Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
COMPANY NAME	Hull Real Estate, LLC				
CONTACT PERSON/TITLE	c/o Charles H. MacPherson, Jr., Exec. Vice President, Technical Director				
ADDRESS	Peachtree Environmental. Inc., 5384 Chaversham Lane, Norcross, GA 30092				
PHONE	770.559.8050	**FAX**	770.559.8051	**E-MAIL**	cmacpherson@peachtreeenvironmental.com

GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	William H. Lucas, III			**GA PE/PG NUMBER**	1255
COMPANY	Peachtree Environmental, Inc.				
ADDRESS	5384 Chaversham Lane, Norcross, GA 30092				
PHONE	(770) 449-6100	**FAX**	(770) 449-6119	**E-MAIL**	wlucas@peachtreeenvironmental.com

APPLICANT'S CERTIFICATION

In order to be considered a qualifying property for the VRP:

(1) The property must have a release of regulated substances into the environment;
(2) The property shall not be:
- (A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.
- (B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or
- (C) A facility required to have a permit under Code Section 12-8-66.

(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.
(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.

In order to be considered a participant under the VRP:
- (1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.
- (2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.

APPLICANT'S SIGNATURE			
APPLICANT'S NAME/TITLE (PRINT)	ROBERT L. BLUMBERG AS PRESIDENT OF TERRY REALTY INC - MEMBER	**DATE**	10/21/2011

Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
COMPANY NAME	Hull Real Estate, LLC				
CONTACT PERSON/TITLE	c/o Charles H. MacPherson, Jr., Exec. Vice President, Technical Director				
ADDRESS	Peachtree Environmental. Inc., 5384 Chaversham Lane, Norcross, GA 30092				
PHONE	770.559.8050	FAX	770.559.8051	E-MAIL	cmacpherson@peachtreeenvironmental.com

GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
NAME	William H. Lucas, III			GA PE/PG NUMBER	1255
COMPANY	Peachtree Environmental, Inc.				
ADDRESS	5384 Chaversham Lane, Norcross, GA 30092				
PHONE	(770) 449-6100	FAX	(770) 449-6119	E-MAIL	wlucas@peachtreeenvironmental.com

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In order to be considered a qualifying property for the VRP:

(1) The property must have a release of regulated substances into the environment;
(2) The property shall not be:
- (A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.
- (B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or
- (C) A facility required to have a permit under Code Section 12-8-66.

(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.
(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.

In order to be considered a participant under the VRP:
- (1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.
- (2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.

APPLICANT'S SIGNATURE	Sharon Loef		
APPLICANT'S NAME/TITLE (PRINT)	~~Hull~~ Real Estate, LLC BY Sharon Loef, Fred Realty, Member	DATE	11/2/11

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)			
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)			
HSI Number	10376	**Date HSI Site listed**	June 9, 1995
HSI Facility Name	The Loef Company, Inc.	**NAICS CODE**	423930
PROPERTY INFORMATION			
TAX PARCEL ID	221 002C, 221 001, & 162 037	**PROPERTY SIZE (ACRES)**	21.34 Acres (total)
PROPERTY ADDRESS	0 Old Hull Road, 590 Old Hull Road, and 305 Athena Dr.		
CITY	Athens	**COUNTY**	Clarke
STATE	Georgia	**ZIPCODE**	30601
LATITUDE(decimal format)	33.982764	**LONGITUDE (decimal format)**	83.342111
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Omnisource, Athens Division, LLC	**PHONE #**	706.613.5201
MAILING ADDRESS	C/O Omnisource Southeast, P.O. Box 578		
CITY	Lyman	**STATE/ZIPCODE**	South Carolina / 29365

ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	**$5,000 APPLICATION FEE** IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)	Included with VRP Application	
2.	**WARRANTY DEED(S)** FOR QUALIFYING PROPERTY.	Refer to Appendix A	
3.	**TAX PLAT** OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	Refer to Appendix A	
4.	**ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES** OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	Attached to Application Package	
5.	The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a **PROJECTED MILESTONE SCHEDULE** for investigation and remediation of the site, and after enrollment as a participant, must update the schedule in each semi-	Refer to Attached VRP Application Report	

	annual status report to the director describing implementation of the plan during the preceding period. A Gantt chart format is preferred for the milestone schedule. The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:		
5.a.	Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;	Refer to Appendix G	
5.b.	Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;	Refer to Appendix G	
5.c.	Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and	Refer to Appendix G	
5.d.	Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.	Refer to Appendix G	
6.	**SIGNED AND SEALED PE/PG CERTIFICATION** AND SUPPORTING DOCUMENTATION: "I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances. Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division. 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." William H. Lucas, III: P.G. #1255 Printed Name and GA RE/PG Number 11/4/11 Date Signature and Stamp		

ADDITIONAL QUALIFYING PROPERTIES (COPY THIS PAGE AS NEEDED)

PROPERTY INFORMATION			
TAX PARCEL ID	221 002C	PROPERTY SIZE (ACRES)	1.63 Acres
PROPERTY ADDRESS	0 Old Hull Road		
CITY	Athens	COUNTY	Clarke
STATE	Georgia	ZIPCODE	30601
LATITUDE (decimal format)	33.984069	LONGITUDE (decimal format)	83.341436
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Omnisource Athens Division, LLC	PHONE #	706.613.5201
MAILING ADDRESS	C/O Omnisource Southeast P.O. Box 578		
CITY	Lyman	STATE/ZIPCODE	South Carolina / 29365

PROPERTY INFORMATION			
TAX PARCEL ID	221 001	PROPERTY SIZE (ACRES)	15 Acres
PROPERTY ADDRESS	590 Old Hull Road		
CITY	Athens	COUNTY	Clarke
STATE	Georgia	ZIPCODE	30601
LATITUDE (decimal format)	33.981769	LONGITUDE (decimal format)	83.342617
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Omnisource Athens Division, LLC	PHONE #	706.613.5201
MAILING ADDRESS	C/O Omnisource Southeast P.O. Box 578		
CITY	Lyman	STATE/ZIPCODE	South Carolina / 29365

PROPERTY INFORMATION			
TAX PARCEL ID	162 037	PROPERTY SIZE (ACRES)	4.71 Acres
PROPERTY ADDRESS	305 Athena Drive		
CITY		COUNTY	Clarke
STATE	Georgia	ZIPCODE	30601
LATITUDE (decimal format)	33.980097	LONGITUDE (decimal format)	83.343344
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Omnisource Athens Division, LLC	PHONE #	706.613.5201
MAILING ADDRESS	C/O Omnisource Southeast P.O. Box 578		
CITY	Lyman	STATE/ZIPCODE	South Carolina / 29365

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN (VIRP) AND APPLICATION FOR THE FORMER LOEF FACILITY (HULL) ATHENS, CLARKE COUNTY, GEORGIA© HSI#10376

DOCUMENT PREPARED FOR:
HULL REAL ESTATE, LLC

DOCUMENT PRESENTED TO:
GEORGIA DEPARTMENT OF NATURAL RESOURCES
2 MARTIN LUTHER KING, JR. DRIVE, SE, SUITE 1154
ATLANTA, GEORGIA 30334

DOCUMENT PREPARED BY:

PEACHTREE ENVIRONMENTAL, INC.
5384 CHAVERSHAM LANE
NORCROSS, GEORGIA 30092-2167
(770)559-8050 • (770)559-8051 FAX

NOVEMBER 2011

THE INFORMATION CONTAINED IN THIS REPORT TITLED
"VOLUNTARY INVESTIGATION AND REMEDIATION PLAN (VIRP)
AND APPLICATION
FOR THE
FORMER LOEF FACILITY (HULL)
ATHENS, CLARKE COUNTY, GEORGIA©"
HSI#10376

IS INTENDED FOR THE
USE OF HULL REAL ESTATE, THEIR OFFICERS
AND DESIGNEES
AND THE
GEORGIA DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS SITE RESPONSE PROGRAM

Project No. 2318

DOCUMENT PREPARED BY:

MICHAEL H. WILSON, *PROJECT MANAGER*

DOCUMENT REVIEWED BY:

WILLIAM H. LUCAS, P.G., *SR. PROJECT MANAGER*

CHARLES H. MacPHERSON, JR., *TECHNICAL DIRECTOR*

NOVEMBER 2011

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN (VIRP)
AND APPLICATION
FOR THE
FORMER LOEF FACILITY (HULL)
590 OLD HULL ROAD
ATHENS, CLARKE COUNTY, GEORGIA©
HSI#10389

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS

AES	Analytical Environmental Services, Inc.
AFCEE	Air Force Center for Environmental Excellence
APLS	Aqueous Phase Liquids
Applicant	Hull Real Estate, LLC
bgs	Below Ground Surface
bls	Below Land Surface
CAP	Corrective Action Plan
cis-1,2-DCE	cis-1,2-Dichloroethene
CSR	Compliance Status Report
COCs	Constituents of Concern
COPC	Constituent of Potential Concern
CSM	Conceptual Site Model
EMNA	Enhanced Monitored Natural Attenuation
Georgia EPD	Georgia Environmental Protection Division
GHWMA	Georgia Hazardous Waste Management Act
HRC	Hydrogen Releasing Compound
HSI	Hazardous Site Inventory
HSRA	Hazardous Site Response Act
HSRP	Hazardous Site Response Program
HWMA	Hazardous Waste Management Act
IRIS	Integrated Risk Information System
ISCO	In-situ Chemical Oxidation
MCL	Maximum Contaminant Levels
µg/L	Micrograms per Liter (same as ppb)
mg/Kg	Milligrams per Kilogram (same as ppm)
mg/L	Milligrams per Liter (same as ppm)
NAPLS	Non-Aqueous Phase Liquids
NC	Notification Concentration
Peachtree	Peachtree Environmental, Inc.
PCE	Tetrachloroethene
POD	Point of Demonstration
ppb	Parts per Billion
ppm	Parts per Million
PRE	Preliminary Risk Evaluation
Property	Former Loef Facility
RAGS	Risk Assessment Guidance for Superfund
RBCA	Risk Based Corrective Action
REC	Recognized Environmental Conditions
RN	Release Notification
RQSM	Reportable Quantities Screening Method
RRS	Risk Reduction Standard
Site	Former Loef Facility
SVE	Soil Vapor Extraction
SVOCs	Semi-Volatile Organic Compounds
TCLP	Toxicity Characteristic Leaching Procedure
TCE	Trichloroethene
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VIRP	Voluntary Investigation and Remediation Plan
VRP	Voluntary Remediation Program
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

PEACHTREE ENVIRONMENTAL, INC. (Peachtree) is submitting this Voluntary Investigation and Remediation Plan (VIRP) and Application on behalf of the applicant, **HULL REAL ESTATE, LLC** (Hull and/or "Applicant"), for the former Loef Facility located northeast of the intersection of Old Hull Road and Athena Drive in Athens, Clarke County, Georgia (the "VIRP Property"); HSI# 10376 (the "Site"). Hull is comprised of two member entities: Terry Realty, LLC and Fred Realty LLC. The purpose of this VIRP and Application is to provide supporting documentation in completing the State's March 30, 2010 Voluntary Remediation Program (VRP) Application Form and Checklist. Part of the VRP Application Form and Checklist is to detail a Conceptual Site Model for the property including a preliminary VIRP, a table of delineation standards, supporting text, tables, charts and figures that illustrates the Site's surface and subsurface setting, sources of contamination, contaminant migration pathways, and potential human and environmental receptors and complete exposure pathways.

1.2 VIRP PROPERTY DESCRIPTION

The VIRP Property consists of three (3) parcels of land totaling 21.34 acres which are more fully described as follows:

- 0 Old Hull Road - Parcel ID: 221 002 C (1.63 Acres);
- 590 Old Hull Road - Parcel ID: 221 001 (15 Acres); and
- 305 Athena Drive - Parcel ID 162 037 (4.71 Acres).

The VIRP Property has a latitude coordinate of 33° 58' 57.95" North and a longitude coordinate of 83° 20' 31.60" West. A VIRP Property Location Map is included as **Figure 1**.

The former Loef Facility, hereinafter referred to as the "facility", is located approximately three (3) miles east of the central business district of the City of Athens, Clarke County, Georgia on Old Hull Road (County Road 127). The facility is bounded by:

- West - Old Hull Road;
- South - A natural gas line easement and a vacant wooded lot with Athena Drive beyond;
- North - Unpaved and unused dead-end easement of Calhoun Drive; and
- East - CSXT / Former Seaboard Coastline rail line.

The facility operates as an industrial scrap metal recycling facility and includes an office, warehouse, maintenance building, shredder, bailer, and other buildings and equipment used in its operations. The Site (area impacted by releases of COCs) consists of adjacent property to the north and to the south (natural gas line easement to Athena Drive) and to

the east including Seaboard Coastline rail line right-of-way on the west side of the tracks. A VIRP Property Layout Map is provided as **Figure 2**.

1.3 QUALIFICATIONS OF THE VIRP PROPERTY AND VIRP APPLICANT

The Participant is submitting this VIRP and Application under the Georgia Voluntary Remediation Act (VRA and/or VRP), (O.C.G.A. § 12-8-100, et seq. (the "Act") for the VIRP Property, Athens Clarke County, Georgia. In order to be considered a "qualifying property", the Property must be, according to O.C.G.A. § 12-8-105;

1) Listed on the Georgia Hazardous Site Inventory (HSI); or meet the criteria of the Georgia Hazardous Site Reuse and Redevelopment Act ("Brownfields Act") O.C.G.A. § 12-8-205; or have a release of regulated substances to the environment.

Under O.C.G.A. § 12-8-105 the property shall also not:

2) Be listed on the federal National Priorities List;
3) Be currently undergoing response activities required by an Order of the Regional Administration of the United States Environmental Protection Agency;
4) Be a facility required to have a permit under the Georgia Hazardous Waste Management Act ("HWMA"); O.C.G.A. § 12-8-66; and
5) Violate the terms and conditions under which the Environmental Protection Division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.

Finally, under O.C.G.A. § 12-8-105 the property shall:

6) Have any lien filed under subsection (e) of the HWM Act O.C.G.A. § 12-8-66 or subsection (b) of the Georgia Underground Storage Tank Management Act O.C.G.A. § 12-13-12 be satisfied or settled and released by the Georgia EPD Director pursuant to the HWM Act O.C.G.A. § 12-8-66.

The VIRP Property is included in HSI#10376 and none of the other criteria listed in items 2 - 6 apply. Therefore, the VIRP Property qualifies under the Act.

In order for the Participant to meet the qualifications of the VRP according to O.C.G.A. § 12-8-106 the following criteria must be met:

1) The Applicant must be the property owner of the VIRP Property or have express permission to enter another's property to perform corrective action including, to the extent applicable, implementing controls for the VIRP Property pursuant to written lease, license, order or indenture;
2) Not be in violation of any order, judgement, statute, rule or regulation subject to the enforcement authority of the Director; and
3) Meet other such criteria as may be established by the DNR Board pursuant to O.C.G.A. § 12-8-103.

As the Participant meets all the criteria stated above, the Participant is “qualified” under the Act.

The contact for the Applicant is as follows:

Hull Real Estate, LLC

c/o Peachtree Environmental, Inc.
5384 Chaversham Lane
Norcross, GA 30092

Attn: Charles H. MacPherson, Jr.
(770) 559-8050

Appendix A contains the Warranty Deed(s) and Tax Plat(s) for the Qualifying Property(s).

2.0 VIRP PROPERTY INVESTIGATION AND CORRECTIVE ACTION HISTORY

Detailed below are annotated descriptions of the findings of past investigations and regulatory correspondence which were developed as part of the previous assessments conducted for the subject facility. These reports include the following:

2.1 BAUMGARTNER & ASSOCIATES (ENVIRONMENTAL SITE ASSESSMENT)

Baumgartner & Associates, Inc. (Baumgartner) conducted a Phase I Environmental Site Assessment (ESA) in/around January 1995. Based on the findings of the ESA, the facility submitted a Hazardous Substance Release Notification/Reporting Form in February 1995. The notification form indicated the following regulated substances were detected above the soil Notification Concentrations (NCs): Copper, Lead, Manganese, PCBs, Silver, and Zinc. The following regulated substances were also reported as exceeding the groundwater notification concentrations: Barium, Trichloroethene (TCE), and Xylene.

A well survey provided by Baumgartner identified only one private drinking water well within a one-mile radius of the Site, this being an onsite production well. The nearest public water supply well was identified to be located just under 2 miles southeast of the Site. In addition, a public drinking water intake on the Oconee River was identified approximately 2.7 miles west of the Site. The on-Site production well was disconnected from all drinking water connections in June 1993 after samples revealed TCE concentrations above the laboratory detection method limit. Subsequent to the discontinuance of the use of the on-Site well for consumptive purposes, the Notification Form reported the public water supply well as the closest identified well to the Site.

The GEPD responded to the facility's notification in a letter dated June 9, 1995, which concurred that a reportable release of regulated substances had occurred at the Site and listed the Site on the Hazardous Site Inventory (HSI). Based on the information provided to the GEPD (the data from the Baumgartner ESA), groundwater and on-Site exposure pathway scores were calculated using the Reportable Quantities Screening Method (RQSM). The groundwater pathway score was calculated to be 4.88 out of a possible maximum score of 100. The on-Site exposure pathway score for soil was calculated to be 55.56 out of a possible maximum score of 100 [1]. These scores were compared to threshold scores of 10 for groundwater and 20 for soil to evaluate the need for corrective action and the listing category under the HSRA Regulations for the Site (i.e., Class I, Class II, Class III or Class IV). The Site was listed on the HSI as a Class II Site on June 9, 1995. The HSI number for the Site is 10376.

[1] These scores are not intended to present a quantitative risk assessment; they are designed to be used for identifying sites where a release has occurred that may pose a threat to human health and/or the environment.

2.2 KIBER ENVIRONMENTAL SERVICES (CSR)

In April 1995, Kiber Environmental Services, Inc. (Kiber) was retained by the facility to complete additional Site assessment activities. These activities included the completion of a Compliance Status Report (CSR), as well as preliminary activities related to planned soil removal for those impacted soils exceeding applicable RRS.

From November 1995 to May 1996, Kiber conducted soil removal activities in areas of the Site identified as having impacted soils exceeding applicable Type 3 RRS (i.e., non-residential property). As required in Section 391-3-19-.07(8) of the Hazardous Site Response Rules, prior to the implementation of the removal activities, Kiber evaluated and calculated Type 3 RRS for the following regulated substances of concern or constituents of concern (COCs): Copper, Lead, Silver, and Polychlorinated biphenyls (PCBs).

Verification samples were collected to evaluate whether excavated areas were in compliance with the Type 3 RRS or whether additional soil removal was necessary. As a result of the 1995 /1996 corrective action activities, compliance with Type 3 RRS was reportedly achieved for all of the identified COCs with the exception of Zinc. No additional corrective action activities were performed at that time.

Kiber subsequently submitted a CSR in March of 1997. The GEPD reviewed and commented on the March 1997 CSR with a Notice of Deficiency letter, dated July 18, 1997.

2.3 KIBER ENVIRONMENTAL SERVICES (REVISED CSR & CAP)

A Revised CSR was submitted by Kiber in August 1997, followed by a CAP in October 1997. Portions of the work described in the Revised CSR and CAP were implemented by the previous owner (The Loef Company, the owner immediately prior to Hull Real Estate, LLC's ownership). In summary, previous environmental assessment and corrective action activities at the Site principally focused on assessing soil conditions across portions of the Site and removal of soils from potential source areas identified as Area 4 (Shredder Source Area), Area 5 (Bailer Source Area), and Area 6 (South Run-off Area). Limited groundwater quality assessment activities were performed by previous property owners. Based upon the limited groundwater assessment data, the GEPD determined that further groundwater assessment work was required.

2.4 PEACHTREE ENVIRONMENTAL (CAP)

Peachtree Environmental, Inc. (Peachtree) was retained by Hull in 2000 to complete additional assessment activities for the purpose of designing, preparing, and implementing a CAP. These activities included additional groundwater assessment activities to evaluate both the horizontal and vertical extent of impact both on the Site (facility), as well as adjacent properties, and a surface and subsurface soils assessment.

