tenant space. As no other suspect tenants occupied the premises, the former dry cleaning operations are considered the source of the tetrachloroethene impacts to soil and groundwater identified on Site. With the removal of the dry cleaner and associated equipment in 2005 and the completion of soil corrective action activities as documented in Peachtree Environmental's CSR dated March 2008, all known ongoing contributions to subsurface impacts have been eliminated.

The acetone in groundwater is likely related to a laboratory induced artifact and chloroform is related to a municipal water source, both of which are inconsequential.

4.3 DESCRIPTION OF THE SOURCE

The source of the release at the Site is interpreted to be general operation of the former dry cleaners. Due to the length of time since the dry cleaner was active and the lack of specific information regarding on-site operations, additional details regarding the source of the release are not available.

4.4 CHRONOLOGY OF THE RELEASE

Specific information regarding the chronology of the release is not available. According to information reportedly obtained by Peachtree Environmental, the former on-site dry cleaner operated from approximately 1988 until at least 2005. The initial release to soil was not detected on Site until 1997 during an environmental assessment. Results of the initial soil assessment were submitted to the Georgia EPD as part of a release notification. At that time, the Site was not listed on the Hazardous Site Inventory. Follow-up environmental assessments were conducted in 2005 which consisted of both soil and groundwater assessments. The results of the 2005 assessment were reported to the Georgia EPD and the Site was listed on the Hazardous Site Inventory in March 2006.

5.0 DELINEATION OF SOIL IMPACTS

Soil sampling and testing have been conducted on Site over a period of time between December 1997 and January 2008. The data collected and the conclusions drawn from these investigations have been summarized in various submittals to the Hazardous Site Response Program (HSRP) which include: July 2007 PPCSR, March 2008 Amended PPCSR and May 2009 Response to Georgia EPD Request for Additional Information.

5.1 SOIL DELINEATION CONCENTRATION CRITERIA

Based on the results of previous subsurface investigations, as reported to the Hazardous Site Response Program (HSRP) and detailed above, the Constituents of Concern (COCs) at the Site consist of various chlorinated and non-chlorinated VOCs, primarily tetrachloroethene. The soil delineation concentration criteria are presented in Table 1 for the known COCs.

5.2 SUMMARY OF PERTINENT SOIL TESTING DATA

The assessment of soil contamination was accomplished through the installation and sampling of drilled soil borings, direct push borings and hand auger borings. The results of the soil laboratory analyses from the previous assessments are summarized in Tables 2 and illustrated on Figure 4.

As discussed, environmental investigations performed in 2005 resulted in the Site's listing on the HSI as Site No. 10832. Following the listing on the HSI, additional environmental assessments were conducted at the Site between November 2005 through January 2008, by Peachtree Environmental. A total of 42 soil samples were analyzed from 31 soil test borings for VOCs. Soil testing revealed the presence of PCE in 4 samples at concentrations greater than the proposed site delineation concentration or Type 1 RRS of 0.5 mg/kg.

The collected soil testing data was used to outline those soils which were impacted with PCE above the Type 1 RRS. Remediation of the PCE contaminated soil was initiated between August to December 2006. The remediation efforts consisted of both excavation and offsite disposal of approximately 45 tons of soil and in-situ chemical oxidation treatments through the injection of persulfate and permanganate. Completion of the remediation activities were confirmed through verification samples in accordance with

the approved PPCAP. Results of the confirmation testing are summarized on Table 2 and revealed that the on Site soils are in compliance with the Type 1 RRS.

6.0 DELINEATION OF GROUNDWATER IMPACTS

Groundwater assessment activities on Site were conducted by Peachtree Environmental between December 2005 and July 2008 and by MACTEC between January 2010 and May 2011. Refer to Figure 3 for a plan of the monitoring well locations and a summary of the groundwater analytical data collected to date for both the Site and immediately surrounding area.

6.1 GROUNDWATER DELINEATION CONCENTRATION CRITERIA

Based on the results of previous subsurface investigations, as reported to the Hazardous Site Response Program (HSRP) and detailed above, the Constituents of Concern (COCs) at the Site consist of primarily tetrachloroethene. However, during various groundwater sampling events conducted by Peachtree Environmental, acetone and chloroform was reported in three on-site wells (MW-1, MW-4 and MW-5). The acetone in groundwater is likely related to a laboratory induced artifact and chloroform is related to a municipal water source, both of which are inconsequential. Nevertheless, the groundwater delineation concentration criteria for constituents detected in groundwater as called for under the VRP are presented in Table 1.

6.2 ANALYTICAL PARAMETERS SELECTED

The wells installed during assessment activities were intended to investigate for impacts related to the former dry cleaners. As such, the groundwater samples were analyzed for VOCs.

6.3 GROUNDWATER MONITORING WELLS

During Peachtree Environmental's December 2005 assessment, five groundwater monitoring wells were installed, one along the western and southern end and three along the eastern end in the parking area behind the dry cleaning premises. Three shallow groundwater monitoring wells (MW-1, MW-3, MW-4) and two deep bedrock monitoring wells (MW-2, MW-5) were installed. Note that MW-2 is upgradient and on a separate parcel not included as part of the Site.

In April 2011, MACTEC installed two Type II groundwater monitoring wells (MW-6 and MW-7) on the adjacent off-site property which is currently occupied by Best Rate Self Storage. In addition, MACTEC installed one deep Type III monitoring well (MW-8) located behind the former dry cleaner and adjacent

to MW-5 which exhibited the highest concentrations of PCE impacts to shallow groundwater. The monitoring wells were installed in soil borings advanced using a drill rig and hollow stem augers. In the case of the off-site well MW-6, since bedrock was encountered before groundwater, an air hammer was utilized to extend the boring into bedrock. Boring logs and well construction diagrams are included in Appendix E.

The two off-site wells installed by MACTEC were constructed using two-inch diameter PVC casing to the surface with the bottom 5 to 15 feet consisting of slotted 0.001-inch PVC screen. A filter pack consisting of bagged quartz sand was placed around the well screens to approximately two feet above the screen. At least two feet if hydrated bentonite chips were placed above the filter pack. The remainder of the borehole annulus of each boring was filled with cement grout. A lockable well cap and protective well covers were installed at the surface.

A deep Type III well (MW-8) was installed in rock by MACTEC downgradient of the former dry cleaner and adjacent to MW-5. This well was intended to evaluate the vertical extent of groundwater impacts, if any. To construct the deep well, the auger boring was extended to the top of bedrock and a four-inch PVC solid casing was installed in the boring and grouted into place. Once the grout had hardened, an air hammer was used to penetrate the grout and extend the boring approximately 29 feet below the rock surface. A well was then constructed in the same manner as previously described with a two-inch diameter PVC casing. The lower ten feet was slotted to span an interpreted permeable zone in the rock.

6.4 SAMPLING AND ANALYSIS PROCEDURES

Following are a description of MACTEC's procedures during the April and May 2011 activities. Peachtree Environmental's sampling procedures have been previously reported in the July 2007 PPCSR and March 2008 amended PPCSR.

6.4.1 Groundwater Elevation

Groundwater levels were measures from the top of the well casing in each of the eight monitoring wells. As discussed in Section 3.3, a level survey was conducted to measure the elevation of the top of each well casing. Based on the May 2011 water level measurements, groundwater flow across the Site was interpreted to be generally toward the southeast.

6.4.2 Well Evacuation Procedures

Well development conducted by MACTEC consisted of pumping the wells until at least five well volumes of water had been removed and groundwater was relatively clear of fine particles. The water quality parameters of temperature, pH, specific conductivity and turbidity were measured during well development. Groundwater samples were collected upon stabilization of the water quality parameters and/or adequate recharge of the wells. The field groundwater sampling forms are included in Appendix E.

6.4.3 Groundwater Sampling, Handling and Preservation

Groundwater samples were collected from wells MW-1, MW-3, MW-4 and MW-5 by MACTEC in January 2010, and from wells MW-6, MW-7 and MW-8 in April and May 2011. Clean nitrile gloves were worn during all development and sampling activities and were changed between each well location. Samples were collected and poured into clean sample containers, supplied by the laboratory, which contained the preservative appropriate for each test. Following sample collection, the bottles were stored on ice in a cooler until they were transferred to the laboratory. The samples were maintained under chain-of-custody control from the time they were collected until they were relinquished to the laboratory.

6.4.4 Decontamination Procedures

Decontamination procedures employed consisted of the use of clean, unused disposable bailers and/or dedicated tubing at each sampling location. Nitrile gloves were also worn and changed between each sampling location. No equipment was used to sample more than one well.

6.5 LABORATORY ANALYTICAL TECHNIQUES

6.5.1 Analytical Procedures

Following delivery to Analytical Environmental Services, Inc. (AES), the groundwater samples were analyzed for VOCs (SW-846 Test Method 8260B). AES maintains a current National Environmental Laboratory Accreditation Conference (NELAC) certification for the analysis of VOCs.

6.5.2 Quality Control Samples

The groundwater samples were maintained under chain-of-custody control and submitted to the analytical laboratory for testing. Trip blanks prepared by the laboratory were also submitted for testing. QA/QC was conducted in accordance with the laboratory analysis selected. Backup QA/QC data for these samples is included in the laboratory reports in Appendix D.

6.5.3 Chain-of-Custody Procedures

Samples collected during MACTEC's assessments were delivered to the analytical laboratory under chain-of-custody protocol. From the time of collection until they were released to the laboratory, the samples were stored in ice-filled coolers. Chain-of-Custody records documenting the transfer of the samples to the laboratory were maintained and are included in the laboratory reports in Appendix D.

6.6 BACKGROUND GROUNDWATER QUALITY

Because the organic constituents acetone, chloroform and tetrachloroethene are not typical of naturally occurring substances in the Piedmont, naturally occurring background conditions for these constituents at the site were assumed to be below laboratory detection limits. However, the acetone is likely related to a laboratory induced artifact and chloroform is related to a municipal water source, both of which are inconsequential and not a result of a release from former dry cleaning operations.

6.7 SUMMARY OF GROUNDWATER TESTING RESULTS

Refer to Figure 3 in Appendix B for the locations of groundwater monitoring wells referenced in the following discussion. The groundwater laboratory data is summarized on Table 3 in Appendix B and illustrated on Figure 5 in Appendix B. Laboratory reports are included in Appendix D.

Following the installation of the five monitoring wells by Peachtree Environmental, numerous groundwater sampling events were conducted at the Site between December 2005 through March 2008. Groundwater testing indicated PCE was present in two of the five wells, at concentrations ranging which varied over time.

In January 2010, MACTEC sampled four of the five monitoring wells in order to characterize the current conditions of groundwater at the Site. The fifth well, MW-2, was not sampled because the well is situated over 300 feet upgradient from the former dry cleaner and the documented release to groundwater. In

addition, historical groundwater testing at this well has shown no impacts of regulated constituents. PCE was detected in wells MW-4 and MW-5 at concentrations of 77 µg/L and 980 µg/L, respectively, which has decreased significantly since the last sampling event conducted by Peachtree Environmental in July 2008. VOCs were not detected in groundwater samples collected from MW-1 and MW-3.

In April 2011, MACTEC installed and sampled two monitoring wells on the adjacent property to the east, which is currently occupied by Best Rate Self Storage, to aid in the delineation of the lateral extent of PCE impacted groundwater. In May 2011, one deep Type III well (MW-8) was also installed on the subject Site behind the former dry cleaner and adjacent to MW-5, which has historically exhibited the highest concentrations of PCE, to delineate the vertical extent of the PCE plume in this area. No PCE or other VOC constituents were detected in the two off-site wells (MW-6 and MW-7) or the deep on-site well (MW-8).

The results of the off-site assessment, coupled with the deep well (MW-8) installed on Site, indicate that significant migration of PCE impacts to groundwater has not occurred beyond that which has been previously reported. As such, the horizontal and vertical extent of PCE in groundwater has been delineated and appears to be isolated along the eastern end of the Site behind the former dry cleaner.

7.0 POTENTIAL RECEPTORS AND EXPOSURE PATHWAY ASSESSMENT

The following potential exposure pathways and receptors were considered:

- Potential exposure to regulated constituents in soil;
- Potential exposure to regulated constituents in groundwater;
- Potential exposure to regulated constituents in surface water;
- Potential exposure to regulated constituents due to vapor intrusion from impacted soil or groundwater beneath the building.

7.1 SOIL CRITERIA

The potential for direct exposure to impacted soil at the Site is considered inconsequential, both because all impacted soil is covered by either paving or a commercial building and all soil concentrations meet Type 1 RRS. Thus, soil concentrations are below the approved direct exposure risk reduction standards for commercial, construction workers and utility workers in the event that ground-disturbing activities are performed in the future.

7.2 GROUNDWATER CRITERIA

In 2005 Peachtree Environmental conducted a water usage survey to identify drinking water sources within a one mile radius of the Site. Four drinking water wells were identified within ½ to 1 mile of the Site. According to an EPD trip report dated March 1, 2006, EPD confirmed that two of the wells no longer exist, one of the wells is used only for irrigation and one of the wells is used as a potable water source. The active private drinking water well was reportedly located at 2150 Miller Chapel Road which is approximately a distance of ½-mile to the west of the Site.

On February 1, 2010 MACTEC contacted Mr. Alvin Vaughn, current property owner at 2150 Miller Chapel Road, in order to confirm the current use of the private drinking water well. According to Mr. Vaughn, the private residence located at 2150 Miller Chapel Road was converted to an office in 2007. He indicated that the private well is being used to supply drinking water to office space located at 2150 Miller Chapel Road. Based on measurements obtained using Rockdale County Parcel Maps, MACTEC has determined the distance between the private well and the nearest impacted on-site monitoring well MW-5 to be at least 2760 feet, which is slightly more than ½-mile. Further, based on potentiometric measurements and regional topography, this well is located upgradient from the Site. Based on our

research and experience, potable drinking water wells in the Piedmont are typically set within the bedrock aquifer. Mr. Vaughn could not verify the depth of the well or if the well is set in the bedrock aquifer. Nevertheless, PCE impacts have been vertically delineated on-Site and only the shallow groundwater along the eastern end of the property has been affected by the release. Therefore, the exposure pathway for human consumption of impacted groundwater is incomplete.

Groundwater sampling in January 2010 has shown that the PCE impact in MW-5 has decreased to 980 µg/L which is well below 1% of solubility recognized as 206,000 µg/L. Therefore, there is no indication of the presence of DNAPL. In addition, the deep bedrock monitoring well (MW-8) installed adjacent to MW-5 revealed no PCE impact, which further supports a conclusion that DNAPL is not present nor has been present at the Site.

The subject shopping center property is well developed and there are no plans for future construction in the vicinity of the groundwater plume which has been laterally and vertically delineated along the eastern end of the property. In addition, the depth to the water table is greater than 12 feet as identified in the four monitoring wells east of the shopping center building. Utilities in the area are buried less than 5 feet deep. Therefore, the potential for exposure of construction and/or utility workers is low.

7.3 POINT OF EXPOSURE FOR GROUNDWATER COMPLIANCE

Under the VRP, "Point of exposure" means the nearest of the closest existing down gradient drinking water supply well, the likely nearest future location of a drinking water well, or a hypothetical point of drinking water exposure located at a distance of 1000 feet down gradient from the Site. The VRP calls for the establishment of a "point of demonstration well" located such that measurements from that well allow prediction of concentrations at the down-gradient Point of Exposure.

The subject Site is located in an area of commercial and multi-family residential development with no drinking water wells located within 1000 feet or likely to be so located in the future. However, there is an unnamed lake to the east approximately 550 feet from the Site in a down-gradient direction. The lake is owned by Rockdale County and proposed for future recreational use. In order to be conservative, the unnamed lake was used for the hypothetical Point of Exposure. For this Voluntary Compliance Status Report, MW-6 and MW-7 are designated as the Point of Demonstration wells. Figure 9 illustrates the groundwater and surface water usage within a radius of 1,000 feet of MW-5 on the Site.

As discussed in Section 3.3, the groundwater flow direction affecting contaminant migration across the Site was measured to be generally toward the east-southeast. The results of the recent groundwater assessment indicate that the horizontal and vertical extent of PCE in groundwater has been delineated and appears to be isolated along the eastern end of the Site behind the former dry cleaner.

In order to evaluate the potential for PCE impacts in groundwater to impact the hypothetical Point of Exposure approximately 550 feet east of the Site, MACTEC utilized the BIOCHLOR software to model the fate and transport of impacted groundwater. BIOCHLOR utilizes a combination of site specific data and literature values to determine the various physical properties of the plume and the migration potential of chlorinated VOC constituents. The model was calibrated by inputting known parameters such as hydraulic conductivity and hydraulic gradient and groundwater VOC concentrations measured within the source area and the down-gradient wells. Additionally, groundwater samples were collected from MW-4, MW-5 and MW-7 and were tested for natural attenuation (NA) parameters. A soil sample was also collected from MW-7 and was analyzed for total organic carbon. The results of this laboratory testing are summarized on Table 6 and the complete laboratory reports can be found in Appendix D.

MACTEC ran the BIOCHLOR model under several different scenarios to predict the extent of the chlorinated solvent plume migration down-gradient of the Site to the southeast in the direction of the unnamed pond. In order to calibrate the model to the results of the last groundwater sampling event in 2010, the concentrations of PCE had to be taken into account for some time prior to 2010. As previously reported the dry cleaner was operational from 1988 until 2005. A release to soil was first discovered in 1997, and the release to groundwater was not discovered until 2005. Therefore, the initial PCE source concentrations and model time was assumed to have occurred approximately 18 years ago.

The modeling results indicate that the PCE plume will biodegrade very little over time which is supported by the fact that no PCE breakdown products (TCE, DCE, and VC) have been detected in groundwater over the past six years. Alternatively, the PCE plume will continue to collapse over time since source material has been removed, and the dry cleaner has not been active at the Site since 2005. The model predicts that the future concentrations of PCE impacts would not reach the unnamed body of water located 550 feet down-gradient of the Site over the next 20 year simulation period. In summary, ground water concentrations at the point of surface expression into the unnamed lake are not predicted to exceed the in-stream water quality standard at any time. Since this conservative Point of Exposure located only 550 feet from the Site is not predicted to ever have detectible concentrations of COCs, it necessarily follows that a point 1000 feet from the Site would likewise not have detectible concentrations. Further,

since monitoring wells 350 to 400 feet away from the up-gradient side of the Point of Exposure are non-detect and concentrations in all monitoring wells at the Site are trending downward, it is not necessary to perform future monitoring in the Point of Demonstration Wells in order to be assured that concentrations at the Point of Exposure will not exceed the applicable risk reduction standards.

The model results along with the model input parameters are included in Appendix F.

7.4 INDOOR AIR

The site has been under investigation since 1997 for potential releases from the Esquire Dry Cleaning facility. Releases may have occurred through floor drains or during unloading of solvents at the rear of the dry cleaner site. Limited soil impacts were noted near the former dry cleaner and were remediated to meet Type 1 RRS in 2006. Groundwater sampling has been conducted since 2005 with PCE, acetone, and chloroform detected in monitoring wells at the site. The concentrations of acetone and chloroform are currently near or below detection limits and prior detections may have been the result of laboratory contamination and/or the presence of chlorinated water.

PCE was detected in monitoring wells MW-4 and MW-5 at concentrations ranging from 77 µg/L to 180 µg/L and <5.0 µg/L to 2,900 µg/L, respectively, during the period from December 2005 to January 2010. PCE was not detected in monitoring wells MW-1 or MW-3. In January 2010, the most recent sampling event for these two wells, the detected concentration in MW-4 was 77 µg/L and 980 µg/L in MW-5. These two wells exhibit a downward trend for PCE concentrations in groundwater since 2005. In May 2011, three additional monitoring wells were installed (MW-6, MW-7, and MW-8) and sampled for acetone, chloroform, and PCE to aid delineation. No VOCs were detected during the May 2011 sampling event.

Because of the presence of PCE in groundwater, an evaluation for potential vapor intrusion to indoor air has been completed. The underlying soils at the site are largely fill with underlying residual soils consisting of clayey soil, sandy silts, and silty sands. Groundwater depths range from 5.4 to 13.7 feet below ground surface. Because the groundwater table is shallow and fill materials somewhat porous, there may be a potential for vapors from underlying groundwater to migrate upward through the soil column and through potential cracks in the flooring.

The site of the former dry cleaning facility has been vacated by the dry cleaner since 2005. The space, which is approximately 67 feet by 38 feet, was then occupied by a specialty retailer that sold decorative items such as tribal masks, imported fabrics, and other potentially dyed, painted or varnished items. In addition, the flooring of the space was carpeted. The specialty retailer has now stopped operations in this space and the area is not occupied.

For a period of at least 24 hours from May 4 to May 5, 2011, three indoor air samples were collected by summa canisters were placed in the former dry cleaner tenant space and analyzed by Method TO-15. Twenty-seven volatile organic compounds were detected at relatively low concentrations. These results are summarized on Table 6 in Appendix C and the complete laboratory reports can be found in Appendix D. Several of the detected compounds are potentially used as solvents and/or petroleum byproducts that may be found in multiple products including carpets, paints, dyes, varnishes, building materials, and in ambient air (Hazardous Substances Database, NLM, 2011). Of the groundwater constituents, acetone and PCE were detected in air samples, but chloroform was not.

The Hunting Creek shopping center was constructed in the late 1980s, and there are no plans to change the use of the property. Surrounding land use is commercial/industrial, and the extent of groundwater impacts does not appear to extend beyond the detention pond east of the site, which lies in the direction of groundwater flow. Therefore, other properties are not currently impacted and are not expected to be impacted in the future.

Future receptors at this site are expected to be retail workers. Typically, workers in the retail industry have median employment tenure of less than 3 years before relocating or changing employment. In addition, approximately one-third work less than full-time (Bureau of Labor Statistics, Employee Tenure by Industry, 2008). Therefore, the default upper range exposure assumptions for industrial/commercial workers of 250 days per year for 25 years potentially overestimate exposures for the majority of retail workers.

As a screening step, the measured indoor air concentrations have been compared to the USEPA Regional Screening Levels for industrial indoor air (USEPA, RSL Tables, May 2011). These screening levels assume that the industrial worker is exposed for 250 days per year for 25 years. The target risks for potential carcinogens was set to 10^{-5} and the target hazard indices for systemic toxicants to 1 to be consistent with target goals for HSRA RRS. Air concentrations collected from the site are less than the industrial air screening levels. Because the measured indoor concentrations are less than the screening

levels, risks and hazards for future retail workers are acceptable with no additional risk evaluation (e.g., Johnson and Ettinger Modeling) required for this site.

After the May 4-5 sampling event it was discovered that the HVAC system was inadvertently turned off during the sampling. In that this would tend to bias the results higher and not lower, this fact does not change the ultimate conclusion. It does, however, mean that normal conditions in the tenant space will likely be even more protective of human health than suggested by the sampling.

7.5 COMPLIANCE WITH RISK REDUCTION STANDARDS

The subject site is a commercial property in Conyers, Georgia. The Site lies in an area upgradient of additional commercial properties for a considerable distance. Therefore, non-residential risk reduction standards (RRS) apply.

7.5.1 Soil Criteria

One HSRA regulated constituent, PCE, was detected in soil above its HSRA notification concentration (NC) during previous environmental assessments. Nine additional regulated VOCs were also detected, but not at concentrations above their respective NC concentrations.

The applicable RRS for all constituents detected in soil on Site were presented in the July 2007 PPCSR and the March 2008 Amended PPCSR and were approved by EPD in July 2009. Furthermore, EPD concurred that no HSRA regulated constituents remain in soil above the Type 1 RRS.

7.5.2 Groundwater Criteria

Three HSRA regulated constituents, tetrachloroethene, acetone and chloroform, were detected in groundwater at the subject site. The Type 1-4 RRS are proposed as calculated in Appendix G. As explained in Section 7.3, groundwater is in compliance with Type 1 risk reduction standards as calculated pursuant to the Voluntary Remediation Program.

8.0 DESCRIPTION OF RESPONSIBLE PERSON FOR RELEASES DETECTED AT THE SITE

F.S. Associates acquired the Site and developed the Hunting Creek Shopping Plaza in 1987. F.S. Associates owned the property until 2006 when it was sold to Rose City Affordable Housing Limited Partnership. Based on the available data, it is apparent that the source of the PCE impacts to soil and groundwater at the Site is a former dry cleaner, Esquire Cleaners, which was located on the south end of the shopping center from 1988 until 2005. During the course of the assessments conducted at the Site, the extent of soil impacts have been delineated to the soil delineation concentration criteria within the boundaries of the Site. Additionally, the extent of groundwater impacts at the Site have been both laterally and vertically delineated to the groundwater delineation concentration criteria.

As previously documented in Peachtree Environmental's PPCSR dated July 2007 and amended March 2008, the soil remediation efforts in the source area was completed as part of Rose City Affordable Housing Brownfield requirements. EPD concurred in a July 29, 2009 letter that the soil on Site is in compliance with the Type 1 RRS.

9.0 SUMMARY OF ANY ACTIONS TAKEN TO ELIMINATE, CONTROL, OR MINIMIZE ANY POTENTIAL RISK AT THE SITE

9.1 SOIL

A Prospective Purchaser Corrective Action Plan (PPCAP) was submitted to EPD in August 2006 by Rose City Village Affordable Housing LP, Dylan/Bristol, LLC, and Bristol Equities, Inc. The PPCAP was approved by EPD via a letter dated September 6, 2006.

During the implementation of the approved PPCAP, soil corrective actions were conducted which consisted of the excavation and off-site disposal of approximately 45 tons of impacted soil and in-situ chemical oxidation treatments of the remaining impacted soil.

Following completion of the soil corrective action activities, there have been various submittals to the Georgia EPD including: Prospective Purchaser Compliance Status Report dated July 2007, Amended Prospective Purchaser Compliance Status Report dated March 2008, Summary of Corrective Actions dated August 2008 and Response to Georgia EPD request for additional information dated May 20, 2009.

In summary, EPD concurred in a July 29, 2009 letter that the soil on-Site is in compliance with the Type 1 RRS. Furthermore, based on previous documentation, the horizontal and vertical extent of regulated constituents in soils have been delineated to the soil delineation concentration criteria. As such, the applicant does not propose any further evaluation of existing soil conditions at this time.

9.2 SOURCE

With the removal of the dry cleaner and associated equipment in 2005, the known ongoing contributions to subsurface impacts have been eliminated. Potential releases from the sewer line which serviced the historical dry cleaner were addressed by the chemical oxidation treatments of the surrounding soil and the source of future such releases, if any, has been removed.

The current groundwater analytical data exhibits a maximum PCE concentration on Site of 980 µg/L in MW-5, which is less than 1% solubility. In order to further evaluate the potential presence of DNAPL at this location and to provide vertical delineation of PCE groundwater impacts, MACTEC installed one

deep Type III monitoring well (MW-8) adjacent to MW-5. No PCE or other chlorinated solvents were detected in MW-8. This implies that no source exists on Site.

9.3 GROUNDWATER

In February 2006 Peachtree Environmental performed a six hour Enhance Vapor Recovery event at the Site. Reportedly, an estimated 195 grams of PCE were recovered during this event.

During the implementation of the Voluntary Remediation Plan, MACTEC further characterized the horizontal and vertical extent of PCE impacts to groundwater through the sampling of the existing monitoring wells (MW-1, MW-3, MW-4 and MW-5) in January 2010, and the installation of two monitoring wells on the adjacent property to the east and one deep Type III monitoring well adjacent to MW-5.

The January 2010 groundwater testing indicated that PCE in groundwater at MW-4 and MW-5 has decreased significantly since the last sampling event conducted by Peachtree Environmental in 2008. No VOCs were detected in the groundwater samples collected from MW-1 and MW-3. No PCE or other VOC constituents were detected in the two off-site wells (MW-6 and MW-7) or the deep on-Site well (MW-8). As a result, the horizontal and vertical extent of PCE in groundwater has been delineated and appears to be isolated along the eastern end of the Site behind the former dry cleaner.

9.4 VAPOR INTRUSION

The results of the subsurface investigations identified the presence of chlorinated solvents in the groundwater on the southern end of the subject site. Because of the presence of PCE in groundwater, an evaluation for potential vapor intrusion to indoor air has been completed. In May 2011, three indoor air samples were collected and laboratory testing identified twenty-seven volatile organic compounds at relatively low concentrations. As discussed in Section 7.4, a risk assessment was completed which indicated that air concentrations collected from the site are less than the industrial air screening levels. Because the measured indoor concentrations are less than the screening levels, risks and hazards for future retail workers are acceptable with no additional risk evaluation (e.g., Johnson and Ettinger Modeling) required for this site. As such, no additional remedial activities is warranted in relation to vapor intrusion to indoor.

10.0 CONCLUSIONS

F.S. Associates has implemented the Voluntary Remediation Plan dated October 8, 2010 which was approved by EPD on December 6, 2010. Based on the findings to date, F.S. Associates offers the following conclusions:

- The Site is in compliance with Type 1 risk reduction standards for soil and groundwater pursuant to the VRP,
- Groundwater conditions have been delineated and fate and transport modeling of impacted groundwater illustrates no human or environmental receptors will be impacted by this release,
- Site specific data illustrates an incomplete pathway for vapor intrusion and there is no unacceptable risk for human exposure, and
- There are no non-qualifying properties affected by the release.

REFERENCES

Cressler, C.W., C.J. Thurmond, and W.G. Hester, 1983, Groundwater in the Greater Atlanta Region, Georgia; Georgia Geologic Survey Information Circular 63

Fetter, C.W., Applied Hydrogeology, third edition, 1994; Macmillan Publishing Company, New York

McConnell, K.L, and C.E. Abrams, 1984, Geology of the Greater Atlanta Region; Georgia Geologic Survey Bulletin 96

APPENDIX A
LEGAL DESCRIPTION

04061
00170

FILED IN OFFICE
CLERK SUPERIOR CT.
ROCKDALE CO., GA.

2006 OCT 27 PM 2:34
06-016356
Joanne G. Caldwell CLERK

BOOK 4061 PAGE 170

019185

Rockdale County, Georgia.
Real Estate Transfer Tax
Paid $ 14,378.00
Date Oct. 27, 2006
Virginia Morris Deputy
Clerk of Superior Court

After recording return to:
Sharon A. Gregory
Fidelity National Title Insurance
1800 Parkway Place, Suite 700
Marietta, GA 30067

LIMITED WARRANTY DEED

This Limited Warranty Deed made the 25th day of October, 2006, between F.S. ASSOCIATES, L.P. a Georgia limited partnership, whose address is 1774 Century Boulevard NE, Suite C, Atlanta, Georgia 30345, hereinafter called "Grantor," and ROSE CITY VILLAGE AFFORDABLE HOUSING LIMITED PARTNERSHIP, an Oregon limited partnership, whose address is 12121 Wilshire Boulevard, Suite 512, Los Angeles, CA 90025, hereinafter called "Grantee."

(Wherever used herein the terms "Grantor" and "Grantee" include all the parties, heirs, legal representatives and assigns of individuals and the successors and assigns of corporations).

WITNESSETH:

That the Grantor, for and in consideration of the sum of TEN AND NO/100 DOLLARS ($10.00) and other valuable considerations, the receipt whereof is hereby acknowledged, does hereby grant, bargain, sell, alien, remise, release, convey and confirm unto the Grantee, its successors and assigns, the property lying and being in Fulton County, Georgia and more particularly described on Schedule 1 attached hereto.

TOGETHER with all the tenements, hereditaments and appurtenances thereto belonging or in any wise appertaining.

TO HAVE AND TO HOLD THE same in fee simple forever, subject to the Permitted Exceptions, listed on Schedule 2 hereto.

AND Grantor hereby covenants with said Grantee, its successors and assigns, that Grantor is lawfully seized of said property in fee simple; that Grantor has good right and lawful authority to sell and convey said property; that Grantor hereby warrants the title to said land and will defend the same against the lawful claims of all persons claiming by, through or under the Grantor.

IN WITNESS WHEREOF, the Grantor has executed this Limited Warranty Deed on the day and year first above written.

Signed, sealed and delivered
in the presence of :

Printed Name: W.H Smith
Unofficial Witness

Sandra Kaye Smith
Notary Public
My commission expires: Notary Public, Gwinnett County, Georgia My Commission Expires April 12 '08

[NOTARY SEAL]

GRANTOR:
F.S. ASSOCIATES, L.P.,
a Georgia limited partnership

By: Henry Wirth
Henry Wirth, General Partner

SCHEDULE "1"

LEGAL DESCRIPTION

All that tract or parcel of land lying and being in Land Lot 243 of the 10th District of Rockdale County, Georgia, and being more particularly described as follows:

Beginning at a one-half inch rebar at the intersection of the southerly right-of-way line of Flat Shoals Road (100 foot right-of-way) and the easterly right-of-way line of McDonough Highway (Georgia Route No. 20 and No. 138) (80 foot right-of-way); running thence South 88 degrees 45 minutes 00 seconds East along the southerly right-of-way line of Flat Shoals Road 546.12 feet to a concrete right-of-way monument; running thence South 01 degrees 19 minutes 30 seconds West 1022.90 feet to a one-half inch rebar; running thence North 89 degrees 01 minutes 40 seconds West 504.00 feet to a one-half inch rebar on the easterly right-of-way line of said McDonough Highway; running thence North 01 degrees 01 minutes 40 seconds West along the easterly right-of-way line of said McDonough Highway 1026.15 feet to a one-half inch rebar and the point of beginning; as per survey for F.S. Associates, Ltd., dated July 14, 1986, last revised September 25, 1986, by Loo-Turley & Associates, P.C., Richard Loo, Registered Land Surveyor No. 2129; and containing 12.3449 acres according to said survey.

LESS AND EXCEPT:

Right of way conveyed in that certain Limited Warranty Deed from F.S. Associates, Ltd., a Georgia limited partnership, whose general partners are Charles A. Lotz, Jr., and Henry H. Wirth to The Georgia Department of Transportation, dated August 17, 1987, filed for record August 18, 1987 at 11:53 o'clock a.m., recorded in Deed Book 378, page 71, aforesaid records.

Right of way conveyed in that certain Right of Way Deed from F.S. Associates, L.P. to Georgia Department of Transportation, dated April 25, 1995, filed for record July 12, 1995 at 2:39 o'clock p.m., recorded in Deed Book 1129, page 221, aforesaid records.

Right of way conveyed in that certain Condemnation Suit No. 97-CV-2062V by and between Department of Transportation (Plaintiff) and 0.3303 acres of land; and certain easement rights; and F.S. Asso. Ltd.; The Lomas and Nettlton Company a/k/a Lomas Mortgage USA. Inc.; Household Bank, FSB; McMichael's Construction Co. Inc.; et.al., filed for record July 17, 1997, recorded in Deed Book 1436, page 1, aforesaid records.

SCHEDULE "2"

PERMITTED EXCEPTIONS

1. All taxes subsequent to the year 2006.

2. Rights of Tenants in possession of subject property, as tenants only, including the rights of those tenants pursuant to the following recorded instruments:

   (a) Lease Agreement from F.S. Associates, Ltd., a Georgia limited partnership (Landlord) and The Grand Union Company, a Delaware corporation, dated August 12, 1986, recorded in Deed Book 341, page 327, aforesaid records, as affected by that certain Assignment and Assumption of Leases from The Grand Union Company, a Delaware corporation to The Great Atlantic and Pacific Tea Company, Inc., a Maryland corporation, dated March 29, 1993, recorded in Deed Book 845, page 330, aforesaid records.

   (b) Lease from F.S. Associates, Ltd., a Georgia limited partnership to The Goodyear Tire & Rubber Company, dated January 17, 1989, recorded in Deed Book 476, page 5, aforesaid records.

3. Sewer Easement from Flat Shoals, Ltd., a Georgia limited partnership whose general partners are James T. Roe, III, and Henry H. Wirth, to The City of Conyers, Georgia, dated April 5, 1985, recorded in Deed Book 285, page 58, Rockdale County, Georgia records.

4. Sewer Easement from Flat Shoals, Ltd., a Georgia limited partnership whose general partners are James T. Roe, III, and Henry H. Wirth, to The City of Conyers, Georgia, dated October 2, 1986, recorded in Deed Book 339, page 398, aforesaid records.

5. Conveyance of Access Rights from F.S. Associates, Ltd., to Department of Transportation, dated August 18, 1987, recorded in Deed Book 378, page 157, aforesaid records.

6. Indemnity Agreement from F.S. Associates, Ltd. to Georgia Department of Transportation, dated December 14, 1987, recorded in Deed Book 452, page 181, aforesaid records.

7. Easements contained in Right of Way Deed from F.S. Associates, L.P. to Georgia Department of Transportation, dated April 25, 1995, recorded in Deed Book 1129, page 221, aforesaid records.

8. Water Easement Agreement from F.S. Associates, L.P. to Rockdale County, dated August 24, 1998, recorded in Deed Book 1566, page 1, aforesaid records.

9. Easements contained in Condemnation Suit No. 97-CV-2062V by and between Department of Transportation (Plaintiff) and 0.3303 acres of land; and certain easement rights; and F.S. Asso. Ltd.; The Lomas and Nettlton Company a/k/a Lomas Mortgage USA. Inc.; Household Bank, FSB; McMichael's Construction Co. Inc.; et.al., filed for record July 17, 1997, recorded in Deed Book 1436, page 1, aforesaid records.

10. Those matters depicted on plat of survey of the subject property prepared for F.S. Associates, Ltd. by Gudger Surveying Inc., signed, sealed and certified by Ronald E. Gudger, Georgia Registered Land Surveyor No. 2089, dated February 15, 1990, recorded in Plat Book W, page 177, aforesaid records.

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PT-61 (Rev. 11/04) To be filed in ROCKDALE COUNTY PT-61 122-2006-005488

SECTION A – SELLER'S INFORMATION (Do not use agent's information)		SECTION C – TAX COMPUTATION	
SELLER'S BUSINESS / ORGANIZATION / OTHER NAME F.S. Associates, L.P.		Exempt Code If no exempt code enter NONE	NONE
MAILING ADDRESS (STREET & NUMBER) 1774 Century Boulevard, NE Suite C		1. Actual Value of consideration received by seller Complete Line 1A if actual value unknown	$14,378,000.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Atlanta, GA 30345 USA	DATE OF SALE 10/25/2006	1A. Estimated fair market value of Real and Personal property	$0.00
SECTION B – BUYER'S INFORMATION (Do not use agent's information)		2. Fair market value of Personal Property only	$0.00
BUYER'S BUSINESS / ORGANIZATION / OTHER NAME Rose City Village Affordable Housing Limited Partnership		3. Amount of liens and encumbrances not removed by transfer	$0.00
MAILING ADDRESS (Must use buyer's address for tax billing & notice purposes) 12121 Wilshire Boulevard Suite 512		4. Net Taxable Value (Line 1 or 1A less Lines 2 and 3)	$14,378,000.00
CITY, STATE / PROVINCE / REGION, ZIP CODE, COUNTRY Los Angeles, CA 90025 USA	Check Buyers Intended Use ( ) Residential (X) Commercial ( ) Agricultural ( ) Industrial	5. TAX DUE at .10 per $100 or fraction thereof (Minimum $1.00)	$14,378.00

SECTION D – PROPERTY INFORMATION (Location of Property (Street, Route, Hwy, etc))

HOUSE NUMBER & EXTENSION (ex 285A)	PRE-DIRECTION, STREET NAME AND TYPE, POST DIRECTION				SUITE NUMBER
COUNTY ROCKDALE	CITY (IF APPLICABLE) Conyers		MAP & PARCEL NUMBER 075-0-01-034A, 034I, 034U		ACCOUNT NUMBER
TAX DISTRICT	GMD	LAND DISTRICT 10	ACRES 11.96661	LAND LOT 243	SUB LOT & BLOCK

SECTION E – RECORDING INFORMATION (Official Use Only)

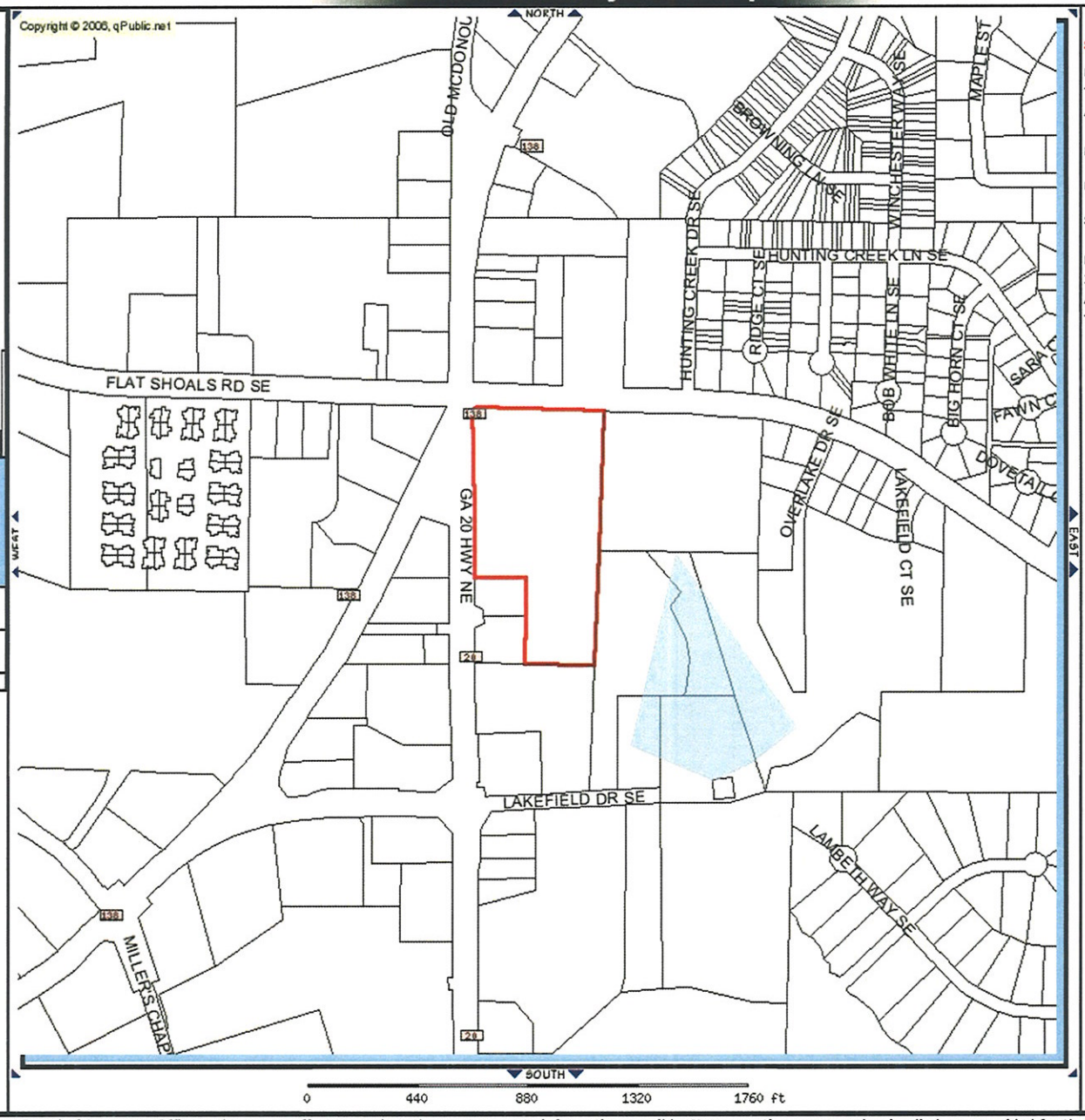
DATE	DEED BOOK	DEED PAGE	PLAT BOOK	PLAT PAGE

ADDITIONAL BUYERS
None

Map Help

Rockdale County Parcel Maps

Rockdale Home Search Page



Zoom Out
Zoom In
Pan by Hand
Zoom to Box
Zoom County
Get Info
Measure
Area Tool
Zoom To Parcel
Center On

Sales for year: 2008 2009 2010

Your maps are loading

qpublic.net

Map Size: Huge

Scale:

4242

PARCEL INFORMATION TABLE

Selected Parcel	075001034A (Click for Complete Card)
Parcel Zoning	BG/C
Taxing District	02
Acres	10.39

OWNERSHIP INFORMATION

Name	HUNTING CREEK RETAIL LLC
Mailing Address	C/O FELLERS,SCHEWE SCOTT & ROBERTS INC P O BOX 450233 ATLANTA, GA 31145
Situs/Physical Address	1820 SE HIGHWAY 20

VALUES

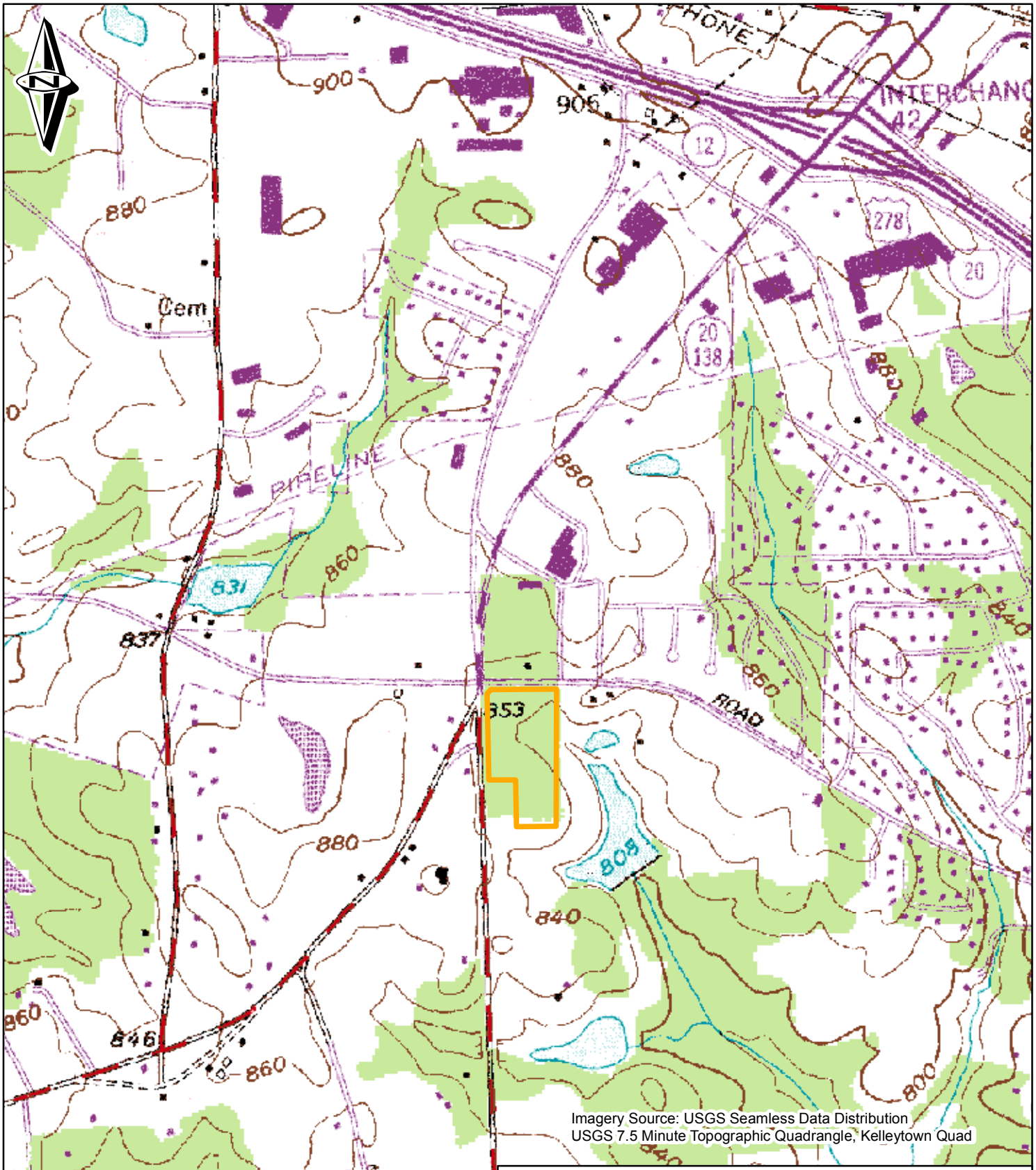
Land Value	$2,971,200.00
Improvement Value	$6,995,600.00
Accessory Value	$193,700.00
Total Value	$10,160,500.0

LAST 2 SALES

Date	Price	Reason	Qual
03-2007	$14,378,000	24	U
10-2006	$14,378,000	24	U

APPENDIX B

FIGURES



Imagery Source: USGS Seamless Data Distribution
USGS 7.5 Minute Topographic Quadrangle, Kelleytown Quad

0 1,000 2,000 Feet

Legend

Approximate Property Boundary

Hunting Creek Plaza

USGS Topographic Map with Site Location

1820 Georgia Highway 20 South
Conyers, Georgia

Prepared by/Date: BWH - 2/2/2010	
Checked by/Date: TB - 2/2/2010	
Project Number: 6121-10-0013	

MACTEC

Figure Number: 1

Map Document: (G:\Hunting_Creek_Plaza\mxd\topo.mxd)
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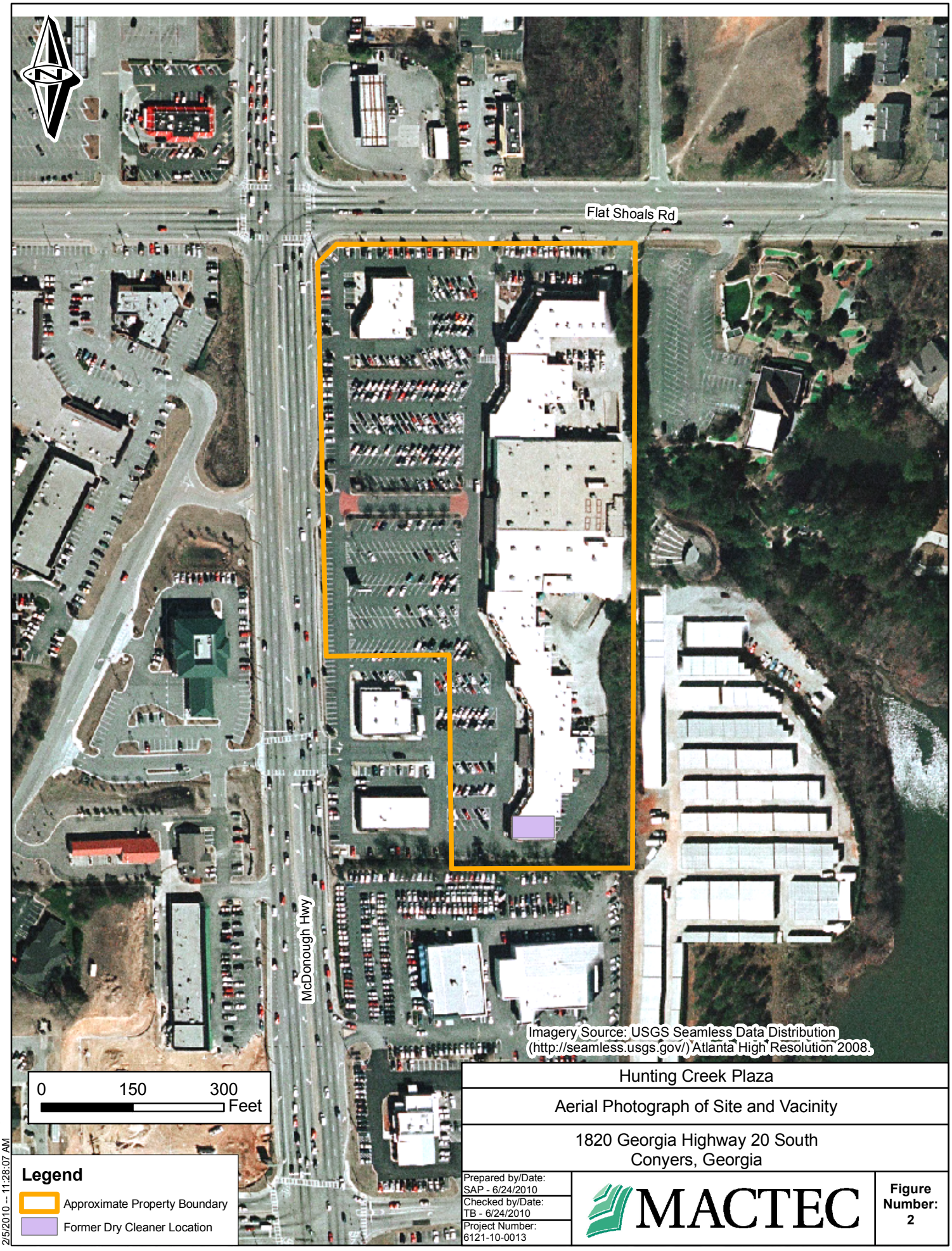


Map Document: (G:\Hunting_Creek_Plaza\mxd\aerial.mxd)
2/5/2010 -- 11:28:07 AM

Hunting Creek Plaza

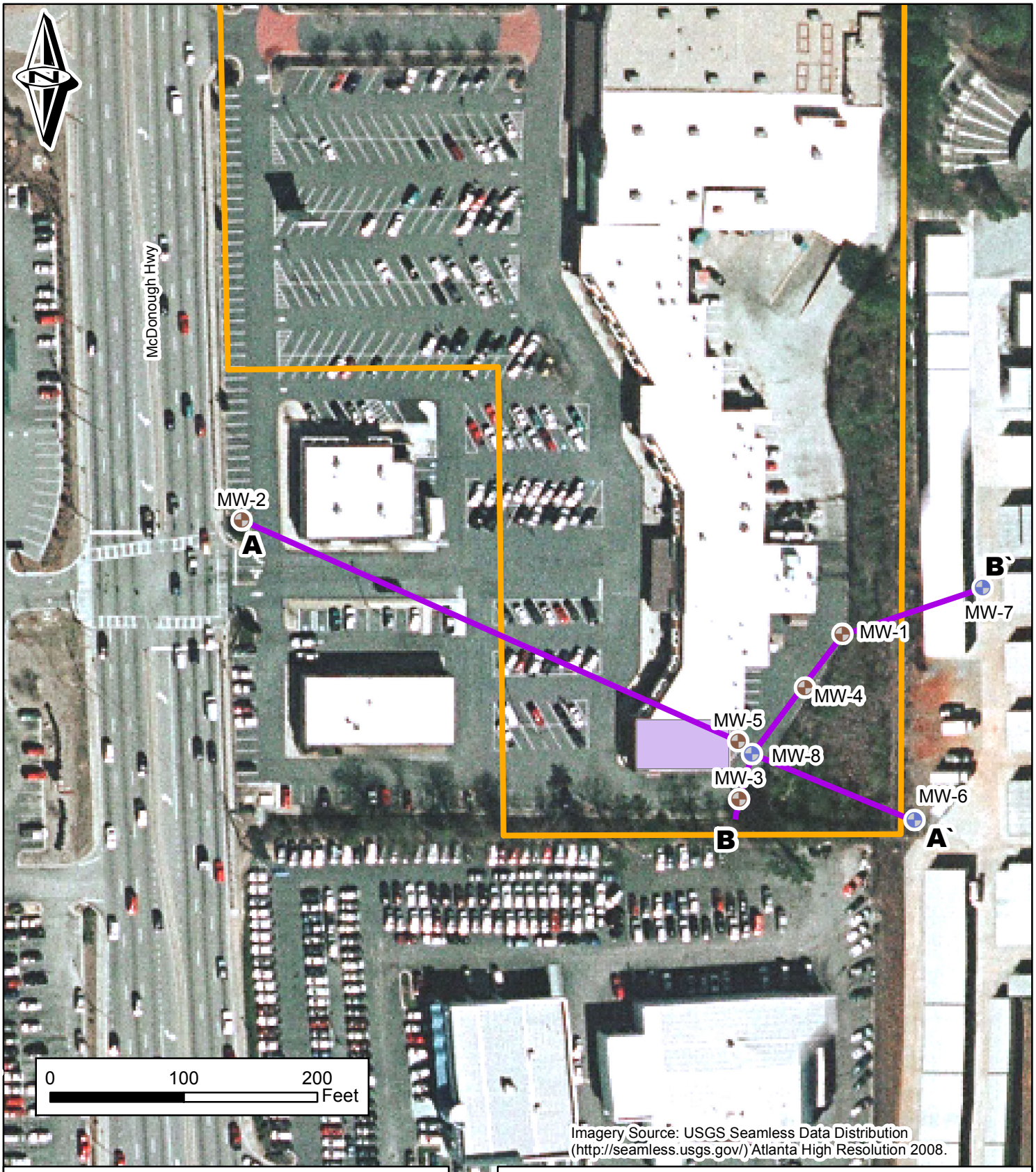
Aerial Photograph of Site and Vacinity

1820 Georgia Highway 20 South
Conyers, Georgia

Prepared by/Date:	SAP - 6/24/2010
Checked by/Date:	TB - 6/24/2010
Project Number:	6121-10-0013

MACTEC

Figure Number: 2



Legend

- Monitoring Well Location (Mactec)
- Monitoring Well Location (Peachtree Environmental)
- Cross Section Trace
- Former Dry Cleaner Location
- Approximate Property Boundary

Hunting Creek Plaza

Site Map with Cross Section Trace

1820 Georgia Highway 20 South
Conyers, Georgia

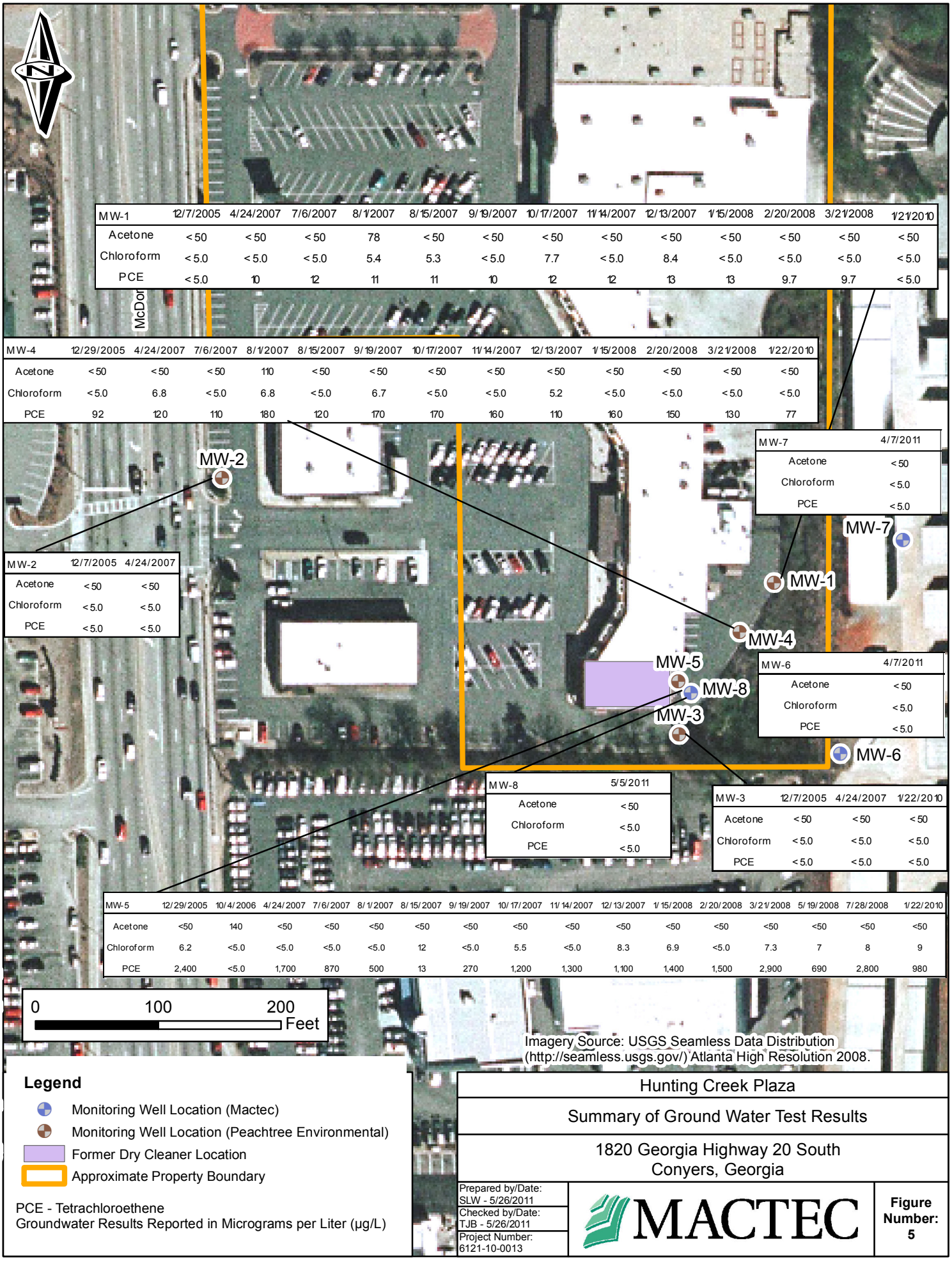
Prepared by/Date:	SLW - 5/26/2011
Checked by/Date:	TJB - 5/26/2011
Project Number:	6121-10-0013

MACTEC

Figure Number: 3

Path: G:\Hunting_Creek_Plaza\mxd\Site Map with Cross Section Trace.mxd


Peachtree Environmental
HA Dumpster 8/29/2006 5FT 10FT 14FT
VOCs BRL BRL BRL
Peachtree Environmental
DP-6 1/10/2007 0.5FT 5FT 8FT
VOCs
Ethylbenzene 0.006 <0.0050 <0.0055
Xylenes 0.02 <0.010 <0.011
Toluene 0.11 <0.0050 <0.0055
PCE <0.0055 0.011 <0.0055
Peachtree Environmental
DP-7 1/10/2007 0.5FT
VOCs BRL
Peachtree Environmental
GP-10 11/28/2005 15FT
VOCs
PCE 0.17
Peachtree Environmental
GP-12 11/28/2005 14FT
VOCs
PCE 0.0035
Peachtree Environmental
DP-8 1/10/2007 0.5FT 5FT 8FT
VOCs
2-Butanone 0.099 <0.056 <0.052
Acetone 0.84 <0.010 0.13
Methyl Acetate <0.0049 0.15 <0.0056
PCE 0.029 0.22 0.013
Peachtree Environmental
DP-9 1/10/2007 0.5FT 5FT 9FT
VOCs BRL BRL BRL
Peachtree Environmental
DP-5 1/10/2007 5FT
VOCs BRL
Peachtree Environmental
DP-4 1/10/2007 5FT
VOCs
Acetone 0.18
PCE 0.03
Peachtree Environmental
GP-1 11/2/2005 1FT
VOCs
PCE 0.013
Peachtree Environmental
GP-11 11/28/2005 15FT
VOCs
PCE 0.14
Peachtree Environmental
Machine 8/4/2006 1FT
VOCs BRL
Peachtree Environmental
GP-3 11/2/2005 1FT
VOCs BRL
Peachtree Environmental
HA-2 Detention Pond 12/7/2005 1FT
VOCs BRL
Peachtree Environmental
GP-2 11/2/2005 1FT
VOCs BRL
Peachtree Environmental
GP-8 11/28/2005 13FT
VOCs
PCE 0.21
Peachtree Environmental
HA-1 Detention Pond 12/7/2005 0.5FT
VOCs BRL
Peachtree Environmental
DP-1 1/10/2007 5FT
VOCs BRL
Peachtree Environmental
DP-3 1/10/2007 5FT
VOCs BRL
Peachtree Environmental
GP-4 11/2/2005 12FT
VOCs
PCE 0.19
Peachtree Environmental
GP-7 11/2/2005 14FT
VOCs
PCE 0.076
Peachtree Environmental
GP-5 11/2/2005 3FT
VOCs
PCE 0.12
Peachtree Environmental
DP-2 1/10/2007 5FT
VOCs BRL
Peachtree Environmental
SVE-1 11/28/2005 5FT
VOCs
PCE 0.25
TCE 0.1
Peachtree Environmental
GP-9 11/28/2005 11FT
VOCs
PCE 0.18
DP-7
DP-5
DP-6
HA-Dumpster
GP-12
GP-10
DP-4
GP-11
Machine
GP-3
GP-1
DP-9
DP-8
SVE-1
GP-5
DP-3
GP-7
HA-2
GP-2
GP-4
GP-8
GP-9
HA-1
DP-1
DP-2
0 50 100 Feet
Imagery Source: USGS Seamless Data Distribution (http://seamless.usgs.gov/) Atlanta High Resolution 2008.
Legend
Soil Boring Locations
VOCs Volatile Organic Compounds
PCE Tetrachloroethene
Soil results reported in milligrams per kilogram (mg/Kg)
Hunting Creek Plaza
Laboratory Test Results for Remaining Soils On Site
1820 Georgia Highway 20 South
Conyers, Georgia
Prepared by/Date: SAP - 6/24/2010
Checked by/Date: TB - 6/24/2010
Project Number: 6121-10-0013
MACTEC
Figure Number: 4
Path: G:\Hunting_Creek_Plaza\mxd\Summary of Soil Test Results.mxd



MW-1	12/7/2005	4/24/2007	7/6/2007	8/1/2007	8/15/2007	9/19/2007	10/17/2007	11/14/2007	12/13/2007	1/15/2008	2/20/2008	3/21/2008	1/21/2010
Acetone	< 50	< 50	< 50	78	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroform	< 5.0	< 5.0	< 5.0	5.4	5.3	< 5.0	7.7	< 5.0	8.4	< 5.0	< 5.0	< 5.0	< 5.0
PCE	< 5.0	10	12	11	11	10	12	12	13	13	9.7	9.7	< 5.0