Based on these additional assessment activities, it was determined that areas of impacted surface and subsurface soils and groundwater existed at the Site which required additional corrective action activities. The extent of the COCs in the soils and groundwater were not fully defined to background levels during CAP assessment activities, however, the data acquired was considered to be sufficient to develop and implement the approved CAP. Peachtree submitted the CAP to the GEPD on October 5, 2001. The CAP was conditionally approved by the GEPD on February 28, 2002.

2.5 PEACHTREE ENVIRONMENTAL (CSR)

Peachtree, on behalf of Hull, submitted a CSR to the GEPD on February 6, 2004 to document compliance with soil RRS following the implementation and completion of CAP activities from the time period of November of 2002 to September of 2003. The CSR was formally accepted by the GEPD on November 16, 2009. Further detail relative to CAP implementation activities is presented in Section 3.0.

2.6 PEACHTREE ENVIRONMENTAL (REMEDIAL TECHNOLOGY PILOT STUDY EFFECTIVENESS REPORT)

The approved CAP for the Site was principally designed to remediate regulated constituents in soil to applicable RRS. In addition, the CAP specified a pilot-scale groundwater remedial technology for addressing substances detected in Site groundwater (principally volatile organics). The selected technology utilized the injection of a Hydrogen Releasing Compound (HRC™) into the soils and groundwater in and around the area where monitoring well MW-2A is located.

The HRC™ was injected in a grid pattern on 20 foot centers, covering an area approximately 80 feet by 100 feet at a depth extending down to 25 feet (within the groundwater table). The HRC™ was applied to each injection point at depth (25 feet) across the grid matrix. Post-injection results were evaluated from the time period of June 2003 to September 2004. The results of the technology evaluation were detailed in a Remedial Technology Pilot Study Effectiveness Report submitted to the GEPD on February 11, 2005.

2.7 PEACHTREE ENVIRONMENTAL (SUPPLEMENTAL CSR INFORMATION)

The GEPD requested, in a letter dated December 1, 2004, supplemental information to complete their review of the February 2004 CSR. The information requested included revised CSR text, figures, and legal description of the property. Peachtree responded with a submission of the requested information on February 22, 2005.

2.8 DECEMBER 14, 2005 MEETING (GEPD & PEACHTREE ENVIRONMENTAL)

Peachtree, on behalf of Hull, met with the GEPD to discuss the February 2004 CSR and the Groundwater Remedial Technology Pilot Study Effectiveness Report submitted in

February 2005. EPD requested further sampling of Site soils to determine the extent of compliance with calculated background concentrations, compliance with applicable RRS, and text changes. The requested information was submitted in a revised CSR Addendum submitted to the GEPD on December 19, 2006.

2.9 PEACHTREE ENVIRONMENTAL (JULY 2006 GROUNDWATER ASSESSMENT REPORT)

The GEPD responded to the February 2005 Groundwater Remedial Technology Pilot Study Effectiveness Report with a letter dated January 30, 2006. The letter required Hull to investigate the soil and groundwater up-gradient of MW-2A to identify any potential source of VOC impact in soil and to characterize the distribution of the groundwater plume in the up-gradient direction. In addition, all other on-site permanent wells were required to be sampled such that a design of additional groundwater corrective action activities could be completed.

Peachtree initiated the collection of temporary groundwater samples, in conjunction with soil sampling activities described above, on May 4, 2006 and sampled permanent groundwater wells on May 9, 2006. The primary objective of the groundwater sampling activities was twofold: the identification and characterization of the up-gradient extent of the groundwater plume observed around MW-2A; and to provide an indication of the current extent of groundwater impact. A total of five (5) temporary groundwater wells were installed and sampled during the May 4, 2006 sampling effort. A total of seven (7) permanent wells were developed and sampled as part of the May 9, 2006 sampling event.

Analytical testing results did not identify the presence of any soil source areas upgradient of MW-2A. Additionally, groundwater concentrations were not elevated in the temporary monitoring wells to an extent indicative of an upgradient source of groundwater impact.

2.10 JUNE 2009 GROUNDWATER SAMPLING EVENT

A groundwater sampling event was conducted in June of 2009. A total of seven (7) groundwater monitoring wells (MW-2A to MW-4A, MW-6, and MW-7A to MW-9A) were sampled on June 17, 2009 in order to assess the condition of the groundwater plume at that time. Analytical testing results indicated a dramatic decrease in concentrations of regulated substances in monitoring well MW-2A, as well as decreasing concentrations of regulated substances in monitoring wells MW-3A and MW-4A as compared to the results of prior sampling events. Please refer to **Table 2** for those concentration comparisons.

2.11 AUGUST 17, 2009 MEETING WITH THE GEPD

Representatives of Peachtree and Hull met with the GEPD on August 17, 2009 to discuss the approval of the soil CSR submitted in February 2004 and revised in December 2006, and the status of the Groundwater Assessment Report submitted in July 2006. A copy of the June 2009 groundwater sampling data was also provided to the GEPD during that meeting, and groundwater corrective action utilizing a Monitored Natural Attenuation (MNA)

approach was discussed as a potential corrective action alternative for addressing impacted groundwater at the Site.

2.12 November 16, 2009 GEPD Comment Letter and Responses

The GEPD issued a letter on November 16, 2009 with technical comments on the July 2006 Groundwater Assessment Report and the June 2009 groundwater data provided during the August 17, 2009 meeting. The GEPD requested that the comments be addressed in a revised CAP by January 15, 2010. The January 13, 2010 response stated that Hull was currently evaluating the most effective corrective action alternatives to address impacted groundwater at the Site. Hull also provided a Supplemental Response to the November 16, 2009 Comments, dated January 29, 2010 which provided more detail on a proposed CAP employing MNA as a remedy, and a schedule for implementation of the revised CAP. On February 11, 2010, the GEPD approved the submittal of a groundwater CAP that addressed the GEPD comments of November 16, 2009.

2.13 Peachtree Environmental (Groundwater Corrective Action Plan Addendum, October 2010)

A groundwater CAP Addendum was submitted to the GEPD on October 14, 2010. The CAP summarized previous assessment and corrective action efforts, evaluated risk relative to current groundwater conditions, established corrective action objectives, evaluated and selected an applicable remedial technology, and proposed a schedule for monitoring and reporting corrective action progress. The evaluation of applicable remedial technologies led to the selection of Monitored Natural Attenuation (MNA) to address groundwater impacts at the Site.

The October 2010 CAP Addendum has not been commented on by the GEPD to date. Nonetheless, Hull implemented the semi-annual groundwater sampling evaluation to monitor the geometry and concentration of the groundwater plume. This data will be summarized and discussed as part of this VRP application. This application is being submitted in place of the Annual Groundwater Monitoring Report as outlined in the 2010 CAP Addendum Schedule.

3.0 CONCEPTUAL SITE MODEL

Detections of potentially regulated substances at the former Loef Facility were initially reported to the GEPD in February 1995. The Hazardous Substance Release Notification/Reporting Form indicated the following regulated substances were detected above the soil Notification Concentrations (NCs):

- Copper, Lead, Manganese, PCBs, Silver, and Zinc.

The following substances were also reported as exceeding the groundwater notification concentrations:

- Barium, Trichloroethene (TCE), and Xylene.

The GEPD utilized the data provided in the February 1995 Release Notification to evaluate groundwater and on-Site exposure pathway scores via the Reportable Quantities Screening Method (RQSM). The groundwater pathway score was calculated to be 4.88 and the onsite exposure pathway score for soil was calculated to be 55.56. These scores were compared to threshold scores of 10 for groundwater and 20 for on-site exposure to evaluate the need for corrective action and the listing category under the HSRA Regulations for the Site (i.e., Class I, Class II, Class III or Class IV). The VRP Property was listed on the HSI for on-Site exposure as a Class II Site on June 9, 1995. The HSI number for the VIRP Property is 10376.

Various investigations of the horizontal and vertical extent of soil and groundwater impact and have been conducted at the VIRP Property dating back to 1995. During that time period, corrective measures were also implemented to bring impacted media (principally soil, but groundwater also) into compliance with applicable RRS. The data gathered over the course of the various assessment and corrective action activities was utilized to develop a Conceptual Site Model (CSM) for the VIRP Property. The CSM is illustrated on **Figure 3**.

3.1 REGIONAL AND SITE GEOLOGY

The VIRP Property lies within the Piedmont Physiographic Province of Georgia which is characterized by broad rolling upland or plateau underlain by a variety of metamorphosed plutonic, volcanic, and sedimentary rocks including gneiss, schist, amphibolite, and diabase and by un-metamorphosed granite plutons and diabase dikes. Regional stresses have warped the rocks into numerous folds and the sequence has been extensively faulted. The Property is situated in an area where the rock unit consists of thinly laminated muscovite gneiss that retains distinctive layering when weathered.

Rock units in this physiographic province generally range in thickness from less than 1,000 feet to possibly more than 10,000 feet. Bedrock in the area is generally covered by

unconsolidated material composed of saprolite, alluvium, and soil, collectively referred to as regolith. This material ranges in depth from 0 to approximately 200 feet. These soils are relatively porous and, depending on the thickness and topographic setting, have the potential to absorb and store large quantities of precipitation.

3.2 REGIONAL HYDROGEOLOGY

Groundwater in the Piedmont province occupies joints, fractures, and other secondary openings in the bedrock and pore spaces in the overlying regolith. Unweathered and unfractured bedrock in the area has very low porosity. Thus, the quantity of water that a rock unit can store and transmit to wells is determined by the number, capacity, and interconnection of the secondary openings. A previous production well located on the Site was completed to a depth 320 feet with a 6-inch diameter casing to 84 feet and a open rock borehole thereafter. Wells screened and/or completed to similar depths typically yield from 20 to 300 gallons per minute of water with well casing depths ranging from 16 to 200 feet.

3.3 VICINITY TOPOGRAPHY AND GEOLOGY

Topographic and geologic information regarding the VIRP Property has been obtained from past assessments. The topographic relief across the VIRP Property follows a northwest to southeast gradient with elevations of approximately 720 feet above mean sea level (AMSL) at the northern property boundary to approximately 695 feet AMSL at the southeastern property boundary. A USGS Topographic Map is provided as **Figure 4**.

Native soils across the VIRP Property consist primarily of sandy and clayey silt. The developed portions of the Site have varying thicknesses of fill on top of native soils. Based on the construction details of the aforementioned production well, the depth to bedrock is greater than 50 feet.

3.4 VICINITY HYDROGEOLOGY

According to the Groundwater Pollution Susceptibility Map of Georgia [2], the VIRP Property is located in an area classified as having a low groundwater pollution susceptibility. Hydraulic characteristics of the VIRP Property have been evaluated in prior groundwater assessments.

Generally, the topography slopes from northwest to southeast across the VIRP Property with higher elevations of approximately 720 feet AMSL occurring near the northern property boundaries and the lower elevation of approximately 695 feet AMSL located on the southeast property boundary, in the vicinity of the CSX rail line. Measured depths to groundwater are generally consistent with topographic elevation and slope. During the

[2] Groundwater Pollution Susceptibility Map of Georgia, Georgia Department of Natural Resources, Environmental Protection Division and The Georgia Geological Survey, 1970

August 2011 groundwater monitoring event, depths to groundwater as measured from the top-of-casing in each of the shallow monitoring wells ranged from 16.87 feet (MW-8A) to 26.15 feet (MW-3A). The resulting groundwater flow direction at the VIRP Property, based on depth to groundwater gauging, suggests an overall southeasterly flow.

The principal water bearing zone appears to be a continuous, unconfined aquifer extending in depth up to approximately 50 feet below ground surface. As evidenced through the installation of various monitoring wells and soil borings at the VIRP Property, soils generally consist of sandy silty clays grading to a more sandy silty matrix which were saturated with groundwater. There are also surficial backfill areas where non-native soils and debris have been observed. As typical in the Piedmont Physiographic Providence, zones of partially weathered rock and saprolite are generally encountered prior to the top of competent bedrock. A cross-section has been prepared for the VIRP Property based upon information obtained during prior assessments. A cross-section location map is included as **Figure 5**, while **Figures 6A** and **6B** depict cross-sections A-A' and B-B', respectively.

Slug tests were performed in June 2010 to evaluate site-specific hydrologic characteristics. The calculated hydraulic gradient, based upon the 2010 hydrogeologic characterization, was 0.0145 feet/foot. The groundwater flow direction was also estimated from groundwater elevations measured at the property to be in a southeasterly direction. The hydraulic conductivity was estimated to average 4.44×10^{-4} cm/s (1.261 ft/day). Based on the gradient and hydraulic conductivity, groundwater in the surficial water bearing zone is estimated to be traveling to the southeast at a horizontal velocity of 0.091 feet per day or approximately 33.215 feet per year.

3.5 REGULATED SUBSTANCES RELEASED

As a result of previous investigation activities, the following regulated substances have been detected/reported at concentrations exceeding the laboratory method detection limit during past and current VIRP Property assessment events:

SOIL

Inorganic Constituents:
Antimony (CAS No. 7440360)
Beryllium (CAS No. 7440417)
Cadmium (CAS No. 7440439)
Copper (CAS No. 7440508)
Lead (CAS No.7439921)
Silver (CAS No.7440224)
Zinc (CAS No.7440666)

Organic Constituents:
Polychlorinated Biphenyls (CAS No. 80386)
Trichloroethene (CAS No. 79016)

GROUNDWATER

Inorganic Constituents:

Organic Constituents:

Lead (CAS No.7439921)	1,1,1-Trichloroethane (CAS No. 71556) 1,1,2-Trichloroethane (CAS No. 70005) 1,1-Dichloroethane (CAS No. 75343) 1,1-Dichloroethene (CAS No. 75354) 2-Butanone (CAS No. 78933) 2-Hexanone (CAS No. 591786) 4-Methyl-2-Pentanone (CAS No. 108101) Acetone (CAS No. 67641) Benzene (CAS No. 71432) Carbon Disulfide (CAS No. 75150) Chloroform (CAS No. 67663) cis-1,2-Dichloroethene (CAS No. 156592) Ethylbenzene (CAS No. 100414) Methyl Tert-butyl Ether (CAS No. 1634044) Tetrachloroethene (CAS No.127184) Toluene (CAS No. 108883) Trichloroethene (CAS No. 79016) Trichlorofluoromethane (CAS No. 75694) Vinyl Chloride (CAS No. 75014) Xylene, Total (CAS No. 1330207)

3.6 POTENTIAL HUMAN AND ECOLOGICAL RECEPTOR EVALUATION

An environmental exposure pathway consists of four elements:

1) chemical source and release mechanisms;
2) environmental transport media;
3) a receptor at the exposure point, and;
4) an exposure route at the exposure point.

The following sections describe each of the elements as they exist at the VIRP Property.

3.6.1 Chemical Source and Release Mechanisms

Several areas which have contributed to a release of COCs at the VIRP Property have been identified in previous characterization work and were remediated during soil CAP activities completed in 2002/2003. The quantity and nature of releases associated with the identified potential sources are unknown since they likely occurred over a long period of time rather than from one or more discrete events. The COCs identified for the VIRP Property are principally associated with scrap metal processing operations.

Operations at the VIRP Property can generally be divided into the following areas which have been designated as potential COCs source areas. Soil CAP implementation activities were put into effect extending over the time period of November 2002 to October 2003 and resulting in the removal of a total of 43,108

tons of soils exceeding regulatory standards. Specifically, former soil source area details are as follows:

- **Area 1: Oil / Water Separator Area** - Lead and Copper concentrations were identified in excess of their respective Type 3 RRS within the Oil / Water Separator Area (Area 1). An estimated total of **271** tons of soil exceeding RRS were removed from Area 1 during CAP implementation activities.

- **Area 2: Eastern Runoff Area** - Lead, Copper and Zinc were detected at concentrations in excess of the approved Type 3 RRS within the Eastern Runoff Area (Area 2). An estimated total of **459 tons** of soil were removed from Area 2 during CAP implementation activities.

- **Area 3: Fluff Storage Area** - No COCs, including Lead, were detected above Type 3 RRS in soil samples collected from Area 3 soil borings utilized to design soil corrective action activities. This area was the focal point of the previous corrective action activities completed in 1995 during which a total of **1,500 tons** of soil were excavated and removed from the Site. Therefore, no additional corrective action activities were required for this area of the Facility.

- **Area 4: Shredder Area** - Antimony, Lead, Copper, Zinc, and PCBs were detected at concentrations in excess of the approved Type 3 and Type 4 RRS within the Shredder Area (Area 4). TCE was also detected above the laboratory detection limit, but below the applicable RRS. An estimated total of **23,060 tons** of impacted soil exceeding applicable RRS were removed from Area 4 during CAP implementation activities.

- **Area 5: Baler Area** - Antimony, Cadmium, Copper, Zinc, and PCBs were detected above their respective Type 3 and Type 4 RRS within the Baler Area (Area 5). An estimated total of **11,350 tons** of impacted soil exceeding applicable RRS were removed from Area 5 during CAP implementation activities.

- **Area 6: Southern Runoff Area** - Lead and Zinc were detected at concentrations in excess of the approved Type 3 RRS within the South Run-Off Area (Area 6). An estimated total of **2,200 tons** of impacted soils exceeding applicable RRS were removed from Area 6 during CAP implementation activities.

The former source areas described in the preceding paragraphs are depicted on **Figure 7**.

3.6.2 Environmental Transport Media

3.6.2.1 Soil and Soil Vapor

In general, the organic constituents tend to have a high affinity for binding with the organic fraction of soils and relatively low solubilities in water. Therefore, in soils, these compounds tend to be transmitted through the soil via surface water infiltration and diffusion. Volatilization of some lighter compounds may also occur and accumulate in soil vapor. Soil vapor may then intrude into cracks, pipe penetrations, and other conduits through building slabs and into the interior of structures.

Surface and subsurface soils at or near identified potential sources appear to be the first medium impacted by the release of constituents. Aqueous phase liquids (APLS) and non-aqueous phase liquids (NAPLS), if previously present at the VIRP Property, may have also migrated through the subsurface. The migration of these constituents occurs principally along preferential pathways where changes in permeability occur. These types of areas include utility lines, former landfill areas, backfilled areas, or areas where partially weathered rock and/or sandy-type soils are present.

3.6.2.2 Groundwater

Those chemicals with higher water solubility values and low water/carbon partitioning coefficients are more likely to be dissolved into groundwater, while those with high water/carbon partitioning coefficients are much more likely to become bound to the organic fraction of soils. Chemicals with relatively high vapor pressures are likely to volatilize when they come in contact with air.

The depth to groundwater in the vicinity of the VIRP Property is located approximately 15 to 25 feet below land surface and is principally flowing in a southeasterly direction. No points of groundwater withdrawal are believed to be located within one mile or in a downgradient direction relative to the VIRP Property and groundwater flow direction. The nearest public water supply well was identified to be located just under 2 miles southeast of the VIRP Property. In addition, a public drinking water intake on the Oconee River was identified approximately 2.7 miles west of the VIRP Property.

3.6.2.3 Surface Water Route

The nearest named surface water body is East Fork Trail Creek located approximately 1,000 feet southeast of the VIRP Property's southern property boundary.

3.6.3 Potential Routes of Migration

3.6.3.1 Soils and Soil Vapor

Surface and subsurface soils at or near identified sources appear to be the first medium impacted by the release of COCs. Aqueous phase liquids and non-aqueous phase liquids, if previously present at the site, may have also migrated through the subsurface along preferential pathways where changes in permeability occur. These types of areas include utility lines, backfilled areas, or areas where partially weathered rock and/or sand are present. Likewise, volatilization of COCs into the air spaces in soils may form a vapor plume that can potentially enter building spaces via cracks, penetrations in the slab, or other structural imperfections.

Erosion of surface soils can be caused by wind, rain (surface water) and human disruptions (i.e., surface water discharges, etc.). If present in exposed surface soils, migration of COCs from eroded surface soils would follow surface topography (except for wind carried particulates) to the primary drainage pathway (i.e., overland flow across unimproved areas of the site). Prior corrective action activities have removed former impacted soils exceeding applicable RRS and have therefore eliminated this potential migration route.

3.6.3.2 Groundwater

Another principal mechanism of migration of constituents away from the former source area, based upon field investigations, has been groundwater.

The groundwater immediately downgradient from the VIRP Property is principally flowing in a southeasterly direction across the top of weathered and competent bedrock surfaces beneath the surface soils. No points of drinking water withdrawal are known to be located within one mile of the VIRP Property, nor in a downgradient direction relative to the VIRP Property and the groundwater flow direction.

3.6.3.3 Surface Water

A portion of the groundwater flow from the VIRP Property appears to travel in a southeasterly direction to discharge within East Fork Trail Creek, approximately 1,000 feet southeast of the VIRP Property.

To date, no surface water samples have been collected from East Fork Trail Creek. However, based on groundwater fate and transport modeling and historic non-detect concentrations of COCs at downgradient monitoring wells MW-7A, MW-8A, and MW-9A; it is unlikely that East Fork Trail Creek has been or ever will be impacted by past releases at the VIRP Property.

3.6.4 Potential Receptors

Potential human receptors identified in and around the VIRP Property are:

1) On-site workers;
2) Local residents;
3) Visitors;
4) Trespassers; and
5) Utility/construction workers.

Long term exposures would be limited to onsite workers. All others would constitute short term receptors. On the VIRP Property, exposures would be consistent with non-residential scenario described in the HSRA rules for Type 3 or 4RRS.

3.6.5 Potential Exposure Points

Exposure points include any area where COCs in the soils, soil vapor, groundwater, and surface seeps that may be accessible to human or ecological receptors. A brief summary of each exposure point is presented below.

3.6.5.1 Soils and Soil Vapor

Surface soils include those soils in the upper 0 to 2 feet of the ground. However, as indicated previously, engineered surface covers (i.e., concrete) exists in areas where previously impacted soils were identified. Such soils (as discussed in Section 3.6.1) have been physically removed from the property and disposed of off-site.

COCs were also previously detected in subsurface soils (i.e., deeper than 2 feet bgs). Access to these soils would be limited to construction/repair work associated with underground utilities. Such contact would be limited to short duration commercial/industrial adult exposure scenarios. Again, however, such soils have been physically removed from the property and disposed off-site, therefore, no exposure point exists.

Soil vapor can originate from volatilization from a soil source area or from volatilization from impacted groundwater. Soil vapors may be present in the unsaturated, vadose-zone soil beneath the scrap metal staging areas. However, no occupied structures exist over or downgradient from these areas of impact. As such, the soil vapor exposure pathway is incomplete.

3.6.5.2 Groundwater and Vapor Intrusion Risk

Groundwater generally exists at depths ranging from approximately 15 to 25 feet beneath the ground surface. Drinking water standards were exceeded in three (3) monitoring wells (MW-2A, MW-3A, and MW-4A) of the seven (7) monitoring wells sampled on the VIRP Property in August of 2011. However, no groundwater points of withdrawal are known from this shallow depth, while the area and surrounding vicinity is supplied with a municipal drinking water source. As such, an exposure point does not exist for ingestion of groundwater.

Soil vapor can originate from volatilization from impacted groundwater. However, no occupied structures exist over or downgradient from these areas of impact. As such, the soil vapor exposure pathway from groundwater volatilization is incomplete.

3.6.5.3 Surface Water

As previously discussed, no surface water samples have been collected from East Fork Trail Creek. However, based on groundwater fate and transport modeling and the historic non-detect concentrations of COCs at downgradient monitoring wells MW-7A, MW-8A, and MW-9A; it is unlikely that East Fork Trail Creek has been or ever will be impacted by past releases at the VIRP Property. As such, an exposure point does not exist for ingestion of surface water.

3.6.6 Survey of Potential Receptors

The VIRP Property area is considered an urbanized/industrialized area. The closest potential receptor is considered East Fork Trail Creek, which flows from the northeast to southwest and is located approximately 1,000 feet downgradient of the VIRP Property.

The VRP specifies in Section 12-8-108(4) that concentrations of regulated constituents detected on a VIRP Property shall be measured and evaluated at a “point of demonstration” (POD) well. The purpose of the POD well is to demonstrate that groundwater concentrations are protective of any established downgradient point of exposure. Currently, monitoring well MW-9A is designated as the POD well at the VIRP Property.

3.6.6.1 Human Health Risk Evaluation

The August 2011 groundwater sampling data indicates that groundwater at the VIRP Property contains detectable levels of regulated substances. As such, a preliminary risk evaluation will be conducted to evaluate whether constituents detected at the VIRP Property pose a risk to human receptors. The evaluation of risk to human receptors will generally involve four (4) steps:

1. Data evaluation and identification of constituent of potential concern (COPC);
2. Exposure Assessment;
3. Toxicity Assessment; and
4. Risk Characterization.

3.6.6.2 Ecological Risk Evaluation

No ecological receptors exist on the VIRP Property. The nearest named surface water body is East Fork Trail Creek located approximately 1,000 feet from the southeastern corner of the VIRP Property.

Predictive groundwater fate and transport modeling was completed utilizing the August 2011 data. The model indicates that the POD well will not be impacted by COCs at concentrations exceeding applicable VRP standards. Based on the results of the groundwater fate and transport model, it may also be concluded that the East Fork Trail Creek would not be impacted by COCs detected in groundwater on the VIRP Property.

Further discussion regarding the groundwater fate and transport modeling activities are presented in **Section 4.3.**

4.0 PRELIMINARY VRP PROPERTY INVESTIGATION PLAN

Areas of the VIRP Property have been previously investigated and remediated to applicable regulatory standards (i.e., Type 3 and 4 RRS) during soil corrective action activities implemented from November 2002 to September of 2003. In addition, the extent of soil impacts were defined to background levels in subsequent investigations. A CSR for soil documenting compliance with Type 3 and 4 RRS and delineation to background levels was submitted to the GEPD on February 24, 2004 with revisions through December 19, 2006. The CSR was formally accepted by the GEPD on November 16, 2009. As such, no further soil delineation or corrective action activities are planned as part of this VIRP and Application.

4.1 PRELIMINARY GROUNDWATER INVESTIGATION

Peachtree completed groundwater sampling activities at the VIRP Property in August 2011. This data has been utilized for the preparation of figures and tables depicting the delineation of COC-impacted groundwater. Water level gauging and groundwater sampling activities were conducted on August 4, 2011.

Groundwater monitoring wells were sampled to evaluate the size and concentration of the existing groundwater plume, as well as groundwater MNA parameters such that corrective measures could be designed to comply with applicable RRS. Peachtree collected groundwater samples from the seven (7) existing shallow water-bearing zone monitoring wells. **Figure 2** depicts the locations of existing monitoring well locations. The August 2011 groundwater sampling event included the following monitoring wells and analytical parameters:

- MW-2A: VOCs and MNA Parameters;
- MW-3A: VOCs and MNA Parameters;
- MW-4A: VOCs and MNA Parameters;
- MW-6: VOCs and MNA Parameters;
- MW-7A: VOCs;
- MW-8A: VOCs; and
- MW-9A: VOCs.

The measurement of MNA parameters in monitoring well MW-2A, MW-3A, and MW-4A was conducted due to historic detections of regulated substances such that a natural attenuation based corrective action approach could be evaluated. Monitoring well MW-6 was evaluated in order to have a background MNA monitoring location to compare parameters to those in the groundwater plume.

4.1.1 Groundwater Elevation

Water level information from the August 2011 sampling event is summarized on **Table 1**. The water level data was used to determine the volume of water to be purged from each well prior to sample collection, as well as the static groundwater elevation in each well.

Prior to well purging and sampling, the depth to water in each monitoring well was measured from the top of the casing using an electronic water level indicator. Each well measurement was recorded to one-hundredth (1/100) of a foot. The well data was recorded on field logs which are included in the Monitoring Well Purging & Sampling Information Sheets of **Appendix B**. The groundwater elevation of each monitoring well was utilized to prepare a potentiometric map for the August 2011 sampling event, included as **Figure 8**.

4.1.2 Well Purging

Well purging and sampling activities were conducted in accordance with the U.S. Environmental Protection Agency (EPA) Science and Ecosystem Support Division (SESD) Operating Procedure (OP) for Groundwater Sampling (SESDPROC-301-R1, November 2007; Section 3.2.1.2). Prior to sample collection, each of the wells was purged of a minimum of three (3) well volumes to remove stagnant water from the screened portion of the well and to allow for the collection of groundwater samples that are representative of the surrounding formation. In the event that a monitoring well was purged dry, a sample was collected subsequent to recharge. Individual monitoring well purge volumes were calculated as follows:
Depth of well (ft) - Static water level (ft) = Column of water (ft)

Column of water (linear ft) x 0.17 gallons x 3 = Gallons of water to purge

In instances where a sufficient quantity of water was present, purging was accomplished using a clean stainless steel adjustable flow rate submersible pump equipped with one-time use teflon-coated disposable tubing to remove a minimum of three well volumes of water and until the pH, temperature and specific conductivity had equilibrated in each well. In instances where an insufficient quantity of water was present to allow the use of the submersible pump (i.e., MW-1 during the 2011 investigation activities), a one-time use disposable teflon bailer equipped with teflon-coated wire lead was used to purge/collect a representative sample. During the well purging process, discrete samples were collected at predetermined intervals and analyzed for field parameters which included temperature, pH, specific conductance, turbidity, dissolved oxygen (DO), total dissolved solids (TDS), and oxidation-reduction potential (ORP). The results of these measurements are presented on the Field Water Quality Sampling Forms in **Appendix B**. The wells were purged of a minimum of three well volumes, until the field parameters stabilized, or until the wells were purged dry, whichever occurred first.

4.1.3 Sampling Procedures

Groundwater sampling was conducted in accordance with procedures outlined in SESD Operating Procedures for Groundwater Sampling (SESDPROC-301-R1, November 2007; Section 4.3.1.3). Groundwater samples were collected following well purging and appropriate recharge. Copies of the data recorded during purging activities are included in the Field Water Quality Sampling Forms shown in **Appendix B**.

Required sample volumes, types of containers, sample preservatives, and holding times followed guidelines presented in SESD guidelines, November 2007. Sample containers were labeled and placed in iced containers for storage to maintain a temperature of 4° C. Chain-of-Custody procedures were used to record and document sample times and changes of possession.

4.1.4 Decontamination Procedures

All downhole and/or re-usable field monitoring and/or sampling equipment was properly decontaminated between monitoring/sampling locations in accordance with the SESD Operating Procedures for Field Equipment and Decontamination (SESDPROC-205-R1, November 2007; Sections 3.3, 3.5, and 3.6).

4.1.5 Analytical Procedures

Samples collected from monitoring wells were analyzed for volatile organic constituents (VOCs) via EPA Method 8260 and Lead via EPA Method 6010. MNA parameters included the following analytes:

- Total Organic Carbon
- Sulfate
- Sulfide
- Methane
- Ethane
- Ethene
- Ferrous Iron
- Dissolved Oxygen
- Nitrate

After collection, all sample coolers were delivered to Analytical Environmental Services, Inc. (AES) located in Atlanta, Georgia under proper Chain-of-Custody protocol for laboratory analyses for Constituents of Concern.

4.1.6 Results

Fourteen (14) COCs were reported at concentrations in excess of the laboratory method detection limit in groundwater samples collected at the VIRP Property during the August 2011 sampling event. These constituents included:

- 1,1-Dichloroethane
- 1,1-Dichloroethene
- 2-Butanone
- 2-Hexanone
- 4-methyl-2-pentanone
- Acetone
- Benzene
- Carbon Disulfide
- cis-1,2-Dichloroethene
- MTBE
- Toluene
- Trichloroethene
- Vinyl Chloride
- m, o, and p-Xylene (Total Xylene)

Horizontal Extent of Impacted Groundwater

The COCs detected in groundwater during the August 2011 sampling event are depicted on **Figure 9.** The principal constituents of concern at the VRP Property are TCE (and its associated breakdown products), BTEX, and various petroleum related COCs. **Figures 10** and **11** depict isocontour maps for TCE (and its associated breakdown products) and BTEX, respectively. A summary of the historic groundwater analytical data findings is provided in **Table 2**. MNA parameters analytical results are summarized in **Table 3**. A copy of the August 2011 analytical testing results and accompanying chain-of-custody documentation is provided in **Appendix C**.

Based on both historical groundwater and the August 2011 groundwater analytical results, further horizontal delineation will be required east-southeast of the VIRP Property (downgradient from MW-4A), and west of the VRP property from MW-2A, and north-northeast of MW-4A. Discussions and data associated with vertical extent delineation activities will be provided in subsequent semi-annual groundwater monitoring reports and the final VIRP CSR.

Vertical Extent of Impacted Groundwater

The vertical extent of impacted groundwater has yet to be defined at the VIRP Property. Discussions and data associated with vertical extent delineation activities will be provided in subsequent semi-annual groundwater monitoring reports and the final VIRP CSR.

4.2 VRP PROPERTY DELINEATION STANDARDS

The Georgia VRP outlines the standards for horizontal and vertical delineation of regulated substances in soil and groundwater utilizing the following criteria:

(A) Concentrations from an appropriate number of samples that are representative of local ambient or anthropogenic background conditions not affected by the subject site release;

(B) Soil concentrations less than those concentrations that require notification under standards promulgated by the Board pursuant to Part 2 of this article;

(C) Two times the laboratory lower detection limit concentration using an applicable analytical test method recognized by the United States Environmental Protection Agency, provided that such concentrations do not exceed all cleanup standards;

(D) For metals in soils, the concentrations reported for Georgia undisturbed native soil samples as reported in the United States Geological Survey (USGS) Open File Report 8 1-197 (Boerngen and Shacklette, 1981), or such later version as may be adopted by rule or regulation of the board; or

(E) Default, residential cleanup standards.

The VRP statute also provides that the provisions of subparagraphs (B) and (C) of the standards listed above shall not be used if the concentrations are higher than as provided in item (E), the default Type 1 residential cleanup criteria.

4.2.1 Soil Delineation Standards

Soil CAP was implemented from November 2002 to October 2003 and resulted in the removal of a total of 43,108 tons of soils exceeding regulatory standards. A CSR for soil was submitted to the GEPD in February of 2004 with supplemental CSR information submitted in February of 2005. The CSR certified compliance with non-residential Type 3 and Type 4 RRS for soils and EPD concurred that those standards were met in a letter dated November 16, 2009. In addition, soils were delineated to background concentrations for constituents of concern. As such, the delineation criteria for the VRP has been previously addressed as part of the CSR activities for soil and, as such, no further soil delineation activities are planned at this time as part of this VIRP.

4.2.2 Groundwater Delineation Standards

Nineteen (19) HSRA-regulated substances have been historically detected in groundwater samples collected at the VIRP Property. The resulting groundwater delineation standards are provided on the table on the following page:

GROUNDWATER DELINEATION STANDARDS

REGULATED CONSTITUENT	HIGHEST DETECTED CONCENTRATION (AUGUST 2011)	TYPE 1 RRS (µG/L)
1,1-Dichloroethane	21 (MW-2A)	4,000
1,1-Dichloroethene	**18 (MW-2A)**	**7**
1,1,1-Trichloroethane	<5	200
1,1,2-Trichloroethane	<5	5
2-Butanone	150 (MW-2A)	2,000
2-Hexanone	10 (MW-2A)	NR
4-Methyl-2-Pentanone	79 (MW-2A)	2,000
Acetone	630 (MW-2A)	4,000
Benzene	**29 (MW-4A)**	**5**
Carbon Disulfide	7.2	4,000
Chloroform	<5	80
cis-1,2-Dichloroethene	310	70
Ethylbenzene	<5	700
Methyl-tert-butyl ether (MTBE)	38	NR
Toluene	11	1,000
Tetrachloroethene (PCE)	<5	5
Trichloroethene (TCE)	**680**	**5**
Trichlorofluoromethane	<5	2,000
Vinyl Chloride	**55**	**2**
Xylenes (o,m,p)	13.9	10,000

Notes:
Bolded constituents exceed the Type 1 RRS.
NR - Not regulated.
"-" Risk reduction standard not calculated.

The following HSRA-regulated substances were detected above applicable groundwater RRS during the August 2011 sampling event:

- 1,1-Dichloroethene, Benzene, Trichloroethene, and Vinyl Chloride.

No HSRA-regulated substance were detected above laboratory reporting limits at the POD well (MW-9A).

4.2.3 Point of Demonstration Monitoring for Groundwater

The Georgia Voluntary Remediation Program Act specifies in Section 12-8-108(4) that concentration of regulated constituents detected on a VIRP Property shall be measured and evaluated at a "point of demonstration" (POD) well. The purpose of the POD well is to demonstrate that groundwater concentration are protective of any established downgradient point of exposure. As previously stated, monitoring well MW-9A is designated as the POD well at the VIRP Property.

4.3 GROUNDWATER PREDICTIVE FATE & TRANSPORT MODELING AND CORRECTIVE ACTION EVALUATION ACTIVITIES

Pusuant to the Georgia Voluntary Remediation Act, (O.C.G.A. § 12-8-100, et seq. (the "Act"), the Point of Demonstration Monitoring for Groundwater is defined as "concentrations of site-specific constituents of concern in groundwater shall be measured and evaluated at a point of demonstration well to demonstrate that groundwater concentrations are protective of any established downgradient point of exposure", where a Point of Exposure is defined as the nearest of the following locations:

- The closest existing downgradient drinking water supply well;
- The likely nearest future location of a downgradient drinking water supply well where public supply water is not currently available and is not likely to be made available within the foreseeable future; or
- The hypothetical point of drinking water exposure located at a distance of 1,000 feet downgradient from the delineated site contamination.

The Act further defines Point of Demonstration Wells as "monitoring wells located between the source of site groundwater contamination and the actual or estimated downgradient point of exposure".

Field evidence indicates that groundwater may intercept a potential point of exposure 1,000 feet downgradient (East Fork Trail Creek). Groundwater predictive fate and transport modeling activities were performed to predict contaminant plume characteristics over time. The following sections provide information of the groundwater predictive fate and transport modeling activities and results.

4.3.1 Groundwater Predictive Fate & Transport Modeling

BIOCHLOR Natural Attenuation Decision Support System, Version 2.2, dated March 2002 is a screening model that simulates remediation by natural attenuation (RNA) of dissolved solvents in groundwater. The software, programmed in the Microsoft© Excel spreadsheet environment and based on the Domenico analytical solute transport model, has the ability to simulate 1-D advection, 3-D dispersion,

linear adsorption, and biotransformation via reductive dechlorination (the dominant biotransformation process at most chlorinated solvent sites). Dissolved solvent degradation is assumed to follow a sequential first order decay process.

BIOCHLOR includes three different model types:

1. Solute transport without decay,
2. Solute transport with biotransformation modeled as a sequential first-order decay process,
3. Solute transport with biotransformation modeled as a sequential first-order decay process with 2 different reaction zones (i.e., each zone has a different set of rate coefficient values).

Groundwater Services, Inc., Houston, Texas, developed BIOCHLOR for the Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division at Brooks Air Force Base. The mathematical technique to solve the coupled reactive transport equations was developed by researchers formerly with the Battelle Pacific Northwest National Laboratory.

Peachtree performed groundwater predictive fate & transport modeling activities utilizing BIOCHLOR for the COC-impacted plume as part of the 2010 CAP Addendum submission. Peachtree repeated the model utilizing the August 2011 groundwater analytical testing data model types 1 and 2 discussed above. The area modeled extended from the source area well (i.e., MW-2A which is the well with the highest noted impacts) through the farthest downgradient well (MW-8A) which does not have any COC impacts based on analytical testing data), and to the downgradient property boundary located approximately 675 feet from well MW-2A. The premise being modeled was the evaluation of the groundwater plume and whether the remaining impacted groundwater would attenuate over time and not migrate to or beyond the downgradient property boundary at concentrations exceeding any applicable RRS. Newly obtained analytical testing data from the August 2011 sampling event were utilized as input values to assist with the calibration of the model.

As a preliminary part of the groundwater predictive fate & transport modeling activities, Peachtree completed the natural attenuation screening protocol scoring sheet which is included as part of the BIOCHLOR model. This scoring sheet utilizes various chemical and geochemical field parameter input parameters derived from analytical testing and/or field measurements collected in August 2011 to evaluate whether or not the VRP Property is conducive for natural attenuation. Input parameters include the following:

- Oxygen, Nitrate, Iron II, Sulfate, Sulfide, Methane, Oxidation Reduction Potential (ORP), pH, Total Organic Carbon (TOC),

Temperature, Carbon Dioxide, Alkalinity, Chlorde, Hydrogen, Volatile Fatty Acids, BTEX, PCE, TCE, DCE, VC, DCA, Chloroethane, Ethene/Ethane, Chloroform, and Dichloromethane.