MW-4	12/29/2005	4/24/2007	7/6/2007	8/1/2007	8/15/2007	9/19/2007	10/17/2007	11/14/2007	12/13/2007	1/15/2008	2/20/2008	3/21/2008	1/22/2010
Acetone	< 50	< 50	< 50	110	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroform	< 5.0	6.8	< 5.0	6.8	< 5.0	6.7	< 5.0	< 5.0	5.2	< 5.0	< 5.0	< 5.0	< 5.0
PCE	92	120	110	180	120	170	170	160	110	160	150	130	77

MW-7	4/7/2011
Acetone	< 50
Chloroform	< 5.0
PCE	< 5.0

MW-2	12/7/2005	4/24/2007
Acetone	< 50	< 50
Chloroform	< 5.0	< 5.0
PCE	< 5.0	< 5.0

MW-6	4/7/2011
Acetone	< 50
Chloroform	< 5.0
PCE	< 5.0

MW-8	5/5/2011
Acetone	< 50
Chloroform	< 5.0
PCE	< 5.0

MW-3	12/7/2005	4/24/2007	1/22/2010
Acetone	< 50	< 50	< 50
Chloroform	< 5.0	< 5.0	< 5.0
PCE	< 5.0	< 5.0	< 5.0

MW-5	12/29/2005	10/4/2006	4/24/2007	7/6/2007	8/1/2007	8/15/2007	9/19/2007	10/17/2007	11/14/2007	12/13/2007	1/15/2008	2/20/2008	3/21/2008	5/19/2008	7/28/2008	1/22/2010
Acetone	<50	140	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Chloroform	6.2	<5.0	<5.0	<5.0	<5.0	12	<5.0	5.5	<5.0	8.3	6.9	<5.0	7.3	7	8	9
PCE	2,400	<5.0	1,700	870	500	13	270	1,200	1,300	1,100	1,400	1,500	2,900	690	2,800	980

Legend

- Monitoring Well Location (Mactec)
- Monitoring Well Location (Peachtree Environmental)
- Former Dry Cleaner Location
- Approximate Property Boundary

PCE - Tetrachloroethene
Groundwater Results Reported in Micrograms per Liter (µg/L)

Hunting Creek Plaza

Summary of Ground Water Test Results

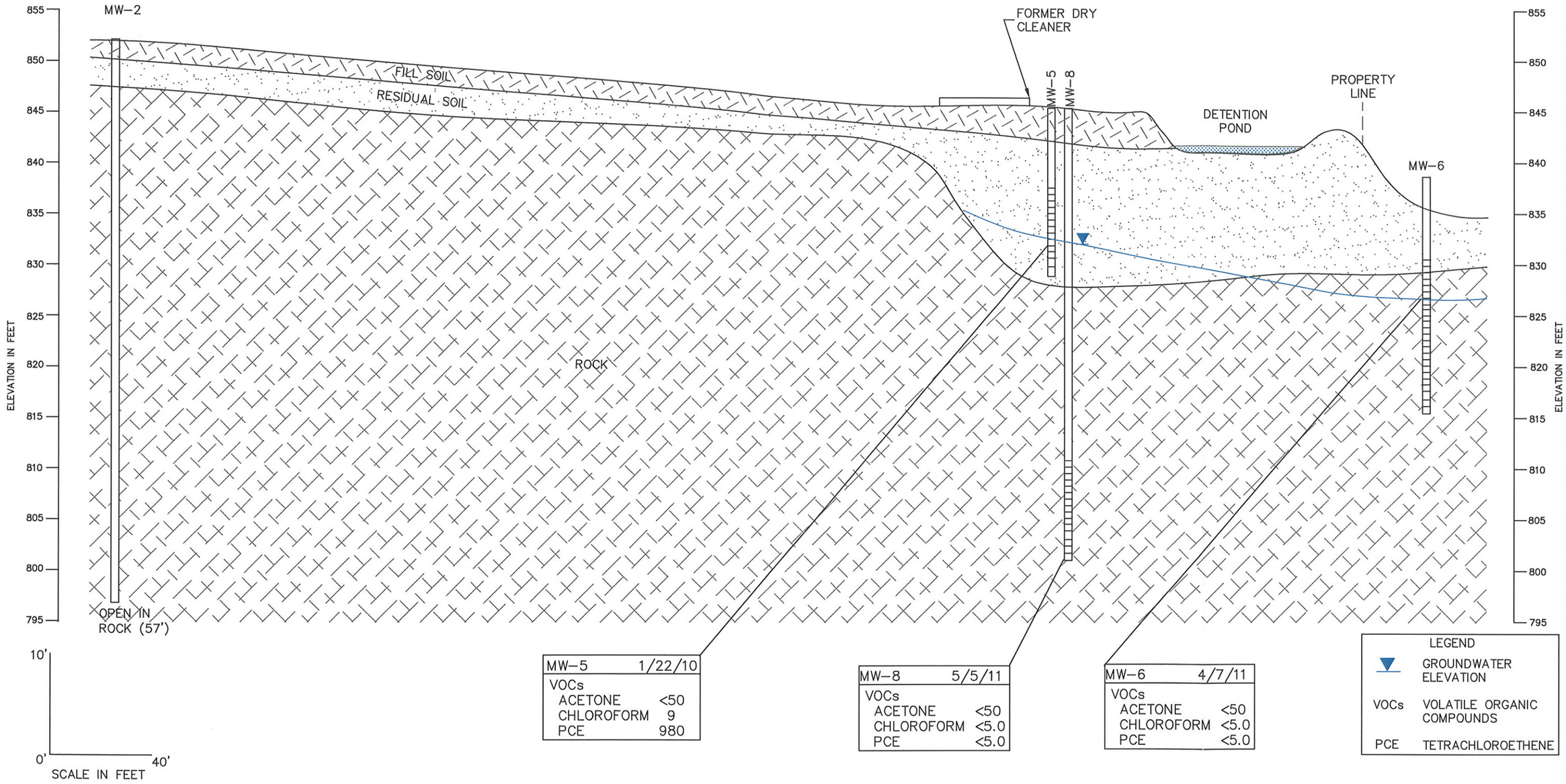
1820 Georgia Highway 20 South
Conyers, Georgia

Prepared by/Date: SLW - 5/26/2011
Checked by/Date: TJB - 5/26/2011
Project Number: 6121-10-0013

MACTEC

Figure Number: 5

Path: G:\Hunting_Creek_Plaza\mxd\GW_Test_Results.mxd



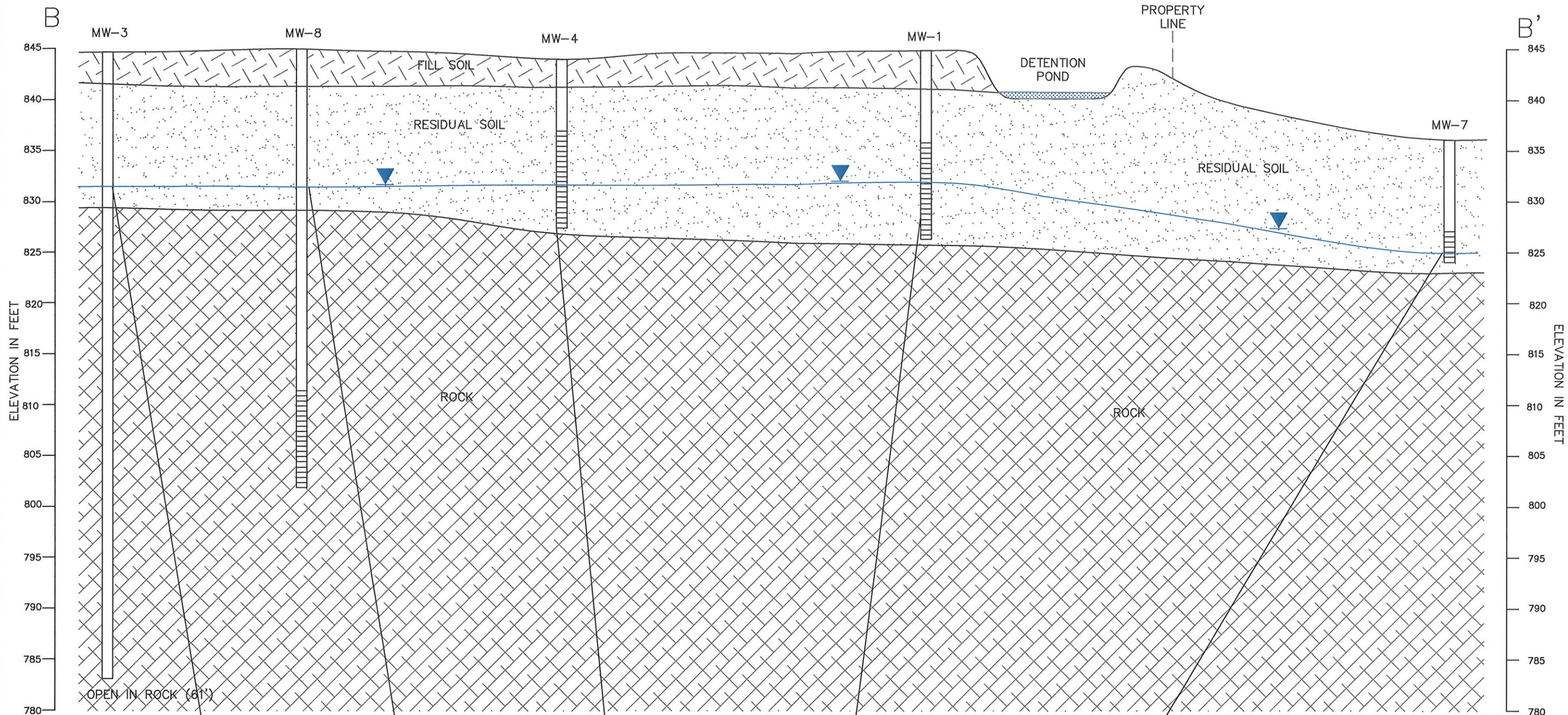
NOTES:
GAUGING DATA COLLECTED ON MAY 5, 2011.
LABORATORY RESULTS REPORTED IN MICROGRAMS PER LITER.

MACTEC
MACTEC ENGINEERING AND CONSULTING, INC.
396 PLASTERS AVENUE, N.E.
ATLANTA, GEORGIA 30324 (404)873-4761

HUNTING CREEK PLAZA
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, ROCKDALE COUNTY, GEORGIA

CROSS SECTION
A-A'

Job Number	Task	Date	Scale	Drawn By	Reviewed By	Figure
6121-10-0013	01	MAY 2011	AS SHOWN	TG	TB	6



MW-3	1/22/10
VOCs	
ACETONE	<50
CHLOROFORM	<5.0
PCE	<5.0

MW-8	5/5/11
VOCs	
ACETONE	<50
CHLOROFORM	<5.0
PCE	<5.0

MW-4	1/22/10
VOCs	
ACETONE	<50
CHLOROFORM	<5.0
PCE	77

MW-1	1/22/10
VOCs	
ACETONE	<50
CHLOROFORM	<5.0
PCE	<5.0

MW-7	4/7/11
VOCs	
ACETONE	<50
CHLOROFORM	<5.0
PCE	<5.0

LEGEND

▼ GROUNDWATER ELEVATION

VOCs VOLATILE ORGANIC COMPOUNDS

PCE TETRACHLOROETHENE

NOTES:
GAUGING DATA COLLECTED ON MAY 5, 2011.
LABORATORY DATE PRESENTED IN MICROGRAMS PER LITER.

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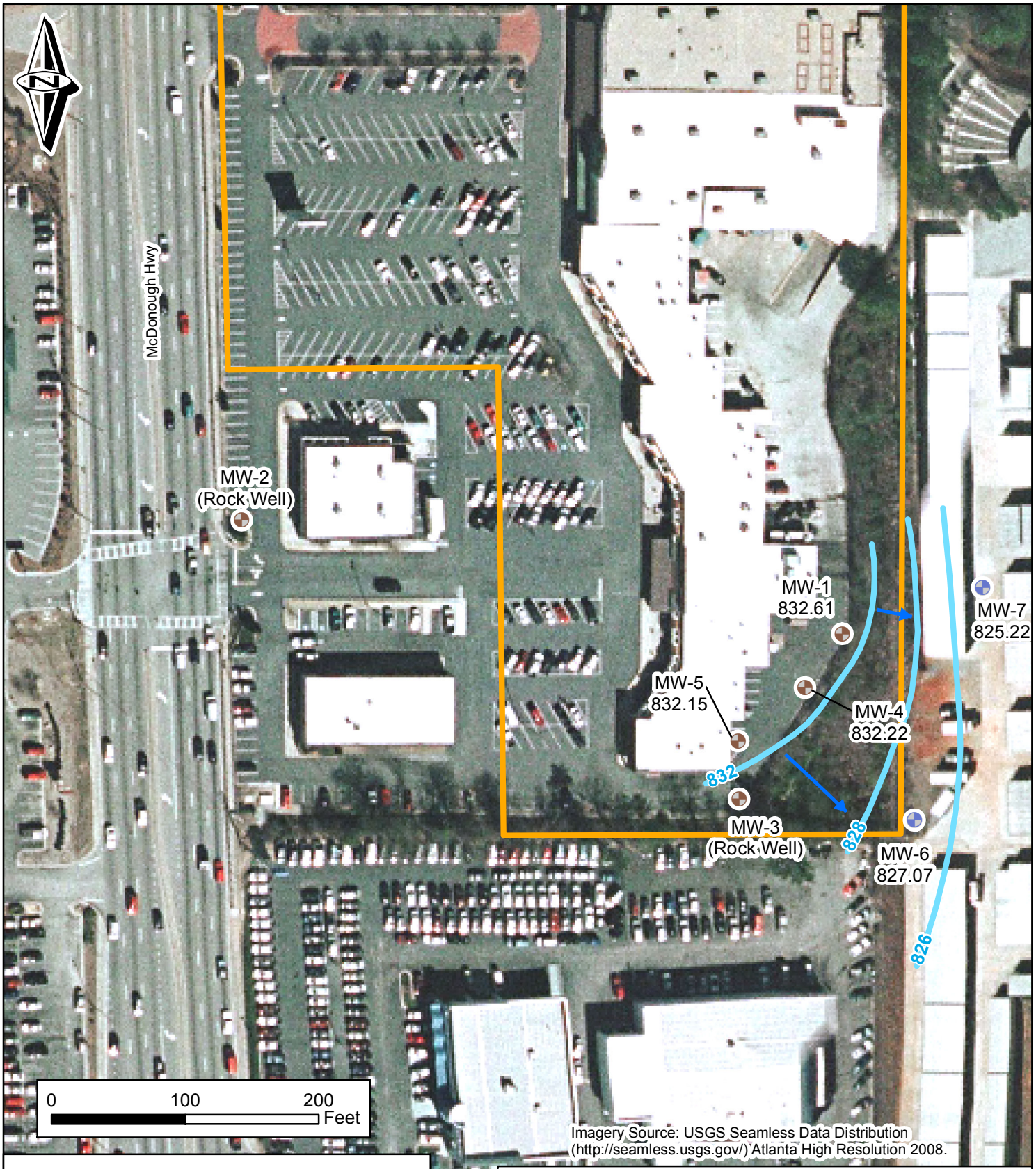
MACTEC ENGINEERING AND CONSULTING, INC.
396 PLASTERS AVENUE, N.E.
ATLANTA, GEORGIA 30324 (404)873-4761

HUNTING CREEK PLAZA
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, ROCKDALE COUNTY, GEORGIA

CROSS SECTION
B-B'

Job Number	Task	Date	Scale	Drawn By	Reviewed By	Figure
6121-10-0013	01	MAY 2011	AS SHOWN	TG	TB	7



Legend

- Monitoring Well Location (Mactec)
- Monitoring Well Location (Peachtree Environmental)
- **Potentiometric Surface Contours (Feet)**
- **Former Dry Cleaner Location**
- **Approximate Property Boundary**
- **Interpreted Groundwater Flow Direction**

Hunting Creek Plaza

Potentiometric Surface Map

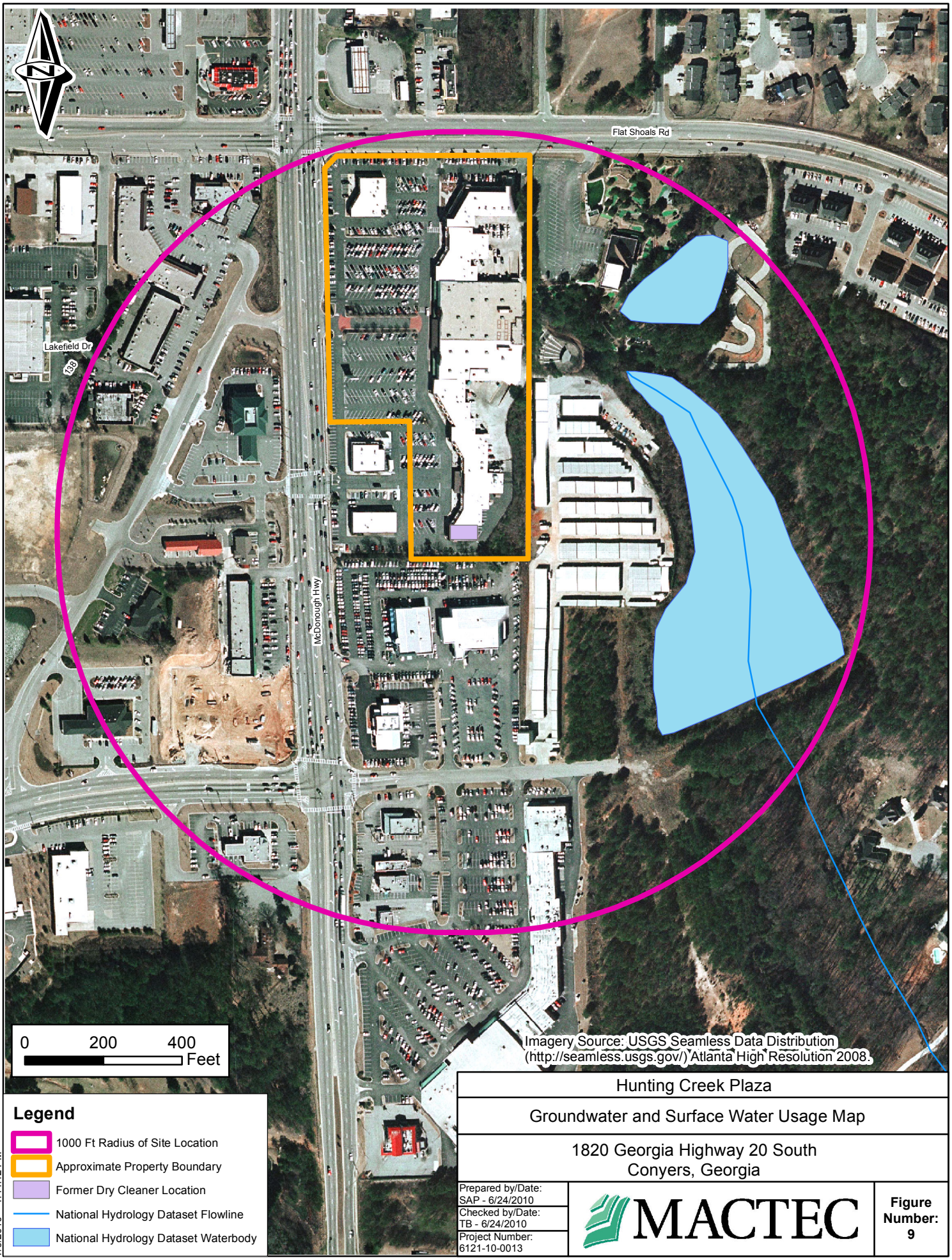
1820 Georgia Highway 20 South
Conyers, Georgia

Prepared by/Date:	SLW - 5/26/2010
Checked by/Date:	TJB - 5/26/2011
Project Number:	6121-10-0013

MACTEC

Figure Number: 8

Path: G:\Hunting_Creek_Plaza\mxd\Potentiometric_Surface3_May11.mxd



Hunting Creek Plaza

Groundwater and Surface Water Usage Map

1820 Georgia Highway 20 South
Conyers, Georgia

Prepared by/Date:	SAP - 6/24/2010
Checked by/Date:	TB - 6/24/2010
Project Number:	6121-10-0013

MACTEC

Figure Number: 9

Map Document: (G:\Hunting_Creek_Plaza\mxd\Groundwater and Surface Water Usage Map.mxd)
7/9/2010 -- 1:44:12 PM

APPENDIX C
TABLES

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 1 - SITE DELINEATION CONCENTRATION CRITERIA

Soil Delineation Concentration Criteria, mg/kg	
2-Butanone	200[2]
Acetone	400[2]
Ethylbenzene	70[2]
Xylenes	1000[2]
Methyl Acetate	0.07[1]
Toluene	100[2]
Tetrachloroethene	0.50[2]
Trichloroethene	0.50[2]
Groundwater Delineation Concentration Criteria, mg/L	
Acetone	4[3]
Chloroform	0.08[3]
Tetrachloroethene	0.005[3]

Notes:

[1] HSRA Notification Concentration

[2] Type 1 Risk Reduction Standard

[3] Default Type 1 Risk Reduction Standard provided in Appendix III Table 1 of the Georgia Rules for Hazardous Site Response 391-3-19

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 2 - LABORATORY TEST RESULTS OF REMAINING SOILS ON SITE

Sample ID	Depth (ft)	Date	VOCs, mg/kg							
			2-Butanone	Acetone	Ethylbenzene	Xylenes	Methyl Acetate	Toluene	Tetrachloroethene	Trichloroethene
Soil Delineation Concentration Criteria			0.79[1]	2.74[1]	20[1]	20[1]	0.07[1]	14.4[1]	0.50[2]	0.50[2]
GP-1	1	11/2/2005	<0.087	<0.170	<0.0087	<0.0017	<0.0087	<0.0087	**0.013**	<0.0087
GP-2	1	11/2/2005	<0.095	<0.190	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095
GP-3	1	11/2/2005	<0.090	<0.180	<0.0090	<0.018	<0.0090	<0.0090	<0.0090	<0.0090
GP-4	12	11/2/2005	<0.091	<0.180	<0.0091	<0.018	<0.0091	<0.0091	**0.190**	<0.0091
GP-5	3	11/2/2005	<0.088	<0.180	<0.0088	<0.018	<0.0088	<0.0088	**0.120**	<0.0088
GP-7	14	11/2/2005	<0.080	<0.160	<0.0080	<0.016	<0.0080	<0.0080	**0.076**	<0.0080
GP-8	13	11/28/2005	<1.5	<2.9	<0.150	<0.290	<0.150	<0.150	**0.210**	<0.150
GP-9	11	11/28/2005	<1.8	<3.5	<0.180	<0.350	<0.180	<0.180	**0.180**	<0.180
GP-10	15	11/28/2005	<1.7	<3.4	<0.170	<0.340	<0.170	<0.170	**0.170**	<0.170
GP-11	15	11/28/2005	<1.7	<3.5	<0.170	<0.350	<0.170	<0.170	**0.140**	<0.170
GP-12	14	11/28/2005	<0.023	<0.046	<0.0023	<0.0046	<0.0023	<0.0023	**0.0035**	<0.0023
SVE-1	5	11/28/2005	<2.3	<4.5	<0.230	<0.450	<0.230	<0.230	**0.250**	**0.100**
HA-1 Detention Pond	0.5	12/7/2005	<0.072	<0.140	<0.0072	<0.014	<0.0072	<0.0072	<0.0072	<0.0072
HA-2 Detention Pond	1	12/7/2005	<0.078	<0.160	<0.0078	<0.016	<0.0078	<0.0078	<0.0078	<0.0078
HA-1-Drain	3	12/15/2005	<0.091	<0.180	<0.0091	<0.018	<0.0091	<0.0091	**0.075**	<0.0091
	8.5	12/15/2005	<0.070	<0.140	<0.0070	<0.014	<0.0070	<0.0070	**0.210**	<0.0070
HA-2-Drain	3	12/15/2005	<0.091	<0.180	<0.0091	<0.018	<0.0091	<0.0091	**0.270**	<0.0091
Machine	1	8/4/2006	<0.077	<0.150	<0.0077	<0.015	<0.0077	<0.0077	<0.0077	<0.0077
HA-Boiler	12	8/29/2006	<0.052	<0.100	<0.0052	<0.010	<0.0052	<0.0052	**0.17**	<0.0052
HA-Dumpster	5	8/29/2006	<0.038	<0.075	<0.0038	<0.0075	<0.0038	<0.0038	<0.0038	<0.0038
	10	8/29/2006	<0.047	<0.094	<0.0047	<0.0094	<0.0047	<0.0047	<0.0047	<0.0047
	14	8/29/2006	<0.038	<0.076	<0.0038	<0.0076	<0.0038	<0.0038	<0.0038	<0.0038
DP-1	5	1/10/2007	<0.075	<0.150	<0.0075	<0.015	<0.0075	<0.0075	<0.0075	<0.0075
DP-2	5	1/10/2007	<0.080	<0.160	<0.0080	<0.016	<0.0080	<0.0080	<0.0080	<0.0080
DP-3	5	1/10/2007	<0.073	<0.150	<0.0073	<0.015	<0.0073	<0.0073	<0.0073	<0.0073
DP-4	5	1/10/2007	<0.049	**0.180**	<0.0049	<0.0099	<0.0049	<0.0049	**0.030**	<0.0049
DP-5	5	1/10/2007	<0.059	<0.120	<0.0059	<0.012	<0.0059	<0.0059	<0.0059	<0.0059
DP-6	0.5	1/10/2007	<0.055	<0.110	**0.006**	**0.020**	<0.0055	**0.110**	<0.0055	<0.0055
	5	1/10/2007	<0.050	<0.100	<0.0050	<0.010	<0.0050	<0.0050	**0.011**	<0.0050
	8	1/10/2007	<0.055	<0.110	<0.0055	<0.011	<0.0055	<0.0055	<0.0055	<0.0055
DP-7	0.5	1/10/2007	<0.046	<0.092	<0.0046	<0.0092	<0.0046	<0.0046	<0.0046	<0.0046
DP-10	10	1/7/2008	<0.095	<0.190	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095

Notes:
Results reported in mg/kg - milligrams per kilogram
Bold type denotes above laboratory detection limit
Non-bold values represent constituent detection limits
[1] HSRA Notification Concentration
[2] Type 1 Risk Reduction Standard

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 2 - LABORATORY TEST RESULTS FOR REMAINING SOILS ON SITE (CONTINUED)

Sample ID	Depth (ft)	Date	VOCs, mg/kg							
			2-Butanone	Acetone	Ethylbenzene	Xylenes	Methyl Acetate	Toluene	Tetrachloroethene	Trichloroethene
Soil Delineation Concentration Criteria			0.79[1]	2.74[1]	20[1]	20[1]	0.07[1]	14.4[1]	0.50[2]	0.50[2]
CS-01	2	8/4/2006	<0.057	<0.110	<0.0057	<0.011	<0.0057	<0.0057	<0.0057	<0.0057
CS-02	2	8/4/2006	<0.080	<0.160	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080
CS-03	2	8/4/2006	<0.067	<0.130	<0.0067	<0.0067	<0.0067	<0.0067	<0.0067	<0.0067
CS-04	8	8/4/2006	<0.080	<0.160	<0.0080	<0.0080	<0.0080	<0.0080	**0.083**	<0.0080
CS-05	8	8/4/2006	<0.057	<0.120	<0.0057	<0.0057	<0.0057	<0.0057	**0.026**	<0.0057
CS-06	4	8/4/2006	<0.074	<0.150	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074
CS-07	3	8/4/2006	<0.084	<0.170	<0.0084	<0.0084	<0.0084	<0.0084	**0.027**	<0.0084
CS-08	3	8/4/2006	<0.120	<0.240	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
CS-09	3	8/4/2006	<0.100	<0.200	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
CS-10-BTM	3	8/4/2006	<0.085	<0.170	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085
CS-11-BTM	8	8/4/2006	<0.081	<0.160	<0.0081	<0.0081	<0.0081	<0.0081	**0.13**	<0.0081
DP-8	0.5	1/10/2007	**0.099**	**0.840**	<0.0049	<0.0099	<0.0049	<0.0049	**0.029**	<0.0049
	5	1/10/2007	<0.056	<0.110	<0.0056	<0.011	**0.015**	<0.0056	**0.220**	<0.0056
	9	1/10/2007	<0.052	**0.130**	<0.0052	<0.010	<0.0052	<0.0052	**0.013**	<0.0052
DP-9	0.5	1/10/2007	<0.056	<0.110	<0.0056	<0.011	<0.0056	<0.0056	<0.0056	<0.0056
	5	1/10/2007	<0.056	<0.110	<0.0056	<0.011	<0.0056	<0.0056	<0.0056	<0.0056
	9	1/10/2007	<0.053	<0.110	<0.0053	<0.011	<0.0053	<0.0053	<0.0053	<0.0053

Notes:
Results reported in mg/kg - milligrams per kilogram
Bold type denotes above laboratory detection limit
Non-bold values represent constituent detection limits
[1] HSRA Notification Concentration
[2] Type 1 Risk Reduction Standard

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 3 - SUMMARY OF GROUNDWATER TESTING RESULTS

Sample ID	Date	VOCs, µg/L		
		Tetrachloroethene	Chloroform	Acetone
MW-1	12/7/2005	<5.0	<5.0	<50
	4/24/2007	**10**	<5.0	<50
	7/6/2007	**12**	<5.0	<50
	8/1/2007	**11**	**5.4**	**78**
	8/15/2007	**11**	**5.3**	<50
	9/19/2007	**10**	<5.0	<50
	10/17/2007	**12**	**7.7**	<50
	11/14/2007	**12**	<5.0	<50
	12/13/2007	**13**	**8.4**	<50
	1/15/2008	**13**	<5.0	<50
	2/20/2008	**9.7**	<5.0	<50
	3/21/2008	**9.7**	<5.0	<50
	1/21/2010	<5.0	<5.0	<50
MW-2	12/7/2005	<5.0	<5.0	<50
	4/27/2007	<5.0	<5.0	<50
MW-3	12/7/2005	<5.0	<5.0	<50
	4/27/2007	<5.0	<5.0	<50
	1/22/2010	<5.0	<5.0	<50
MW-4	12/29/2005	**92**	<5.0	<50
	4/24/2007	**120**	**6.8**	<50
	7/6/2007	**110**	<5.0	<50
	8/1/2007	**180**	**6.8**	**110**
	8/15/2007	**120**	<5.0	<50
	9/19/2007	**170**	**6.7**	<50
	10/17/2007	**170**	<5.0	<50
	11/14/2007	**160**	<5.0	<50
	12/13/2007	**110**	**5.2**	<50
	1/15/2008	**160**	<5.0	<50
	2/20/2008	**150**	<5.0	<50
	3/21/2008	**130**	<5.0	<50
	1/22/2010	**77**	<5.0	<50
MW-5	12/29/2005	**2400**	**6.2**	<50
	10/4/2006	<5.0	<5.0	**140**
	4/24/2007	**1700**	<5.0	<50
	7/6/2007	**870**	<5.0	<50
	8/1/2007	**500**	<5.0	<50
	8/15/2007	**13**	**12**	<50
	9/19/2007	**270**	<5.0	<50
	10/17/2007	**1200**	**5.5**	<50
	11/14/2007	**1300**	<5.0	<50
	12/13/2007	**1100**	**8.3**	<50
	1/15/2008	**1400**	**6.9**	<50
	2/20/2008	**1500**	<5.0	<50
	3/21/2008	**2900**	<5.0	<50
	5/19/2008	**690**	**7**	<50
	7/28/2008	**2800**	**8**	<50
	1/22/2010	**980**	**9**	<50
MW-6	4/7/2011	<5.0	<5.0	<50
MW-7	4/7/2011	<5.0	<5.0	<50
MW-8	5/5/2011	<5.0	<5.0	<50

Notes:
Results in µg/L - micrograms per liter
Bold type denotes above laboratory detection limits
Non-bold type denotes laboratory detectin limits

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 4 - GROUNDWATER ELEVATION DATE
MAY 5, 2011 SAMPLING EVENT

Well ID	Well Elevation, FT*	Depth of Well, FT	Well Screen Interval, FT	Depth to Water, FT	Groundwater Elevation, FT
MW-1	845.42	18.5	8-18	12.81	832.61
MW-2	852.10	57	Open in Rock	5.32	846.78
MW-3	845.08	61	Open in Rock	13.10	831.98
MW-4	844.78	17	7-17	12.56	832.22
MW-5	845.81	16.85	6.85-16.85	13.66	832.15
MW-6	839.32	20	5-20	12.25	827.07
MW-7	836.57	12	7-12	11.35	825.22
MW-8	845.66	43	33-43	13.67	831.99

* Relative to documented geodetic elevations

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 5 - SUMMARY OF NATURAL ATTENUATION PARAMETERS

Well ID / Sample Date	Units	MW-4 5/5/2011	MW-5 4/7/2011	MW-7 4/7/2011
Field Measured Parameters				
pH		4.71	5.3	5.51
Specific Conductivity	mS/cm	0.049	0.194	0.11
ORP	mV	229	272	110
Dissolved Oxygen	mg/L	0	5.43	2.16
Temperature	°C	20.61	21.2	18.3
Laboratory Measured Parameters				
Total Organic Carbon	mg/L	**2.24**	<1.0	<1.0
Ferrous Iron	mg/L	<0.1	<0.1	**0.463**
Alkalinity	mg/L	**18.1**	<10.0	<10.0
Ethane	mg/L	<0.009	<0.009	<0.009
Ethylene	mg/L	<0.007	<0.007	<0.007
Methane	mg/L	**91**	<0.004	<0.004
Total Sulfide	mg/L	<2.0	<2.0	<2.0
Nitrate	mg/L	**0.75**	**2**	**0.48**
Nitrite	mg/L	<0.25	<0.25	<0.25
Sulfate	mg/L	**4.1**	**4.2**	**2.8**
Chloride	mg/L	**7.5**	**41**	**5.4**

Notes:
mS/cm - mircoSiemens per centimeter
mV - millivolts
mg/L - milligrams per liter
°C - degrees celsius

Prepared By: Tyler Boyles
Checked By: Tonya Toby

HUNTING CREEK SHOPPING CENTER
1820 GEORGIA HIGHWAY 20 SOUTH
CONYERS, GEORGIA

TABLE 6 - SUMMARY OF INDOOR AIR TESTING RESULTS

Constituent[1]	HC-1		HC-2		HC-3		Comparison Standards[2] Industrial	
Acetone	**13**		**10**		**12**		140,000	N
Benzene	**1.5**		**0.58**	J	**0.51**	J	16	C
n-Butane	**21**		**1.5**		**1.1**		NL	
Chloromethane	**0.97**		**0.95**		**1**		390	N
Cyclohexane	**0.65**	J	<0.69		<0.69		26,000	N
Dichlorodifluoromethane	**2.2**		**2.1**		**2.1**		880	N
Ethanol	**17**		**6.8**		**6.8**		NL	
Ethylbenzene	**0.78**	J	<0.87		<0.87		49	C
Ethyl Acetate	**13**		**4**		<0.72		NC	
Heptane	**1.1**		<0.82		<0.82		NL	
Hexane	**3.3**		**0.63**	J	**0.63**	J	3,100	N
Isopropyl Alcohol	**9.1**		**1.9**		**1**		31,000	N
p-Isopropyltoluene	<1.1		**0.99**	J	**1.1**		NL	
Methylene chloride	**1.8**		**1.5**		**1.4**		260	C
Methyl ethyl ketone	**0.88**		<0.59		**1**		22,000	N
Nonane	**0.58**	J	<1.0		<0.1		880	N
Octane	**0.56**	J	<0.93		<0.93		NL	
Pentane	**16**		**2**		**2.6**		4,400	N
Propylene	**0.88**		**0.74**	J	**0.79**	J	13,000	N
1,2,4-Trimethylbenzene	**1.7**		**1.1**		**0.59**	J	31	N
2,2,4-Trimethylpentane	**2.3**		**0.27**	J	<0.93		NL	
Tetrachloroethylene	**6.8**		**6.1**		**8.1**		21	C
Toluene	**7.2**		**2.6**		**3.1**		22,000	N
Trichlorofluoromethane	**1.5**		**1.4**		**1.4**		3,100	N
m,p-Xylene	**2.5**		**1**		**0.74**	J	3,100	N
o-Xylene	**1**		**0.43**	J	<0.87		3,100	N
Total Xylenes	**3.5**		**1.4**		**0.74**		440	N

Notes:

[1] - Results reported in micrograms per cubic meter of air ($\mu g/m^3$)

[2] - Regional Screening Level (RSL) for Industrial Air per U.S. EPA Regional Screening Level Tables, May 2011. Values are noted as being based on carcinogenic (C) or noncarcinogenic (N) toxicity values. Values are based on a carcinogenic target risk of 1×10^{-5} and noncarcinogenic hazard index of 1.