The analytical results of the natural attenuation parameter inputs are summarized in **Table 3**. Based on the inputs, a score is derived indicating the potential or favorability for natural attenuation processes to occur at the VIRP Property. Scoring ranges are as follows:

INTERPRETATION	SCORE
Inadequate evidence for anaerobic biodegradation of chlorinated organics =	0 - 5
Limited evidence for anaerobic biodegradation of chlorinated organics =	6 - 14
Adequate evidence for anaerobic biodegradation of chlorinated organics =	15 - 20
Strong evidence for anaerobic biodegradation of chlorinated organics =	> 20

Monitoring well MW-2A, the most highly impacted well, was utilized in the natural attenuation scoring. The resulting score, based on input values, was 25; thus indicating strong evidence exists for anaerobic biodegradation of chlorinated organics at the site. The natural attenuation screening protocol inputs and output is included as **Appendix D**.

A series of slug tests were conducted on existing monitoring wells MW-2A, MW-4A, and MW-9A as part of the June 2010 sampling activities; the data from which was also utilized as input parameters as part of the groundwater modeling activities. Initially, static water levels were measured within each well prior to performing slug testing activities. A Hermit Model 3000 datalogger with a pressure transducer was then lowered into the well along with a solid-core slug equipped with nylon cord. The water was then allowed to return to static conditions prior to initiating the slug test. Upon the return of water to static conditions, the slug test was initiated by quickly removing the solid-core slug from the well with the rate of groundwater recovery being measured using the datalogger and pressure transducer until water levels approached or returned to static conditions.

Resulting data obtained during the performance of the rising head slug testing was evaluated using the AQTESOLV© Aquifer Test Design and Analysis Computer Software.

This information, together with published and/or available literature, resulted in the following estimated and/or calculated aquifer parameters for shallow monitoring wells:

Aquifer Thickness, b	=	50 feet (estimated)
Hydraulic Conductivity, K	=	1.261 feet/day (average of MW-2A, MW-4A & MW-9A)
Hydraulic Gradient, $\frac{dh}{Dl}$	=	0.0145 feet/foot (between MW-2A & MW-8A)
Porosity, n	=	0.2 (estimated)

The hydraulic gradient is determined by dividing the piezometric difference between two wells by the horizontal difference between those wells. Based on groundwater measurements collected from all Site monitoring wells, the groundwater flow at the Site was determined to generally be in a southeasterly direction.

The hydraulic gradient for the surficial water bearing zone was calculated between monitoring wells MW-2A and MW-8A. The calculated hydraulic gradient was as follows:

Surficial water bearing zone gradient
689.20 - 683.93 / 364.59 or 0.0145 feet/foot

The estimated horizontal velocity (Vh) was calculated for the surficial water bearing zone using the following form of Darcy's Equation:

$$Vh = K_i / n$$

Where:

K	=	estimated hydraulic conductivity of the soils within the aquifer at the Property (average of MW-2A, MW-4A, and MW-9A)
i	=	estimated hydraulic gradient determined from the groundwater elevations measured in the wells across the Property (average value as described above)
n	=	estimated effective porosity of the soils within the aquifer at the Property (based on published literature)

Based on the gradient and hydraulic conductivity, groundwater in the surficial water bearing zone is estimated to be traveling to the southeast at a horizontal velocity of 0.091 feet per day or approximately 33.215 feet per year.

Table 4 summarizes the results of slug tests performed during the June 2010 sampling event and indicates the depth to which each well was screened. **Appendix E** contains copies of Peachtree's time and head data and graphs from the slug tests.

Utilizing the contaminant plume concentration analytical testing data, aquifer slug testing and MNA parameter results as part of the BIOCHLOR modeling activities, yielded model results that indicated that with biotransformation (i.e., reductive dechlorination) the COC-impacted groundwater at well MW-2A would not migrate to the POD well MW-9A or past the downgradient property boundary.

Based on historic groundwater analytical testing data, the concentrations of COCs within the area of impact have decreased over time. Historic trend graphs are included as **Appendix F**. We have therefore concluded that reductive dechlorination processes are indeed occurring at the VIRP Property and has been occurring historically since 2000 as evidenced by TCE and breakdown components reported during sampling activities. Based on the foregoing, no active means of corrective action is required for the COC-impacted groundwater plume.

Additional VIRP activities will include the delineation of the horizontal and vertical extent of groundwater impacts. Data from delineation activities will be utilized to determine if the groundwater fate and transport model still supports the conclusion that there are no exceedances or the RRS at the POD well. If the model is verified with the new data, Hull intends to prepare a CSR and request delisting. Should the data indicate that the RRS are exceeded at the POD well, then Hull will evaluate other corrective action alternatives.

BIOCHLOR model inputs and outputs are included as **Appendix D** to this report.

4.3.2 Corrective Action Alternatives Currently Under Consideration

Based on the August 2011 analytical data, 1,1-Dichloroethene, Benzene, Trichloroethene, and Vinyl Chloride were detected at the VIRP Property in excess of RRS. To the extent further assessment (vertical delineation of groundwater and horizontal delineation of groundwater east of the VIRP Property) identifies impacts requiring corrective action, the Applicant expects to consider natural attenuation as the remedial approach. Should the data be consistent with groundwater model predictions and no further corrective action is warranted, then Hull intends to submit a CSR and pursue delisting of the property. The proposed locations of the horizontal and vertical delineation monitoring well are depicted on **Figure 12**.

A schedule for completion of the horizontal and vertical delineation activities and updating of the CSM for the VIRP Property is presented in **Appendix G**.

5.0 SCHEDULE

Appendix G contains a schedule of implementation that includes dates for milestones, including semi-annual progress reports and submittal of a VIRP Compliance Status Report (CSR).

6.0 PREPARATION OF COMPLIANCE STATUS REPORT

A Compliance Status Report (CSR) will be prepared on behalf of the Applicant upon either: verification of the groundwater model subsequent to the completion of groundwater delineation activities; or at the conclusion of corrective action should data indicate that the RRS are exceeded at the POD well subsequent to delineation activities. The written report will consist of information in the format required for submission to the Georgia EPD and will include, at a minimum, the following:

- A description of each known source of release;
- A description of the Applicant's properties which are part of the VIRP Property (i.e. legal description of the area affected by the release);
- A summary of previously collected field and laboratory data;
- Delineation of the horizontal and vertical extent of on-property and off-property groundwater contamination to default residential cleanup standards or other applicable delineation criteria;
- Description of geologic and hydrogeologic conditions at the VIRP Property;
- A description of VIRP Property-specific human or environmental receptors and exposure pathways;
- A verification that the VIRP Property meets Risk Based Corrective Action remediation goals through a USEPA-recognized fate and transport model and groundwater sampling verification;
- Documentation of characterization, transportation, and disposal of impacted materials (if any); and
- A summary statement of the findings of the report including the Applicant's certification of compliance with the appropriate groundwater standards, within the VRP framework.

7.0 PROFESSIONAL CERTIFICATION

I certify that I am a qualified groundwater scientist 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 judgements regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by me or by a subordinate working under my direction.

William H. Lucas, III, P.G.
Georgia Professional Geologist
Registration Number 1255

A summary of Professional Geologists hours associated with the preparation of this VIRP Report are included in **Appendix H**.

VOLUNTARY REMEDIATION PLAN APPLICATION
FORMER LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION MEASUREMENTS

Well Number	Date Measured	TOC Elevation	Screen Interval (BGS)	Depth to Water (BTOC)	Water Table Elevation
MW-2A*	6/17/2009	710.20	33.15 to 23.15 FT	22.87	687.33
	6/24/2010			21.00	689.20
	2/24/2011			18.05	692.15
	8/4/2011*	706.70	20.0 to 30.0 FT	18.00	688.70
MW-3A	6/17/2009	712.23	20.0 to 30.0 FT	26.79	685.44
	6/24/2010			24.82	687.41
	2/24/2011			25.15	687.08
	8/4/2011			26.15	686.08
MW-4A	6/17/2009	709.18	29.5 to 19.5 FT	24.76	684.42
	6/24/2010			23.21	685.97
	2/24/2011			22.94	686.24
	8/4/2011			25.49	683.69
MW-6	6/17/2009	720.15	30.0 to 20.0 FT	23.00	697.15
	6/24/2010			20.42	699.73
	2/24/2011			20.62	699.53
	8/4/2011			20.50	699.65
MW-7A	6/17/2009	696.08	19.5 to 9.5 FT	15.47	680.61
	6/24/2010			12.46	683.62
	2/24/2011			12.81	683.27
	8/4/2011			18.05	678.03
MW-8A	6/17/2009	695.23	19.5 to 9.5 FT	14.02	681.21
	6/24/2010			11.3	683.93
	2/24/2011			11.54	683.69
	8/4/2011			16.87	678.36
MW-9A	6/17/2009	697.13	10.0 to 20.0 FT	16.51	680.62
	6/24/2010			12.79	684.34
	2/24/2010			12.65	684.48
	8/4/2011			19.80	677.33

Notes:

TOC = Top of Casing
BTOC = Below Top of Casing
BGS = Below Ground Surface

VOLUNTARY REMEDIATION PLAN APPLICATION
FORMER LOEF FACILITY (HULL)
ATHENS, CLARKE COUNTY, GEORGIA
HSI#10376

TABLE 2
SUMMARY OF HISTORIC GROUNDWATER ANALYTICAL RESULTS

Peachtree Well/Sample ID	Date	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	4-Methyl-2-Pentanone	2-Butanone	2-Hexanone	Acetone	Benzene	Carbon Disulfide	Chloroform	Toluene	Ethylbenzene	Xylenes (o)	Xylenes (m,p)	MTBE**	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	Cis-1,2-Dihloroethene	Vinyl Chloride
		ANALYTICAL RESULTS (ug/L)																				
Permanent Monitoring Wells																						
MW-1*	6/23/2000	<1	<1	1.5	<1	-	-	-	-	1.5	-	-	<1	<1	<3	-	<1	**8.2**	<1	-	<1	<3
MW-2A	6/23/2000	<10	<10	12	**26**	**-**	**-**	**-**	**-**	<10	**-**	**-**	<10	<10	<30	**-**	42	**570**	<5	-	100	**31**
	6/26/2003	9.7	<5	30	**43**	**-**	**-**	**-**	**-**	**11**	**-**	-	<5	<5	11	**-**	150	**1800**	<5	-	250	**52**
	8/12/2003	32	<5	110	**78**	**-**	**-**	**-**	**-**	**18**	**-**	-	8.9	<5	17	**-**	250	**6500**	<5	-	**1300**	**170**
	9/19/2003	28	<5	70	**65**	**-**	**-**	**-**	**-**	**17**	**-**	-	9.3	<5	18	**-**	200	**4700**	<5	-	700	**98**
	10/22/2003	28	<5	90	**80**	**-**	**-**	**-**	**-**	**36**	**-**	-	13	6.4	26	**-**	250	**3000**	<5	-	590	**140**
	11/18/2003	21	<5	71	**58**	**-**	**-**	**-**	**-**	**18**	**-**	-	9.1	<5	17	**-**	250	**8100**	<5	-	1000	**110**
	12/24/2003	34	<5	91	**70**	**-**	**-**	**-**	**-**	**16**	**-**	-	9.4	<5	22	**-**	280	**9600**	<5	-	**1500**	**130**
	1/23/2004	<50	<5	55	**60**	**-**	**-**	**-**	**-**	<50	**-**	-	<50	<5	<50	**-**	370	**4000**	<5	-	560	**130**
	3/29/2004	16	<5	54	**46**	**-**	**-**	**-**	**-**	22	**-**	-	6.9	<5	14	**-**	250	**4000**	<5	-	790	**83**
	5/7/2004	11	<5	34	**42**	**-**	**-**	**-**	**-**	**20**	**-**	-	<5	5.8	14	**-**	210	**2500**	<5	-	420	**54**
	7/15/2004	11		38	**32**	**-**	**-**	**-**	**-**	**25**	**-**	-	7.1	8.5	18	**-**	280	**1900**	<5	-	420	**67**
	9/30/2004	<5	<5	10	**23**	**-**	**-**	**-**	**-**	**21**	**-**	-	130	46	58	**-**	190	**430**	<5	-	130	**32**
	5/9/2006	9.4	<5	54	**38**	**-**	**-**	**-**	**-**	**13**	**-**	-	<5	<5	10	**-**	77	**2600**	<5	-	720	**51**
	6/17/2009	<5	<5	<5	<5	-	-	-	-	**14**	-	-	<5	<5	<10	**-**	<5	**70**	<5	-	31	**7**
	6/24/2010	<5	<5	23	**17**	**-**	**-**	**-**	**-**	**12**	**-**	-	<5	<5	1.9	**-**	15	**710**	<5	-	300	**54**
	2/24/2011	<5	<5	19	**14**	11	**-**	**-**	90	**7.2**	**-**	**-**	<5	<5	<5	**-**	20	**730**	<5	120	370	**33**
	3/18/2011***	<5	<5	6	**10**	11	**-**	**-**	<50	**7.8**	**-**	7	<5	<5	<5	**-**	9.4	**210**	<5	<5	120	**19**
	8/4/2011	<5	<5	21	**19**	90	210	12	670	**13**	9	<5	13	<5	7.6	7.8	43	**810**	<5	<5	390	**61**
	8/4/2011 (DUP)	<5	<5	21	**18**	79	150	10	630	**11**	7.2	<5	11	<5	6.8	7.1	38	**680**	<5	<5	310	**55**
MW-3A	6/23/2000	<1	<5	<1	<1	-	-	-	-	**36**	-	-	<1	<1	<3	-	<1	**30**	<5	**-**	<1	<3
	5/7/2004	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	**11**	<5	-	<5	<2
	5/9/2006	<5	<5	<5	<5	-	-	-	-	**7.4**	-	-	<5	<5	<5	-	<5	**22**	<5	-	<5	<2
	6/17/2009	<5	<5	<5	<5	-	-	-	-	**13**	-	-	<5	<5	<5	-	<5	**15**	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	**16**	-	-	<5	<5	<5	-	<5	**17**	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	**14**	<5	<5	<5	<5	<5	<5	<5	**13**	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	**13**	<5	<5	<5	<5	<5	<5	<5	**11**	<5	<5	<5	<2
MW-4A	6/23/2000	<1	<5	<1	<1	-	-	-	-	**12**	-	-	<1	<1	<1	-	<1	<1	2.7	-	<1	<1
	5/7/2004	<5	<5	<5	<5	-	-	-	-	**27**	-	-	<5	<5	<5	-	<5	**29**	<5	-	<5	<5
	5/9/2006	<5	<5	<5	<5	-	-	-	-	**37**	-	-	<5	<5	<5	-	<5	**51**	<5	-	<5	<2
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	**7.2**	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	4.9	-	-	<5	<5	<5	-	<5	**6.1**	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	**7**	<5	<5	<5	<5	<5	<5	<5	**13**	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	**29**	<5	<5	<5	<5	<5	<5	<5	**51**	<5	<5	**9.5**	<2
MW-5	6/23/2000	1.5	<1	<1	<1	-	-	-	-	<1	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1
MW-6	11/5/2000	NT	<5	<1	NT	-	-	-	-	<1	-	-	NT	NT	NT	-	NT	<1	<1	-	<1	NT
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2

VOLUNTARY REMEDIATION PLAN APPLICATION
FORMER LOEF FACILITY (HULL)
ATHENS, CLARKE COUNTY, GEORGIA
HSI#10376

TABLE 2
SUMMARY OF HISTORIC GROUNDWATER ANALYTICAL RESULTS

Peachtree Well/Sample ID	Date	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	4-Methyl-2-Pentanone	2-Butanone	2-Hexanone	Acetone	Benzene	Carbon Disulfide	Chloroform	Toluene	Ethylbenzene	Xylenes (o)	Xylenes (m,p)	MTBE**	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	Cis-1,2-Dihloroethene	Vinyl Chloride
		ANALYTICAL RESULTS (ug/L)																				
MW-7A	11/5/2000	NT	NT	<1	NT	-	-	-	-	<1	-	-	NT	NT	NT	-	NT	**5.4**	<1	-	2.1	NT
	5/7/2004	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	5/9/2006	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
MW-8A	11/5/2000	NT	NT	<1	NT	-	-	-	-	<1	-	-	NT	NT	NT	-	NT	**15**	<1	-	<1	NT
	5/7/2004	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	5/9/2006	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
MW-9A	5/7/2004	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	5/9/2006	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	6/24/2010	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
Temporary Monitoring Well Data																						
TW-1	5/4/2006	<5	<5	<5	<5	-	-	-	-	**38**	-	**-**	<5	<5	<5	-	<5	**10**	<5	-	<5	<5
TW-2	5/4/2006	<5	<5	<5	<5	-	-	-	-	**100**	-	**-**	<5	<5	<5	-	<5	**15**	**6.6**	**-**	<5	<5
TW-3	5/4/2006	<5	<5	<5	**29**	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	**8.2**	<5	-	<5	<5
TW-4	5/4/2006	<5	**5.9**	<5	**150**	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<5
TW-5	5/4/2006	<5	<5	<5	<5	-	-	-	-	**24**	-	**-**	<5	<5	<5	-	<5	<5	<5	-	<5	<5
Equipment Blank	2/24/2011	<5	<5	<5	<5	<10	<50	<10	59	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2
Trip Blank	8/5/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2

NOTES:
"250" - Numbers in bold exceed the applicable Risk Reduction Standard criteria.
* - Casing for MW-1 is damaged. Sampling access is not available.
** - Currently, there is no Type 1/3 Groundwater Risk Reduction Standard.
* **- MW-2A overdrilled and replaced 3/18/11.
NT - Not Tested.

VOLUNTARY REMEDIATION PLAN APPLICATION
FORMER LOEF FACILITY (HULL)
ATHENS, CLARKE COUNTY, GEORGIA
HSI#10376

TABLE 3
SUMMARY OF MONITORED NATURAL ATTENUATION PARAMETER RESULTS

Well/Sample ID	Date	pH	Temperature (°C)	Conductivity (uS/cm)	Total Dissolved Solids (g/L)	Oxidation-Reduction Potential (mV)	Ethane	Ethene	Methane	Dissolved Oxygen	Total Organic Carbon	Iron II	Nitrate	Sulfate	Sulfide
		FIELD-MEASURED PARAMETERS					LABORATORY ANALYTICAL RESULTS (mg/L)								
MW-2A	6/24/2010	4.65	18.1	0.581	0.037	450	0.16	<0.007	3.2	10.2	8.2	7.25	0.49	<1	<2
	8/4/2011	5.45	20.78	0.295	NM	10	0.78	<0.007	3.1	0.54	60.8	47	<0.25	<1	<2
MW-3A	6/24/2010	4.63	19.2	0.852	0.054	398	0.36	<0.007	4.2	9.64	2.34	<0.1	1.8	2	<2
	8/4/2011	4.4	20.94	0.57	NM	301	0.12	<0.007	1.7	1.34	1.42	<0.1	1.7	<1	<2
MW-4A	6/24/2010	4.66	18.8	0.164	0.11	414	0.029	<0.007	0.34	9.54	2.98	<0.1	0.88	1.9	<2
	8/4/2011	4.62	21.76	0.093	NM	330	0.026	<0.007	0.44	2.1	<5	<.1	0.84	1.7	<2
MW-6*	6/24/2010	4.9	19.7	0.044	0.03	443	<0.009	<0.007	<0.004	10.5	1.79	<0.1	0.44	<1	<2
	8/4/2011	4.25	19.7	0.03	NM	366	<0.009	<0.007	<0.004	8.51	<1	<0.1	0.43	<1	<2

NOTES:
* - Background Well

VOLUNTARY REMEDIATION PLAN APPLICATION
HULL (FORMER LOEF FACILITY)
ATHENS, CLARKE COUNTY, GEORGIA
HSI SITE #10376

TABLE 4
SUMMARY OF AQUIFER SLUG TESTING DATA

Well Number	Test Date	Well Depth (Feet Below TOC)	Water Level (Feet Below TOC)	Screened Interval (Feet Below TOC)	Hydraulic Conductivity (Ft/Day)
Shallow Wells					
MW-2A	6/24/10	33.15	21.00	23.15 - 33.15	2.160
MW-4A	6/24/10	29.50	23.21	19.50 - 29.50	0.360
MW-9A	6/24/10	30.00	12.79	20.00 - 30.00	0.002
Combined Hydraulic Conductivity Average of Shallow Wells =>					**1.261**

NOTES:
TOC = Top of Casing

GROUNDWATER FLOW VELOCITY CALCULATIONS

$V = k^* i/n_e$ Where:

V = groundwater flow velocity
k = hydraulic conductivity
i = hydraulic gradient
n_e = effective porosity

Groundwater Flow Velocity Calculations - Shallow Aquifer

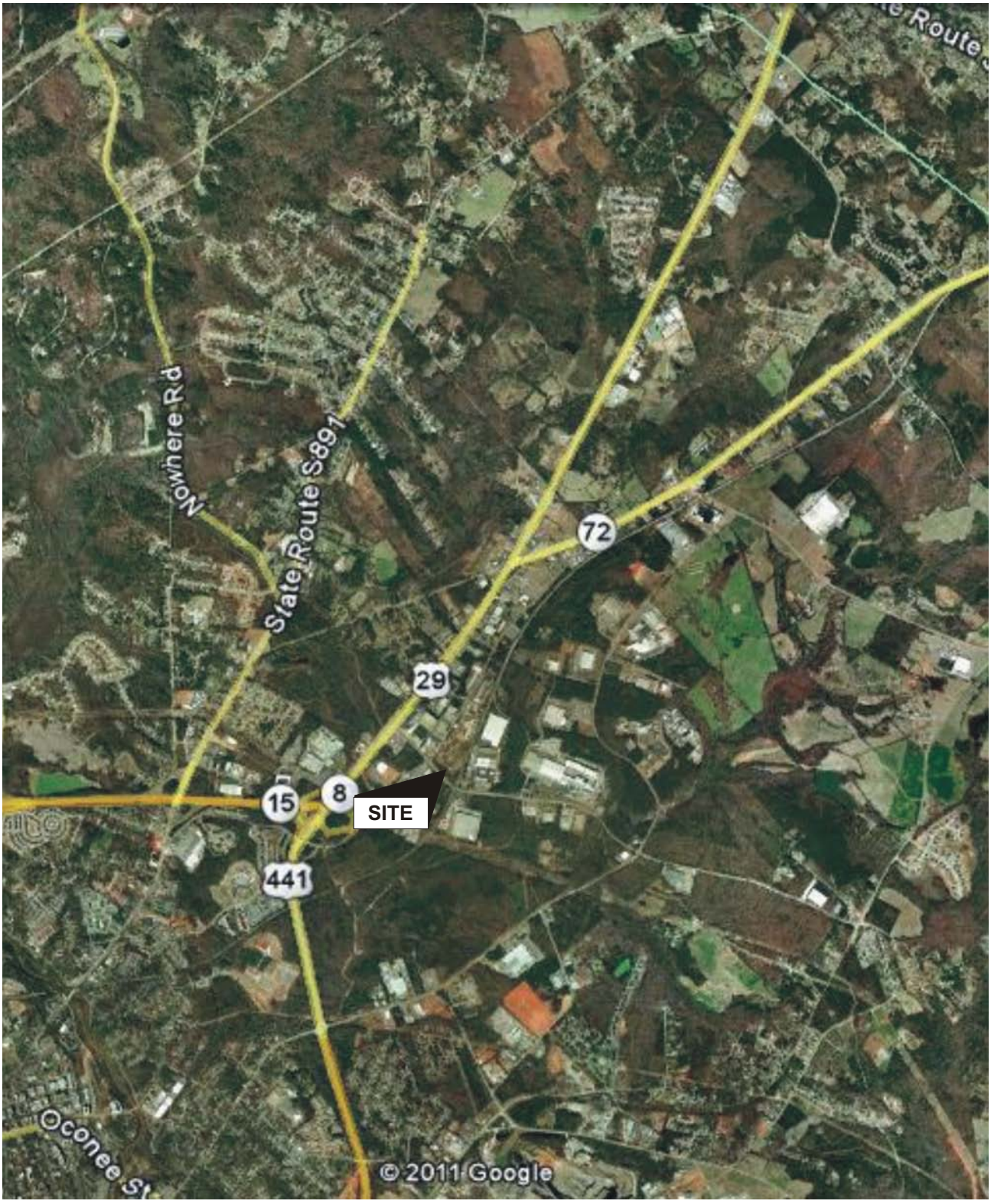
Hydraulic gradient between MW-2A and MW-8A and average hydraulic conductivity for the shallow aquifer => 689.20' - 683.93' / 364.59' = 0.0145 feet/foot.

1. $V = k^* i/n_e$

V = 1.261* 0.0145/0.2 = 0.091

V = 0.091 feet/day or 33.215 feet/year

FIGURES



0 1750 3500 7000

APPROXIMATE SCALE IN FEET

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FORMER LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA
HSI#10376

FIGURE 1
SITE LOCATION MAP

VOLUNTARY REMEDIATION PROGRAM

QUADRANGLE LOCATION

APPROXIMATE PROPERTY BOUNDARY OF SCRAP METAL PROCESSING FACILITY

ATHENA DRIVE

OLD HULL ROAD

60' R/W

CALHOUN DRIVE

16.79 ACS.

4.71 ACS.

SHREDDER

MW-1 (DESTROYED)

MW-2A

MW-3A

MW-4A

MW-6

MW-7A

MW-8A

MW-9A

PRODUCTION WELL

BALER

SHEAR

EDDY CURRENT

HRB BALER

CSX RAILROAD

100' R/W

0 60 120 180

GRAPHIC SCALE (FEET)

LEGEND

GROUNDWATER MONITORING WELL

REV	DATE	DESCRIPTION	DRN BY	DES BY	CHK BY	APP BY
0	07/16/2015	ISSUED	JPC	MHW	CHM	

FORMER LOEF FACILITY
ATHENS, GEORGIA

FORMER LOEF FACILITY SITE
LAYOUT MAP

FIGURE NO. **2A**

FORMER LOEF 2318

APPROXIMATE PROPERTY BOUNDARY OF CURRENT SCRAP METAL PROCESSING FACILITY

OLD HULL ROAD

ATHENA DRIVE

CALHOUN DRIVE

60' R/W

ASPHALT

BERM

CHAIN LINK FENCE

COOLING TOWER

TRANSFORMER

ENGINE ROOM

OPERATOR TOWER

CONC.

SHREDDER

DIRT

STEEL WALL

TOWER

RAIL

16.79 ACS.

GARAGE

GRASS

MW-6

CONC. CURB

60' PIT SCALE

OFFICE

PLANTER

ALUMINUM SMELTER

(DESTROYED) MW-1

PRODUCTION WELL (PW-1)

MW-7A

4.71 ACS.

TREES/BRUSH

MW-8A

MW-9A

MW-2A

MW-3A

MW-4A

CONC. DRIVE

DIRT DRIVE

BALER

2' SUMP PIT

CUTTING AREA

WAREHOUSE

STORAGE BINS

SCALE OFFICE

STEEL FENCE

CSX RAILROAD

100' R/W

N 33d09'35" E 72.48'

N 30d54'45" E 817.74'

N 29d31'50" E 120.48'

N20d00'50" W 39.

S 22d07'50" W 1448.59'

S 20d13'30" E 818.17'

0 60 120 180

GRAPHIC SCALE (FEET)

LEGEND

- GROUNDWATER MONITORING WELL
- PRODUCTION WELL (OPEN HOLE BEDROCK WELL PW-1)
- TREES/BRUSH
- C.B. CATCH BASIN AND STORM SEWER
- PROPERTY BOUNDARY
- CSX RAILROAD / RAIL SPUR

REV	DATE	DESCRIPTION	DRN BY	DES BY	CHK BY	APP BY
0	1/7/11		JPC			
			MHW			

Peadmont Environmental

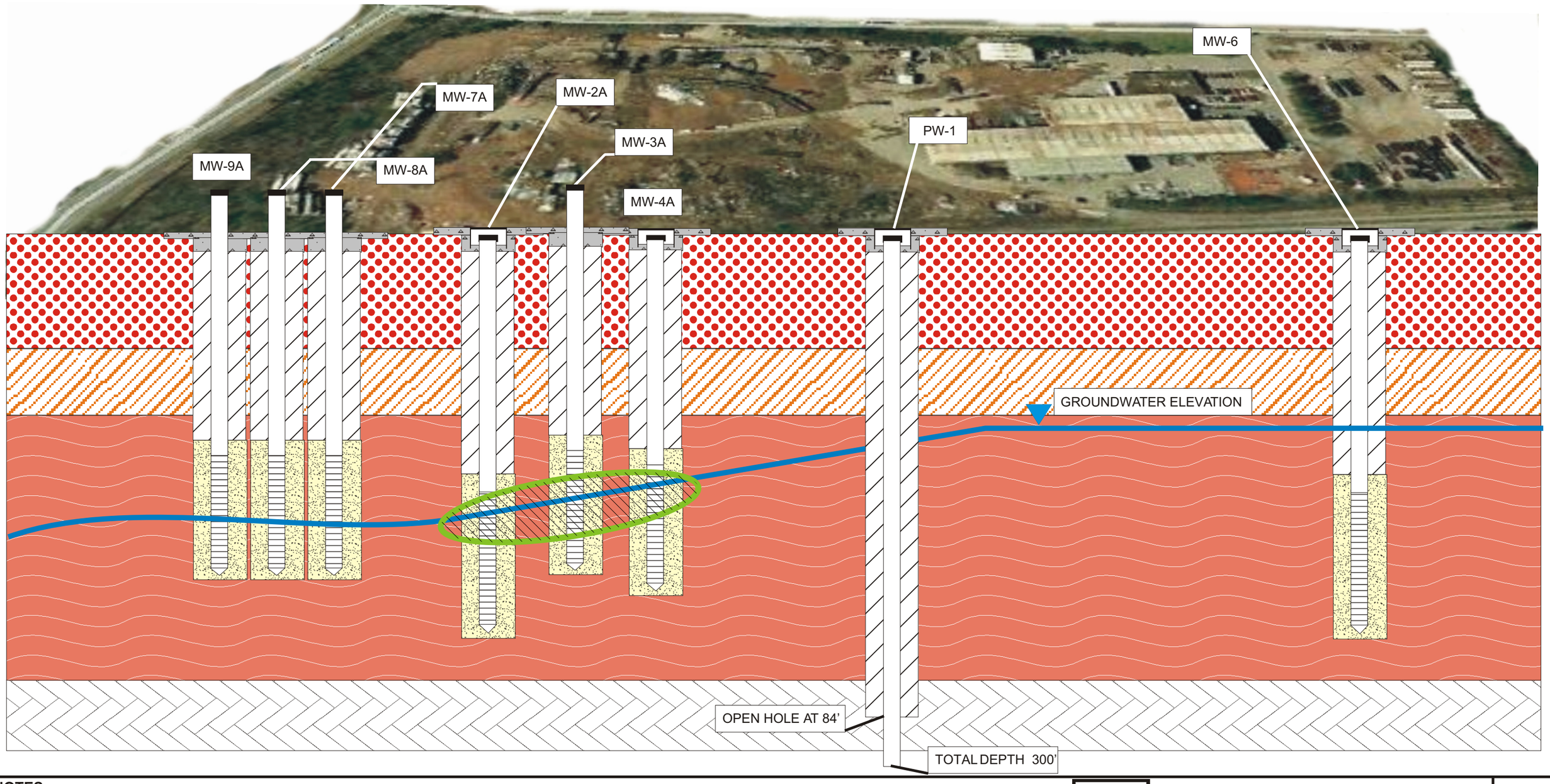
FORMER LOEF FACILITY
ATHENS, GEORGIA

CURRENT OMNISOURCE SITE
LAYOUT MAP

FIGURE NO. **2B**

FORMER LOEF 2318

CONCEPTUAL SITE MODEL



NOTES:

- RED, ORANGE, SAND, SILT, AND CLAY, FINE TO MEDIUM, MICACEOUS
- BROWN, RED, ORANGE, TAN, SAND AND SILT, FINE TO MEDIUM, MICACEOUS
- WHITE, TAN, SAND AND SILT, SAPROLITIC, FINE TO MEDIUM, MICACEOUS WITH WEATHERED QUARTZ
- BEDROCK - INFERRED
- EXTENT OF COCs DETECTED IN GROUNDWATER

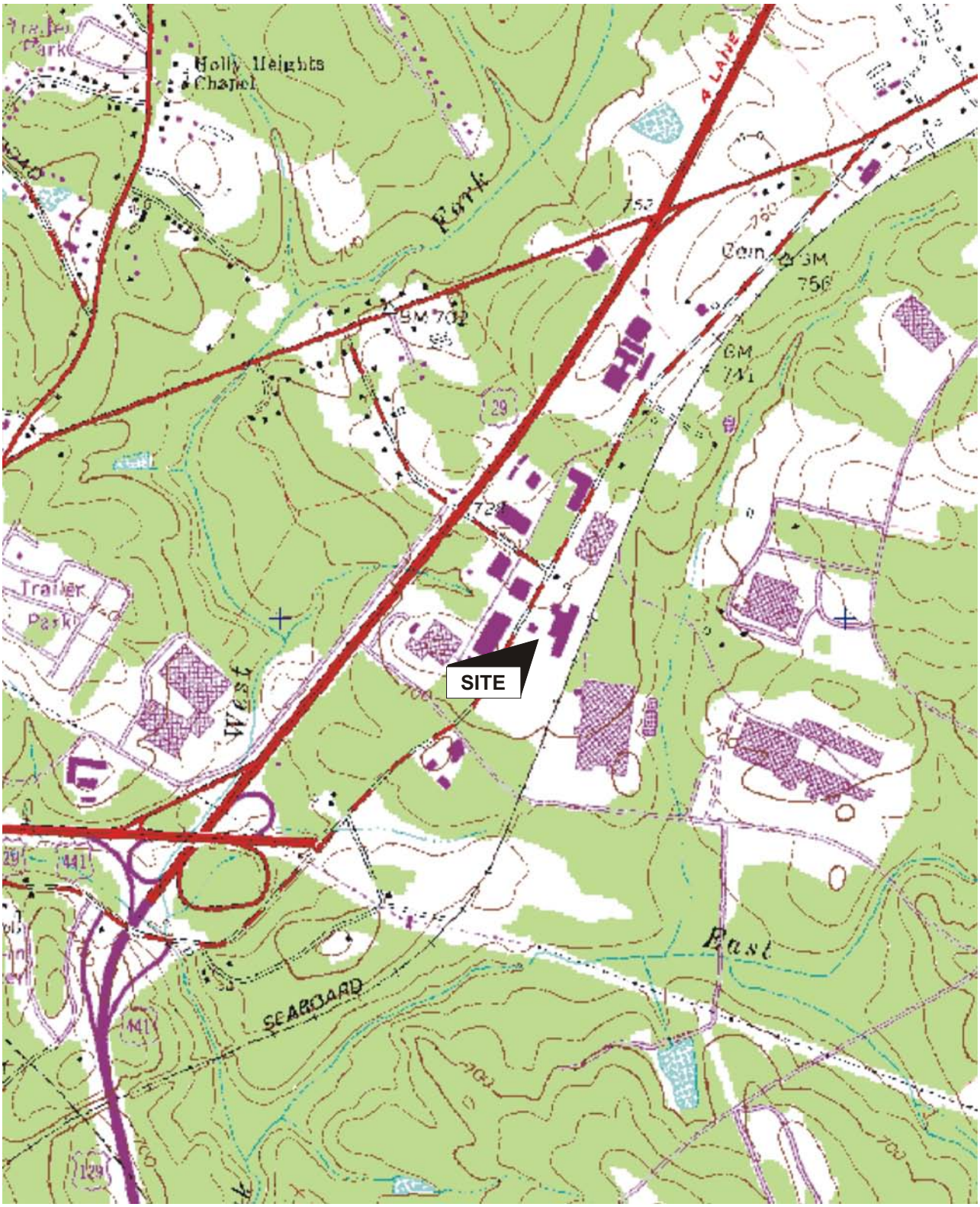
Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA

FIGURE 3
CONCEPTUAL SITE MODEL

VOLUNTARY REMEDIATION PROGRAM

MAP LOCATION



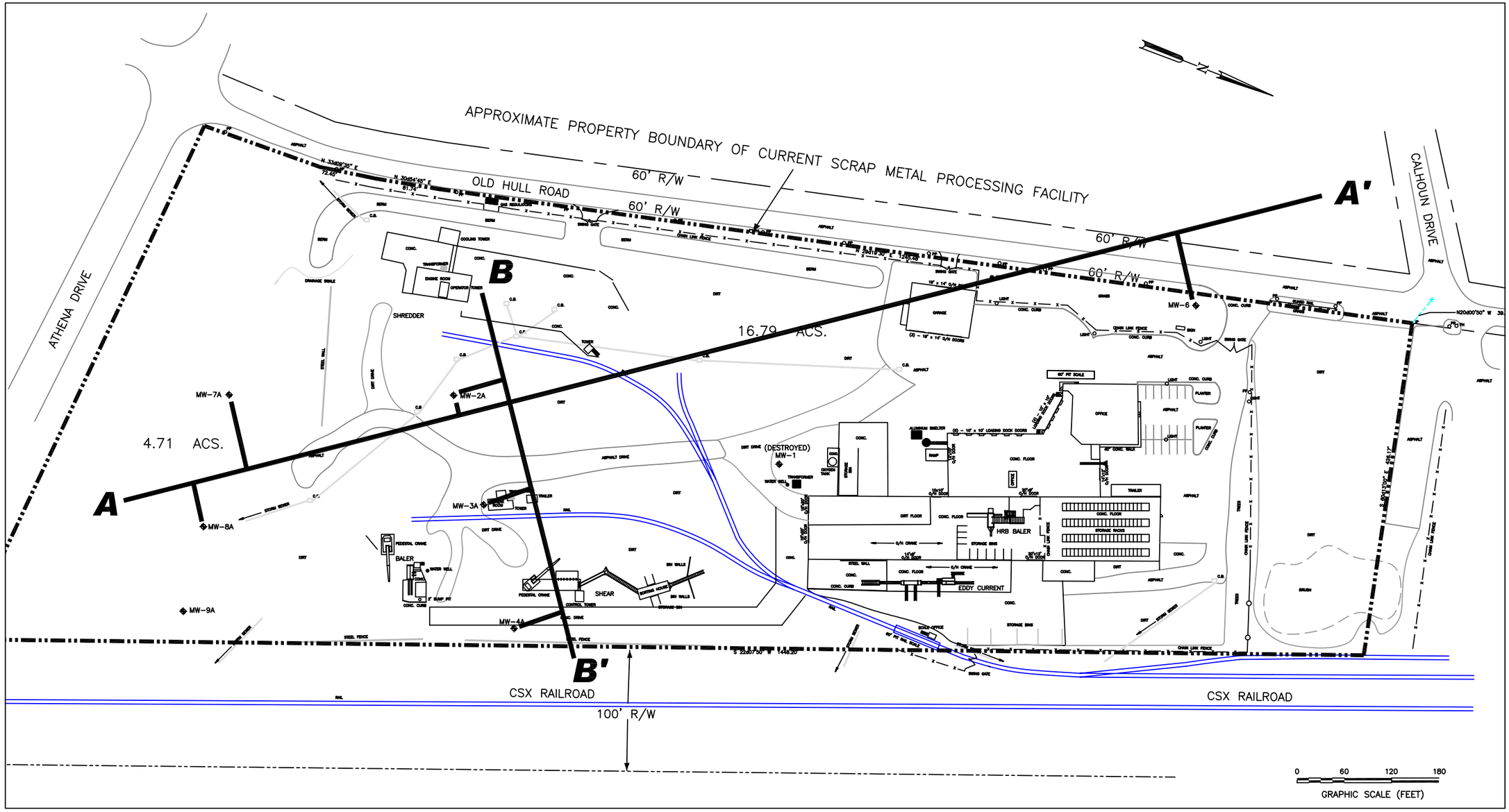
Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA
HSI#10376

FIGURE 4
USGS TOPOGRAPHIC MAP

VOLUNTARY REMEDIATION PROGRAM

QUADRANGLE LOCATION



LEGEND

◆ GROUNDWATER MONITORING WELL

NOTES

TW-1, TW-2, TW-3, AND TW-4 WERE TEMPORARY WELLS AND ARE NO LONGER ONSITE.
MW-1 WAS DESTROYED AND IS NO LONGER ONSITE.