J - Indicates estimated value

Bold values indicate constituent detected above laboratory reporting limit

No detections exceed industrial air value.

NL - No listing for constituent

NC - No comparison established

Prepared By: Tyler Boyles
Checked By: Tonya Toby

APPENDIX D
LABORATORY REPORTS

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

January 27, 2010

Bill Updyke
Mactec Engineering and Consulting, Inc.
396 Plasters Ave
Atlanta GA 30324

TEL: (404) 873-4761
FAX: (404) 817-0183

RE: Hunting Creek Plaza

Dear Bill Updyke: Order No: 1001D93

Analytical Environmental Services, Inc. received 5 samples on January 22, 2010 1:25 pm for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/09-06/30/10.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Blair Stout
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3785 Presidential Parkway, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1001093

Date: 1/22/10 Page 1 of 1

COMPANY: MACTEC

ADDRESS:

PHONE: 404-817-0231

FAX:

SAMPLED BY: B. Wadyka

SIGNATURE:

ANALYSIS REQUESTED

VOCs-8260

PRESERVATION (See codes)

HCl

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	PRESERVATION	REMARKS	No # of Containers
1	MW-1	1/21/10	1400	X		GW	X		2
2	MW-3	1/22/10	1135	X		"	X		2
3	MW-4	1/22/10	1055	X		"	X		2
4	MW-5	1/21/10	1525	X		GW	X		2
5									
6	Trip Blank						X		2
7									
8									
9									
10									
11									
12									
13									
14									

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	1/22/10 1325	1:	1/22/10 1:25
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Hunting Creek Plaza

PROJECT #: 6121-10-0013

SITE ADDRESS: Highway 20 Conyers, GA

SEND REPORT TO: B. Wadyka, T Boyles

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 10

Turnaround Time Request

- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush **(auth req.)**
- ( ) Other

STATE PROGRAM (if any):

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

(CLIENT) FedEx UPS MAIL COURIER GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.
SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-1
Project:	Hunting Creek Plaza	**Collection Date:**	1/21/2010 2:00:00 PM
Lab ID:	1001D93-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,1,2-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,1-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,1-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2-Dibromoethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,2-Dichloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,3-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
1,4-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
2-Butanone	BRL	50		ug/L	124270	1	01/25/2010 17:32	GK
2-Hexanone	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
4-Methyl-2-pentanone	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
Acetone	BRL	50		ug/L	124270	1	01/25/2010 17:32	GK
Benzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Bromodichloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Bromoform	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Bromomethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Carbon tetrachloride	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Chlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Chloroethane	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
Chloroform	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Chloromethane	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Cyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Dibromochloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Dichlorodifluoromethane	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
Ethylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Freon-113	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
Isopropylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
m,p-Xylene	BRL	10		ug/L	124270	1	01/25/2010 17:32	GK
Methyl acetate	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Methyl tert-butyl ether	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Methylcyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Methylene chloride	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
o-Xylene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Styrene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-1
Project:	Hunting Creek Plaza	**Collection Date:**	1/21/2010 2:00:00 PM
Lab ID:	1001D93-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Toluene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Trichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Trichlorofluoromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:32	GK
Vinyl chloride	BRL	2.0		ug/L	124270	1	01/25/2010 17:32	GK
Surr: 4-Bromofluorobenzene	88	60.1-127		%REC	124270	1	01/25/2010 17:32	GK
Surr: Dibromofluoromethane	96.7	79.6-126		%REC	124270	1	01/25/2010 17:32	GK
Surr: Toluene-d8	98.2	78-116		%REC	124270	1	01/25/2010 17:32	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-3
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010 11:35:00 AM
Lab ID:	1001D93-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,1,2-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,1-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,1-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2-Dibromoethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,2-Dichloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,3-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
1,4-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
2-Butanone	BRL	50		ug/L	124270	1	01/25/2010 18:30	GK
2-Hexanone	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
4-Methyl-2-pentanone	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
Acetone	BRL	50		ug/L	124270	1	01/25/2010 18:30	GK
Benzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Bromodichloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Bromoform	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Bromomethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Carbon tetrachloride	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Chlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Chloroethane	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
Chloroform	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Chloromethane	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Cyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Dibromochloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Dichlorodifluoromethane	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
Ethylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Freon-113	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
Isopropylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
m,p-Xylene	BRL	10		ug/L	124270	1	01/25/2010 18:30	GK
Methyl acetate	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Methyl tert-butyl ether	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Methylcyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Methylene chloride	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
o-Xylene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Styrene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-3
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010 11:35:00 AM
Lab ID:	1001D93-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Toluene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Trichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Trichlorofluoromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:30	GK
Vinyl chloride	BRL	2.0		ug/L	124270	1	01/25/2010 18:30	GK
Surr: 4-Bromofluorobenzene	89.7	60.1-127		%REC	124270	1	01/25/2010 18:30	GK
Surr: Dibromofluoromethane	98.9	79.6-126		%REC	124270	1	01/25/2010 18:30	GK
Surr: Toluene-d8	96.8	78-116		%REC	124270	1	01/25/2010 18:30	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-4
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010 10:55:00 AM
Lab ID:	1001D93-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,1,2-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,1-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,1-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2-Dibromoethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,2-Dichloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,3-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
1,4-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
2-Butanone	BRL	50		ug/L	124270	1	01/25/2010 18:59	GK
2-Hexanone	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
4-Methyl-2-pentanone	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
Acetone	BRL	50		ug/L	124270	1	01/25/2010 18:59	GK
Benzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Bromodichloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Bromoform	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Bromomethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Carbon tetrachloride	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Chlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Chloroethane	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
Chloroform	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Chloromethane	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Cyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Dibromochloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Dichlorodifluoromethane	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
Ethylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Freon-113	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
Isopropylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
m,p-Xylene	BRL	10		ug/L	124270	1	01/25/2010 18:59	GK
Methyl acetate	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Methyl tert-butyl ether	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Methylcyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Methylene chloride	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
o-Xylene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Styrene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-4
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010 10:55:00 AM
Lab ID:	1001D93-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	77	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Toluene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Trichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Trichlorofluoromethane	BRL	5.0		ug/L	124270	1	01/25/2010 18:59	GK
Vinyl chloride	BRL	2.0		ug/L	124270	1	01/25/2010 18:59	GK
Surr: 4-Bromofluorobenzene	89.9	60.1-127		%REC	124270	1	01/25/2010 18:59	GK
Surr: Dibromofluoromethane	98.6	79.6-126		%REC	124270	1	01/25/2010 18:59	GK
Surr: Toluene-d8	99.9	78-116		%REC	124270	1	01/25/2010 18:59	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-5
Project:	Hunting Creek Plaza	**Collection Date:**	1/21/2010 3:25:00 PM
Lab ID:	1001D93-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,1,2-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,1-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,1-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2-Dibromoethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,2-Dichloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,3-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
1,4-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
2-Butanone	BRL	50		ug/L	124270	1	01/25/2010 19:28	GK
2-Hexanone	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
4-Methyl-2-pentanone	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
Acetone	BRL	50		ug/L	124270	1	01/25/2010 19:28	GK
Benzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Bromodichloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Bromoform	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Bromomethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Carbon tetrachloride	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Chlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Chloroethane	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
Chloroform	9.0	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Chloromethane	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Cyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Dibromochloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Dichlorodifluoromethane	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
Ethylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Freon-113	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
Isopropylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
m,p-Xylene	BRL	10		ug/L	124270	1	01/25/2010 19:28	GK
Methyl acetate	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Methyl tert-butyl ether	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Methylcyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Methylene chloride	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
o-Xylene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Styrene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-5
Project:	Hunting Creek Plaza	**Collection Date:**	1/21/2010 3:25:00 PM
Lab ID:	1001D93-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	980	50		ug/L	124270	10	01/26/2010 18:04	NK
Toluene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Trichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Trichlorofluoromethane	BRL	5.0		ug/L	124270	1	01/25/2010 19:28	GK
Vinyl chloride	BRL	2.0		ug/L	124270	1	01/25/2010 19:28	GK
Surr: 4-Bromofluorobenzene	88.3	60.1-127		%REC	124270	1	01/25/2010 19:28	GK
Surr: 4-Bromofluorobenzene	97.7	60.1-127		%REC	124270	10	01/26/2010 18:04	NK
Surr: Dibromofluoromethane	99.7	79.6-126		%REC	124270	1	01/25/2010 19:28	GK
Surr: Dibromofluoromethane	101	79.6-126		%REC	124270	10	01/26/2010 18:04	NK
Surr: Toluene-d8	98	78-116		%REC	124270	10	01/26/2010 18:04	NK
Surr: Toluene-d8	98.8	78-116		%REC	124270	1	01/25/2010 19:28	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010
Lab ID:	1001D93-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,1,2-Trichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,1-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,1-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2-Dibromoethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2-Dichloroethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,2-Dichloropropane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,3-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
1,4-Dichlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
2-Butanone	BRL	50		ug/L	124270	1	01/25/2010 17:03	GK
2-Hexanone	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
4-Methyl-2-pentanone	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
Acetone	BRL	50		ug/L	124270	1	01/25/2010 17:03	GK
Benzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Bromodichloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Bromoform	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Bromomethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Carbon tetrachloride	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Chlorobenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Chloroethane	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
Chloroform	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Chloromethane	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Cyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Dibromochloromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Dichlorodifluoromethane	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
Ethylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Freon-113	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
Isopropylbenzene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
m,p-Xylene	BRL	10		ug/L	124270	1	01/25/2010 17:03	GK
Methyl acetate	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Methyl tert-butyl ether	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Methylcyclohexane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Methylene chloride	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
o-Xylene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Styrene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc **Date:** 27-Jan-10

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project:	Hunting Creek Plaza	**Collection Date:**	1/22/2010
Lab ID:	1001D93-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Toluene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Trichloroethene	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Trichlorofluoromethane	BRL	5.0		ug/L	124270	1	01/25/2010 17:03	GK
Vinyl chloride	BRL	2.0		ug/L	124270	1	01/25/2010 17:03	GK
Surr: 4-Bromofluorobenzene	90.6	60.1-127		%REC	124270	1	01/25/2010 17:03	GK
Surr: Dibromofluoromethane	97.7	79.6-126		%REC	124270	1	01/25/2010 17:03	GK
Surr: Toluene-d8	96.9	78-116		%REC	124270	1	01/25/2010 17:03	GK

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Maetec Work Order Number 1001D93

Checklist completed by [signature] 1/22/10
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other ______

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 4°C Cooler #2 ______ Cooler #3 ______ Cooler #4 ______ Cooler#5 ______ Cooler #6 ______

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? ____________ Checked by ____________

Sample Condition: Good ✓ Other(Explain) ______________________

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1001D93

ANALYTICAL QC SUMMARY REPORT

BatchID: 124270

Sample ID: **MB-124270** Client ID: Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399349**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	
cis-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1001D93

ANALYTICAL QC SUMMARY REPORT

BatchID: 124270

Sample ID: **MB-124270** Client ID: Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399349**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	10	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	44.59	0	50	0	89.2	60.1	127	0	0	0	
Surr: Dibromofluoromethane	47.42	0	50	0	94.8	79.6	126	0	0	0	
Surr: Toluene-d8	48.19	0	50	0	96.4	78	116	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1001D93

ANALYTICAL QC SUMMARY REPORT

BatchID: 124270

Sample ID: **LCS-124270** Client ID: Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399348**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	43.02	5.0	50	0	86	61.4	146	0	0	0	
Benzene	44.28	5.0	50	0	88.6	72.8	131	0	0	0	
Chlorobenzene	42.90	5.0	50	0	85.8	76	123	0	0	0	
Toluene	43.70	5.0	50	0	87.4	74.7	128	0	0	0	
Trichloroethene	44.53	5.0	50	0	89.1	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	48.44	0	50	0	96.9	60.1	127	0	0	0	
Surr: Dibromofluoromethane	47.82	0	50	0	95.6	79.6	126	0	0	0	
Surr: Toluene-d8	49.77	0	50	0	99.5	78	116	0	0	0	

Sample ID: **1001C25-001AMS** Client ID: Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399556**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	53.57	5.0	50	0	107	48.8	172	0	0	0	
Benzene	53.58	5.0	50	0	107	64.5	143	0	0	0	
Chlorobenzene	48.69	5.0	50	0	97.4	74.5	129	0	0	0	
Toluene	50.70	5.0	50	0	101	62	145	0	0	0	
Trichloroethene	51.53	5.0	50	0	103	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	45.53	0	50	0	91.1	60.1	127	0	0	0	
Surr: Dibromofluoromethane	47.70	0	50	0	95.4	79.6	126	0	0	0	
Surr: Toluene-d8	48.41	0	50	0	96.8	78	116	0	0	0	

Sample ID: **1001C25-001AMSD** Client ID: Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399557**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	49.24	5.0	50	0	98.5	48.8	172	53.57	8.42	21.6	
Benzene	50.59	5.0	50	0	101	64.5	143	53.58	5.74	18.3	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1001D93

ANALYTICAL QC SUMMARY REPORT

BatchID: 124270

Sample ID: **1001C25-001AMSD** Client ID:
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **01/25/2010** Run No: **164175**
BatchID: **124270** Analysis Date: **01/25/2010** Seq No: **3399557**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	46.46	5.0	50	0	92.9	74.5	129	48.69	4.69	19.2	
Toluene	48.04	5.0	50	0	96.1	62	145	50.70	5.39	21.2	
Trichloroethene	48.94	5.0	50	0	97.9	70.3	140	51.53	5.16	20.3	
Surr: 4-Bromofluorobenzene	46.34	0	50	0	92.7	60.1	127	45.53	0	0	
Surr: Dibromofluoromethane	47.74	0	50	0	95.5	79.6	126	47.70	0	0	
Surr: Toluene-d8	48.42	0	50	0	96.8	78	116	48.41	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

April 18, 2011

Tyler Boyles
Mactec Engineering and Consulting, Inc.
396 Plasters Ave
Atlanta GA 30324

TEL: (404) 873-4761
FAX: (404) 817-0183

RE: Hunting Creek Shopping Plaza

Dear Tyler Boyles: Order No: 1104636

Analytical Environmental Services, Inc. received 5 samples on 4/8/2011 12:15:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/10-06/30/11.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

James Forrest
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704

AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1104636

Date: 4/7/11 Page 1 of 1

COMPANY: MACTEC	ADDRESS: 396 Plasters Ave Atlanta GA
PHONE: 404 817 0153	FAX: 404 817 0183
SAMPLED BY: Tyler Boyles	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Total Organic Carbon	VOCs	Ferrous Iron	Total Organic Carbon	MEE	Alkalinity	Sulfide	Chloride	Nitrate	Nitrite	Sulfate			REMARKS	No # of Containers
	PRESERVATION (See codes)						NA	HCL	NA	H_2SO_4	HCL	NA	NaOH+ZnAc	NA	NA	NA	NA				
1	MW-7			X		SO	X														1
2	MW-7	4/7/11	1230	X		GW		X	X	X	X	X	X	X	X	N	X				7
3	MW-5	4/7/11	1700	X		GW			X	X	X	X	X	N	P	P	X				5
4	MW-6	4/7/11	1730	X		GW		X													2
5	Trip Blank							X													
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					

Visit our website **www.aesatlanta.com** to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	4/8/11 1215	1:	4/8/11 12:15
2:		2:	
3		3:	

PROJECT INFORMATION

PROJECT NAME: Hunting Creek Shopping Plaza

PROJECT #: 6121 10 0013

SITE ADDRESS: Conyers, GA

SEND REPORT TO: Tyler Boyles

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

CLIENT FedEx UPS MAIL COURIER

GREYHOUND OTHER

RECEIPT

Total # of Containers: 15

Turnaround Time Request

- Standard 5 Business Days
- 2 Business Day Rush
- Next Business Day Rush
- Same Day Rush **(auth req.)**
- Other

STATE PROGRAM (if any):

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: I II III IV

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc

Date: 18-Apr-11

Client: Mactec Engineering and Consulting, Inc.
Project: Hunting Creek Shopping Plaza
Lab ID: 1104636

Case Narrative

For sample 1104636-001A (MW-7) the collection date and time were reported from the sample container.

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-7
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/5/2011 11:40:00 AM
Lab ID:	1104636-001	**Matrix:**	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon SW9060A Modified				**(SW9060 Modified)**				
Total Organic Carbon (TOC)	653	500		mg/Kg-dry	144996	1	04/15/2011 10:14	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-7
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/7/2011 12:30:00 PM
Lab ID:	1104636-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	BRL	1.00		mg/L	R194662	1	04/12/2011 16:38	GR
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,1-Dichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,1-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2-Dibromoethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2-Dichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,2-Dichloropropane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
2-Butanone	BRL	50		ug/L	144783	1	04/14/2011 10:19	SB
2-Hexanone	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
4-Methyl-2-pentanone	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
Acetone	BRL	50		ug/L	144783	1	04/14/2011 10:19	SB
Benzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Bromodichloromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Bromoform	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Bromomethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Carbon tetrachloride	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Chlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Chloroethane	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
Chloroform	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Chloromethane	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Cyclohexane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Dibromochloromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Dichlorodifluoromethane	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
Ethylbenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Freon-113	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
Isopropylbenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
m,p-Xylene	BRL	10		ug/L	144783	1	04/14/2011 10:19	SB
Methyl acetate	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Methylcyclohexane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-7
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/7/2011 12:30:00 PM
Lab ID:	1104636-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylene chloride	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
o-Xylene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Styrene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Tetrachloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Toluene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Trichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Trichlorofluoromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:19	SB
Vinyl chloride	BRL	2.0		ug/L	144783	1	04/14/2011 10:19	SB
Surr: 4-Bromofluorobenzene	95.7	64.7-130		%REC	144783	1	04/14/2011 10:19	SB
Surr: Dibromofluoromethane	103	80.7-129		%REC	144783	1	04/14/2011 10:19	SB
Surr: Toluene-d8	99.7	71.1-120		%REC	144783	1	04/14/2011 10:19	SB
Sulfide by SW9030/9034				**(SW9030)**				
Sulfide	BRL	2.00		mg/L	144955	1	04/14/2011 10:35	AS
ION SCAN SW9056A								
Chloride	5.4	1.0		mg/L	R194548	1	04/08/2011 15:35	GR
Nitrate	0.48	0.25		mg/L	R194548	1	04/08/2011 15:35	GR
Nitrite	BRL	0.25		mg/L	R194548	1	04/08/2011 15:35	GR
Sulfate	2.8	1.0		mg/L	R194548	1	04/08/2011 15:35	GR
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9		ug/L	144776	1	04/11/2011 15:42	RS
Ethylene	BRL	7		ug/L	144776	1	04/11/2011 15:42	RS
Methane	BRL	4		ug/L	144776	1	04/11/2011 15:42	RS
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	0.463	0.100		mg/L	R194483	1	04/08/2011 12:25	CG
Alkalinity E310.2								
Alkalinity, Total (As CaCO3)	BRL	10.0		mg/L	R194882	1	04/15/2011 11:25	TL

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-5
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/7/2011 5:00:00 PM
Lab ID:	1104636-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	BRL	1.00		mg/L	R194662	1	04/12/2011 16:59	GR
Sulfide by SW9030/9034 (SW9030)								
Sulfide	BRL	2.00		mg/L	144955	1	04/14/2011 10:35	AS
ION SCAN SW9056A								
Chloride	41	1.0		mg/L	R194548	1	04/08/2011 16:34	GR
Nitrate	2.0	0.25		mg/L	R194548	1	04/08/2011 16:34	GR
Nitrite	BRL	0.25		mg/L	R194548	1	04/08/2011 16:34	GR
Sulfate	4.2	1.0		mg/L	R194548	1	04/08/2011 16:34	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Ethane	BRL	9		ug/L	144776	1	04/11/2011 15:58	RS
Ethylene	BRL	7		ug/L	144776	1	04/11/2011 15:58	RS
Methane	BRL	4		ug/L	144776	1	04/11/2011 15:58	RS
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R194483	1	04/08/2011 12:25	CG
Alkalinity E310.2								
Alkalinity, Total (As CaCO3)	BRL	10.0		mg/L	R194882	1	04/15/2011 11:26	TL

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-6
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/7/2011 5:30:00 PM
Lab ID:	1104636-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,1-Dichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,1-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2-Dibromoethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2-Dichloroethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,2-Dichloropropane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
2-Butanone	BRL	50		ug/L	144783	1	04/14/2011 10:48	SB
2-Hexanone	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
4-Methyl-2-pentanone	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
Acetone	BRL	50		ug/L	144783	1	04/14/2011 10:48	SB
Benzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Bromodichloromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Bromoform	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Bromomethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Carbon tetrachloride	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Chlorobenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Chloroethane	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
Chloroform	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Chloromethane	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Cyclohexane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Dibromochloromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Dichlorodifluoromethane	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
Ethylbenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Freon-113	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
Isopropylbenzene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
m,p-Xylene	BRL	10		ug/L	144783	1	04/14/2011 10:48	SB
Methyl acetate	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Methylcyclohexane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Methylene chloride	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
o-Xylene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Styrene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-6
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/7/2011 5:30:00 PM
Lab ID:	1104636-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Toluene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Trichloroethene	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Trichlorofluoromethane	BRL	5.0		ug/L	144783	1	04/14/2011 10:48	SB
Vinyl chloride	BRL	2.0		ug/L	144783	1	04/14/2011 10:48	SB
Surr: 4-Bromofluorobenzene	96.1	64.7-130		%REC	144783	1	04/14/2011 10:48	SB
Surr: Dibromofluoromethane	101	80.7-129		%REC	144783	1	04/14/2011 10:48	SB
Surr: Toluene-d8	102	71.1-120		%REC	144783	1	04/14/2011 10:48	SB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/8/2011
Lab ID:	1104636-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,1-Dichloroethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,1-Dichloroethene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2-Dibromoethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2-Dichloroethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,2-Dichloropropane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
2-Butanone	BRL	50		ug/L	144783	1	04/13/2011 10:20	SB
2-Hexanone	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
4-Methyl-2-pentanone	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
Acetone	BRL	50		ug/L	144783	1	04/13/2011 10:20	SB
Benzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Bromodichloromethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Bromoform	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Bromomethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Carbon tetrachloride	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Chlorobenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Chloroethane	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
Chloroform	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Chloromethane	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Cyclohexane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Dibromochloromethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Dichlorodifluoromethane	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
Ethylbenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Freon-113	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
Isopropylbenzene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
m,p-Xylene	BRL	10		ug/L	144783	1	04/13/2011 10:20	SB
Methyl acetate	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Methylcyclohexane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Methylene chloride	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
o-Xylene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Styrene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
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- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 18-Apr-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Hunting Creek Shopping Plaza	**Collection Date:**	4/8/2011
Lab ID:	1104636-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Toluene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Trichloroethene	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Trichlorofluoromethane	BRL	5.0		ug/L	144783	1	04/13/2011 10:20	SB
Vinyl chloride	BRL	2.0		ug/L	144783	1	04/13/2011 10:20	SB
Surr: 4-Bromofluorobenzene	99.7	64.7-130		%REC	144783	1	04/13/2011 10:20	SB
Surr: Dibromofluoromethane	94.3	80.7-129		%REC	144783	1	04/13/2011 10:20	SB
Surr: Toluene-d8	97.3	71.1-120		%REC	144783	1	04/13/2011 10:20	SB

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Mactec Work Order Number 1104636

Checklist completed by M.D 4/8/11
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.6c Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ MW 4/8/11 No ✓

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by M.D

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc

Date: 18-Apr-11

Client: Mactec Engineering and Consulting, Inc.
Project: Hunting Creek Shopping Plaza
Lab Order: 1104636

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1104636-001A	MW-7	4/5/2011 11:40:00AM	Soil	Total Organic Carbon		04/11/2011	04/15/2011
1104636-002A	MW-7	4/7/2011 12:30:00PM	Groundwater	TCL VOLATILE ORGANICS		04/11/2011	04/14/2011
1104636-002B	MW-7	4/7/2011 12:30:00PM	Groundwater	GC Analysis of Gaseous Samples		04/11/2011	04/11/2011
1104636-002C	MW-7	4/7/2011 12:30:00PM	Groundwater	Total Organic Carbon (TOC)			04/12/2011
1104636-002D	MW-7	4/7/2011 12:30:00PM	Groundwater	Sulfide by SW9030/9034		04/14/2011	04/14/2011
1104636-002E	MW-7	4/7/2011 12:30:00PM	Groundwater	Alkalinity			04/15/2011
1104636-002E	MW-7	4/7/2011 12:30:00PM	Groundwater	ION SCAN			04/08/2011
1104636-002E	MW-7	4/7/2011 12:30:00PM	Groundwater	Ferrous Iron			04/08/2011
1104636-003A	MW-5	4/7/2011 5:00:00PM	Groundwater	GC Analysis of Gaseous Samples		04/11/2011	04/11/2011
1104636-003B	MW-5	4/7/2011 5:00:00PM	Groundwater	Total Organic Carbon (TOC)			04/12/2011
1104636-003C	MW-5	4/7/2011 5:00:00PM	Groundwater	Sulfide by SW9030/9034		04/14/2011	04/14/2011
1104636-003D	MW-5	4/7/2011 5:00:00PM	Groundwater	Alkalinity			04/15/2011
1104636-003D	MW-5	4/7/2011 5:00:00PM	Groundwater	ION SCAN			04/08/2011
1104636-003D	MW-5	4/7/2011 5:00:00PM	Groundwater	Ferrous Iron			04/08/2011
1104636-004A	MW-6	4/7/2011 5:30:00PM	Groundwater	TCL VOLATILE ORGANICS		04/11/2011	04/14/2011
1104636-005A	TRIP BLANK	4/8/2011 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		04/11/2011	04/13/2011

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144776

Sample ID: **MB-144776** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194575**
SampleType: **MBLK** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **144776** Analysis Date: **04/11/2011** Seq No: **4059672**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	BRL	9	0	0	0	0	0	0	0	0	
Ethylene	BRL	7	0	0	0	0	0	0	0	0	
Methane	BRL	4	0	0	0	0	0	0	0	0	

Sample ID: **LCS-144776** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194575**
SampleType: **LCS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **144776** Analysis Date: **04/11/2011** Seq No: **4059675**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	96.85	9	200	0	48.4	37.8	115	0	0	0	
Ethylene	69.28	7	200	0	34.6	24.4	115	0	0	0	
Methane	95.85	4	200	0	47.9	38	115	0	0	0	

Sample ID: **LCSD-144776** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194575**
SampleType: **LCSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **144776** Analysis Date: **04/11/2011** Seq No: **4059680**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	93.26	9	200	0	46.6	37.8	115	96.85	3.78	20	
Ethylene	66.15	7	200	0	33.1	24.4	115	69.28	4.63	20	
Methane	93.52	4	200	0	46.8	38	115	95.85	2.47	20	

Sample ID: **1104636-002BMS** Client ID: **MW-7** Units: **ug/L** Prep Date: **04/11/2011** Run No: **194575**
SampleType: **MS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **144776** Analysis Date: **04/11/2011** Seq No: **4059738**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	123.0	9	200	0	61.5	37.5	115	0	0	0	
Ethylene	81.28	7	200	0	40.6	23.1	115	0	0	0	
Methane	132.0	4	200	0	66	37.7	115	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144776

Sample ID: **1104636-002BMSD** Client ID: **MW-7** Units: **ug/L** Prep Date: **04/11/2011** Run No: **194575**
SampleType: **MSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **144776** Analysis Date: **04/11/2011** Seq No: **4059743**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	116.0	9	200	0	58	37.5	115	123.0	5.82	20	
Ethylene	77.05	7	200	0	38.5	23.1	115	81.28	5.35	20	
Methane	124.5	4	200	0	62.2	37.7	115	132.0	5.87	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144783

Sample ID: **MB-144783** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059843**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	
cis-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144783

Sample ID: **MB-144783** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059843**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	49.52	0	50	0	99	64.7	130	0	0	0	
Surr: Dibromofluoromethane	50.06	0	50	0	100	80.7	129	0	0	0	
Surr: Toluene-d8	48.90	0	50	0	97.8	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144783

Sample ID: **LCS-144783** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059839**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	57.07	5.0	50	0	114	60	140	0	0	0	
Benzene	51.57	5.0	50	0	103	70	130	0	0	0	
Chlorobenzene	51.32	5.0	50	0	103	70	130	0	0	0	
Toluene	51.56	5.0	50	0	103	70	130	0	0	0	
Trichloroethene	54.76	5.0	50	0	110	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	48.66	0	50	0	97.3	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.59	0	50	0	97.2	80.7	129	0	0	0	
Surr: Toluene-d8	49.95	0	50	0	99.9	71.1	120	0	0	0	

Sample ID: **1104743-001AMS** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059853**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	69.63	5.0	50	0	139	46.2	183	0	0	0	
Benzene	57.96	5.0	50	0	116	62.2	143	0	0	0	
Chlorobenzene	55.47	5.0	50	0	111	72.2	137	0	0	0	
Toluene	57.58	5.0	50	0	115	57.8	149	0	0	0	
Trichloroethene	62.37	5.0	50	0	125	70.5	149	0	0	0	
Surr: 4-Bromofluorobenzene	51.71	0	50	0	103	64.7	130	0	0	0	
Surr: Dibromofluoromethane	51.86	0	50	0	104	80.7	129	0	0	0	
Surr: Toluene-d8	51.27	0	50	0	103	71.1	120	0	0	0	

Sample ID: **1104743-001AMSD** Client ID: Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059856**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	65.98	5.0	50	0	132	46.2	183	69.63	5.38	20	
Benzene	56.53	5.0	50	0	113	62.2	143	57.96	2.5	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144783

Sample ID: **1104743-001AMSD** Client ID:
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **04/11/2011** Run No: **194471**
BatchID: **144783** Analysis Date: **04/11/2011** Seq No: **4059856**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	54.13	5.0	50	0	108	72.2	137	55.47	2.45	20	
Toluene	57.13	5.0	50	0	114	57.8	149	57.58	0.785	20	
Trichloroethene	61.37	5.0	50	0	123	70.5	149	62.37	1.62	20	
Surr: 4-Bromofluorobenzene	50.48	0	50	0	101	64.7	130	51.71	0	0	
Surr: Dibromofluoromethane	50.59	0	50	0	101	80.7	129	51.86	0	0	
Surr: Toluene-d8	50.86	0	50	0	102	71.1	120	51.27	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144955

Sample ID: **MB-144955**	Client ID:					Units: **mg/L**		Prep Date: **04/14/2011**		Run No: **194851**
SampleType: **MBLK**	TestCode: **Sulfide by SW9030/9034**					BatchID: **144955**		Analysis Date: **04/14/2011**		Seq No: **4065420**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Sulfide	BRL	2.00	0	0	0	0	0	0	0	0

Sample ID: **LCS-144955**	Client ID:					Units: **mg/L**		Prep Date: **04/14/2011**		Run No: **194851**
SampleType: **LCS**	TestCode: **Sulfide by SW9030/9034**					BatchID: **144955**		Analysis Date: **04/14/2011**		Seq No: **4065421**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Sulfide	396.0	2.00	396	0	100	40	120	0	0	0

Sample ID: **1104636-003CMS**	Client ID: **MW-5**					Units: **mg/L**		Prep Date: **04/14/2011**		Run No: **194851**
SampleType: **MS**	TestCode: **Sulfide by SW9030/9034**					BatchID: **144955**		Analysis Date: **04/14/2011**		Seq No: **4065424**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Sulfide	39.20	2.00	39.6	1.600	94.9	71.9	119	0	0	0

Sample ID: **1104636-003CMSD**	Client ID: **MW-5**					Units: **mg/L**		Prep Date: **04/14/2011**		Run No: **194851**
SampleType: **MSD**	TestCode: **Sulfide by SW9030/9034**					BatchID: **144955**		Analysis Date: **04/14/2011**		Seq No: **4065425**
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Sulfide	39.20	2.00	39.6	1.600	94.9	71.9	119	39.20	0	30

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: 144996

Sample ID: **MB-144996**	Client ID:				Units: **mg/Kg-dry**		Prep Date: **04/11/2011**		Run No: **194913**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon SW9060A Modified**				BatchID: **144996**		Analysis Date: **04/15/2011**		Seq No: **4067726**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Total Organic Carbon (TOC)	BRL	500	0	0	0	0	0	0	0	0	

Sample ID: **LCS-144996**	Client ID:				Units: **mg/Kg-dry**		Prep Date: **04/11/2011**		Run No: **194913**	
SampleType: **LCS**	TestCode: **Total Organic Carbon SW9060A Modified**				BatchID: **144996**		Analysis Date: **04/15/2011**		Seq No: **4067779**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Total Organic Carbon (TOC)	3125	500	2610	0	120	70	130	0	0	0	

Sample ID: **1104636-001ADUP**	Client ID: **MW-7**				Units: **mg/Kg-dry**		Prep Date: **04/11/2011**		Run No: **194913**	
SampleType: **DUP**	TestCode: **Total Organic Carbon SW9060A Modified**				BatchID: **144996**		Analysis Date: **04/15/2011**		Seq No: **4067865**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Total Organic Carbon (TOC)	642.8	500	0	0	0	0	0	652.9	1.56	50	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: R194483

Sample ID: **MB-R194483**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194483**	
SampleType: **MBLK**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R194483**		Analysis Date: **04/08/2011**		Seq No: **4057627**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Iron, as Ferrous (Fe+2)	BRL	0.100	0	0	0	0	0	0	0	0

Sample ID: **LCS-R194483**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194483**	
SampleType: **LCS**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R194483**		Analysis Date: **04/08/2011**		Seq No: **4057628**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Iron, as Ferrous (Fe+2)	0.4710	0.100	0.5	0	94.2	85	115	0	0	0

Sample ID: **1104636-003DMS**	Client ID: **MW-5**				Units: **mg/L**		Prep Date:		Run No: **194483**	
SampleType: **MS**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R194483**		Analysis Date: **04/08/2011**		Seq No: **4057632**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Iron, as Ferrous (Fe+2)	0.4710	0.100	0.5	0	94.2	80	120	0	0	0

Sample ID: **1104636-003DMSD**	Client ID: **MW-5**				Units: **mg/L**		Prep Date:		Run No: **194483**	
SampleType: **MSD**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R194483**		Analysis Date: **04/08/2011**		Seq No: **4057637**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Iron, as Ferrous (Fe+2)	0.4631	0.100	0.5	0	92.6	80	120	0.4710	1.69	30

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: R194548

Sample ID: **MB-R194548**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194548**	
SampleType: **MBLK**	TestCode: **ION SCAN SW9056A**				BatchID: **R194548**		Analysis Date: **04/08/2011**		Seq No: **4059000**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	BRL	1.0	0	0	0	0	0	0	0	0	
Nitrate	BRL	0.25	0	0	0	0	0	0	0	0	
Nitrite	BRL	0.25	0	0	0	0	0	0	0	0	
Sulfate	BRL	1.0	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R194548**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194548**	
SampleType: **LCS**	TestCode: **ION SCAN SW9056A**				BatchID: **R194548**		Analysis Date: **04/08/2011**		Seq No: **4058999**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	9.813	1.0	10	0.1024	97.1	90	110	0	0	0	
Nitrate	4.695	0.25	5	0	93.9	90	110	0	0	0	
Nitrite	4.848	0.25	5	0	97	90	110	0	0	0	
Sulfate	23.54	1.0	25	0	94.2	90	110	0	0	0	

Sample ID: **1104607-006AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194548**	
SampleType: **MS**	TestCode: **ION SCAN SW9056A**				BatchID: **R194548**		Analysis Date: **04/08/2011**		Seq No: **4059012**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	23.21	1.0	10	14.22	89.9	90	110	0	0	0	S
Nitrate	4.813	0.25	5	0.01745	95.9	90	110	0	0	0	
Nitrite	4.854	0.25	5	0	97.1	90	110	0	0	0	
Sulfate	30.45	1.0	25	6.224	96.9	90	110	0	0	0	

Sample ID: **1104636-002EMS**	Client ID: **MW-7**				Units: **mg/L**		Prep Date:		Run No: **194548**	
SampleType: **MS**	TestCode: **ION SCAN SW9056A**				BatchID: **R194548**		Analysis Date: **04/08/2011**		Seq No: **4059019**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	14.51	1.0	10	5.357	91.5	90	110	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: R194548

Sample ID: **1104636-002EMS** Client ID: **MW-7** Units: **mg/L** Prep Date: Run No: **194548**
SampleType: **MS** TestCode: **ION SCAN SW9056A** BatchID: **R194548** Analysis Date: **04/08/2011** Seq No: **4059019**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	5.455	0.25	5	0.4808	99.5	90	110	0	0	0	
Nitrite	4.964	0.25	5	0	99.3	90	110	0	0	0	
Sulfate	25.97	1.0	25	2.815	92.6	90	110	0	0	0	

Sample ID: **1104607-006AMSD** Client ID: Units: **mg/L** Prep Date: Run No: **194548**
SampleType: **MSD** TestCode: **ION SCAN SW9056A** BatchID: **R194548** Analysis Date: **04/08/2011** Seq No: **4059013**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	23.10	1.0	10	14.22	88.8	90	110	23.25	0.657	20	S
Nitrate	4.709	0.25	5	0.01745	93.8	90	110	4.813	2.18	20	
Nitrite	4.835	0.25	5	0	96.7	90	110	4.854	0.389	20	
Sulfate	29.31	1.0	25	6.224	92.3	90	110	30.45	3.83	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: R194662

Sample ID: **MB-R194662**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194662**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R194662**		Analysis Date: **04/12/2011**		Seq No: **4061502**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	BRL	1.00	0	0	0	0	0	0	0	0

Sample ID: **LCS-R194662**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194662**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R194662**		Analysis Date: **04/12/2011**		Seq No: **4061501**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	25.43	1.00	25	0	102	90	110	0	0	0

Sample ID: **1104562-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194662**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R194662**		Analysis Date: **04/12/2011**		Seq No: **4061511**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	42.51	1.00	25	16.53	104	80	120	0	0	0

Sample ID: **1104562-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **194662**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R194662**		Analysis Date: **04/12/2011**		Seq No: **4061513**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	44.05	1.00	25	16.53	110	80	120	42.51	3.56	20

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Shopping Plaza
Workorder: 1104636

ANALYTICAL QC SUMMARY REPORT

BatchID: R194882

Sample ID: **MB-R194882**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **194882**	
SampleType: **MBLK**	TestCode: **Alkalinity E310.2**					BatchID: **R194882**		Analysis Date: **04/15/2011**		Seq No: **4066717**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	BRL	10.0	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R194882**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **194882**	
SampleType: **LCS**	TestCode: **Alkalinity E310.2**					BatchID: **R194882**		Analysis Date: **04/15/2011**		Seq No: **4066722**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	256.0	10.0	250	0	102	75	125	0	0	0	

Sample ID: **1104821-001FDUP**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **194882**	
SampleType: **DUP**	TestCode: **Alkalinity E310.2**					BatchID: **R194882**		Analysis Date: **04/15/2011**		Seq No: **4066790**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	172.0	10.0	0	0	0	0	0	166.0	3.55	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 12, 2011

Tyler Boyles
Mactec Engineering and Consulting, Inc.
396 Plasters Ave
Atlanta GA 30324

TEL: (404) 873-4761
FAX: (404) 817-0183

RE: Hunting Creek Plaza

Dear Tyler Boyles: Order No: 1105451

Analytical Environmental Services, Inc. received 3 samples on 5/5/2011 4:10:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/10-06/30/11.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

James Forrest
Project Manager

ANALYTICAL ENVIRONMENTAL SERVICES, INC
3785 Presidential Parkway, Atlanta GA 30340-3704
AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1105451

Date: 5/5/11 Page 1 of 1

COMPANY:	ADDRESS:
Mactec Engineering + Consulting	396 Plasters Ave Atlanta, Ga 30324
PHONE: 404-873-4701	FAX: 404-817-0183
SAMPLED BY: S. Davenport	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Total Organic Carbon	alkalinity	chloride	ethane	ethene	Ferrous iron	methane	nitrate	Nitrite	Sulfate	Sulfide	VOCs	REMARKS	No # of Containers
	PRESERVATION (See codes)																			
1	MW-4	5/5/11	12:30p	✓		GW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			5
2	MW-8	5/5/11	3:00p	✓		GW												✓		2
3	Trip Blank																			2
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	5/5/11 4:06p	1:	5/5/11 4:10
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Hunting Creek Plaza
PROJECT #: C121 10 6013
SITE ADDRESS: Conyers Ga
SEND REPORT TO: Tyler Bayless
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers: 9

Turnaround Time Request
- ✓ Standard 5 Business Days
- ○ 2 Business Day Rush
- ○ Next Business Day Rush
- ○ Same Day Rush (auth req.)
- ○ Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
CLIENT FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water
PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Analytical Environmental Services, Inc **Date:** 12-May-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-4
Project Name:	Hunting Creek Plaza	**Collection Date:**	5/5/2011 12:30:00 PM
Lab ID:	1105451-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	2.24	1.00		mg/L	R196467	1	05/06/2011 11:57	GR
Sulfide by SW9030/9034 (SW9030)								
Sulfide	BRL	2.00		mg/L	146144	1	05/10/2011 11:00	AS
ION SCAN SW9056A								
Chloride	7.5	1.0		mg/L	R196551	1	05/06/2011 09:49	GR
Nitrate	0.75	0.25		mg/L	R196551	1	05/06/2011 09:49	GR
Nitrite	BRL	0.25		mg/L	R196551	1	05/06/2011 09:49	GR
Sulfate	4.1	1.0		mg/L	R196551	1	05/06/2011 09:49	GR
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Ethane	BRL	9		ug/L	146195	1	05/10/2011 15:51	AK
Ethylene	BRL	7		ug/L	146195	1	05/10/2011 15:51	AK
Methane	91	4		ug/L	146195	1	05/10/2011 15:51	AK
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100		mg/L	R196850	1	05/06/2011 10:00	AS
Alkalinity E310.2								
Alkalinity, Total (As CaCO3)	18.1	10.0		mg/L	R196657	1	05/10/2011 11:52	TL

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-May-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-8
Project Name:	Hunting Creek Plaza	**Collection Date:**	5/5/2011 3:00:00 PM
Lab ID:	1105451-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,1-Dichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,1-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2-Dibromoethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2-Dichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,2-Dichloropropane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
2-Butanone	BRL	50		ug/L	146125	1	05/10/2011 20:21	NH
2-Hexanone	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
4-Methyl-2-pentanone	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
Acetone	BRL	50		ug/L	146125	1	05/10/2011 20:21	NH
Benzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Bromodichloromethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Bromoform	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Bromomethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Carbon tetrachloride	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Chlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Chloroethane	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
Chloroform	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Chloromethane	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Cyclohexane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Dibromochloromethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Dichlorodifluoromethane	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
Ethylbenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Freon-113	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
Isopropylbenzene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
m,p-Xylene	BRL	10		ug/L	146125	1	05/10/2011 20:21	NH
Methyl acetate	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Methyl tert-butyl ether	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Methylcyclohexane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Methylene chloride	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
o-Xylene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Styrene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-May-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	MW-8
Project Name:	Hunting Creek Plaza	**Collection Date:**	5/5/2011 3:00:00 PM
Lab ID:	1105451-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Toluene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Trichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Trichlorofluoromethane	BRL	5.0		ug/L	146125	1	05/10/2011 20:21	NH
Vinyl chloride	BRL	2.0		ug/L	146125	1	05/10/2011 20:21	NH
Surr: 4-Bromofluorobenzene	92.9	64.7-130		%REC	146125	1	05/10/2011 20:21	NH
Surr: Dibromofluoromethane	96.8	80.7-129		%REC	146125	1	05/10/2011 20:21	NH
Surr: Toluene-d8	100	71.1-120		%REC	146125	1	05/10/2011 20:21	NH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-May-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Hunting Creek Plaza	**Collection Date:**	5/5/2011
Lab ID:	1105451-003	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,1-Dichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,1-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2-Dibromoethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2-Dichloroethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,2-Dichloropropane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
2-Butanone	BRL	50		ug/L	146125	1	05/10/2011 19:53	NH
2-Hexanone	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
4-Methyl-2-pentanone	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
Acetone	BRL	50		ug/L	146125	1	05/10/2011 19:53	NH
Benzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Bromodichloromethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Bromoform	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Bromomethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Carbon tetrachloride	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Chlorobenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Chloroethane	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
Chloroform	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Chloromethane	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Cyclohexane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Dibromochloromethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Dichlorodifluoromethane	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
Ethylbenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Freon-113	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
Isopropylbenzene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
m,p-Xylene	BRL	10		ug/L	146125	1	05/10/2011 19:53	NH
Methyl acetate	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Methyl tert-butyl ether	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Methylcyclohexane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Methylene chloride	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
o-Xylene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Styrene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 12-May-11

Client:	Mactec Engineering and Consulting, Inc.	**Client Sample ID:**	TRIP BLANK
Project Name:	Hunting Creek Plaza	**Collection Date:**	5/5/2011
Lab ID:	1105451-003	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Tetrachloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Toluene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Trichloroethene	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Trichlorofluoromethane	BRL	5.0		ug/L	146125	1	05/10/2011 19:53	NH
Vinyl chloride	BRL	2.0		ug/L	146125	1	05/10/2011 19:53	NH
Surr: 4-Bromofluorobenzene	92.3	64.7-130		%REC	146125	1	05/10/2011 19:53	NH
Surr: Dibromofluoromethane	96.2	80.7-129		%REC	146125	1	05/10/2011 19:53	NH
Surr: Toluene-d8	99.5	71.1-120		%REC	146125	1	05/10/2011 19:53	NH

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client MACTEC Work Order Number 1105451

Checklist completed by [signature] 5/5/11
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes ✓ No __ Not Present ✓ MJ 5/5/11

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.7° Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted __ Yes ✓ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by MS

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Analytical Environmental Services, Inc

Date: 12-May-11

Client: Mactec Engineering and Consulting, Inc.
Project: Hunting Creek Plaza
Lab Order: 1105451

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1105451-001A	MW-4	5/5/2011 12:30:00PM	Groundwater	GC Analysis of Gaseous Samples		05/10/2011	05/10/2011
1105451-001B	MW-4	5/5/2011 12:30:00PM	Groundwater	Total Organic Carbon (TOC)			05/06/2011
1105451-001C	MW-4	5/5/2011 12:30:00PM	Groundwater	Sulfide by SW9030/9034		05/10/2011	05/10/2011
1105451-001D	MW-4	5/5/2011 12:30:00PM	Groundwater	Alkalinity			05/10/2011
1105451-001D	MW-4	5/5/2011 12:30:00PM	Groundwater	ION SCAN			05/06/2011
1105451-001D	MW-4	5/5/2011 12:30:00PM	Groundwater	Ferrous Iron			05/06/2011
1105451-002A	MW-8	5/5/2011 3:00:00PM	Groundwater	TCL VOLATILE ORGANICS		05/09/2011	05/10/2011
1105451-003A	TRIP BLANK	5/5/2011 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		05/09/2011	05/10/2011

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146125

Sample ID: **MB-146125** Client ID: Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104725**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	
cis-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146125

Sample ID: **MB-146125** Client ID: Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104725**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	46.28	0	50	0	92.6	64.7	130	0	0	0	
Surr: Dibromofluoromethane	46.16	0	50	0	92.3	80.7	129	0	0	0	
Surr: Toluene-d8	50.03	0	50	0	100	71.1	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146125

Sample ID: **LCS-146125** Client ID: Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104724**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	49.46	5.0	50	0	98.9	60	140	0	0	0	
Benzene	52.50	5.0	50	0	105	70	130	0	0	0	
Chlorobenzene	45.70	5.0	50	0	91.4	70	130	0	0	0	
Toluene	52.64	5.0	50	0	105	70	130	0	0	0	
Trichloroethene	50.97	5.0	50	0	102	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	46.45	0	50	0	92.9	64.7	130	0	0	0	
Surr: Dibromofluoromethane	45.07	0	50	0	90.1	80.7	129	0	0	0	
Surr: Toluene-d8	49.78	0	50	0	99.6	71.1	120	0	0	0	

Sample ID: **1105378-001CMS** Client ID: Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104728**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	51.22	5.0	50	0	102	46.2	183	0	0	0	
Benzene	55.88	5.0	50	0	112	62.2	143	0	0	0	
Chlorobenzene	47.22	5.0	50	0	94.4	72.2	137	0	0	0	
Toluene	55.19	5.0	50	0	110	57.8	149	0	0	0	
Trichloroethene	53.35	5.0	50	0	107	70.5	149	0	0	0	
Surr: 4-Bromofluorobenzene	45.93	0	50	0	91.9	64.7	130	0	0	0	
Surr: Dibromofluoromethane	47.31	0	50	0	94.6	80.7	129	0	0	0	
Surr: Toluene-d8	48.29	0	50	0	96.6	71.1	120	0	0	0	

Sample ID: **1105378-001CMSD** Client ID: Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104730**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	50.54	5.0	50	0	101	46.2	183	51.22	1.34	20	
Benzene	52.47	5.0	50	0	105	62.2	143	55.88	6.29	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146125

Sample ID: **1105378-001CMSD** Client ID:
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B**
Units: **ug/L** Prep Date: **05/09/2011** Run No: **196566**
BatchID: **146125** Analysis Date: **05/09/2011** Seq No: **4104730**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	46.01	5.0	50	0	92	72.2	137	47.22	2.6	20	
Toluene	53.44	5.0	50	0	107	57.8	149	55.19	3.22	20	
Trichloroethene	49.56	5.0	50	0	99.1	70.5	149	53.35	7.37	20	
Surr: 4-Bromofluorobenzene	46.19	0	50	0	92.4	64.7	130	45.93	0	0	
Surr: Dibromofluoromethane	46.84	0	50	0	93.7	80.7	129	47.31	0	0	
Surr: Toluene-d8	49.31	0	50	0	98.6	71.1	120	48.29	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146144

Sample ID: **MB-146144** Client ID: Units: **mg/L** Prep Date: **05/09/2011** Run No: **196583**
SampleType: **MBLK** TestCode: **Sulfide by SW9030/9034** BatchID: **146144** Analysis Date: **05/09/2011** Seq No: **4102887**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	BRL	2.00	0	0	0	0	0	0	0	0	

Sample ID: **LCS-146144** Client ID: Units: **mg/L** Prep Date: **05/09/2011** Run No: **196583**
SampleType: **LCS** TestCode: **Sulfide by SW9030/9034** BatchID: **146144** Analysis Date: **05/09/2011** Seq No: **4102888**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	385.6	2.00	385.6	0	100	40	120	0	0	0	

Sample ID: **1105232-001FMS** Client ID: Units: **mg/L** Prep Date: **05/09/2011** Run No: **196583**
SampleType: **MS** TestCode: **Sulfide by SW9030/9034** BatchID: **146144** Analysis Date: **05/09/2011** Seq No: **4102891**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	34.56	2.00	38.56	0	89.6	71.9	119	0	0	0	

Sample ID: **1105232-001FMSD** Client ID: Units: **mg/L** Prep Date: **05/09/2011** Run No: **196583**
SampleType: **MSD** TestCode: **Sulfide by SW9030/9034** BatchID: **146144** Analysis Date: **05/09/2011** Seq No: **4102892**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	33.76	2.00	38.56	0	87.6	71.9	119	34.56	2.34	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146195

Sample ID: **MB-146195** Client ID: Units: **ug/L** Prep Date: **05/10/2011** Run No: **196797**
SampleType: **MBLK** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **146195** Analysis Date: **05/10/2011** Seq No: **4107541**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	BRL	9	0	0	0	0	0	0	0	0	
Ethylene	BRL	7	0	0	0	0	0	0	0	0	
Methane	BRL	4	0	0	0	0	0	0	0	0	

Sample ID: **LCS-146195** Client ID: Units: **ug/L** Prep Date: **05/10/2011** Run No: **196797**
SampleType: **LCS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **146195** Analysis Date: **05/10/2011** Seq No: **4107542**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	121.0	9	200	0	60.5	37.8	115	0	0	0	
Ethylene	76.21	7	200	0	38.1	24.4	115	0	0	0	
Methane	125.7	4	200	0	62.8	38	115	0	0	0	

Sample ID: **LCSD-146195** Client ID: Units: **ug/L** Prep Date: **05/10/2011** Run No: **196797**
SampleType: **LCSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **146195** Analysis Date: **05/10/2011** Seq No: **4107543**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	119.2	9	200	0	59.6	37.8	115	121.0	1.51	20	
Ethylene	75.17	7	200	0	37.6	24.4	115	76.21	1.38	20	
Methane	125.0	4	200	0	62.5	38	115	125.7	0.575	20	

Sample ID: **1105456-012BMS** Client ID: Units: **ug/L** Prep Date: **05/10/2011** Run No: **196799**
SampleType: **MS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **146195** Analysis Date: **05/11/2011** Seq No: **4107625**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	124.0	9	200	0	62	37.5	115	0	0	0	
Ethylene	83.30	7	200	0	41.6	23.1	115	0	0	0	
Methane	130.8	4	200	0	65.4	37.7	115	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: 146195

Sample ID: **1105456-012BMSD** Client ID:
SampleType: **MSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175**
Units: **ug/L** Prep Date: **05/10/2011** Run No: **196799**
BatchID: **146195** Analysis Date: **05/11/2011** Seq No: **4107626**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	124.0	9	200	0	62	37.5	115	0	0	20	
Ethylene	83.22	7	200	0	41.6	23.1	115	0	0	20	
Methane	131.5	4	200	0	65.7	37.7	115	0	0	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: R196467

Sample ID: **MB-R196467**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196467**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R196467**		Analysis Date: **05/06/2011**		Seq No: **4100557**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	BRL	1.00	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R196467**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196467**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R196467**		Analysis Date: **05/06/2011**		Seq No: **4100554**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	25.69	1.00	25	0	103	90	110	0	0	0	

Sample ID: **1105221-008BMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196467**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R196467**		Analysis Date: **05/06/2011**		Seq No: **4100575**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	30.50	1.00	25	2.239	113	80	120	0	0	0	

Sample ID: **1105221-008BMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196467**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R196467**		Analysis Date: **05/06/2011**		Seq No: **4100578**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Organic Carbon, Total	29.61	1.00	25	2.239	109	80	120	30.50	2.96	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: R196551

Sample ID: **MB-R196551**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196551**
SampleType: **MBLK**	TestCode: **ION SCAN SW9056A**				BatchID: **R196551**		Analysis Date: **05/06/2011**		Seq No: **4102352**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	BRL	1.0	0	0	0	0	0	0	0	0	
Nitrate	BRL	0.25	0	0	0	0	0	0	0	0	
Nitrite	BRL	0.25	0	0	0	0	0	0	0	0	
Sulfate	BRL	1.0	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R196551**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196551**
SampleType: **LCS**	TestCode: **ION SCAN SW9056A**				BatchID: **R196551**		Analysis Date: **05/06/2011**		Seq No: **4102347**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	4.816	1.0	5	0	96.3	90	110	0	0	0	
Nitrate	4.745	0.25	5	0.03494	94.2	90	110	0	0	0	
Nitrite	4.892	0.25	5	0.01141	97.6	90	110	0	0	0	
Sulfate	24.23	1.0	25	0	96.9	90	110	0	0	0	

Sample ID: **1105451-001DMS**	Client ID: **MW-4**				Units: **mg/L**		Prep Date:		Run No: **196551**
SampleType: **MS**	TestCode: **ION SCAN SW9056A**				BatchID: **R196551**		Analysis Date: **05/06/2011**		Seq No: **4102360**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	57.27	10	50	8.609	97.3	90	110	0	0	0	
Nitrate	50.80	2.5	50	0.7217	100	90	110	0	0	0	
Nitrite	46.20	2.5	50	0	92.4	90	110	0	0	0	
Sulfate	241.2	10	250	6.121	94	90	110	0	0	0	

Sample ID: **1105451-001DMSD**	Client ID: **MW-4**				Units: **mg/L**		Prep Date:		Run No: **196551**
SampleType: **MSD**	TestCode: **ION SCAN SW9056A**				BatchID: **R196551**		Analysis Date: **05/06/2011**		Seq No: **4102363**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chloride	55.78	10	50	8.609	94.3	90	110	57.27	2.64	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: R196551

Sample ID: **1105451-001DMSD** Client ID: **MW-4** Units: **mg/L** Prep Date: Run No: **196551**
SampleType: **MSD** TestCode: **ION SCAN SW9056A** BatchID: **R196551** Analysis Date: **05/06/2011** Seq No: **4102363**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	51.28	2.5	50	0.7217	101	90	110	50.80	0.937	20	
Nitrite	46.41	2.5	50	0	92.8	90	110	46.20	0.435	20	
Sulfate	241.6	10	250	6.121	94.2	90	110	241.2	0.176	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: R196657

Sample ID: **MB-R196657**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **196657**	
SampleType: **MBLK**	TestCode: **Alkalinity E310.2**					BatchID: **R196657**		Analysis Date: **05/10/2011**		Seq No: **4104507**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	BRL	10.0	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R195557**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **196657**	
SampleType: **LCS**	TestCode: **Alkalinity E310.2**					BatchID: **R196657**		Analysis Date: **05/10/2011**		Seq No: **4104510**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	247.0	10.0	250	0	98.8	75	125	0	0	0	

Sample ID: **1105280-001BDUP**	Client ID:					Units: **mg/L**		Prep Date:		Run No: **196657**	
SampleType: **DUP**	TestCode: **Alkalinity E310.2**					BatchID: **R196657**		Analysis Date: **05/10/2011**		Seq No: **4104514**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	137.0	10.0	0	0	0	0	0	135.0	1.47	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: Mactec Engineering and Consulting, Inc.
Project Name: Hunting Creek Plaza
Workorder: 1105451

ANALYTICAL QC SUMMARY REPORT

BatchID: R196850

Sample ID: **MB-R196850**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196850**
SampleType: **MBLK**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R196850**		Analysis Date: **05/06/2011**		Seq No: **4108651**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron, as Ferrous (Fe+2)	BRL	0.100	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R196850**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **196850**
SampleType: **LCS**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R196850**		Analysis Date: **05/06/2011**		Seq No: **4108652**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron, as Ferrous (Fe+2)	0.4874	0.100	0.5	0	97.5	85	115	0	0	0	

Sample ID: **1105451-001DMS**	Client ID: **MW-4**				Units: **mg/L**		Prep Date:		Run No: **196850**
SampleType: **MS**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R196850**		Analysis Date: **05/06/2011**		Seq No: **4108654**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron, as Ferrous (Fe+2)	0.5370	0.100	0.5	0	107	80	120	0	0	0	

Sample ID: **1105451-001DMSD**	Client ID: **MW-4**				Units: **mg/L**		Prep Date:		Run No: **196850**
SampleType: **MSD**	TestCode: **Ferrous Iron**	**SM3500-Fe-B**			BatchID: **R196850**		Analysis Date: **05/06/2011**		Seq No: **4108655**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Iron, as Ferrous (Fe+2)	0.5341	0.100	0.5	0	107	80	120	0.5370	0.541	30	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Sample Summary

Mactec

Job No: JA75331

Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA
Project No: 6121-10-0013

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JA75331-1	05/05/11	11:07	BD	05/07/11	AIR	Indoor Air Comp.	HC-1
JA75331-2	05/05/11	11:08	BD	05/07/11	AIR	Indoor Air Comp.	HC-2
JA75331-3	05/05/11	11:09	BD	05/07/11	AIR	Indoor Air Comp.	HC-3