REV	DATE	DRN BY	DES BY	CHK BY	APP BY
	DATE AS SHOWN	JPC		WHH	
		MHW		CHN	

DESCRIPTION

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

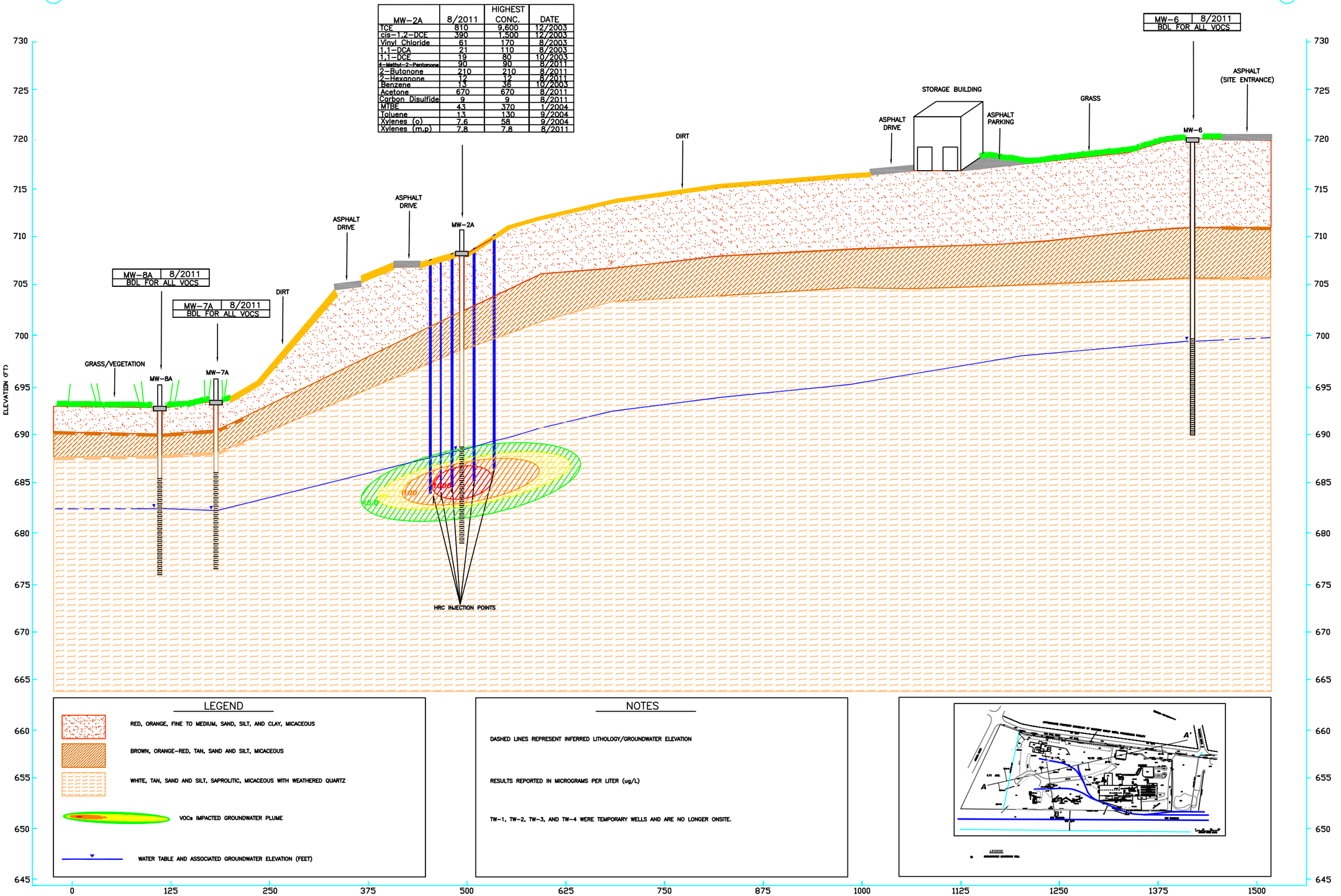
CROSS-SECTION LOCATION MAP

FIGURE NO. **5**

FORMER LOEF 2318

CROSS-SECTION A-A'

MW-2A	8/2011	HIGHEST CONC.	DATE
TCE	810	9,600	12/2003
cis-1,2-DCE	390	1,500	12/2003
Vinyl Chloride	61	170	8/2003
1,1-DCA	21	110	8/2003
1,1-DCE	19	80	10/2003
4-Methyl-2-Pentanone	90	90	8/2011
2-Butanone	210	210	8/2011
2-Hexanone	12	12	8/2011
Benzene	13	36	10/2003
Acetone	670	670	8/2011
Carbon Disulfide	9	9	8/2011
MTBE	43	370	1/2004
Toluene	13	130	9/2004
Xylenes (o)	7.6	58	9/2004
Xylenes (m,p)	7.8	7.8	8/2011



LEGEND

- RED, ORANGE, FINE TO MEDIUM, SAND, SILT, AND CLAY, MICACEOUS
- BROWN, ORANGE-RED, TAN, SAND AND SILT, MICACEOUS
- WHITE, TAN, SAND AND SILT, SAPROLITIC, MICACEOUS WITH WEATHERED QUARTZ
- VOCs IMPACTED GROUNDWATER PLUME
- WATER TABLE AND ASSOCIATED GROUNDWATER ELEVATION (FEET)

NOTES

DASHED LINES REPRESENT INFERRED LITHOLOGY/GROUNDWATER ELEVATION

RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)

TW-1, TW-2, TW-3, AND TW-4 WERE TEMPORARY WELLS AND ARE NO LONGER ONSITE.

SCALE: 1" = 125' HORIZONTAL
1" = 10' VERTICAL

REV	DATE	DESCRIPTION	DWN BY	CHK BY	APP BY
	DATE OF ISSUE 9/27/11		JPC	MHW	CHM

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

SITE CROSS-SECTION DIAGRAM
A - A'

FIGURE NO. 6A

FORMER LOEF 2318

CROSS-SECTION B-B'

B

B'

MW-2A	8/2011	HIGHEST CONC.	DATE
TCE	810	9,600	12/2003
cis-1,2-DCE	390	1,500	12/2003
Vinyl Chloride	61	170	8/2003
1,1-DCA	21	110	8/2003
1,1-DCE	19	80	10/2003
4-Methyl-2-Pentanone	90	90	8/2011
2-Butanone	210	210	8/2011
2-Hexanone	12	12	8/2011
Benzene	13	36	10/2003
Acetone	670	670	8/2011
Carbon Disulfide	9	9	8/2011
MTBE	43	370	1/2004
Toluene	13	130	9/2004
Xylenes (o)	7.6	58	9/2004
Xylenes (m,p)	7.8	7.8	8/2011

MW-3A	8/2011	HIGHEST CONC.	DATE
TCE	11	30	6/2000
Benzene	13	36	6/2000

MW-4A	8/2011	HIGHEST CONC.	DATE
TCE	51	51	5/2006 & 8/2011
Benzene	29	37	5/2006
cis-1,2-DCE	9.5	9.5	8/2011

SHREDDER

OPERATOR'S TOWER

ENGINE ROOM

CONCRETE

RAIL

MW-2A

DIRT

ASPHALT DRIVE

MW-3A

RAIL

DIRT

MW-4A

8-FOOT CHAIN LINK FENCE

CSX RAILROAD RIGHT-OF-WAY

HRC INJECTION POINTS

ELEVATION (FT)

730 725 720 715 710 705 700 695 690 685 680 675 670 665 660 655 650 645

0 40 80 120 160 200 240 280 320 360 400 440 480

DISTANCE (FT)

LEGEND

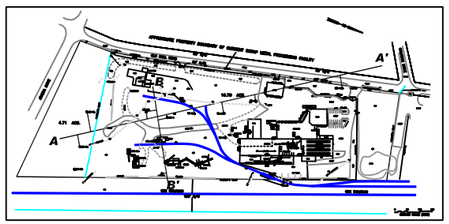
- RED, ORANGE, FINE TO MEDIUM, SAND, SILT, AND CLAY, MICACEOUS
- BROWN, ORANGE-RED, TAN, SAND AND SILT, MICACEOUS
- WHITE, TAN, SAND AND SILT, SAPROLITIC, MICACEOUS WITH WEATHERED QUARTZ
- VOCs IMPACTED GROUNDWATER PLUME
- WATER TABLE AND ASSOCIATED GROUNDWATER ELEVATION (FEET)

NOTES

DASHED LINES REPRESENT INFERRED LITHOLOGY/GROUNDWATER ELEVATION

RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)

TW-1 WAS A TEMPORARY WELL AND IS NO LONGER ONSITE.



SCALE: 1" = 40' HORIZONTAL
1" = 10' VERTICAL

REV	DATE	DESCRIPTION
	DATE OF ISSUE 9/28/11	DWN BY JPC DES BY MHW CHK BY APP BY

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

SITE CROSS-SECTION DIAGRAM
B - B'

FIGURE NO. **6B**

FORMER LOEF 2318

APPROXIMATE PROPERTY BOUNDARY OF CURRENT SCRAP METAL PROCESSING FACILITY

OLD HULL ROAD

60' R/W

ATHENA DRIVE

CALHOUN DRIVE

6
SOUTH
RUN-OFF AREA

4.71 ACS.

3
FLUFF
STORAGE AREA

16.79 ACS.

4
SHREDDER
SOURCE AREA

5
BALER SOURCE
AREA

2
EAST RUN-OFF
AREA

1
OIL/WATER
SEPARATOR
AREA

SHREDDER
BALER
SHEAR
EDDY CURRENT
HRB BALER
OFFICE
GARAGE
TRAILER
SCALE HOUSE
COOLING TOWER
TRANSFORMER
ENGINE ROOM
OPERATOR TOWER
CONTROL TOWER
PEDESTAL CRANE
WATER WELL
WATER TANK
ALUMINUM SHELTER
STORAGE BINS
STORAGE RACKS
BRUSH

MW-1
MW-2A
MW-3A
MW-4A
MW-6
MW-7A
MW-8A
MW-9A

TW-1
TW-2
TW-3
TW-4
TW-5

CSX RAILROAD

100' R/W

CSX RAILROAD

0 60 120 180

GRAPHIC SCALE (FEET)

LEGEND

◆ GROUNDWATER MONITORING WELL

REV	DATE	DESCRIPTION	DRN BY	DES BY	CHK BY	APP BY
	10/5/2016		JPC		MHW	

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

SITE LAYOUT MAP DEPICTING FORMER SOIL SOURCE AREAS

FIGURE NO. 7

FORMER LOEF 2318

APPROXIMATE PROPERTY BOUNDARY OF CURRENT SCRAP METAL PROCESSING FACILITY

OLD HULL ROAD

60' R/W

CALHOUN DRIVE

ATHENA DRIVE

16.79 ACS.

4.71 ACS.

SHREDDER

BALER

SHEAR

EDDY CURRENT

HRB BALER

(679.03) MW-7A

(688.70) MW-2A

(686.08) MW-3A

(678.36) MW-8A

(677.33) MW-9A

(683.69) MW-4A

(DESTROYED) MW-1

MW-6 (699.65)

CSX RAILROAD

100' R/W

676 678 680 682 684 686 688 690 692 694 696 698

0 60 120 180

GRAPHIC SCALE (FEET)

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (687.33) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)
- 684 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- ← APPROXIMATE GROUNDWATER FLOW DIRECTION

REV	DATE	DESCRIPTION	DRN BY	DES BY	CHK BY	APP BY
0	9/26/11	ISSUED	JPC		CHW	

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

POTENTIOMETRIC SURFACE MAP - AUGUST 4, 2011

FIGURE NO. **8**

FORMER LOEF 2318

APPROXIMATE PROPERTY BOUNDARY OF CURRENT SCRAP METAL PROCESSING FACILITY

OLD HULL ROAD

ATHENA DRIVE

CALHOUN DRIVE

60' R/W

4.71 ACS.

MW-2A	8/2011
TCE	810
cis-1,2-DCE	390
Vinyl Chloride	61
1,1-DCA	21
1,1-DCE	19
4-Methyl-2-Pentanone	90
2-Butanone	210
2-Hexanone	12
Benzene	13
Acetone	670
Carbon Disulfide	9
MTBE	43
Toluene	13
Xylenes (o)	7.6
Xylenes (m,p)	7.8

MW-3A	8/2011
TCE	11
Benzene	13

MW-4A	8/2011
TCE	51
Benzene	29
cis-1,2-DCE	9.5

MW-2A
MW-3A
MW-4A
(BDL) MW-7A
(BDL) MW-8A
(BDL) MW-9A
(DESTROYED) MW-1
MW-6 (BDL)

SHREDDER
BALER
SHEAR
HRB BALER
EDDY CURRENT

CSX RAILROAD
100' R/W

LEGEND

◆ GROUNDWATER MONITORING WELL

(BDL) BELOW LABORATORY DETECTION LIMITS

MW-2A	8/2011	=	Well ID	Date
Benzene	14		Compound	in ug/L

0 60 120
FEET

REV	DATE	DES BY	DRN BY	CHK BY	APP BY
	DATE OF PLOT: 2/22/2012	MHW	JPC	CHK	

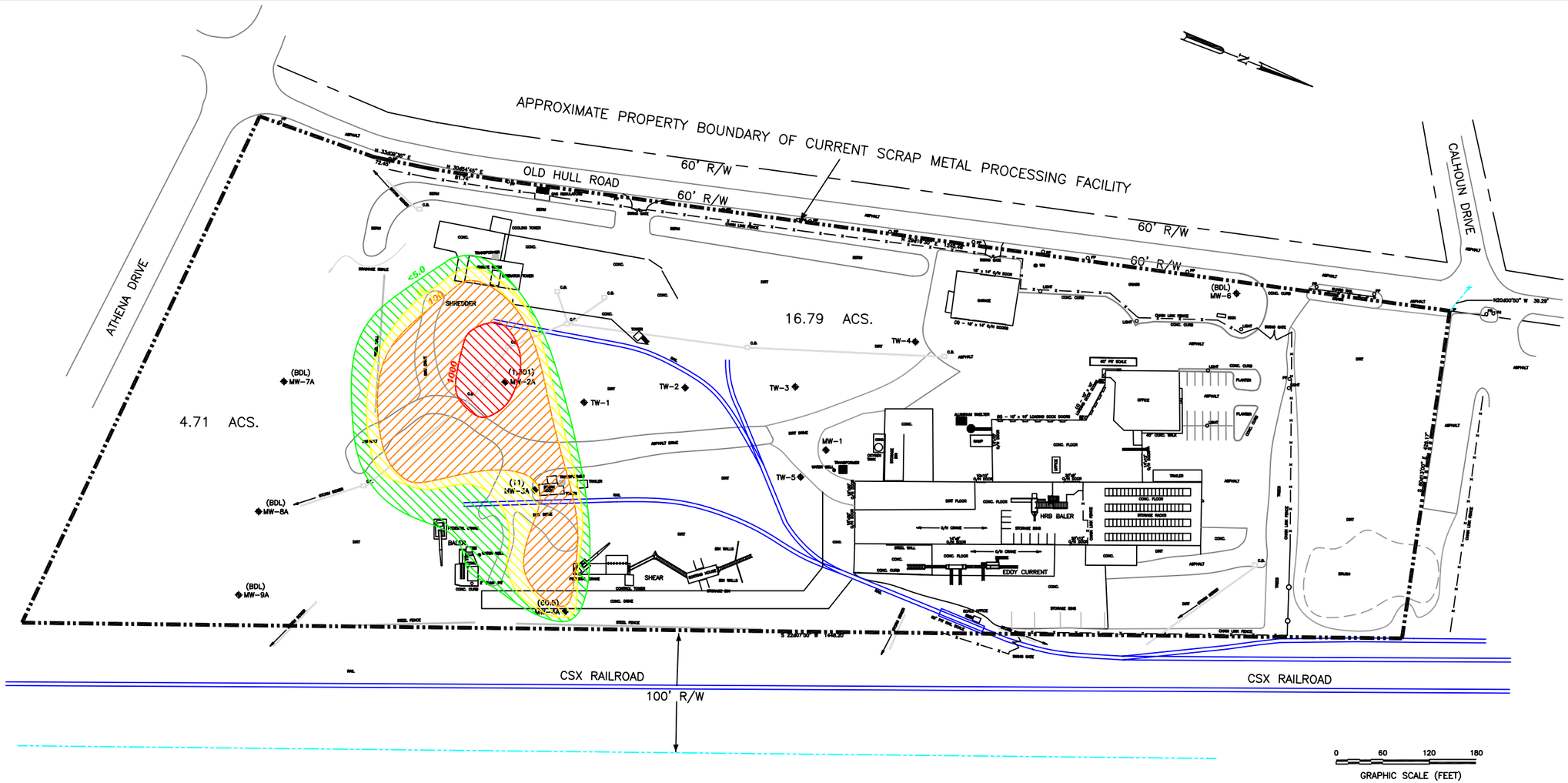
Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

AUGUST 2011 GROUNDWATER
ANALYTICAL RESULTS

FIGURE NO. **9**

Former Loef
2318



LEGEND

◆	GROUNDWATER MONITORING WELL
(1,166)	TOTAL TRICHLOROETHENE AND BREAKDOWN CONSTITUENT CONCENTRATION IN ug/L
(BDL)	BELOW LABORATORY DETECTION LIMITS
	TRICHLOROETHENE AND BREAKDOWN CONSTITUENT ISOCONTOUR

REV	DATE	DES BY	DRN BY	CHK BY	APP BY
1	08/16/2011	JPC	MHH		

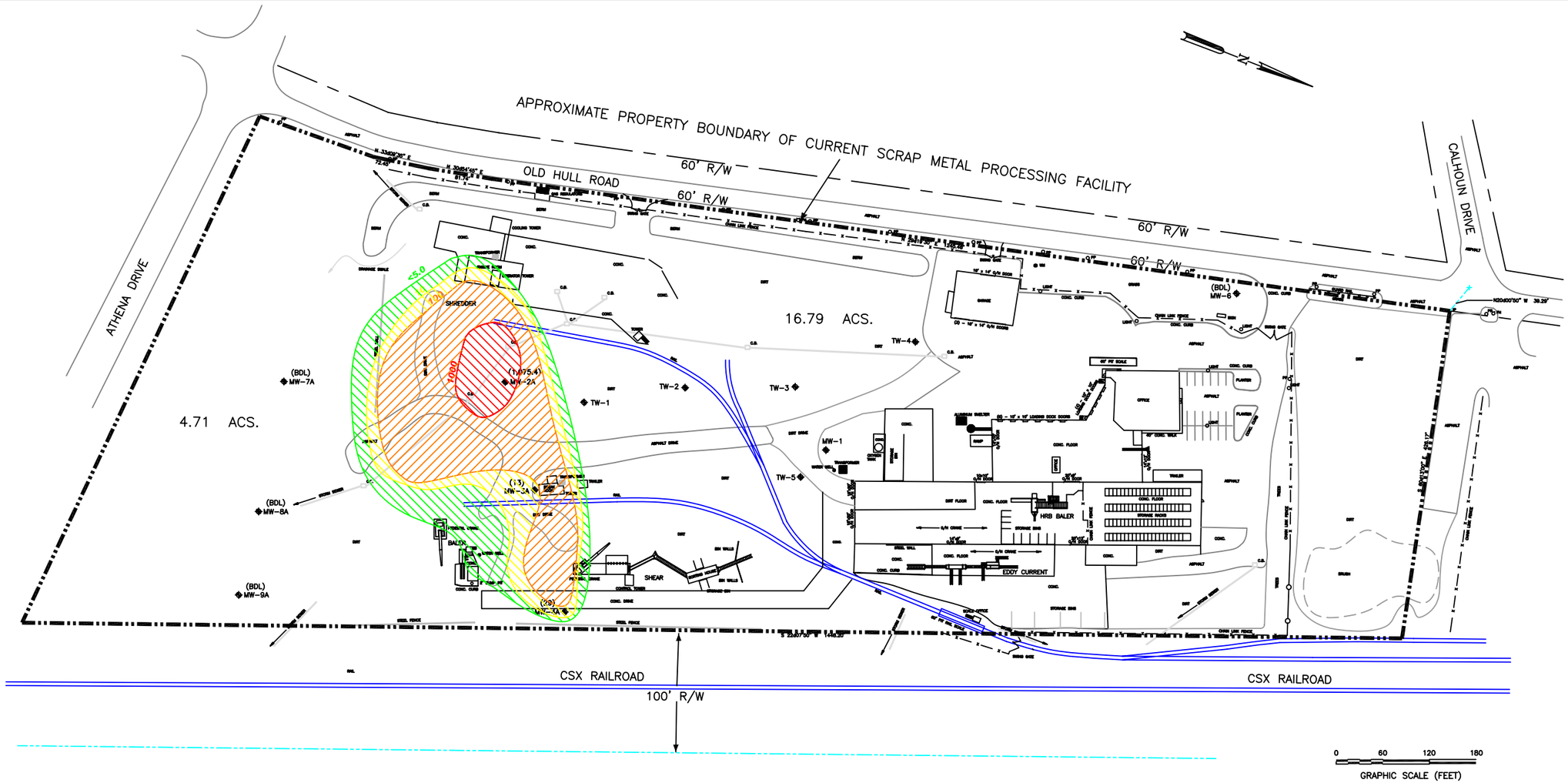
Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