Report of Analysis

Client Sample ID: HC-1
Lab Sample ID: JA75331-1 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A900 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W22375.D	1	05/10/11	YXC	n/a	n/a	V3W883
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	5.6	0.20	0.036	ppbv		13	0.48	ug/m3
107-13-1	53	Acrylonitrile	ND	0.20	0.054	ppbv		ND	0.43	ug/m3
75-05-8	41	Acetonitrile	ND	0.20	0.077	ppbv		ND	0.34	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.024	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.46	0.20	0.046	ppbv		1.5	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.030	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.037	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.037	ppbv		ND	0.87	ug/m3
106-97-8	58	n-Butane	8.7	0.20	0.043	ppbv		21	0.47	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.041	ppbv		ND	1.0	ug/m3
104-51-8	134	n-Butylbenzene	ND	0.20	0.052	ppbv		ND	1.1	ug/m3
135-98-8	134	sec-Butylbenzene	ND	0.20	0.027	ppbv		ND	1.1	ug/m3
98-06-6	134	tert-Butylbenzene	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.032	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.027	ppbv		ND	0.92	ug/m3
75-45-6	86	Chlorodifluoromethane	ND	0.20	0.045	ppbv		ND	0.70	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.039	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.47	0.20	0.037	ppbv		0.97	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.041	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.040	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	0.19	0.20	0.034	ppbv	J	0.65	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.028	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.046	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.027	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.043	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.038	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.056	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.45	0.20	0.038	ppbv		2.2	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.027	ppbv		ND	1.7	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-1
Lab Sample ID: JA75331-1 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A900 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.038	ppbv		ND	0.79	ug/m3
540-59-0	96	1,2-Dichloroethene (total)	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.043	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.025	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
542-75-6	111	1,3-Dichloropropene (total)	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
108-20-3	102	Di-Isopropyl ether	ND	0.20	0.032	ppbv		ND	0.83	ug/m3
565-59-3	100.1	2,3-Dimethylpentane	ND	0.20	0.088	ppbv		ND	0.82	ug/m3
108-08-7	100.1	2,4-Dimethylpentane	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
64-17-5	46.07	Ethanol	9.0	0.50	0.095	ppbv		17	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.18	0.20	0.031	ppbv	J	0.78	0.87	ug/m3
141-78-6	88	Ethyl Acetate	3.6	0.20	0.061	ppbv		13	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.024	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.034	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
76-15-3	154.47	Freon 115	ND	0.20	0.021	ppbv		ND	1.3	ug/m3
306-83-2	152.93	Freon 123	ND	0.20	0.036	ppbv		ND	1.3	ug/m3
354-23-4	152.93	Freon 123A	ND	0.20	0.034	ppbv		ND	1.3	ug/m3
75-37-6	66.05	Freon 152A	ND	0.20	0.085	ppbv		ND	0.54	ug/m3
142-82-5	100.2	Heptane	0.27	0.20	0.033	ppbv		1.1	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
67-72-1	234	Hexachloroethane	ND	0.20	0.026	ppbv		ND	1.9	ug/m3
110-54-3	86.17	Hexane	0.95	0.20	0.044	ppbv		3.3	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.043	ppbv		ND	0.82	ug/m3
74-88-4	142	Iodomethane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
98-82-8	120	Isopropylbenzene	ND	0.20	0.031	ppbv		ND	0.98	ug/m3
67-63-0	60.1	Isopropyl Alcohol	3.7	0.20	0.059	ppbv		9.1	0.49	ug/m3
99-87-6	134	p-Isopropyltoluene	ND	0.20	0.037	ppbv		ND	1.1	ug/m3
75-09-2	84.94	Methylene chloride	0.52	0.20	0.027	ppbv		1.8	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.30	0.20	0.048	ppbv		0.88	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
91-20-3	128.17	Naphthalene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
111-84-2	128.2	Nonane	0.11	0.20	0.026	ppbv	J	0.58	1.0	ug/m3
111-65-9	114.1	Octane	0.12	0.20	0.027	ppbv	J	0.56	0.93	ug/m3
109-66-0	72	Pentane	5.4	0.20	0.037	ppbv		16	0.59	ug/m3
103-65-1	120	n-Propylbenzene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3
115-07-1	42	Propylene	0.51	0.50	0.070	ppbv		0.88	0.86	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-1
Lab Sample ID: JA75331-1 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A900 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
100-42-5	104.1	Styrene	ND	0.20	0.027	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
630-20-6	168	1,1,1,2-Tetrachloroethane	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.030	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.051	ppbv		ND	1.5	ug/m3
96-18-4	147	1,2,3-Trichloropropane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.35	0.20	0.024	ppbv		1.7	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.49	0.20	0.028	ppbv		2.3	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.032	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	1.0	0.040	0.028	ppbv		6.8	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.047	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	1.9	0.20	0.040	ppbv		7.2	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.033	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.27	0.20	0.042	ppbv		1.5	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.032	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.057	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.57	0.20	0.031	ppbv		2.5	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.24	0.20	0.031	ppbv		1.0	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.81	0.20	0.031	ppbv		3.5	0.87	ug/m3
	72	TVHC As Equiv Pentane	ND	10	0.18	ppbv		ND	29	ug/m3
	100.2	TVHC As Equiv Heptane	ND	10	0.091	ppbv		ND	41	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	90%		65-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-2
Lab Sample ID: JA75331-2 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A367 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W22376.D	1	05/10/11	YXC	n/a	n/a	V3W883
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	4.2	0.20	0.036	ppbv		10	0.48	ug/m3
107-13-1	53	Acrylonitrile	ND	0.20	0.054	ppbv		ND	0.43	ug/m3
75-05-8	41	Acetonitrile	ND	0.20	0.077	ppbv		ND	0.34	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.024	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.18	0.20	0.046	ppbv	J	0.58	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.030	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.037	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.037	ppbv		ND	0.87	ug/m3
106-97-8	58	n-Butane	0.64	0.20	0.043	ppbv		1.5	0.47	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.041	ppbv		ND	1.0	ug/m3
104-51-8	134	n-Butylbenzene	ND	0.20	0.052	ppbv		ND	1.1	ug/m3
135-98-8	134	sec-Butylbenzene	ND	0.20	0.027	ppbv		ND	1.1	ug/m3
98-06-6	134	tert-Butylbenzene	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.032	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.027	ppbv		ND	0.92	ug/m3
75-45-6	86	Chlorodifluoromethane	ND	0.20	0.045	ppbv		ND	0.70	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.039	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.46	0.20	0.037	ppbv		0.95	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.041	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.040	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.034	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.028	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.046	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.027	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.043	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.038	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.056	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.43	0.20	0.038	ppbv		2.1	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.027	ppbv		ND	1.7	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-2
Lab Sample ID: JA75331-2 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A367 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.038	ppbv		ND	0.79	ug/m3
540-59-0	96	1,2-Dichloroethene (total)	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.043	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.025	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
542-75-6	111	1,3-Dichloropropene (total)	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
108-20-3	102	Di-Isopropyl ether	ND	0.20	0.032	ppbv		ND	0.83	ug/m3
565-59-3	100.1	2,3-Dimethylpentane	ND	0.20	0.088	ppbv		ND	0.82	ug/m3
108-08-7	100.1	2,4-Dimethylpentane	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
64-17-5	46.07	Ethanol	3.6	0.50	0.095	ppbv		6.8	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.20	0.031	ppbv		ND	0.87	ug/m3
141-78-6	88	Ethyl Acetate	1.1	0.20	0.061	ppbv		4.0	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.024	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.034	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
76-15-3	154.47	Freon 115	ND	0.20	0.021	ppbv		ND	1.3	ug/m3
306-83-2	152.93	Freon 123	ND	0.20	0.036	ppbv		ND	1.3	ug/m3
354-23-4	152.93	Freon 123A	ND	0.20	0.034	ppbv		ND	1.3	ug/m3
75-37-6	66.05	Freon 152A	ND	0.20	0.085	ppbv		ND	0.54	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.033	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
67-72-1	234	Hexachloroethane	ND	0.20	0.026	ppbv		ND	1.9	ug/m3
110-54-3	86.17	Hexane	0.18	0.20	0.044	ppbv	J	0.63	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.043	ppbv		ND	0.82	ug/m3
74-88-4	142	Iodomethane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
98-82-8	120	Isopropylbenzene	ND	0.20	0.031	ppbv		ND	0.98	ug/m3
67-63-0	60.1	Isopropyl Alcohol	0.79	0.20	0.059	ppbv		1.9	0.49	ug/m3
99-87-6	134	p-Isopropyltoluene	0.18	0.20	0.037	ppbv	J	0.99	1.1	ug/m3
75-09-2	84.94	Methylene chloride	0.43	0.20	0.027	ppbv		1.5	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	ND	0.20	0.048	ppbv		ND	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
91-20-3	128.17	Naphthalene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
111-84-2	128.2	Nonane	ND	0.20	0.026	ppbv		ND	1.0	ug/m3
111-65-9	114.1	Octane	ND	0.20	0.027	ppbv		ND	0.93	ug/m3
109-66-0	72	Pentane	0.68	0.20	0.037	ppbv		2.0	0.59	ug/m3
103-65-1	120	n-Propylbenzene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3
115-07-1	42	Propylene	0.43	0.50	0.070	ppbv	J	0.74	0.86	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-2
Lab Sample ID: JA75331-2 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A367 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
100-42-5	104.1	Styrene	ND	0.20	0.027	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
630-20-6	168	1,1,1,2-Tetrachloroethane	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.030	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.051	ppbv		ND	1.5	ug/m3
96-18-4	147	1,2,3-Trichloropropane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.22	0.20	0.024	ppbv		1.1	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.10	0.20	0.028	ppbv	J	0.47	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.032	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.90	0.040	0.028	ppbv		6.1	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.047	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.70	0.20	0.040	ppbv		2.6	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.033	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.25	0.20	0.042	ppbv		1.4	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.032	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.057	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.23	0.20	0.031	ppbv		1.0	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.098	0.20	0.031	ppbv	J	0.43	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.33	0.20	0.031	ppbv		1.4	0.87	ug/m3
	72	TVHC As Equiv Pentane	ND	10	0.18	ppbv		ND	29	ug/m3
	100.2	TVHC As Equiv Heptane	ND	10	0.091	ppbv		ND	41	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	90%		65-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-3
Lab Sample ID: JA75331-3 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A474 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W22377.D	1	05/10/11	YXC	n/a	n/a	V3W883
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	5.1	0.20	0.036	ppbv		12	0.48	ug/m3
107-13-1	53	Acrylonitrile	ND	0.20	0.054	ppbv		ND	0.43	ug/m3
75-05-8	41	Acetonitrile	ND	0.20	0.077	ppbv		ND	0.34	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.024	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.16	0.20	0.046	ppbv	J	0.51	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.030	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.037	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.037	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.037	ppbv		ND	0.87	ug/m3
106-97-8	58	n-Butane	0.47	0.20	0.043	ppbv		1.1	0.47	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.041	ppbv		ND	1.0	ug/m3
104-51-8	134	n-Butylbenzene	ND	0.20	0.052	ppbv		ND	1.1	ug/m3
135-98-8	134	sec-Butylbenzene	ND	0.20	0.027	ppbv		ND	1.1	ug/m3
98-06-6	134	tert-Butylbenzene	ND	0.20	0.028	ppbv		ND	1.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.032	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.027	ppbv		ND	0.92	ug/m3
75-45-6	86	Chlorodifluoromethane	ND	0.20	0.045	ppbv		ND	0.70	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.039	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.49	0.20	0.037	ppbv		1.0	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.041	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.040	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.034	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.028	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.046	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.027	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.043	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.038	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.056	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.43	0.20	0.038	ppbv		2.1	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.027	ppbv		ND	1.7	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-3
Lab Sample ID: JA75331-3 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A474 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.038	ppbv		ND	0.79	ug/m3
540-59-0	96	1,2-Dichloroethene (total)	ND	0.20	0.033	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.043	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.027	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.025	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
542-75-6	111	1,3-Dichloropropene (total)	ND	0.20	0.039	ppbv		ND	0.91	ug/m3
108-20-3	102	Di-Isopropyl ether	ND	0.20	0.032	ppbv		ND	0.83	ug/m3
565-59-3	100.1	2,3-Dimethylpentane	ND	0.20	0.088	ppbv		ND	0.82	ug/m3
108-08-7	100.1	2,4-Dimethylpentane	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
64-17-5	46.07	Ethanol	3.6	0.50	0.095	ppbv		6.8	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.20	0.031	ppbv		ND	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.061	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.024	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.034	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
76-15-3	154.47	Freon 115	ND	0.20	0.021	ppbv		ND	1.3	ug/m3
306-83-2	152.93	Freon 123	ND	0.20	0.036	ppbv		ND	1.3	ug/m3
354-23-4	152.93	Freon 123A	ND	0.20	0.034	ppbv		ND	1.3	ug/m3
75-37-6	66.05	Freon 152A	ND	0.20	0.085	ppbv		ND	0.54	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.033	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.046	ppbv		ND	2.1	ug/m3
67-72-1	234	Hexachloroethane	ND	0.20	0.026	ppbv		ND	1.9	ug/m3
110-54-3	86.17	Hexane	0.18	0.20	0.044	ppbv	J	0.63	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.043	ppbv		ND	0.82	ug/m3
74-88-4	142	Iodomethane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
98-82-8	120	Isopropylbenzene	ND	0.20	0.031	ppbv		ND	0.98	ug/m3
67-63-0	60.1	Isopropyl Alcohol	0.42	0.20	0.059	ppbv		1.0	0.49	ug/m3
99-87-6	134	p-Isopropyltoluene	0.20	0.20	0.037	ppbv		1.1	1.1	ug/m3
75-09-2	84.94	Methylene chloride	0.41	0.20	0.027	ppbv		1.4	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.35	0.20	0.048	ppbv		1.0	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.036	ppbv		ND	0.82	ug/m3
91-20-3	128.17	Naphthalene	ND	0.20	0.031	ppbv		ND	1.0	ug/m3
111-84-2	128.2	Nonane	ND	0.20	0.026	ppbv		ND	1.0	ug/m3
111-65-9	114.1	Octane	ND	0.20	0.027	ppbv		ND	0.93	ug/m3
109-66-0	72	Pentane	0.88	0.20	0.037	ppbv		2.6	0.59	ug/m3
103-65-1	120	n-Propylbenzene	ND	0.20	0.030	ppbv		ND	0.98	ug/m3
115-07-1	42	Propylene	0.46	0.50	0.070	ppbv	J	0.79	0.86	ug/m3

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: HC-3
Lab Sample ID: JA75331-3 **Date Sampled:** 05/05/11
Matrix: AIR - Indoor Air Comp. Summa ID: A474 **Date Received:** 05/07/11
Method: TO-15 **Percent Solids:** n/a
Project: Hunting Creek Plaza, 1820 Georgia Highway 20 Southeast, Conyers, GA

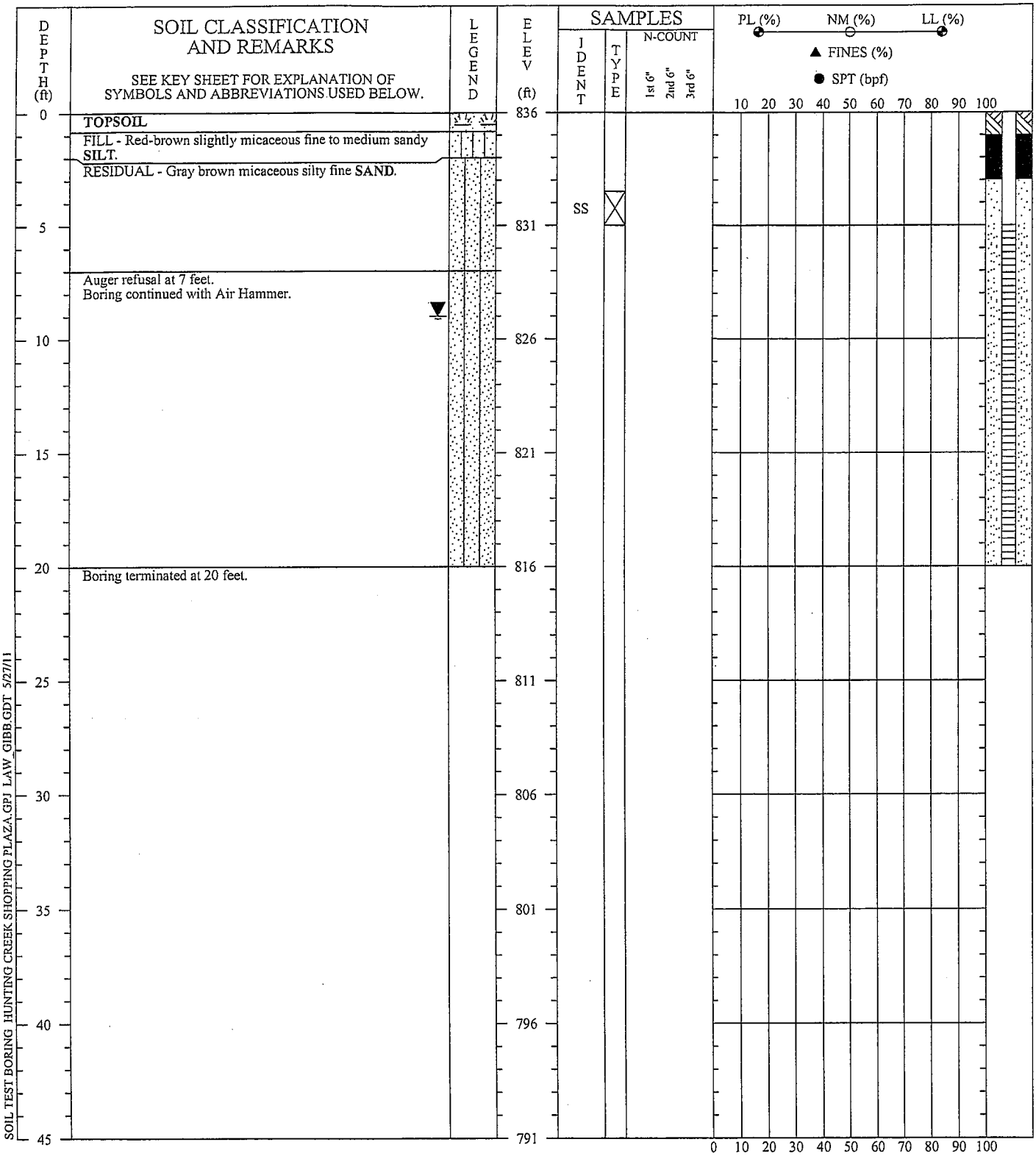
CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
100-42-5	104.1	Styrene	ND	0.20	0.027	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.022	ppbv		ND	1.1	ug/m3
630-20-6	168	1,1,1,2-Tetrachloroethane	ND	0.20	0.031	ppbv		ND	1.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.030	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.030	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.051	ppbv		ND	1.5	ug/m3
96-18-4	147	1,2,3-Trichloropropane	ND	0.20	0.033	ppbv		ND	1.2	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.12	0.20	0.024	ppbv	J	0.59	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.20	0.028	ppbv		ND	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.032	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	1.2	0.040	0.028	ppbv		8.1	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.047	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.82	0.20	0.040	ppbv		3.1	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.033	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.25	0.20	0.042	ppbv		1.4	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.032	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.057	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.17	0.20	0.031	ppbv	J	0.74	0.87	ug/m3
95-47-6	106.2	o-Xylene	ND	0.20	0.031	ppbv		ND	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.17	0.20	0.031	ppbv	J	0.74	0.87	ug/m3
	72	TVHC As Equiv Pentane	ND	10	0.18	ppbv		ND	29	ug/m3
	100.2	TVHC As Equiv Heptane	ND	10	0.091	ppbv		ND	41	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	89%		65-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

APPENDIX E

BORING LOGS & FIELD GROUNDWATER SAMPLING FORMS



SOIL TEST BORING HUNTING CREEK SHOPPING PLAZA.GPJ LAW_GIBB.GDT 5/27/11

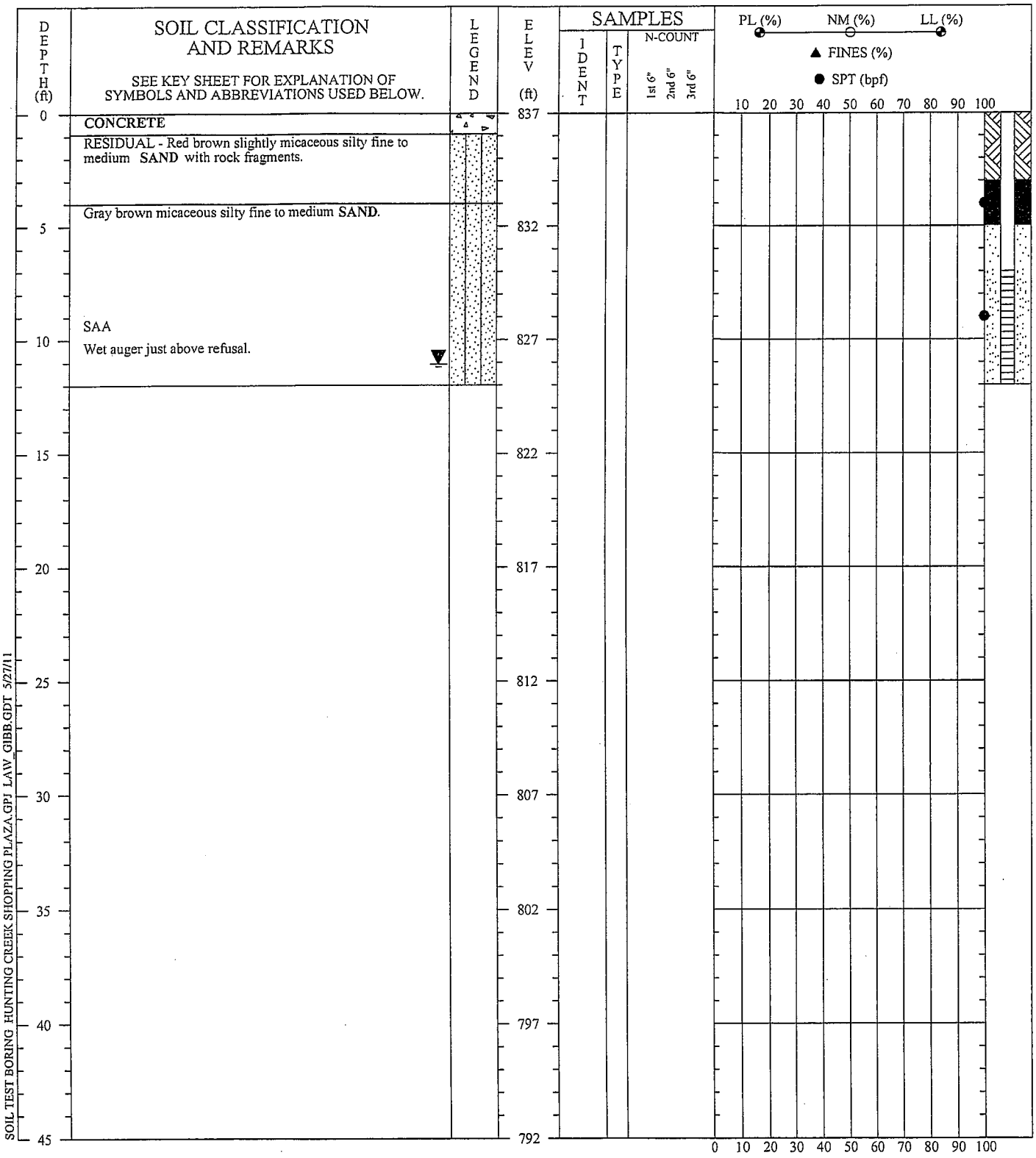
DRILLER:	MACTEC
EQUIPMENT:	CME
METHOD:	HSA/Air Hammer
HOLE DIA.:	4.25 inches
REMARKS:	Well completed with 3.15 stick up. Top of casing elevation 839.32.

Prepared by: _____ Checked by: _____

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BEWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BORING NO.: MW-6
PROJECT: Hunting Creek Shopping Plaza
LOCATION: Conyers, GA
DRILLED: April 5, 2011
PROJECT NO.: 6121-10-0013 **PAGE 1 OF 1**

MACTEC



SOIL TEST BORING HUNTING CREEK SHOPPING PLAZA.GPJ LAW_GIBB.GDT 5/27/11

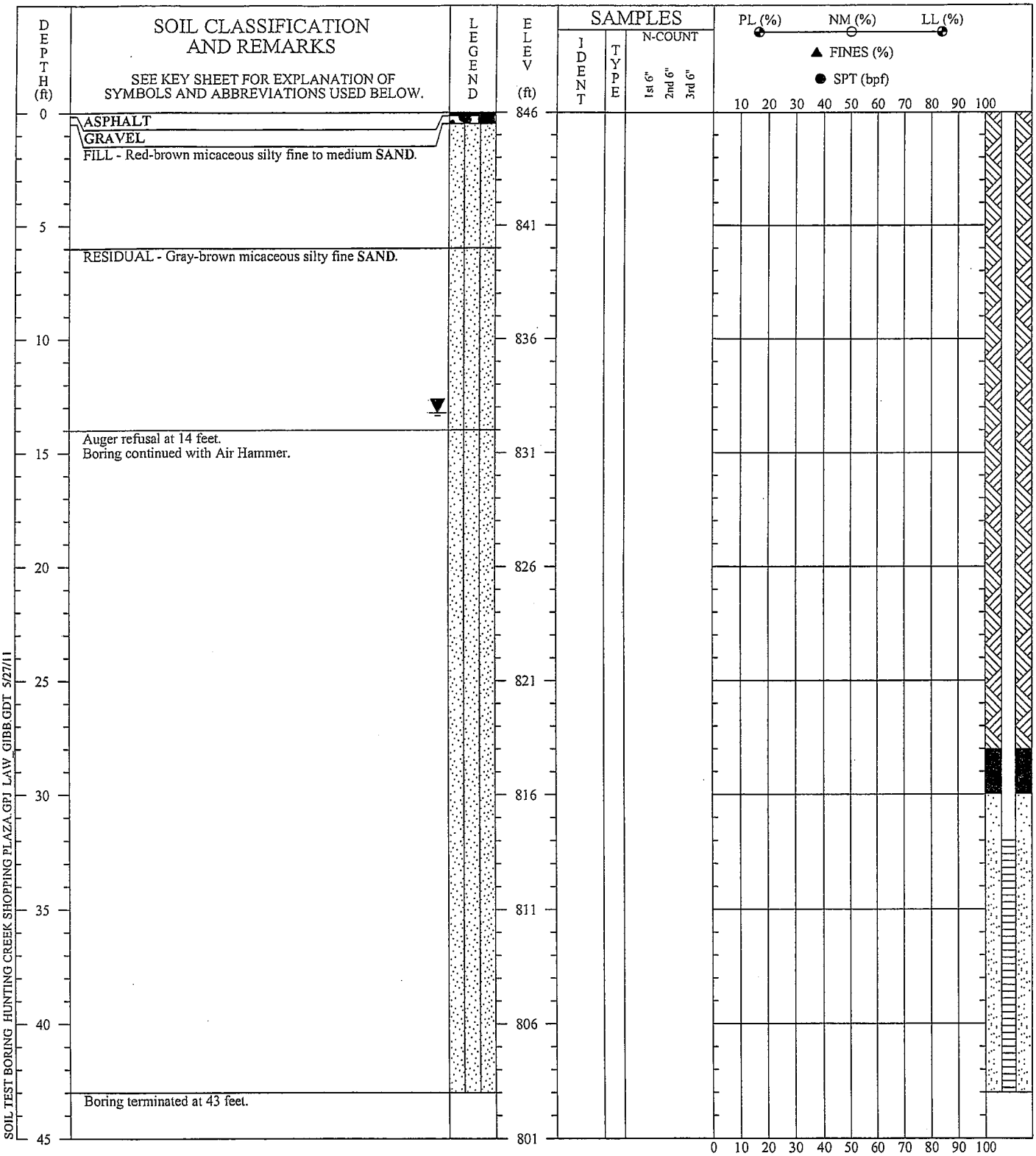
DRILLER:	MACTEC
EQUIPMENT:	CME
METHOD:	HSA
HOLE DIA.:	4.25 inches
REMARKS:	Well completed as flush mount.

Prepared by: _____ Checked by: _____

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BEWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BORING NO.: MW-7
PROJECT: Hunting Creek Shopping Plaza
LOCATION: Conyers, GA
DRILLED: April 5, 2011
PROJECT NO.: 6121-10-0013 **PAGE 1 OF 1**

MACTEC



DRILLER:	MACTEC
EQUIPMENT:	CME
METHOD:	HSA/Air Hammer
HOLE DIA.:	4.25 inches
REMARKS:	Well completed as flushmount.

Prepared by: _____ Checked by: _____

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BEWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

BORING NO.: MW-8
PROJECT: Hunting Creek Shopping Plaza
LOCATION: Conyers, GA
DRILLED: May 4, 2011
PROJECT NO.: 6121-10-0013 PAGE 1 OF 1

MACTEC

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location:

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-4
Field Sampling Personnel: S. Davenport

Depth to Screen below MP: 7 Top of screen 17 Bottom of screen

Pump Intake at (ft. below MP): 14
Purging Device (Pump Type): Peristaltic Pump
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential ORP mV	Cum. Volume Purged gallons			Comments
	14:52	13.00		4.45	0.073	108.1	0.0	21.53	206	0			
	14:57	13.22		4.37	0.058	100	0.0	20.80	214	1.0			
	15:02	13.30		5.05	0.051	88.3	0.0	20.61	192	2.0			
	15:07	13.30		4.66	0.045	5.58	0.0	20.61	222	3.0			
	15:12	13.30		4.80	0.049	0.0	0.0	20.62	221	4.0			
	15:17	13.30		4.64	0.045	0.0	0.0	20.62	235	5			
	15:22	13.30		4.71	0.045	0.0	0.0	20.61	229	6			Stop Purge - Ready for Sample

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<20 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: Hunting Creek Shopping Plaza

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-5

Field Sampling Personnel: _____

Depth to Screen below MP: 6.85 of screen (Top) 16.85 of screen (Bottom)

Pump Intake at (ft. below MP): 17

Purging Device (Pump Type): Peristaltic
(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time	Depth to Water Below MP	Purge Rate	pH	Spec Cond.	Turbidity	DO Flow cell	Temp.	Redox Potential	Cum. Volume Purged			Comments
	24 hr	ft	mL/min	pH units	mS/cm	NTUs	mg/L	°C	mV	gallons			
4/7/11	1609	13.67		6.29	0.287	20.1	7.41	21.5	237				
	1615	13.80		6.27	0.286	10.4	7.59	21.5	238				
	1625	13.88		5.43	0.246	19.6	6.12	21.2	249				
	1630	13.89		5.34	0.217	2.6	5.84	21.2	255	1.0			
	1640	13.90		5.33	0.209	1.3	5.65	21.0	264	1.5			
	1650	13.90		5.33	0.199	1.1	5.55	21.1	269				
	1700	13.90		5.30	0.198	1.2	5.43	21.2	272	2.5			Stop Purge Sample well

Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<20 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: Hunting Creek Shopping Plaza

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

page ___ of ___

Well ID: MW-6

Field Sampling Personnel: _____

Depth to Screen below MP: 8.15 of screen (Top) 23.15 of screen (Bottom)

Pump Intake at (ft. below MP): 22

Purging Device (Pump Type): Peristaltic

(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons			Comments
4/7/4	1310	10.82		6.67	0.307	296	12.17	18.9	133				
	1315	11.65		6.85	0.268	89.6	9.64	18.1	130				
	1320	12.22		6.87	0.272	47.7	9.43	19.1	124				
	1325	13.21		6.84	0.251	17.7	9.35	18.9	122				
	1340	14.63		6.78	0.247	10.3	9.26	18.7	117	2			
	1345	14.86		6.73	0.223	6.84	9.02	18.6	115				Lowered Intake to 22 feet
	1350	15.37		6.73	0.194	5.26	9.02	18.7	117				
	1405	16.56		6.95	0.187	5.51	9.09	19.2	118	5			
	1420	17.85		7.04	0.187	6.14	8.99	19.2	119				
	1440	19.44		7.35	0.281	7.87	9.13	19.4	110	8			
	1450	20.44		7.38	0.214	8.64	9.13	19.7	109				
	1505	21.48		7.39	0.209	8.61	9.10	19.5	108	9.5			Stop Development - Slow Recharge
	1730												Sampled well

Notes:

Note when "Stabilization" has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

- ±0.1 for pH
- ±10 mV for redox
- ±3% for specific cond.
- ±10% for DO
- <20 NTUs for turbidity
- NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

Attachment 4.4

WELL PURGING - FIELD WATER QUALITY MEASUREMENTS FORM

Location: Hunting Creek Shopping Plaza

Identify Measuring Point (MP): TOC
(e.g. Top of Casing)

Well ID: MW-7

Field Sampling Personnel: TBayle

Depth to Screen below MP: 6.88 of screen (Top) 11.88 of screen (Bottom)

Pump Intake at (ft. below MP): 11

Purging Device (Pump Type): Peristaltic

(e.g. Dedicated pump, peristaltic pump, bailer, bladder pump, etc.)

Date	Time 24 hr	Depth to Water Below MP ft	Purge Rate mL/min	pH pH units	Spec Cond. mS/cm	Turbidity NTUs	DO Flow cell mg/L	Temp. °C	Redox Potential mV	Cum. Volume Purged gallons			Comments
4/7/11	1125	9.18	210	6.25	0.089	68	3.72	18.4	101				
	1130	9.68	210	6.10	0.079	13.7	3.68	18.9	102				
	1138	9.87	210	5.62	0.109	12.9	3.82	18.5	106	0.75			
	1143	9.90	210	5.59	0.112	7.82	3.82	18.3	108				
	1150	10.19	210	5.57	0.112	6.92	2.14	18.3	109	1.25			
	1200	10.52	210	5.52	0.110	6.46	2.13	18.3	110				
	1210	10.85	210	5.53	0.111	6.23	2.16	18.3	110	2.5			Stop Development Allow well to Recharge
	1230	9.98											Sample Well

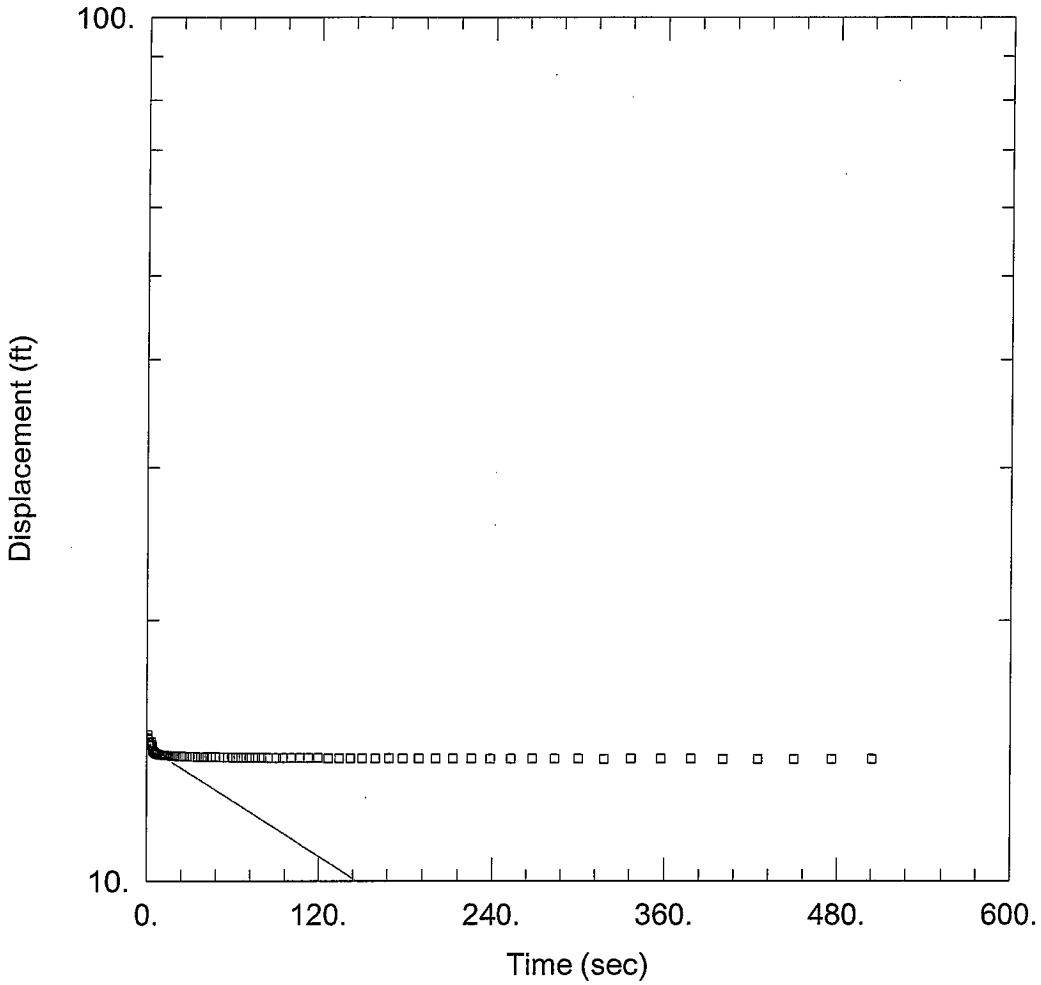
Notes:
Note when "Stabilization " has occurred. Stabilization Criteria (achieved after a minimum of three successive readings):

±0.1 for pH
±10 mV for redox
±3% for specific cond.
±10% for DO
<20 NTUs for turbidity
NA for temperature

If stabilization does not occur within 2 hours, contact Site Manager for action.
If well goes dry prior to stabilization, stop, allow well to recharge, and collect sample.

APPENDIX F

HYDRAULIC CONDUCTIVITY TESTING & FATE AND TRANSPORT MODELING



MW-5 SLUG OUT

Data Set: C:\...\MW-5-slug out.aqt
Date: 05/26/11 Time: 10:15:48

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 2.8 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-5)

Initial Displacement: 0.927 ft Static Water Column Height: 2.8 ft
Total Well Penetration Depth: 2.8 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Wellbore Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 5.006E-5 cm/sec y0 = 14.31 ft

Data Set: C:\Documents and Settings\sdavenpo\My Documents\WinSitu Data\Exported Data\hunting creek\MW-5
Title: MW-5 Slug Out
Date: 05/26/11
Time: 10:15:58

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 2.8 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : MW-5

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 0.927 ft
Static Water Column Height: 2.8 ft
Casing Radius: 0.083 ft
Wellbore Radius: 0.25 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 2.8 ft

No. of Observations: 99

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.751	14.75	31.86	13.91
1.001	14.63	33.72	13.92
1.251	14.59	35.76	13.91
1.501	14.53	37.86	13.91
1.751	14.48	40.08	13.91
2.001	14.44	42.48	13.91
2.251	14.39	45.	13.9
2.501	14.36	47.64	13.9
2.751	14.35	50.46	13.9
3.001	14.38	53.46	13.9
3.251	14.49	56.64	13.89
3.501	14.46	60.	13.89
3.751	14.43	63.6	13.89
4.001	14.34	67.2	13.88
4.251	14.21	71.4	13.88
4.501	14.13	75.6	13.88
4.751	14.12	79.8	13.88
5.001	14.11	84.6	13.87
5.251	14.09	90.	13.87
5.501	14.08	94.8	13.87
5.751	14.07	100.8	13.87
6.001	14.06	106.8	13.87
6.361	14.05	112.8	13.87
6.721	14.03	119.4	13.86
7.141	14.02	126.6	13.86
7.561	14.02	134.4	13.86
7.981	14.01	142.2	13.85
8.461	14.	150.6	13.85

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
9.001	13.99	159.6	13.85
9.481	13.99	169.2	13.85
10.08	13.98	178.8	13.85
10.68	13.97	189.6	13.85
11.28	13.98	201.	13.84
11.94	13.97	213.	13.84
12.66	13.96	225.6	13.84
13.44	13.96	238.8	13.84
14.22	13.96	253.2	13.84
15.06	13.95	268.2	13.84
15.96	13.95	283.8	13.83
16.92	13.95	300.6	13.83
17.88	13.94	318.6	13.83
18.96	13.94	337.2	13.83
20.1	13.94	357.6	13.83
21.3	13.93	378.6	13.83
22.56	13.93	400.8	13.82
23.88	13.93	424.8	13.82
25.32	13.93	450.	13.83
26.82	13.92	476.4	13.82
28.38	13.92	504.6	13.82
30.06	13.91		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
Shape Factor: 1.95

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	5.006E-5	cm/sec
y0	14.31	ft

mw-5 slug out 2011-05-06 10-10-17.txt

Report Date: 5/6/2011 1:24:10 PM
Report User Name: sdavenpo
Report Computer Name: ATL-90YNP61

Log File Properties:

File Name: mw-5 slug out 2011-05-06 10-10-17.wsl
Create Date: 5/6/2011 10:10:12 AM

Device Properties:

Device: Level TROLL® 700
Site: hunting creek
Device Name:
Serial Number: 156493
Firmware Version: 2.08

Log Configuration

Log Name: mw-5 slug out
Created By: Unknown
Computer Name: Pocket PC
Application: WinSituMobile.exe
Application Version: 5.5.9.2
Create Date: 9/1/2004 10:17:26 AM
Notes Size(bytes): 4096
Type: True Logarithmic
Overwrite when full: Disabled
Scheduled Start: Manual Start
Scheduled Stop: No Stop Time
Max Interval: Days: 0 Hours: 00 Mins: 20 Secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode: Level-DTW
Specific Gravity: 0.999
Level Reference Mode: Set new reference
Level Reference Value: 13.82 (ft)
Level Reference Head Pressure: 1.23659 (PSI)
Head Pressure: 1.23556 (PSI)
Temperature: 20.2812 (C)
Depth of Probe: 2.85286 (ft)

Log Notes:

Date and Time	Note
5/4/2011 2:24:35 PM	Manual Start Command
5/4/2011 2:39:36 PM	Suspend Command
5/4/2011 2:39:42 PM	Manual Stop Command

Log Data:
Record Count: 112

Date and Time	Elapsed Time Seconds	Sensor: Pres 30G SN#: 156493 Level-DTW (ft)
5/4/2011 2:24:35 PM	0.000	13.811

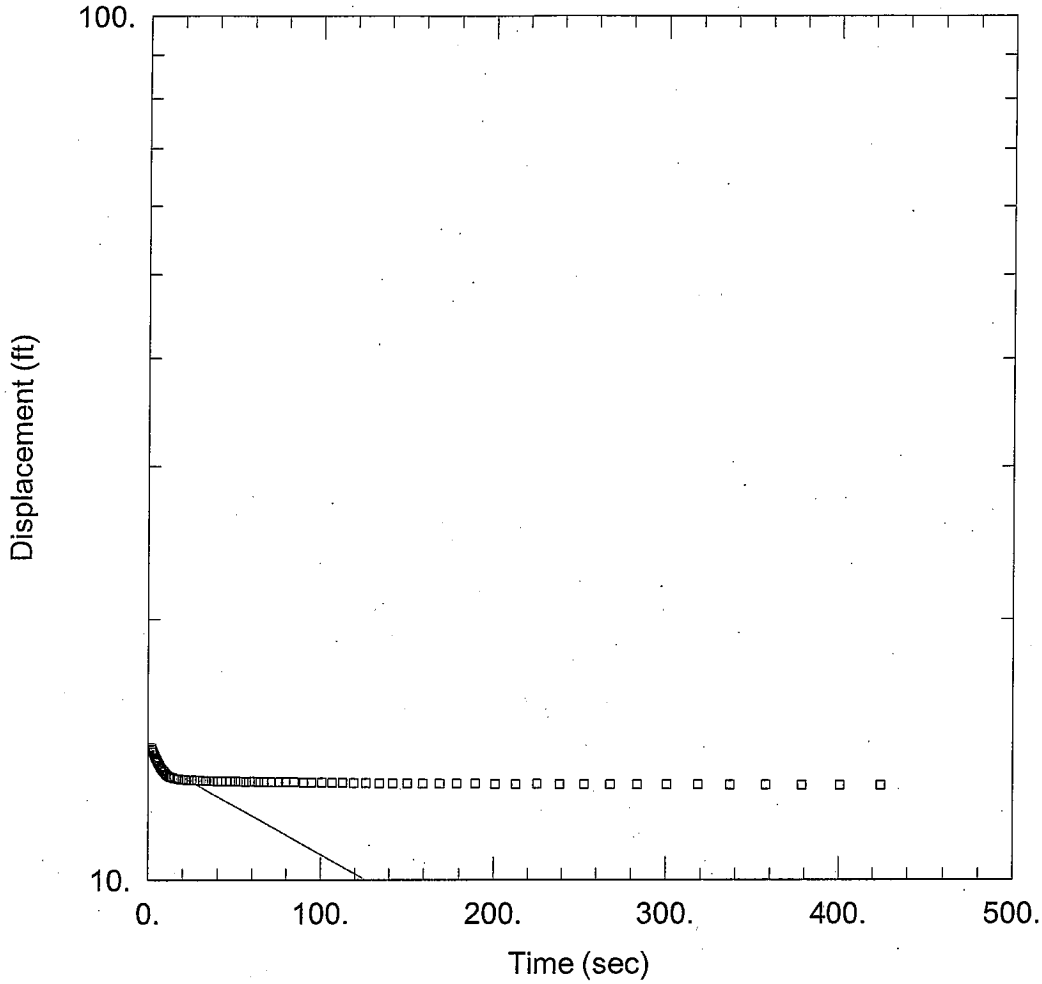
5/4/2011 2:24:35 PM	0.251	14.530
5/4/2011 2:24:35 PM	0.501	14.043
5/4/2011 2:24:36 PM	0.751	14.747
5/4/2011 2:24:36 PM	1.001	14.633
5/4/2011 2:24:36 PM	1.251	14.588
5/4/2011 2:24:36 PM	1.501	14.530
5/4/2011 2:24:37 PM	1.751	14.484
5/4/2011 2:24:37 PM	2.001	14.442
5/4/2011 2:24:37 PM	2.251	14.387
5/4/2011 2:24:37 PM	2.501	14.359
5/4/2011 2:24:38 PM	2.751	14.347
5/4/2011 2:24:38 PM	3.001	14.383
5/4/2011 2:24:38 PM	3.251	14.491
5/4/2011 2:24:38 PM	3.501	14.458
5/4/2011 2:24:39 PM	3.751	14.432
5/4/2011 2:24:39 PM	4.001	14.341
5/4/2011 2:24:39 PM	4.251	14.206
5/4/2011 2:24:39 PM	4.501	14.134
5/4/2011 2:24:40 PM	4.751	14.122
5/4/2011 2:24:40 PM	5.001	14.108
5/4/2011 2:24:40 PM	5.251	14.092
5/4/2011 2:24:40 PM	5.501	14.077
5/4/2011 2:24:41 PM	5.751	14.072
5/4/2011 2:24:41 PM	6.001	14.060
5/4/2011 2:24:41 PM	6.361	14.046
5/4/2011 2:24:42 PM	6.721	14.032
5/4/2011 2:24:42 PM	7.141	14.024
5/4/2011 2:24:42 PM	7.561	14.019
5/4/2011 2:24:43 PM	7.981	14.008
5/4/2011 2:24:43 PM	8.461	13.998
5/4/2011 2:24:44 PM	9.001	13.991
5/4/2011 2:24:44 PM	9.481	13.988
5/4/2011 2:24:45 PM	10.081	13.982
5/4/2011 2:24:46 PM	10.681	13.973
5/4/2011 2:24:46 PM	11.281	13.979
5/4/2011 2:24:47 PM	11.940	13.971
5/4/2011 2:24:48 PM	12.660	13.963
5/4/2011 2:24:48 PM	13.440	13.960
5/4/2011 2:24:49 PM	14.220	13.958
5/4/2011 2:24:50 PM	15.061	13.952
5/4/2011 2:24:51 PM	15.961	13.951
5/4/2011 2:24:52 PM	16.921	13.948
5/4/2011 2:24:53 PM	17.881	13.944
5/4/2011 2:24:54 PM	18.961	13.943
5/4/2011 2:24:55 PM	20.101	13.939
5/4/2011 2:24:56 PM	21.301	13.931
5/4/2011 2:24:57 PM	22.561	13.932
5/4/2011 2:24:59 PM	23.880	13.928
5/4/2011 2:25:00 PM	25.321	13.929
5/4/2011 2:25:02 PM	26.821	13.923
5/4/2011 2:25:03 PM	28.381	13.919
5/4/2011 2:25:05 PM	30.061	13.913
5/4/2011 2:25:07 PM	31.861	13.915
5/4/2011 2:25:09 PM	33.721	13.916
5/4/2011 2:25:11 PM	35.760	13.909
5/4/2011 2:25:13 PM	37.860	13.908
5/4/2011 2:25:15 PM	40.080	13.909
5/4/2011 2:25:17 PM	42.481	13.909
5/4/2011 2:25:20 PM	45.000	13.903
5/4/2011 2:25:23 PM	47.641	13.903
5/4/2011 2:25:25 PM	50.460	13.898
5/4/2011 2:25:28 PM	53.460	13.898
5/4/2011 2:25:32 PM	56.641	13.890

13.82 WL

0.927 in/day

H = 2.8

5/4/2011 2:25:35 PM	60.000	13.886
5/4/2011 2:25:38 PM	63.600	13.886
5/4/2011 2:25:42 PM	67.200	13.883
5/4/2011 2:25:46 PM	71.401	13.879
5/4/2011 2:25:50 PM	75.600	13.876
5/4/2011 2:25:55 PM	79.801	13.876
5/4/2011 2:25:59 PM	84.601	13.871
5/4/2011 2:26:05 PM	90.000	13.872
5/4/2011 2:26:10 PM	94.801	13.867
5/4/2011 2:26:16 PM	100.800	13.870
5/4/2011 2:26:22 PM	106.801	13.865
5/4/2011 2:26:28 PM	112.800	13.867
5/4/2011 2:26:34 PM	119.400	13.863
5/4/2011 2:26:41 PM	126.600	13.856
5/4/2011 2:26:49 PM	134.400	13.858
5/4/2011 2:26:57 PM	142.200	13.854
5/4/2011 2:27:05 PM	150.601	13.854
5/4/2011 2:27:14 PM	159.601	13.849
5/4/2011 2:27:24 PM	169.200	13.853
5/4/2011 2:27:34 PM	178.800	13.847
5/4/2011 2:27:44 PM	189.600	13.851
5/4/2011 2:27:56 PM	201.000	13.842
5/4/2011 2:28:08 PM	213.000	13.840
5/4/2011 2:28:20 PM	225.600	13.841
5/4/2011 2:28:34 PM	238.800	13.836
5/4/2011 2:28:48 PM	253.200	13.836
5/4/2011 2:29:03 PM	268.200	13.836
5/4/2011 2:29:19 PM	283.800	13.834
5/4/2011 2:29:35 PM	300.600	13.829
5/4/2011 2:29:53 PM	318.600	13.826
5/4/2011 2:30:12 PM	337.200	13.829
5/4/2011 2:30:32 PM	357.600	13.828
5/4/2011 2:30:53 PM	378.600	13.828
5/4/2011 2:31:16 PM	400.800	13.823
5/4/2011 2:31:40 PM	424.800	13.823
5/4/2011 2:32:05 PM	450.000	13.826
5/4/2011 2:32:31 PM	476.400	13.823
5/4/2011 2:32:59 PM	504.600	13.819
5/4/2011 2:33:29 PM	534.600	13.816
5/4/2011 2:34:01 PM	566.400	13.816
5/4/2011 2:34:35 PM	600.000	13.816
5/4/2011 2:35:11 PM	636.000	13.819
5/4/2011 2:35:47 PM	672.000	13.821
5/4/2011 2:36:29 PM	714.000	13.817
5/4/2011 2:37:11 PM	756.000	13.817
5/4/2011 2:37:53 PM	798.000	13.815
5/4/2011 2:38:41 PM	846.000	13.813
5/4/2011 2:39:35 PM	900.000	13.811



MW-4 - SLUG OUT

Data Set: C:\...\mw-4-slug out.aqt
Date: 05/26/11 Time: 10:13:04

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 4.13 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4)

Initial Displacement: 1.35 ft
Total Well Penetration Depth: 4.13 ft
Casing Radius: 0.083 ft
Static Water Column Height: 4.13 ft
Screen Length: 10. ft
Wellbore Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 6.014E-5 cm/sec
y0 = 13.83 ft

Data Set: C:\Documents and Settings\sdavenpo\My Documents\WinSitu Data\Exported Data\hunting creek\mw-4
Title: MW-4 - Slug Out
Date: 05/26/11
Time: 10:13:11

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 4.13 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : MW-4

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.35 ft
Static Water Column Height: 4.13 ft
Casing Radius: 0.083 ft
Wellbore Radius: 0.25 ft
Well Skin Radius: 0.25 ft
Screen Length: 10. ft
Total Well Penetration Depth: 4.13 ft

No. of Observations: 90

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
2.324	14.21	33.72	13.02
2.543	14.14	35.76	13.01
2.762	14.11	37.86	13.01
3.	14.07	40.08	13.
3.25	14.04	42.48	13.
3.5	14.01	45.	13.
3.75	13.96	47.64	12.99
4.	13.93	50.46	12.99
4.25	13.9	53.46	12.99
4.5	13.86	56.64	12.98
4.75	13.83	60.	12.98
5.	13.79	63.6	12.97
5.25	13.76	67.2	12.97
5.5	13.73	71.4	12.97
5.75	13.7	75.6	12.97
6.	13.67	79.8	12.96
6.36	13.63	84.6	12.96
6.72	13.59	90.	12.96
7.14	13.54	94.8	12.95
7.56	13.5	100.8	12.95
7.98	13.46	106.8	12.94
8.46	13.41	112.8	12.94
9.	13.37	119.4	12.94
9.48	13.33	126.6	12.93
10.08	13.29	134.4	12.93
10.68	13.25	142.2	12.92
11.28	13.22	150.6	12.92
11.94	13.19	159.6	12.91

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
12.66	13.16	169.2	12.91
13.44	13.14	178.8	12.91
14.22	13.13	189.6	12.9
15.06	13.11	201.	12.9
15.96	13.1	213.	12.89
16.92	13.09	225.6	12.89
17.88	13.08	238.8	12.88
18.96	13.07	253.2	12.88
20.1	13.06	268.2	12.88
21.3	13.06	283.8	12.88
22.56	13.05	300.6	12.87
23.88	13.04	318.6	12.87
25.32	13.04	337.2	12.87
26.82	13.03	357.6	12.87
28.38	13.03	378.6	12.86
30.06	13.03	400.8	12.86
31.86	13.02	424.8	12.86

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
Shape Factor: 2.224

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	6.014E-5	cm/sec
y0	13.83	ft

mw-4 slug out 2011-05-06 10-10-49.txt

Report Date: 5/6/2011 1:24:35 PM
Report User Name: sdavenpo
Report Computer Name: ATL-90YNP61

Log File Properties:

File Name:	mw-4 slug out 2011-05-06 10-10-49.wsl
Create Date:	5/6/2011 10:10:45 AM

Device Properties:

Device:	Level TROLL® 700
Site:	hunting creek
Device Name:	
Serial Number:	156493
Firmware Version:	2.08

Log Configuration

Log Name:	mw-4 slug out
Created By:	Unknown
Computer Name:	Pocket PC
Application:	WinSituMobile.exe
Application Version:	5.5.9.2
Create Date:	9/1/2004 9:41:11 AM
Notes Size(bytes):	4096
Type:	True Logarithmic
Overwrite when full:	Disabled
Scheduled Start:	Manual Start
Scheduled Stop:	No Stop Time
Max Interval:	Days: 0 Hours: 00 Mins: 20 Secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode:	Level-DTW
Specific Gravity:	0.999
Level Reference Mode:	Set new reference
Level Reference Value:	12.85 (ft)
Level Reference Head Pressure:	1.85628 (PSI)
Head Pressure:	1.85602 (PSI)
Temperature:	20.0878 (C)
Depth of Probe:	4.28549 (ft)

Log Notes:

Date and Time	Note
5/4/2011 1:48:26 PM	Manual Start Command
5/4/2011 2:01:52 PM	User Note: "□Ã□□□□□□□□□□□□Unknown"
5/4/2011 2:02:05 PM	Suspend Command
5/4/2011 2:02:13 PM	Manual Stop Command

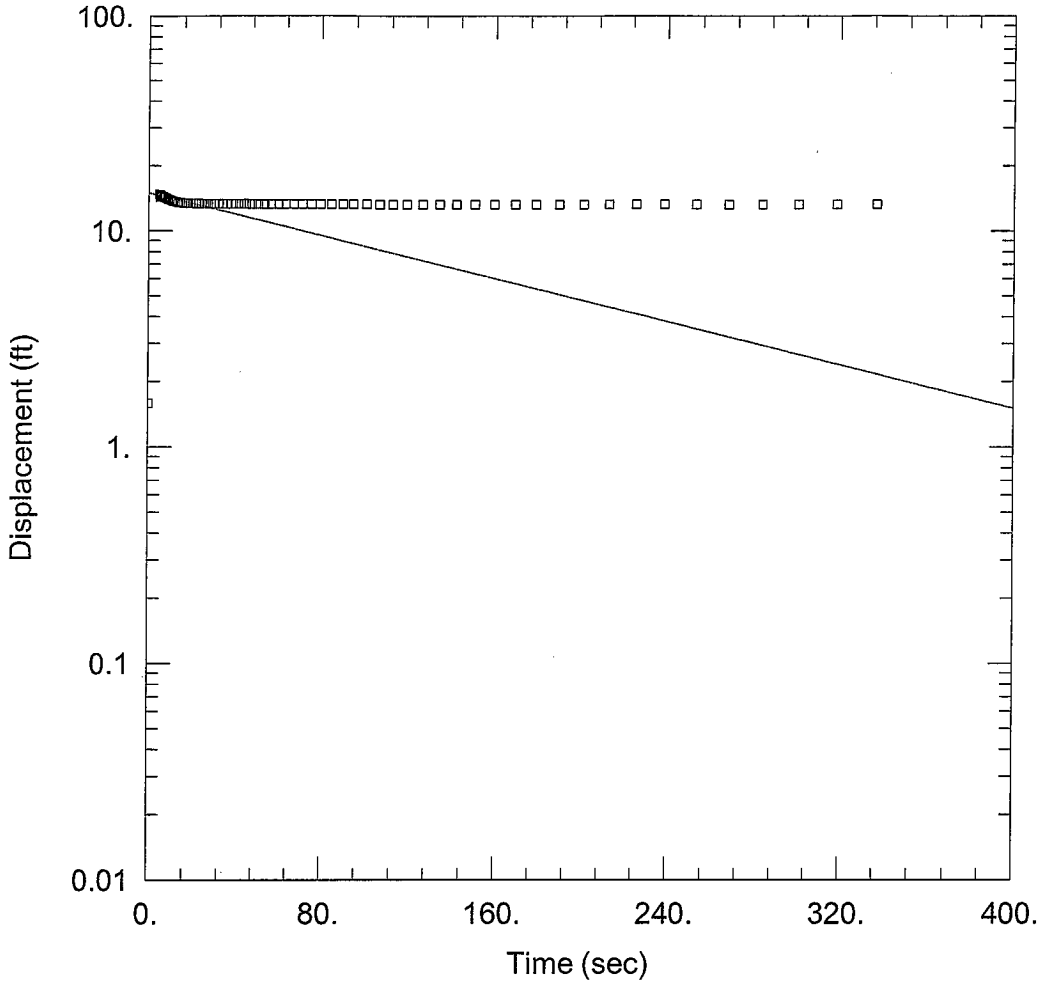
Log Data:
Record Count: 110

Date and Time	Elapsed Time Seconds	Sensor: Pres 30G SN#: 156493 Level-DTW (ft)

5/4/2011 1:48:26 PM	0.000	12.839
5/4/2011 1:48:26 PM	0.250	12.841
5/4/2011 1:48:26 PM	0.500	12.839
5/4/2011 1:48:27 PM	0.750	12.839
5/4/2011 1:48:27 PM	1.000	12.840
5/4/2011 1:48:27 PM	1.250	12.838
5/4/2011 1:48:27 PM	1.500	14.025
5/4/2011 1:48:28 PM	1.883	13.670
5/4/2011 1:48:28 PM	2.104	13.639
5/4/2011 1:48:28 PM	2.324	14.206
5/4/2011 1:48:28 PM	2.543	14.144
5/4/2011 1:48:29 PM	2.762	14.114
5/4/2011 1:48:29 PM	3.000	14.074
5/4/2011 1:48:29 PM	3.250	14.044
5/4/2011 1:48:29 PM	3.500	14.010
5/4/2011 1:48:30 PM	3.750	13.961
5/4/2011 1:48:30 PM	4.000	13.930
5/4/2011 1:48:30 PM	4.250	13.895
5/4/2011 1:48:30 PM	4.500	13.859
5/4/2011 1:48:31 PM	4.750	13.831
5/4/2011 1:48:31 PM	5.000	13.792
5/4/2011 1:48:31 PM	5.250	13.758
5/4/2011 1:48:31 PM	5.500	13.733
5/4/2011 1:48:32 PM	5.750	13.697
5/4/2011 1:48:32 PM	6.000	13.666
5/4/2011 1:48:32 PM	6.360	13.626
5/4/2011 1:48:33 PM	6.720	13.585
5/4/2011 1:48:33 PM	7.140	13.539
5/4/2011 1:48:33 PM	7.560	13.497
5/4/2011 1:48:34 PM	7.980	13.458
5/4/2011 1:48:34 PM	8.460	13.413
5/4/2011 1:48:35 PM	9.000	13.367
5/4/2011 1:48:35 PM	9.480	13.330
5/4/2011 1:48:36 PM	10.080	13.290
5/4/2011 1:48:37 PM	10.680	13.254
5/4/2011 1:48:37 PM	11.280	13.221
5/4/2011 1:48:38 PM	11.940	13.193
5/4/2011 1:48:39 PM	12.660	13.162
5/4/2011 1:48:39 PM	13.440	13.144
5/4/2011 1:48:40 PM	14.220	13.129
5/4/2011 1:48:41 PM	15.060	13.108
5/4/2011 1:48:42 PM	15.960	13.097
5/4/2011 1:48:43 PM	16.920	13.089
5/4/2011 1:48:44 PM	17.880	13.077
5/4/2011 1:48:45 PM	18.960	13.068
5/4/2011 1:48:46 PM	20.100	13.063
5/4/2011 1:48:47 PM	21.300	13.057
5/4/2011 1:48:48 PM	22.560	13.048
5/4/2011 1:48:50 PM	23.880	13.044
5/4/2011 1:48:51 PM	25.322	13.041
5/4/2011 1:48:53 PM	26.820	13.030
5/4/2011 1:48:54 PM	28.380	13.030
5/4/2011 1:48:56 PM	30.060	13.027
5/4/2011 1:48:58 PM	31.860	13.019
5/4/2011 1:49:00 PM	33.720	13.015
5/4/2011 1:49:02 PM	35.760	13.012
5/4/2011 1:49:04 PM	37.860	13.005
5/4/2011 1:49:06 PM	40.080	13.002
5/4/2011 1:49:08 PM	42.480	12.999
5/4/2011 1:49:11 PM	45.000	12.997
5/4/2011 1:49:14 PM	47.640	12.994
5/4/2011 1:49:16 PM	50.460	12.995
5/4/2011 1:49:19 PM	53.460	12.986

1.35

5/4/2011 1:49:23 PM	56.640	12.980
5/4/2011 1:49:26 PM	60.000	12.982
5/4/2011 1:49:30 PM	63.600	12.972
5/4/2011 1:49:33 PM	67.200	12.974
5/4/2011 1:49:37 PM	71.400	12.968
5/4/2011 1:49:42 PM	75.600	12.965
5/4/2011 1:49:46 PM	79.800	12.964
5/4/2011 1:49:51 PM	84.600	12.961
5/4/2011 1:49:56 PM	90.000	12.956
5/4/2011 1:50:01 PM	94.800	12.950
5/4/2011 1:50:07 PM	100.800	12.951
5/4/2011 1:50:13 PM	106.800	12.942
5/4/2011 1:50:19 PM	112.800	12.940
5/4/2011 1:50:25 PM	119.400	12.937
5/4/2011 1:50:33 PM	126.600	12.929
5/4/2011 1:50:40 PM	134.400	12.926
5/4/2011 1:50:48 PM	142.200	12.923
5/4/2011 1:50:57 PM	150.600	12.921
5/4/2011 1:51:06 PM	159.600	12.913
5/4/2011 1:51:15 PM	169.200	12.911
5/4/2011 1:51:25 PM	178.800	12.906
5/4/2011 1:51:36 PM	189.599	12.905
5/4/2011 1:51:47 PM	201.000	12.899
5/4/2011 1:51:59 PM	213.000	12.891
5/4/2011 1:52:12 PM	225.600	12.894
5/4/2011 1:52:25 PM	238.800	12.883
5/4/2011 1:52:39 PM	253.200	12.883
5/4/2011 1:52:54 PM	268.200	12.877
5/4/2011 1:53:10 PM	283.800	12.876
5/4/2011 1:53:27 PM	300.600	12.874
5/4/2011 1:53:45 PM	318.599	12.872
5/4/2011 1:54:03 PM	337.200	12.868
5/4/2011 1:54:24 PM	357.599	12.866
5/4/2011 1:54:45 PM	378.599	12.858
5/4/2011 1:55:07 PM	400.800	12.857
5/4/2011 1:55:31 PM	424.800	12.855
5/4/2011 1:55:56 PM	450.000	12.860
5/4/2011 1:56:22 PM	476.400	12.855
5/4/2011 1:56:51 PM	504.599	12.850
5/4/2011 1:57:21 PM	534.599	12.846
5/4/2011 1:57:52 PM	566.400	12.848
5/4/2011 1:58:26 PM	600.000	12.844
5/4/2011 1:59:02 PM	635.999	12.841
5/4/2011 1:59:38 PM	671.999	12.844
5/4/2011 2:00:20 PM	714.000	12.841
5/4/2011 2:01:02 PM	756.000	12.842
5/4/2011 2:01:44 PM	797.999	12.838



MW-1 SLUG OUT

Data Set: C:\...\MW-1-slug out.aqt
Date: 05/26/11 Time: 10:22:20

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 5.31 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW 1)

Initial Displacement: 1.587 ft Static Water Column Height: 5.31 ft
Total Well Penetration Depth: 5.31 ft Screen Length: 5. ft
Casing Radius: 0.083 ft Wellbore Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0002721 cm/sec y0 = 14.99 ft

Data Set: C:\Documents and Settings\sdavenpo\My Documents\WinSitu Data\Exported Data\hunting creek\MW-
Title: MW-1 Slug Out
Date: 05/26/11
Time: 10:22:25

PROJECT INFORMATION

Company: MACTEC
Project: 6121100013
Location: Hunting Creek Plaza
Test Date: 5/4/11

AQUIFER DATA

Saturated Thickness: 5.31 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: : OW 1

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 1.587 ft
Static Water Column Height: 5.31 ft
Casing Radius: 0.083 ft
Wellbore Radius: 0.25 ft
Well Skin Radius: 0.25 ft
Screen Length: 5. ft
Total Well Penetration Depth: 5.31 ft

No. of Observations: 76

Observation Data

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
0.	0.	40.08	13.29
5.	14.78	42.48	13.28
5.25	14.34	45.	13.27
5.5	14.62	47.64	13.27
5.75	14.51	50.46	13.26
6.	14.4	53.46	13.26
6.36	14.46	56.64	13.26
6.72	14.38	60.	13.25
7.14	14.31	63.6	13.25
7.56	14.23	67.2	13.25
7.98	14.16	71.4	13.25
8.46	14.09	75.6	13.24
9.	14.	79.8	13.23
9.48	13.93	84.6	13.23
10.08	13.86	90.	13.24
10.68	13.78	94.8	13.23
11.28	13.72	100.8	13.23
11.94	13.66	106.8	13.23
12.66	13.6	112.8	13.22
13.44	13.55	119.4	13.22
14.22	13.51	126.6	13.21
15.06	13.48	134.4	13.21
15.96	13.45	142.2	13.21
16.92	13.43	150.6	13.21
17.88	13.42	159.6	13.21
18.96	13.4	169.2	13.2
20.1	13.39	178.8	13.21
21.3	13.38	189.6	13.2