TRICHLOROETHENE AND ASSOCIATED BREAKDOWN CONSTITUENTS ISOCONTOUR MAP - AUGUST 2011

FIGURE NO. **10**

FORMER LOEF
2318



LEGEND

◆	GROUNDWATER MONITORING WELL
(1,166)	TOTAL BENZENE AND PETROLEUM RELATED CONSTITUENT CONCENTRATION IN ug/L
(BDL)	BELOW LABORATORY DETECTION LIMITS
	BENZENE AND PETROLEUM RELATED CONSTITUENT ISOCONTOUR

REV	DATE	DES BY	DRN BY	CHK BY	APP BY
0	08/26/2011	JPC	MHW		

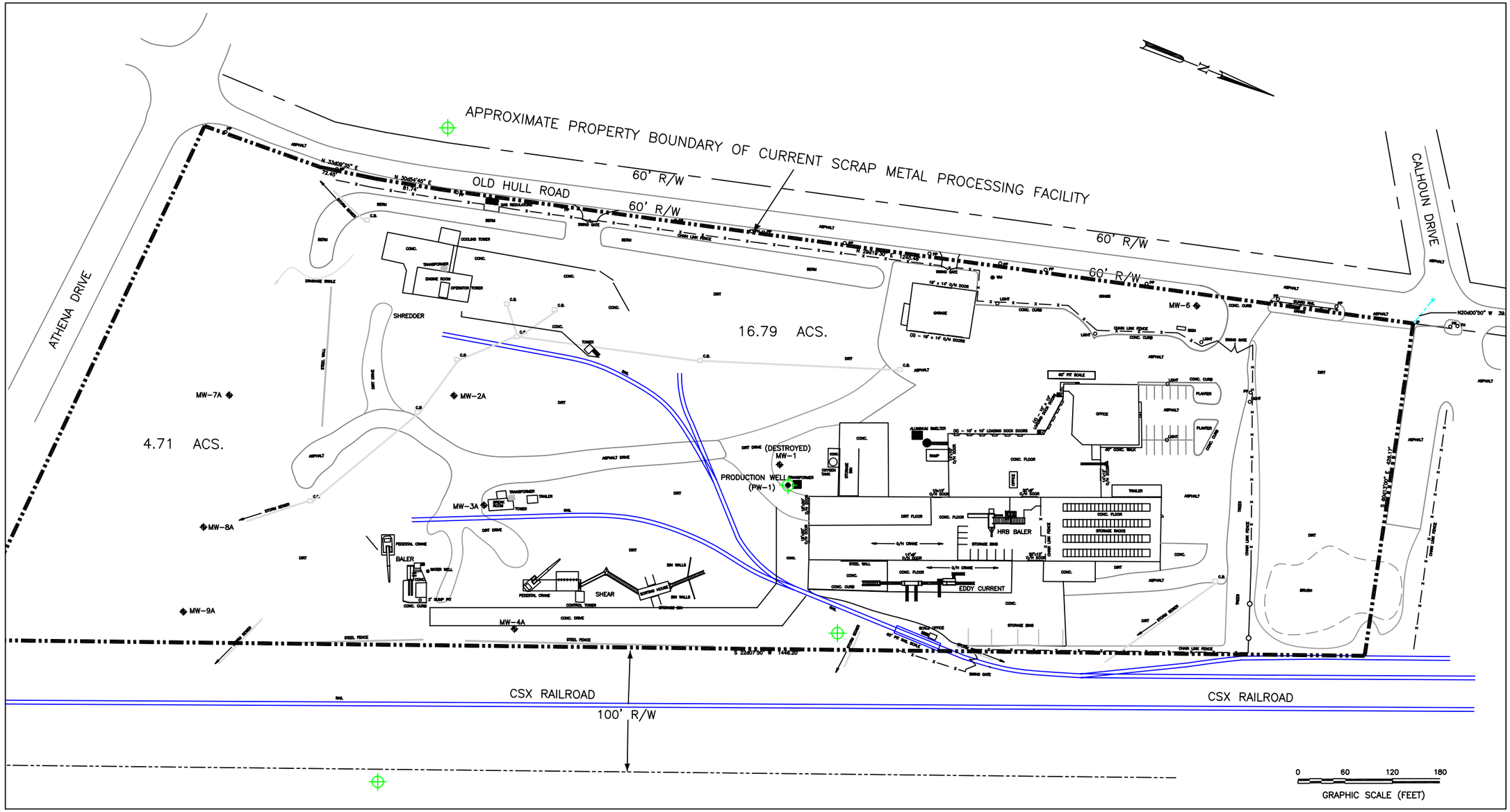
Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

BENZENE AND PETROLEUM RELATED CONSTITUENTS ISOCONTOUR MAP - AUGUST 2011

FIGURE NO. **11**

FORMER LOEF 2318



LEGEND

- GROUNDWATER MONITORING WELL
- PROPOSED GROUNDWATER MONITORING WELL / DELINEATION SAMPLE LOCATION

REV	DATE	DESCRIPTION	DRN BY	DES BY	CHK BY	APP BY
0	10/26/2015	ISSUED	JPC		CHW	
1	6/9/2016	REVISED	MHW			

Peachtree Environmental

FORMER LOEF FACILITY
ATHENS, GEORGIA

PROPOSED HORIZONTAL AND VERTICAL DELINEATION MONITORING WELL LOCATION MAP

FIGURE NO. **12**

FORMER LOEF 2318

APPENDIX A
WARRANTY DEED AND TAX PLAT INFORMATION

Clarke County Assessor			
Parcel: 221 002C Acres: 1.63			
Name:	OMNISOURCE ATHENS DIVISION LLC	Land Value	$91,688.00
Site:	0 OLD HULL RD	Building Value	$0.00
Sale:	$0 on 10-2002 Reason=M Qual=U	Misc Value	$0.00
Mail:	C/O OMNISOURCE SOUTHEAST P O BOX 578 LYMAN, SC 29365	Total Value:	$91,688.00

Date printed: 09/27/11 : 15:18:15

Clarke County Assessor			
Parcel: 221 001 Acres: 15			
Name:	OMNISOURCE ATHENS DIVISION LLC	Land Value	$750,000.00
Site:	590 OLD HULL RD	Building Value	$1,113,444.00
Sale:	$3,500,000 on 10-2002 Reason=M Qual=U	Misc Value	$26,840.00
Mail:	C/O OMNISOURCE SOUTHEAST P O BOX 578 LYMAN, SC 29365	Total Value:	$1,890,284.00

Date printed: 09/27/11 : 15:16:48

Clarke County Assessor			
Parcel: 162 037 Acres: 4.71			
Name:	RH REALTY INC	Land Value	$282,600.00
Site:	305 ATHENA DR	Building Value	$0.00
Sale:	$188,160 on 05-2001 Reason=LM Qual=Q	Misc Value	$0.00
Mail:	C/O OMNISOURCE SOUTHEAST P O BOX 578 LYMAN, SC 29365	Total Value:	$282,600.00

Date printed: 09/27/11 : 15:17:31

Prepared by & Return to:
Upshaw C. Bentley, Jr.
Fortson, Bentley and Griffin, P.A.
P.O. Box 1744
Athens, Georgia 30603-1744

CLERK OF SUPERIOR COURT
ATHENS-CLARKE COUNTY, GEORGIA
TRANSFER TAX PAID
$ 3,500.00 DATE 10/08/02
RECORDING CLERK'S INITIALS

FILED IN OFFICE
CLERK SUPERIOR COURT
CLARKE COUNTY, GEORGIA
02 OCT -8 PM 2:07
RECORDED
BOOK 2278 PAGE 487
DATE 10-8-02
BEVERLY LOGAN, CLERK

WARRANTY DEED

STATE OF GEORGIA
COUNTY OF ATHENS-CLARKE

THIS INDENTURE, made the 2nd day of October, 2002, between **HULL REAL ESTATE, L.L.C.**, a Georgia limited liability company, (hereinafter referred to as "Grantor") and **OMNISOURCE ATHENS DIVISION, LLC**, an Indiana limited liability company, (hereinafter referred to as "Grantee") (the words "Grantor" and "Grantee" shall include their respective heirs, executors, administrators, successors and assigns, where the context requires or permits):

WITNESSETH:

That Grantor, for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration to Grantor in hand paid, at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed and does by these presents grant, bargain, sell and convey unto Grantee, the following described real property located in Athens-Clarke County, Georgia:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

The property herein described is conveyed subject to those matters set forth on Exhibit "B" attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the said described property, with all and singular the rights, members and appurtenances thereunto appertaining, to the only proper use, benefit and behoof of Grantee, in FEE SIMPLE,

And Grantor will warrant and forever defend the right and title to the above-described property unto Grantee against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor has caused this Warranty Deed to be executed by its duly authorized officers and its corporate seal affixed, the day and year first above written.

Signed, sealed and delivered,
in the presence of:

Unofficial Witness

Notary Public

[Notary Seal]

GRANTOR:

HULL REAL ESTATE, L.L.C., a Georgia limited liability company

By: FRED REALTY, INC., a Georgia corporation, Manager

By: _____
Frederick J. Loef, President

[Corporate Seal]

STATE OF FLORIDA
COUNTY OF SARASOTA

Signed, sealed and delivered,
in the presence of:

Unofficial Witness

Notary Public

[Notary Seal]

DAWN DRUMGOOL
Notary Public - State of Florida
My Commission Expires Sep 17, 2005
Commission # DD078321

GRANTOR:

HULL REAL ESTATE, L.L.C., a Georgia limited liability company

By: TERRY REALTY, INC., a Georgia corporation, Manager

By: _____
Robert L. Brumberg, President

[Corporate Seal]

EXHIBIT "A"

Legal Description

PARCEL A:

All that tract or parcel of land situate, lying and being in Athens-Clarke County, Georgia, containing 15.63 acres, more or less, lying on the southeasterly side of the Old Hull Road bounded on the north by said Old Hull Road; on the east by lands conveyed by George F. Strother, Jr. and Elizabeth Strother Hawkins to Athena, Inc., on May 31, 1963; on the south by said lands to Athena, Inc., the south line being the centerline of the Seaboard Air Line Railroad right of way; and on the west by the former Comer lands of Athens, Inc. Said 15.63 acres are more particularly described as beginning at its northeast corner on the centerline of said railroad right of way at the corner with the lands conveyed by George F. Strother, Jr., and Elizabeth Strother Hawkins to Athens, Inc., the deed of conveyance being recorded in Deed Book 218, page 348, in the Office of the Clerk of the Superior Court of Athens-Clarke County, Georgia, and from said beginning point running north 68 degrees 41 minutes west 516.3 feet along line of Athena, Inc., to an iron pin on the southeast side of said Old Hull Road; running thence south 29 degrees 42 minutes west 1,182.7 feet along said Old Hull Road to an iron pin at the corner of said Comer lands of Athens, Inc.; running thence south 55 degrees 47 minutes east 686 feet along the line of said Comer lands to the centerline of said Seaboard Air Line Railroad right of way; thence north 22 degrees 11 minutes east 1315 feet, more or less, along said centerline to the point of beginning.

PARCEL B:

All that tract or parcel of land lying and being in the 220th District, G.M., Athens-Clarke County, Georgia, containing 1.333 acres, more or less, and being shown and designated as Tract 7 according to a plat prepared by Ben McLeroy & Associates, dated December 13, 1972, as last revised May 16, 1977, entitled "Athena Industrial Park", said plat being recorded in Plat Book 16, page 153, in the Office of the Clerk of the Superior Court of Athens-Clarke County, Georgia, to which plat reference is hereby specifically made for a more detailed description. This being a portion of the property conveyed from Lane Limited, a New York corporation, to Stone Mountain Industrial Park, Inc., a Georgia corporation, by Warranty Deed dated May 3, 1983, recorded in Deed Book 436, page 593, Athens-Clarke County, Georgia Records.

Together with all that tract or parcel of land, together with all improvements thereon, situate, lying and being in Athens-Clarke County, Georgia, and being the southwesterly one-half of that certain street having a 60' right of way known as Calhoun Drive as shown on that certain Plat of survey entitled "Plat of Binkley Const. Co. Property" prepared by J.R. Holland, Registered Surveyor, dated October 10, 1964. The said property known as Calhoun Drive commencing on the easterly side of Old Hull Road and running thence in a southeasterly direction approximately 425 feet to the westerly right of way of Seaboard Coast Line Railroad.

EXHIBIT "B"

Exceptions

1. All taxes for the year 2002, which are a lien and are not yet due and payable, and subsequent years and any additional taxes which may result from a reassessment of the subject property.

2. Railroad right of way dated June 3, 1890, recorded in Deed Book HH, page 735, Athens-Clarke County, Georgia Records.

3. Easements from George F. Strother, et al, in favor of Georgia Power Company dated June 19, 1946, recorded in Deed Book 99, page 92; and dated January 20, 1947, recorded in Deed Book 105, page 138, Athens-Clarke County, Georgia Records.

4. Easement from Athena, Inc., in favor of Atlanta Gas Light Company, dated September 4, 1968, and recorded in Deed Book 308, page 438, Athens-Clarke County, Georgia Records.

5. Notice of environmental hazard contained in Affidavit recorded in Deed Book 2183, page 371, Athens-Clarke County, Georgia Records.

6. Title to any portion of the subject property which lies within the Seaboard Coast Line Railroad right of way.

Prepared by and Return to:
Upshaw C. Bentley, Jr.
Fortson, Bentley and Griffin, P.A.
P.O. Box 1744
Athens, Georgia 30603-1744

SATISFIED OF RECORD
THE 8 DAY OF Oct, 2002
CLERK OF SUPERIOR COURT
CLARKE COUNTY, GEORGIA
DEPUTY CLERK'S INITIALS

FILED IN OFFICE
CLERK SUPERIOR COURT
CLARKE COUNTY, GEORGIA
02 OCT -8 PM 2:07
RECORDED
BOOK 1278 PAGE 491
DATE 10-8-02
BEVERLY LOGAN, CLERK

STATE OF GEORGIA
ATHENS-CLARKE COUNTY

RELEASE

The indebtedness referred to in that certain Deed to Secure Debt, Security Agreement, Assignment of Leases and Rents and Fixture Financing Statement from **The Loef Company, Inc.**, a Georgia corporation, to **Hull Road Associates, L.L.C.**, a Georgia limited liability company, dated June 30, 1995, and recorded in Deed Book **1519**, page **228**; UCC-2 Notice Filing for UCC Real Estate Related Collateral recorded in Deed Book **1519**, page **280**; and First Amendment to Deed to Secure Debt, Security Agreement, Assignment of Leases and Rents and Fixture Financing Statement dated December 30, 1997, and recorded in Deed Book **1680**, page **412** (collectively, the "deed"); all in the Office of the Clerk of the Superior Court of Athens-Clarke County, Georgia, having been paid in full and the undersigned being the present record holder and owner of such deed by virtue of being the original Grantee the Clerk of such Superior Court is authorized and directed to cancel that deed of record as provided in Code Section 44-14-4 of the O.C.G.A. for other mortgage cancellations.

IN WITNESS WHEREOF, the undersigned have set their hands and seals, this 3rd day of October, 2002.

Signed, sealed and delivered
in the presence of:

Unofficial Witness

Notary Public

[Notary Seal]

MICHAEL J. McCLEARY
NOTARY PUBLIC
ATHENS-CLARKE COUNTY, GA
EXP. NOV. 7, 2003

HULL ROAD ASSOCIATES, L.L.C.

By: FRED REALTY, INC., a Georgia corporation, Manager

By: _____
Frederick J. Loef, President

[Corporate Seal]

[Signatures continued on next page]

APPENDIX B

FIELD WATER QUALITY SAMPLING FORMS

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/411

Well Information

Well Identification No: **MW-2A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 33.15 feet

Depth to Water from TOC: **18.00** feet

Length of Static Water Column: 15.15 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **2.58** gallons (1 well volume) **7.73** gallons (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	5.53	0.360	1.360	20.75	-0.37	355
2	5.43	0.281	0.710	20.77	5.00	120
3	5.45	0.295	0.540	20.78	10.00	2.7
4						
5						
6						
7						

Purged To Dryness: Approximatley 8 gallons purged prior to sampling.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-2A	2 - 40 ml	HCL	Method 8260B Volatile Organics

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-3A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 30.00 feet

Depth to Water from TOC: **26.15** feet

Length of Static Water Column: 3.85 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **0.65** gallons **1.96** gallons

(1 well volume) (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	4.30	0.060	2.64	20.82	326	45
2	4.40	0.057	1.91	20.96	304	8.9
3	4.40	0.057	1.34	20.94	301	6.2
4						
5						
6						
7						

Purged To Dryness: Approximately 2 gallons purged prior to sampling.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-3	2 - 40 ml	HCL	Method 8260B Volatile Organics

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-4A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 29.50 feet

Depth to Water from TOC: **25.49** feet

Length of Static Water Column: 4.01 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **0.68** gallons (1 well volume) **2.05** gallons (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	4.60	0.950	3.11	21.45	314	360
2	4.54	0.960	7.85	21.35	323	12.1
3	4.62	0.930	2.10	21.76	330	9.7
4						
5						
6						
7						

Purged To Dryness: Approximately 2.5 gallons purged prior to sampling.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-4	2 - 40 ml	HCL	Method 8260B Volatile Organics

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-6** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 30.00 feet

Depth to Water from TOC: **20.50** feet

Length of Static Water Column: 9.50 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **1.62** gallons (1 well volume) **4.85** gallons (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	4.60	0.036	5.13	21.99	325	58
2	4.96	0.029	5.59	21.58	310	18
3	4.29	0.029	8.53	21.58	353	7.2
4	4.25	0.03	8.51	21.62	366	4.8
5						
6						
7						

Purged To Dryness: Approximately gallons purged prior to sample collection.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-6	2 - 40 ml	HCL	Method 8260B Volatile Organics

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-7A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 19.50 feet

Depth to Water from TOC: **18.05** feet

Length of Static Water Column: 1.45 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **0.25** gallons **0.74** gallons

(1 well volume) (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	5.27	0.551	5.44	20.77	98	327
2	5.11	0.547	4.83	20.61	154	98
3	5.09	0.544	3.85	20.59	199	1.9
4						
5						
6						
7						

Purged To Dryness: Approximately 1.5 gallons purged prior to sample collection.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-7	2 - 40 ml	HCL	Method 8260B Volatile Organics

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-8A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 19.50 feet

Depth to Water from TOC: **16.87** feet

Length of Static Water Column: 2.63 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **0.45** gallons (1 well volume) **1.34** gallons (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	5.32	0.820	2.85	21.26	90	563
2	5.11	0.817	2.56	20.83	168	112
3	5.12	0.811	2.12	20.58	187	2.2
4						
5						
6						
7						

Purged To Dryness: Purged approximately 2.0 gallons prior to sample collection.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-8	2 - 40 ml	HCL	Method 8260B Volatile Organics
	1 - 500 ml	HNO3	Method 6010 - Lead

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

Monitoring Well Purging & Sampling Information

Peachtree Project: Former Loef Facility (Hull) **Project No.:** 2318 **Date:** 8/4/11

Well Information

Well Identification No: **MW-9A** Location: Athens, Georgia

Well Diameter: 2-Inch Well Construction: Schedule 40 PVC

Total Well Depth from TOC: 20.00 feet

Depth to Water from TOC: **14.80** feet

Length of Static Water Column: 5.20 feet

NOTES:

Well Observations

General Condition of Well: Good General Condition of surrounding area: Good

LNAPL observation: NA Method of measure: NA

Volume of water in well = Height (Ht) of water in well x K

where: K = 0.17 (2-inch well)

0.571 (3-inch well)

0.652 (4-inch well)

Volume of water in well (Ht. x K): **0.88** gallons (1 well volume) **2.65** gallons (3 well volumes)

Well Purging

Purging method: Electric adjustable flow rate submerissible pump.