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
22.56	13.37	201.	13.21
23.88	13.36	213.	13.2
25.32	13.35	225.6	13.2
26.82	13.34	238.8	13.2
28.38	13.33	253.2	13.2
30.06	13.33	268.2	13.2
31.86	13.32	283.8	13.2
33.72	13.31	300.6	13.2
35.76	13.3	318.6	13.2
37.86	13.29	337.2	13.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
Shape Factor: 2.257

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0002721	cm/sec
y0	14.99	ft

mw-1 slug out 2011-05-06 10-11-19.txt

Report Date: 5/6/2011 1:24:50 PM
Report User Name: sdavenpo
Report Computer Name: ATL-90YNP61

Log File Properties:

File Name: mw-1 slug out 2011-05-06 10-11-19.wsl
Create Date: 5/6/2011 10:11:15 AM

Device Properties:

Device: Level TROLL® 700
Site: hunting creek
Device Name:
Serial Number: 156493
Firmware Version: 2.08

Log Configuration

Log Name: mw-1 slug out
Created By: Unknown
Computer Name: Pocket PC
Application: WinSituMobile.exe
Application Version: 5.5.9.2
Create Date: 9/1/2004 8:58:53 AM
Notes Size(bytes): 4096
Type: True Logarithmic
Overwrite when full: Disabled
Scheduled Start: Manual Start
Scheduled Stop: No Stop Time
Max Interval: Days: 0 Hours: 00 Mins: 20 Secs: 00

Level Reference Settings At Log Creation

Level Measurement Mode: Level-DTW
Specific Gravity: 0.999
Level Reference Mode: Set new reference
Level Reference Value: 13.19 (ft)
Level Reference Head Pressure: 2.31111 (PSI)
Head Pressure: 2.31066 (PSI)
Temperature: 18.5839 (C)
Depth of Probe: 5.33524 (ft)

Log Notes:

Date and Time	Note
5/4/2011 1:06:10 PM	Manual Start Command
5/4/2011 1:24:50 PM	Suspend Command
5/4/2011 1:25:03 PM	Manual Stop Command

Log Data:
Record Count: 115

Date and Time	Elapsed Time Seconds	Sensor: Pres 30G SN#: 156493 Level-DTW (ft)
5/4/2011 1:06:10 PM	0.000	13.182

5/4/2011 1:06:10 PM	0.250	13.182
5/4/2011 1:06:10 PM	0.500	13.186
5/4/2011 1:06:11 PM	0.750	13.184
5/4/2011 1:06:11 PM	1.000	13.183
5/4/2011 1:06:11 PM	1.253	13.181
5/4/2011 1:06:11 PM	1.500	13.184
5/4/2011 1:06:12 PM	1.750	13.185
5/4/2011 1:06:12 PM	2.000	13.182
5/4/2011 1:06:12 PM	2.250	13.184
5/4/2011 1:06:12 PM	2.500	13.188
5/4/2011 1:06:13 PM	2.809	13.187
5/4/2011 1:06:13 PM	3.028	13.185
5/4/2011 1:06:13 PM	3.247	13.189
5/4/2011 1:06:13 PM	3.500	13.244
5/4/2011 1:06:14 PM	3.750	13.912
5/4/2011 1:06:14 PM	4.000	12.841
5/4/2011 1:06:14 PM	4.250	13.202
5/4/2011 1:06:14 PM	4.500	13.744
5/4/2011 1:06:15 PM	4.750	14.049
5/4/2011 1:06:15 PM	5.000	14.777 start
5/4/2011 1:06:15 PM	5.250	14.338
5/4/2011 1:06:15 PM	5.500	14.623
5/4/2011 1:06:16 PM	5.750	14.511 r. 587
5/4/2011 1:06:16 PM	6.000	14.398
5/4/2011 1:06:16 PM	6.360	14.457
5/4/2011 1:06:17 PM	6.720	14.384
5/4/2011 1:06:17 PM	7.140	14.305
5/4/2011 1:06:17 PM	7.560	14.230
5/4/2011 1:06:18 PM	7.980	14.165
5/4/2011 1:06:18 PM	8.460	14.086
5/4/2011 1:06:19 PM	9.000	14.000
5/4/2011 1:06:19 PM	9.480	13.928
5/4/2011 1:06:20 PM	10.080	13.859
5/4/2011 1:06:21 PM	10.680	13.778
5/4/2011 1:06:21 PM	11.280	13.716
5/4/2011 1:06:22 PM	11.940	13.659
5/4/2011 1:06:23 PM	12.660	13.597
5/4/2011 1:06:23 PM	13.440	13.547
5/4/2011 1:06:24 PM	14.220	13.510
5/4/2011 1:06:25 PM	15.060	13.477
5/4/2011 1:06:26 PM	15.960	13.453
5/4/2011 1:06:27 PM	16.920	13.430
5/4/2011 1:06:28 PM	17.880	13.417
5/4/2011 1:06:29 PM	18.960	13.402
5/4/2011 1:06:30 PM	20.100	13.386
5/4/2011 1:06:31 PM	21.300	13.376
5/4/2011 1:06:32 PM	22.560	13.366
5/4/2011 1:06:34 PM	23.880	13.358
5/4/2011 1:06:35 PM	25.320	13.354
5/4/2011 1:06:37 PM	26.820	13.341
5/4/2011 1:06:38 PM	28.380	13.332
5/4/2011 1:06:40 PM	30.060	13.327
5/4/2011 1:06:42 PM	31.860	13.321
5/4/2011 1:06:44 PM	33.720	13.307
5/4/2011 1:06:46 PM	35.760	13.300
5/4/2011 1:06:48 PM	37.860	13.292
5/4/2011 1:06:50 PM	40.080	13.285
5/4/2011 1:06:52 PM	42.480	13.279
5/4/2011 1:06:55 PM	45.000	13.273
5/4/2011 1:06:57 PM	47.640	13.268
5/4/2011 1:07:00 PM	50.460	13.263
5/4/2011 1:07:03 PM	53.460	13.262
5/4/2011 1:07:06 PM	56.640	13.257

5/4/2011 1:07:10 PM	60.000	13.251
5/4/2011 1:07:13 PM	63.600	13.252
5/4/2011 1:07:17 PM	67.200	13.248
5/4/2011 1:07:21 PM	71.400	13.246
5/4/2011 1:07:25 PM	75.600	13.243
5/4/2011 1:07:30 PM	79.800	13.235
5/4/2011 1:07:34 PM	84.600	13.233
5/4/2011 1:07:40 PM	90.000	13.236
5/4/2011 1:07:45 PM	94.800	13.231
5/4/2011 1:07:51 PM	100.800	13.228
5/4/2011 1:07:57 PM	106.800	13.225
5/4/2011 1:08:03 PM	112.800	13.222
5/4/2011 1:08:09 PM	119.400	13.218
5/4/2011 1:08:16 PM	126.600	13.213
5/4/2011 1:08:24 PM	134.400	13.214
5/4/2011 1:08:32 PM	142.200	13.212
5/4/2011 1:08:40 PM	150.600	13.211
5/4/2011 1:08:49 PM	159.600	13.206
5/4/2011 1:08:59 PM	169.200	13.203
5/4/2011 1:09:09 PM	178.800	13.208
5/4/2011 1:09:19 PM	189.600	13.202
5/4/2011 1:09:31 PM	201.000	13.205
5/4/2011 1:09:43 PM	213.000	13.200
5/4/2011 1:09:55 PM	225.600	13.204
5/4/2011 1:10:09 PM	238.800	13.200
5/4/2011 1:10:23 PM	253.200	13.198
5/4/2011 1:10:38 PM	268.200	13.197
5/4/2011 1:10:54 PM	283.800	13.200
5/4/2011 1:11:10 PM	300.600	13.197
5/4/2011 1:11:28 PM	318.600	13.197
5/4/2011 1:11:47 PM	337.200	13.200
5/4/2011 1:12:07 PM	357.600	13.196
5/4/2011 1:12:28 PM	378.600	13.200
5/4/2011 1:12:51 PM	400.800	13.199
5/4/2011 1:13:15 PM	424.800	13.199
5/4/2011 1:13:40 PM	450.000	13.198
5/4/2011 1:14:06 PM	476.400	13.197
5/4/2011 1:14:34 PM	504.600	13.198
5/4/2011 1:15:04 PM	534.600	13.197
5/4/2011 1:15:36 PM	566.400	13.198
5/4/2011 1:16:10 PM	600.000	13.197
5/4/2011 1:16:46 PM	635.999	13.195
5/4/2011 1:17:22 PM	671.999	13.196
5/4/2011 1:18:04 PM	714.000	13.196
5/4/2011 1:18:46 PM	756.000	13.194
5/4/2011 1:19:28 PM	797.999	13.196
5/4/2011 1:20:16 PM	845.999	13.197
5/4/2011 1:21:10 PM	899.999	13.189
5/4/2011 1:21:58 PM	947.999	13.194
5/4/2011 1:22:58 PM	1008.000	13.192
5/4/2011 1:23:58 PM	1068.000	13.188

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Hunting Creek
Conyers, Georgia
Run Name

Data Input Instructions:
115 → 1. Enter value directly....or
↑ or
0.02 → 2. Calculate by filling in gray cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.2	(ft/yr)
or			
Hydraulic Conductivity	K	5.5E-05	(cm/sec)
Hydraulic Gradient	i	0.04	(ft/ft)
Effective Porosity	n	0.15	(-)

2. DISPERSION

Alpha x*	7.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	4.E-01	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho		1.6	(kg/L)	
FractionOrganicCarbon, foc		6.5E-4	(-)	
Partition Coefficient	Koc			
PCE		426	(L/kg)	3.97 (-)
TCE		130	(L/kg)	1.91 (-)
DCE		125	(L/kg)	1.87 (-)
VC		30	(L/kg)	1.21 (-)
ETH		302	(L/kg)	3.10 (-)

Common R (used in model)* = 1.91

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.000		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	5	(yr)	
Modeled Area Width*	125	(ft)	W
Modeled Area Length*	200	(ft)	L
Zone 1 Length*	200	(ft)	
Zone 2 Length*	0	(ft)	Zone 2= L - Zone 1

6. SOURCE DATA

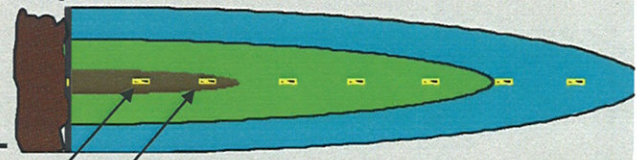
TYPE: Decaying Single Planar

Source Options

Source Thickness in Sat. Zone* 4 (ft)

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations

	Y1	k_s* (1/yr)
Width* (ft)	50	
Conc. (mg/L)*	C1	
PCE	.98	0.12
TCE		0.12
DCE		0.12
VC		0.12
ETH		0.12



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.98	.003
TCE Conc. (mg/L)		
DCE Conc. (mg/L)		
VC Conc. (mg/L)		
ETH Conc. (mg/L)		
Distance from Source (ft)	5	150
Date Data Collected	2010	

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

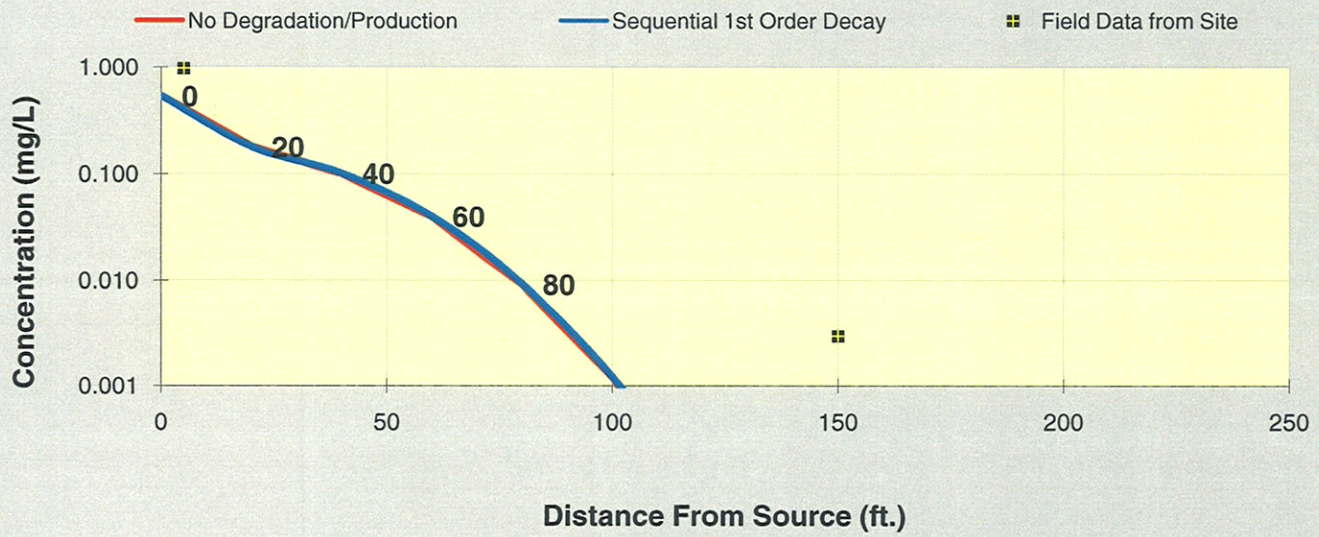
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	20	40	60	80	100	120	140	160	180	200
No Degradation	0.538	0.180	0.102	0.040	0.009	0.001	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.5378	0.180	0.102	0.040	0.009	0.001	0.000	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)

	5	150									
Field Data from Site	0.980	0.003									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

5.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Hunting Creek
Conyers, Georgia
Run Name

Data Input Instructions:
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Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.2	(ft/yr)
or			
Hydraulic Conductivity	K	5.5E-05	(cm/sec)
Hydraulic Gradient	i	0.04	(ft/ft)
Effective Porosity	n	0.15	(-)

2. DISPERSION

Alpha x*	7.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	4.E-01	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho		1.6	(kg/L)	
FractionOrganicCarbon, foc		6.5E-4	(-)	
Partition Coefficient	Koc			
PCE	426	(L/kg)	3.97	(-)
TCE	130	(L/kg)	1.91	(-)
DCE	125	(L/kg)	1.87	(-)
VC	30	(L/kg)	1.21	(-)
ETH	302	(L/kg)	3.10	(-)
Common R (used in model)* =			**1.91**	

4. BIOTRANSFORMATION

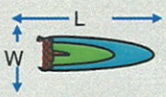
-1st Order Decay Coefficient*

	λ (1/yr)	half-life (yrs)	Yield
Zone 1			
PCE → TCE	0.000		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45
Zone 2	λ (1/yr)	half-life (yrs)	
PCE → TCE	0.000		
TCE → DCE	0.000		
DCE → VC	0.000		
VC → ETH	0.000		

λ HELP

5. GENERAL

Simulation Time*	10	(yr)
Modeled Area Width*	125	(ft)
Modeled Area Length*	200	(ft)
Zone 1 Length*	200	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

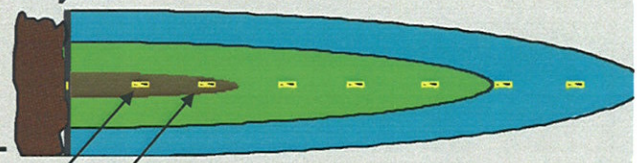
TYPE: Decaying Single Planar

Source Options

Source Thickness in Sat. Zone* 4 (ft)

	Y1	k_s* (1/yr)
Width* (ft)	50	
Conc. (mg/L)*	C1	
PCE	.98	0.12
TCE		0.12
DCE		0.12
VC		0.12
ETH		0.12

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.98	.003									
TCE Conc. (mg/L)											
DCE Conc. (mg/L)											
VC Conc. (mg/L)											
ETH Conc. (mg/L)											
Distance from Source (ft)	5	150									
Date Data Collected	2010										

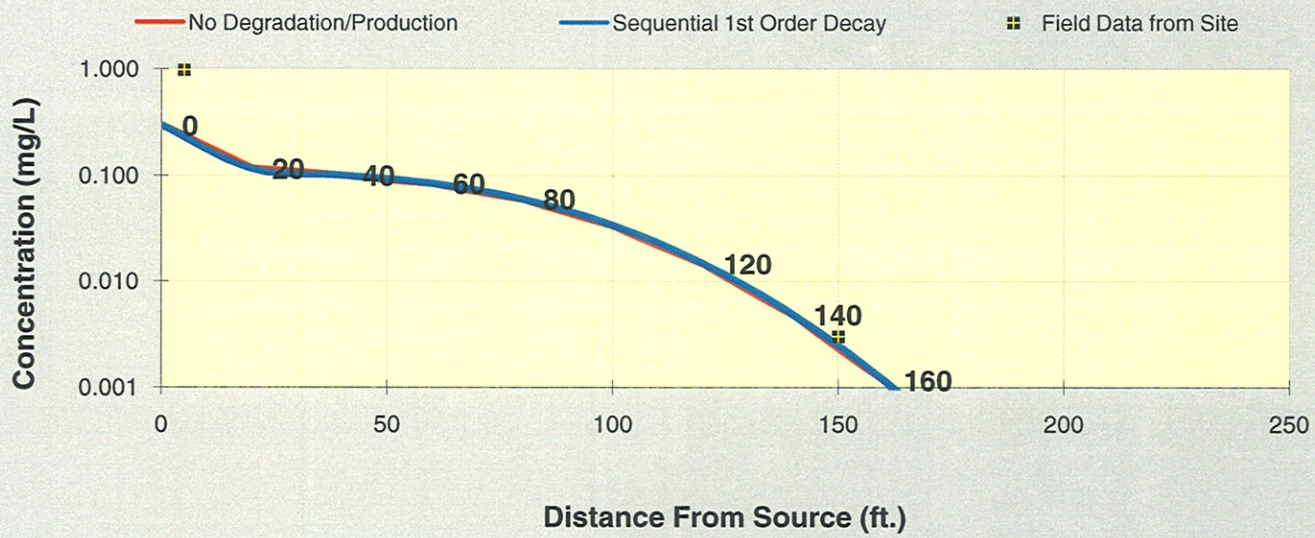
8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

PCE	Distance from Source (ft)										
	0	20	40	60	80	100	120	140	160	180	200
No Degradation	0.295	0.117	0.101	0.085	0.060	0.034	0.015	0.005	0.001	0.000	0.000
Biotransformation	0.2952	0.117	0.101	0.085	0.060	0.034	0.015	0.005	0.001	0.000	0.000

	Monitoring Well Locations (ft)										
	5	150									
Field Data from Site	0.980	0.003									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

10.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Hunting Creek
Conyers, Georgia
Run Name

Data Input Instructions:
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or ↑ 0.02 ← 2. Calculate by filling in gray cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.2	(ft/yr)
or			
Hydraulic Conductivity	K	5.5E-05	(cm/sec)
Hydraulic Gradient	i	0.04	(ft/ft)
Effective Porosity	n	0.15	(-)

2. DISPERSION

Alpha x*	7.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	4.E-01	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho		1.6	(kg/L)	
FractionOrganicCarbon, foc		6.5E-4	(-)	
Partition Coefficient	Koc			
PCE		426	(L/kg)	3.97 (-)
TCE		130	(L/kg)	1.91 (-)
DCE		125	(L/kg)	1.87 (-)
VC		30	(L/kg)	1.21 (-)
ETH		302	(L/kg)	3.10 (-)

Common R (used in model)* = 1.91

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

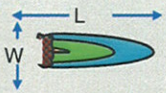
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.000		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	15	(yr)	
Modeled Area Width*	125	(ft)	
Modeled Area Length*	200	(ft)	
Zone 1 Length*	200	(ft)	
Zone 2 Length*	0	(ft)	Zone 2= L - Zone 1



6. SOURCE DATA

TYPE: Decaying Single Planar

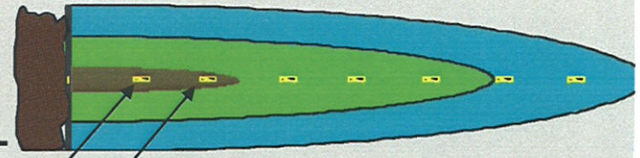
Source Options

Source Thickness in Sat. Zone* 4 (ft)

Width* (ft) Y1 = 50

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	.98	0.12
TCE		0.12
DCE		0.12
VC		0.12
ETH		0.12

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.98	.003									
TCE Conc. (mg/L)											
DCE Conc. (mg/L)											
VC Conc. (mg/L)											
ETH Conc. (mg/L)											
Distance from Source (ft)	5	150									
Date Data Collected	2010										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | **RUN ARRAY** | **Help** | Restore Formulas | RESET | *SEE OUTPUT* | Paste Example

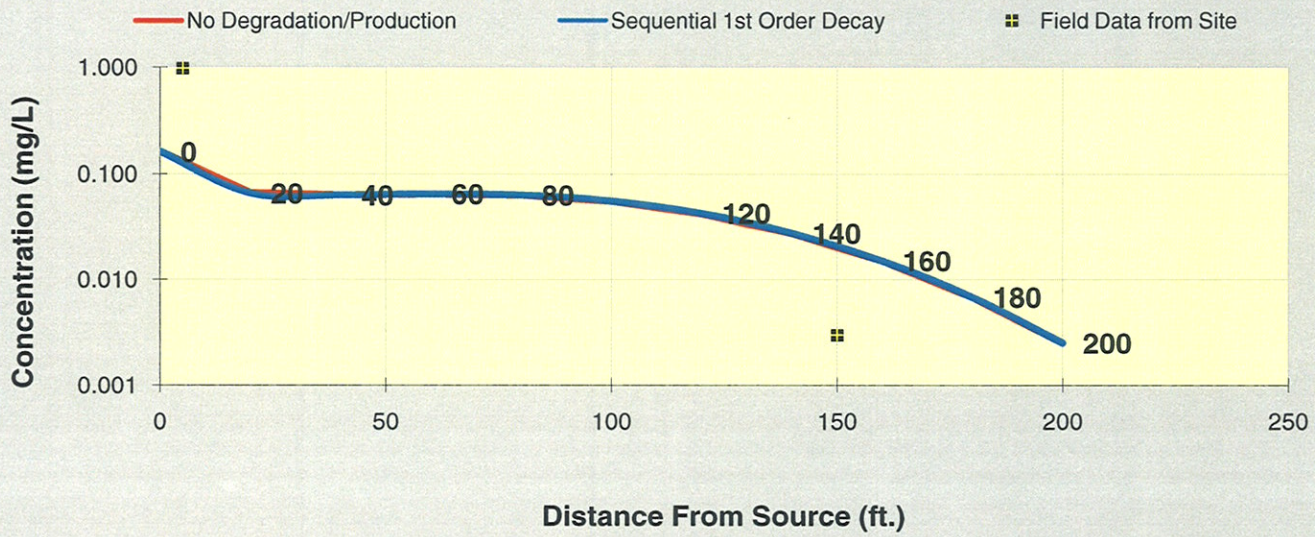
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	20	40	60	80	100	120	140	160	180	200
No Degradation	0.162	0.066	0.064	0.065	0.064	0.056	0.043	0.028	0.015	0.007	0.003
Biotransformation	0.1620	0.066	0.064	0.065	0.064	0.056	0.043	0.028	0.015	0.007	0.003

Monitoring Well Locations (ft)

	5	150									
Field Data from Site	0.980	0.003									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

15.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Hunting Creek
Conyers, Georgia
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ or
0.02 → 2. Calculate by filling in gray cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	15.2	(ft/yr)
or			
Hydraulic Conductivity	K	5.5E-05	(cm/sec)
Hydraulic Gradient	i	0.04	(ft/ft)
Effective Porosity	n	0.15	(-)

2. DISPERSION

Alpha x*	7.5	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	4.E-01	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho		1.6	(kg/L)	
FractionOrganicCarbon, foc		6.5E-4	(-)	
Partition Coefficient	Koc			
PCE		426	(L/kg)	3.97 (-)
TCE		130	(L/kg)	1.91 (-)
DCE		125	(L/kg)	1.87 (-)
VC		30	(L/kg)	1.21 (-)
ETH		302	(L/kg)	3.10 (-)

Common R (used in model)* = 1.91

4. BIOTRANSFORMATION -1st Order Decay Coefficient*

	Zone 1 λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.000		0.79
TCE → DCE	0.000		0.74
DCE → VC	0.000		0.64
VC → ETH	0.000		0.45

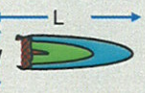
	Zone 2 λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	20	(yr)
Modeled Area Width*	125	(ft)
Modeled Area Length*	200	(ft)
Zone 1 Length*	200	(ft)
Zone 2 Length*	0	(ft)

Zone 2= L - Zone 1



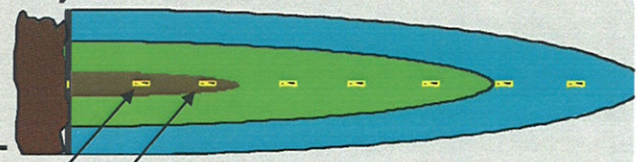
6. SOURCE DATA TYPE: Decaying Single Planar

Source Options

Source Thickness in Sat. Zone* 4 (ft)

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations

	Y1	k_s* (1/yr)
Width* (ft)	50	
Conc. (mg/L)*	C1	
PCE	.98	0.12
TCE		0.12
DCE		0.12
VC		0.12
ETH		0.12



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.98	.003									
TCE Conc. (mg/L)											
DCE Conc. (mg/L)											
VC Conc. (mg/L)											
ETH Conc. (mg/L)											
Distance from Source (ft)	5	150									
Date Data Collected	2010										

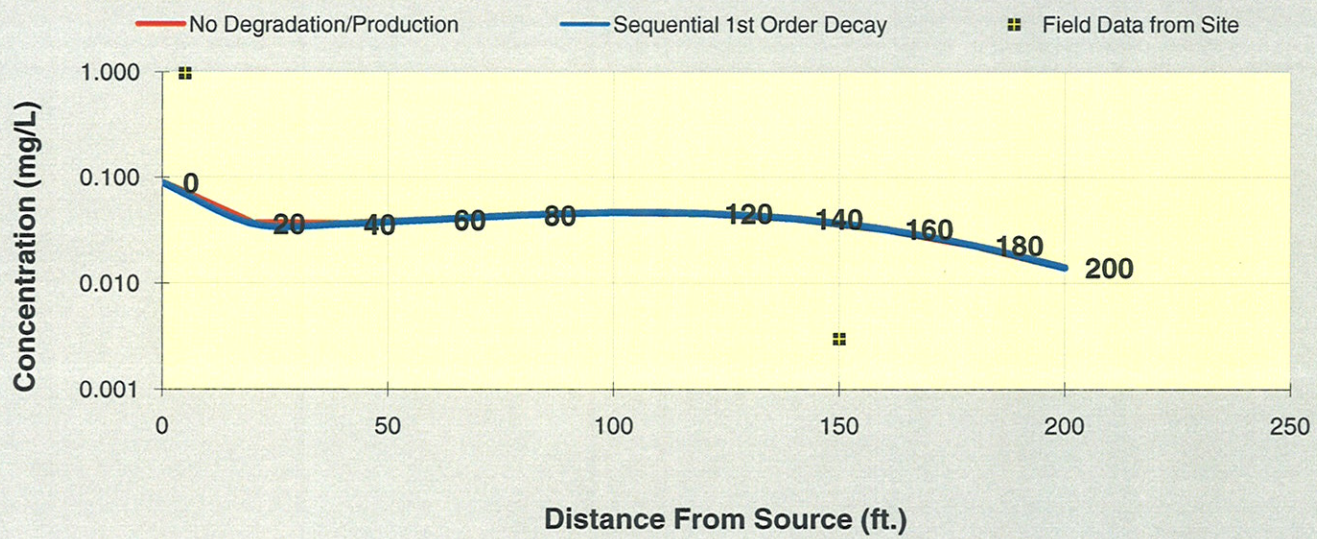
8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

PCE	Distance from Source (ft)										
	0	20	40	60	80	100	120	140	160	180	200
No Degradation	0.089	0.037	0.036	0.040	0.044	0.047	0.046	0.041	0.033	0.023	0.014
Biotransformation	0.0889	0.037	0.036	0.040	0.044	0.047	0.046	0.041	0.033	0.023	0.014

	Monitoring Well Locations (ft)										
	5	150									
Field Data from Site	0.980	0.003									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

20.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

APPENDIX G

RISK REDUCTION STANDARDS CALCULATIONS

Ta
T. rough Type 4 Ground Water RRS, mg/L

Parameter	Chronic Reference Dose Oral (mg/kg/day)	Chronic Reference Dose Inhalation (mg/kg/day)	Cancer Slope Factor Oral (mg/kg/day)-1	Cancer Slope Factor Inhalation (mg/kg/day)-1	Source for Chronic Rfds and CSFs	Volatile (a)	Type 1/ Type 3 (mg/L)	Type 2 Standard (mg/L) Adult Noncarcinogenic	Type 2 Standard (mg/L) Adult Carcinogenic	Type 2 Standard (mg/L) Child Noncarcinogenic	Type 2 Standard (mg/L) Child Carcinogenic	Type 2 Overall	Type 4 (mg/L) Industrial Worker Noncarcinogenic	Type 4 (mg/L) Industrial Worker Carcinogenic	Type 4 Overall IW	Type 4 (mg/L) Construction Worker Noncarcinogenic	Type 4 (mg/L) Construction Worker Carcinogenic	Type 4 Overall CW
Volatile Organic Compounds (VOCs)																		
Acetone	0.900	8.900	ND	ND	IRIS, ATSDR	v	4.0	21.82	ND	8.0	ND	8.0	45.73	ND	45.73	314.13	ND	314.13
Chloroform	0.010	0.028	0.031	0.081	IRIS, Cal EPA, ATSDR	v	0.080	0.13	0.002	0.043	0.003	0.002	0.22	0.003	0.003	1.1	0.70	0.70
Tetrachloroethene	0.010	0.077	0.540	0.021	IRIS, Cal EPA, ATSDR	v	0.005	0.22	0.001	0.079	0.003	0.001	0.44	0.004	0.004	2.8	1.9	1.9

PREPARED BY/DATE: EJS 7/14/09
CHECKED BY/DATE: LMS 9/17/10

IRIS Integrated Risk Information System
HEAST - Health Effects Assessment Summary Table FY1997, USEPA.
NCEA - National Center for Exposure Assessment, USEPA.
PPRTV - Provisional Peer Reviewed Toxicity Values, USEPA.
Cal EPA - California Environmental Protection Agency
ATSDR - Agency for Toxic Substances and Disease Registry

ND Toxicity values not available
(a) Volatility in water

Equation 2 (Noncarcinogens):

$$C = \frac{THI \times BW \times AT \times 365 days/year}{EF \times ED \times [(1/RfDi \times K \times IRa) + (1/RfDo \times IRw)]}$$

Equation 1 (Carcinogens):

$$C = \frac{TR \times BW \times AT \times 365 days/year}{EF \times ED \times [(SFi \times K \times IRa) + (SFo \times IRw)]}$$

Where:	Type 2 Adult	Type 2 Parameters Child	Type 4 Industrial Worker Parameters	Type 4 Construction Worker Parameters	
THI = Target Hazard Index =	1	1	1	1	
BW = Body Weight =	70 kg	15 kg	70 kg	70 kg	
AT = Averaging Time =	30 years (noncarc.); 70 (ca	6	25 years for noncarcinogens; 70 years	0.5 years for noncarcinogens; 70 years for carc.	
EF = Exposure Frequency =	350 days/year	350 days/year	250 day/year	125 day/year	
ED = Exposure Duration =	30 years	6 years	25 year	0.5 year	
RfDi = Inhalation Reference Dose =	Chemical Specific	Chemical Specific	Chemical Specific	Chemical Specific	
K = Volatilization Factor = 0.0005 x 1000 L/m3 =	0.5 L/m3	0.5 L/m3	0.5 L/m3	0.25 L/m3	(hand-washing)
IRa = Inhalation Rate for Air =	20 m3/day	15 m3/day	20 m3/day	20 m3/day	
RfDo = Oral Reference Dose =	Chemical Specific	Chemical Specific	Chemical Specific	Chemical Specific	
IRw = Ingestion Rate for Water =	2 L/day	1 L/day	1 L/day	0.08 L/day	(0.01 per hour for 8 hrs)
TR = Target Risk =	0.00001	0.00001	0.00001	0.00001	
SFo = Oral Cancer Slope Factor =	Chemical Specific	Chemical Specific	Chemical Specific	Chemical Specific	
SFi = Inhalation Cancer Slope Factor =	Chemical Specific	Chemical Specific	Chemical Specific	Chemical Specific	

APPENDIX H
PE SUPPORTING DOCUMENTATION

Charles T. Ferry, P.E.
Summary of Hours and Services
Hunting Creek Plaza
HSI Site No. 10832
MACTEC Project No. 6121-10-0013

Hours for post-approval Voluntary Remediation Plan implementation

(1) Planning and management of assessment work
2 hours invoiced between 3/30/11 and 4/21/11

(2) Preparation and submittal of CSR to EPD dated 6/6/11
13.5 hours invoiced between 4/25/11 and 6/6/11