Well Volumes	pH	Conductivity (us/cm)	Dissolved Oxygen	Temperature (^{0}C)	ORP	Turbidity (NTUs)
1	6.34	0.688	4.77	21.55	-22	167
2	6.22	0.677	4.61	21.40	-33	25
3	6.20	0.670	4.57	21.38	-42	5.2
4						
5						
6						
7						

Purged To Dryness: Approximatley 3 gallons purged prior to sampling.

Sample Information

Method of sampling: Teflon bailer with Teflon-coated wire lead.

Decontamination procedures: Dedicated, one time use sampling equipment per each well per sampling event. Non-disposal sampling equipment decontaminated per applicable USEPA SESD procedures.

Sample ID	Container	Preservative	Analyses
HRE-0811-MW-9	2 - 40 ml	HCL	Method 8260B Volatile Organics
	1-500 ml	HNO3	Method 6010 - Lead

Sample Transport and Preservation: Ice Filled Cooler

Sample Destination: Analytical Environmental Services, Inc. Via: Hand Delivery via Peachtree Personnel

Chain of Custody completed: Yes

Peachtree Environmental Personnel: Michael H. Wilson & Jason P. Chappell

APPENDIX C

AUGUST 2011 ANALYTICAL TESTING DATA REPORT

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

August 10, 2011

Michael H. Wilson
Peachtree Environmental
5384 Chaversham Lane
Norcross GA 300922167

TEL: (770) 330-3327
FAX: (770) 559-8051

RE: Former Loef Facility

Dear Michael H. Wilson: Order No: 1108440

Analytical Environmental Services, Inc. received 9 samples on 8/5/2011 9:20:00 AM 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 07/01/11-06/30/12.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/13.

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: 1108440

Date: 8/5/11 Page 1 of 1

COMPANY: PEACHTREE ENVIRONMENTAL, INC.

ADDRESS: 5384 Chaverchem Ln, Norcross, GA 30092

PHONE: 770-559-8050 FAX: 770-559-8051

SAMPLED BY: JASON P. CHAPPELL/MIKE WILSON SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	8260	TOC	Sulfide	Sulfate	Nitrate	Methane, ethane ethene	Ferrous Iron	Ion Scan	REMARKS	No # of Containers
	PRESERVATION (See codes)															
1	HRE-0811-MW-6	8/4/11	705	✓		GW	✓	✓	✓	✓	✓	✓	✓	✓		7
2	HRE-0811-MW-3A		815	✓		GW	✓	✓	✓	✓	✓	✓	✓	✓		7
3	HRE-0811-MW-4A		915	✓		GW	✓	✓	✓	✓	✓	✓	✓	✓		7
4	HRE-0811-MW-2A		1045	✓		GW	✓	✓	✓	✓	✓	✓	✓	✓		7
5	HRE-0811-MW-9A		1145	✓		GW	✓									2
6	HRE-0811-MW-8A		1300	✓		GW	✓									2
7	HRE-0811-MW-7A		1400	✓		GW	✓									2
8	HRE-0811-DUP			✓		GW	✓									
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.	8/5/11 920	1.	8/5/11
2.		2.	9:20
3.		3.	

PROJECT INFORMATION

PROJECT NAME: FORMER LOEF FACILITY (HULL)

PROJECT #: 2318

SITE ADDRESS: ATHENS, GEORGIA

SEND REPORT TO: Michael Wilson

INVOICE TO (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers:

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)

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: 10-Aug-11

Client: Peachtree Environmental
Project: Former Loef Facility
Lab ID: 1108440

Case Narrative

The samples " HRE-0811-MW-6", " HRE-0811-MW-3A", and " HRE-0811-MW-4A" were received out of holding time of one day for Ferrous Iron by SM3500-FE D. Proceed with analysis per Jason Chappell on 8/5/11.

Sample Receiving Nonconformance:

A Trip Blank was provided but not listed on the Chain of Custody. Trip blank analyzed at no cost to the client.

Volatile Organic Compounds Analysis by Method 8260B:

Trichloroethene values for the QC samples 1108440-004AMS/MSD are "E" qualified indicating estimated values over linear calibration range due to the level of target analyte present in the unspiked sample.

Acetone, cis-1,2-Dichloroethene and Trichloroethene values for sample 1108440-004A are "E" qualified indicating an estimated value over linear calibration range. Sample could not be diluted and reanalyzed due to second vial used as MS/MSD.

Total Organic Carbon Analysis by Method 9060:

Due to sample matrix, sample 1108440-003C required a dilution during preparation and/or analysis resulting in elevated reporting limits.

Analytical Environmental Services, Inc **Date:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-6
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 7:05:00 AM
Lab ID:	1108440-001	**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	R202632	1	08/05/2011 13:49	GR
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
2-Butanone	BRL	50		ug/L	150007	1	08/06/2011 02:04	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
Acetone	BRL	50		ug/L	150007	1	08/06/2011 02:04	SB
Benzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Chloroethane	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Chloromethane	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Freon-113	BRL	10		ug/L	150007	1	08/06/2011 02:04	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-6
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 7:05:00 AM
Lab ID:	1108440-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Styrene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Toluene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Trichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:04	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/06/2011 02:04	SB
Surr: 4-Bromofluorobenzene	81.9	64.7-130		%REC	150007	1	08/06/2011 02:04	SB
Surr: Dibromofluoromethane	102	80.7-129		%REC	150007	1	08/06/2011 02:04	SB
Surr: Toluene-d8	96.9	71.1-120		%REC	150007	1	08/06/2011 02:04	SB
Sulfide by SW9030B/9034				**(SW9030B)**				
Sulfide	BRL	2.00		mg/L	150089	1	08/09/2011 10:00	AS
ION SCAN SW9056A								
Nitrate	0.43	0.25		mg/L	R202648	1	08/05/2011 10:56	GR
Sulfate	BRL	1.0		mg/L	R202648	1	08/05/2011 10:56	GR
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	BRL	9		ug/L	150006	1	08/08/2011 10:19	AK
Ethylene	BRL	7		ug/L	150006	1	08/08/2011 10:19	AK
Methane	BRL	4		ug/L	150006	1	08/08/2011 10:19	AK
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100	H	mg/L	R202903	1	08/05/2011 10:35	CG

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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-3A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 8:15:00 AM
Lab ID:	1108440-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	1.42	1.00		mg/L	R202632	1	08/05/2011 14:12	GR
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
2-Butanone	BRL	50		ug/L	150007	1	08/06/2011 02:33	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
Acetone	BRL	50		ug/L	150007	1	08/06/2011 02:33	SB
Benzene	13	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Chloroethane	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Chloromethane	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Freon-113	BRL	10		ug/L	150007	1	08/06/2011 02:33	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-3A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 8:15:00 AM
Lab ID:	1108440-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Styrene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Toluene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Trichloroethene	11	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/06/2011 02:33	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/06/2011 02:33	SB
Surr: 4-Bromofluorobenzene	82.9	64.7-130		%REC	150007	1	08/06/2011 02:33	SB
Surr: Dibromofluoromethane	105	80.7-129		%REC	150007	1	08/06/2011 02:33	SB
Surr: Toluene-d8	91.9	71.1-120		%REC	150007	1	08/06/2011 02:33	SB
Sulfide by SW9030B/9034				**(SW9030B)**				
Sulfide	BRL	2.00		mg/L	150089	1	08/09/2011 10:00	AS
ION SCAN SW9056A								
Nitrate	1.7	0.25		mg/L	R202648	1	08/05/2011 11:11	GR
Sulfate	BRL	1.0		mg/L	R202648	1	08/05/2011 11:11	GR
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	120	9		ug/L	150006	1	08/08/2011 10:37	AK
Ethylene	BRL	7		ug/L	150006	1	08/08/2011 10:37	AK
Methane	1700	80		ug/L	150006	20	08/08/2011 11:08	AK
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100	H	mg/L	R202903	1	08/05/2011 10:35	CG

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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-4A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 9:15:00 AM
Lab ID:	1108440-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	BRL	5.00		mg/L	R202632	5	08/05/2011 17:34	GR
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
2-Butanone	BRL	50		ug/L	150007	1	08/06/2011 03:01	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
Acetone	BRL	50		ug/L	150007	1	08/06/2011 03:01	SB
Benzene	29	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Chloroethane	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Chloromethane	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
cis-1,2-Dichloroethene	9.5	5.0		ug/L	150007	1	08/06/2011 03:01	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Freon-113	BRL	10		ug/L	150007	1	08/06/2011 03:01	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-4A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 9:15:00 AM
Lab ID:	1108440-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Styrene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Toluene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Trichloroethene	51	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:01	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/06/2011 03:01	SB
Surr: 4-Bromofluorobenzene	85.6	64.7-130		%REC	150007	1	08/06/2011 03:01	SB
Surr: Dibromofluoromethane	96.2	80.7-129		%REC	150007	1	08/06/2011 03:01	SB
Surr: Toluene-d8	90.7	71.1-120		%REC	150007	1	08/06/2011 03:01	SB
Sulfide by SW9030B/9034				**(SW9030B)**				
Sulfide	BRL	2.00		mg/L	150089	1	08/09/2011 10:00	AS
ION SCAN SW9056A								
Nitrate	0.84	0.25		mg/L	R202648	1	08/05/2011 11:26	GR
Sulfate	1.7	1.0		mg/L	R202648	1	08/05/2011 11:26	GR
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	26	9		ug/L	150006	1	08/08/2011 10:41	AK
Ethylene	BRL	7		ug/L	150006	1	08/08/2011 10:41	AK
Methane	440	20		ug/L	150006	5	08/08/2011 11:14	AK
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	BRL	0.100	H	mg/L	R202903	1	08/05/2011 10:35	CG

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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-2A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 10:45:00 AM
Lab ID:	1108440-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	60.8	5.00		mg/L	R202632	5	08/05/2011 15:04	GR
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
1,1,1-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,1-Dichloroethane	21	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,1-Dichloroethene	19	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
2-Butanone	210	50		ug/L	150007	1	08/06/2011 03:30	SB
2-Hexanone	12	10		ug/L	150007	1	08/06/2011 03:30	SB
4-Methyl-2-pentanone	90	10		ug/L	150007	1	08/06/2011 03:30	SB
Acetone	670	50	E	ug/L	150007	1	08/06/2011 03:30	SB
Benzene	13	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Carbon disulfide	9.0	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Chloroethane	BRL	10		ug/L	150007	1	08/06/2011 03:30	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Chloromethane	BRL	10		ug/L	150007	1	08/06/2011 03:30	SB
cis-1,2-Dichloroethene	390	5.0	E	ug/L	150007	1	08/06/2011 03:30	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/06/2011 03:30	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Freon-113	BRL	10		ug/L	150007	1	08/06/2011 03:30	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
m,p-Xylene	7.8	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Methyl tert-butyl ether	43	5.0		ug/L	150007	1	08/06/2011 03:30	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-2A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 10:45:00 AM
Lab ID:	1108440-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
o-Xylene	7.6	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Styrene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Toluene	13	5.0		ug/L	150007	1	08/06/2011 03:30	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Trichloroethene	810	5.0	E	ug/L	150007	1	08/06/2011 03:30	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/06/2011 03:30	SB
Vinyl chloride	61	2.0		ug/L	150007	1	08/06/2011 03:30	SB
Surr: 4-Bromofluorobenzene	101	64.7-130		%REC	150007	1	08/06/2011 03:30	SB
Surr: Dibromofluoromethane	93	80.7-129		%REC	150007	1	08/06/2011 03:30	SB
Surr: Toluene-d8	105	71.1-120		%REC	150007	1	08/06/2011 03:30	SB
Sulfide by SW9030B/9034				**(SW9030B)**				
Sulfide	BRL	2.00		mg/L	150089	1	08/09/2011 10:00	AS
ION SCAN SW9056A								
Nitrate	BRL	0.25		mg/L	R202648	1	08/05/2011 11:40	GR
Sulfate	BRL	1.0		mg/L	R202648	1	08/05/2011 11:40	GR
GC Analysis of Gaseous Samples SOP-RSK 175				**(RSK175)**				
Ethane	78	9		ug/L	150006	1	08/08/2011 10:46	AK
Ethylene	BRL	7		ug/L	150006	1	08/08/2011 10:46	AK
Methane	3100	200		ug/L	150006	50	08/08/2011 11:20	AK
Ferrous Iron SM3500-Fe-B								
Iron, as Ferrous (Fe+2)	47.0	5.00		mg/L	R202903	50	08/05/2011 10:35	CG

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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-9A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 11:45:00 AM
Lab ID:	1108440-005	**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	150007	1	08/08/2011 11:48	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
2-Butanone	BRL	50		ug/L	150007	1	08/08/2011 11:48	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
Acetone	BRL	50		ug/L	150007	1	08/08/2011 11:48	SB
Benzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Chloroethane	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Chloromethane	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Freon-113	BRL	10		ug/L	150007	1	08/08/2011 11:48	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-9A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 11:45:00 AM
Lab ID:	1108440-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Toluene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Trichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/08/2011 11:48	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/08/2011 11:48	SB
Surr: 4-Bromofluorobenzene	80.4	64.7-130		%REC	150007	1	08/08/2011 11:48	SB
Surr: Dibromofluoromethane	104	80.7-129		%REC	150007	1	08/08/2011 11:48	SB
Surr: Toluene-d8	93.2	71.1-120		%REC	150007	1	08/08/2011 11:48	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-8A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 11:45:00 AM
Lab ID:	1108440-006	**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	150007	1	08/08/2011 12:17	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
2-Butanone	BRL	50		ug/L	150007	1	08/08/2011 12:17	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
Acetone	BRL	50		ug/L	150007	1	08/08/2011 12:17	SB
Benzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Chloroethane	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Chloromethane	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Freon-113	BRL	10		ug/L	150007	1	08/08/2011 12:17	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-8A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 11:45:00 AM
Lab ID:	1108440-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Toluene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Trichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:17	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/08/2011 12:17	SB
Surr: 4-Bromofluorobenzene	83	64.7-130		%REC	150007	1	08/08/2011 12:17	SB
Surr: Dibromofluoromethane	101	80.7-129		%REC	150007	1	08/08/2011 12:17	SB
Surr: Toluene-d8	93	71.1-120		%REC	150007	1	08/08/2011 12:17	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-7A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 1:00:00 PM
Lab ID:	1108440-007	**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	150007	1	08/08/2011 12:45	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
2-Butanone	BRL	50		ug/L	150007	1	08/08/2011 12:45	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
Acetone	BRL	50		ug/L	150007	1	08/08/2011 12:45	SB
Benzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Chloroethane	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Chloromethane	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Freon-113	BRL	10		ug/L	150007	1	08/08/2011 12:45	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-MW-7A
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 1:00:00 PM
Lab ID:	1108440-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Toluene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Trichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/08/2011 12:45	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/08/2011 12:45	SB
Surr: 4-Bromofluorobenzene	83.2	64.7-130		%REC	150007	1	08/08/2011 12:45	SB
Surr: Dibromofluoromethane	105	80.7-129		%REC	150007	1	08/08/2011 12:45	SB
Surr: Toluene-d8	94	71.1-120		%REC	150007	1	08/08/2011 12:45	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-DUP
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 2:00:00 PM
Lab ID:	1108440-008	**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	150007	1	08/08/2011 13:14	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,1-Dichloroethane	21	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,1-Dichloroethene	18	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
2-Butanone	150	50		ug/L	150007	1	08/08/2011 13:14	SB
2-Hexanone	10	10		ug/L	150007	1	08/08/2011 13:14	SB
4-Methyl-2-pentanone	79	10		ug/L	150007	1	08/08/2011 13:14	SB
Acetone	630	500		ug/L	150007	10	08/08/2011 13:43	SB
Benzene	11	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Carbon disulfide	7.2	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Chloroethane	BRL	10		ug/L	150007	1	08/08/2011 13:14	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Chloromethane	BRL	10		ug/L	150007	1	08/08/2011 13:14	SB
cis-1,2-Dichloroethene	310	50		ug/L	150007	10	08/08/2011 13:43	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/08/2011 13:14	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Freon-113	BRL	10		ug/L	150007	1	08/08/2011 13:14	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
m,p-Xylene	7.1	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Methyl tert-butyl ether	38	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
o-Xylene	6.8	5.0		ug/L	150007	1	08/08/2011 13:14	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	HRE-0811-DUP
Project Name:	Former Loef Facility	**Collection Date:**	8/4/2011 2:00:00 PM
Lab ID:	1108440-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Toluene	11	5.0		ug/L	150007	1	08/08/2011 13:14	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Trichloroethene	680	50		ug/L	150007	10	08/08/2011 13:43	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/08/2011 13:14	SB
Vinyl chloride	55	2.0		ug/L	150007	1	08/08/2011 13:14	SB
Surr: 4-Bromofluorobenzene	85.6	64.7-130		%REC	150007	10	08/08/2011 13:43	SB
Surr: 4-Bromofluorobenzene	102	64.7-130		%REC	150007	1	08/08/2011 13:14	SB
Surr: Dibromofluoromethane	97.5	80.7-129		%REC	150007	1	08/08/2011 13:14	SB
Surr: Dibromofluoromethane	103	80.7-129		%REC	150007	10	08/08/2011 13:43	SB
Surr: Toluene-d8	97.6	71.1-120		%REC	150007	10	08/08/2011 13:43	SB
Surr: Toluene-d8	107	71.1-120		%REC	150007	1	08/08/2011 13:14	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	TRIP BLANK
Project Name:	Former Loef Facility	**Collection Date:**	8/5/2011
Lab ID:	1108440-009	**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	150007	1	08/05/2011 18:26	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,1-Dichloroethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,1-Dichloroethene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2-Dibromoethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2-Dichloroethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,2-Dichloropropane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
2-Butanone	BRL	50		ug/L	150007	1	08/05/2011 18:26	SB
2-Hexanone	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
4-Methyl-2-pentanone	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
Acetone	BRL	50		ug/L	150007	1	08/05/2011 18:26	SB
Benzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Bromodichloromethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Bromoform	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Bromomethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Carbon disulfide	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Carbon tetrachloride	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Chlorobenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Chloroethane	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
Chloroform	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Chloromethane	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Cyclohexane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Dibromochloromethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Dichlorodifluoromethane	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
Ethylbenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Freon-113	BRL	10		ug/L	150007	1	08/05/2011 18:26	SB
Isopropylbenzene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
m,p-Xylene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Methyl acetate	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Methylcyclohexane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Methylene chloride	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
o-Xylene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	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:** 10-Aug-11

Client:	Peachtree Environmental	**Client Sample ID:**	TRIP BLANK
Project Name:	Former Loef Facility	**Collection Date:**	8/5/2011
Lab ID:	1108440-009	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				**(SW5030B)**				
Styrene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Tetrachloroethene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Toluene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Trichloroethene	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Trichlorofluoromethane	BRL	5.0		ug/L	150007	1	08/05/2011 18:26	SB
Vinyl chloride	BRL	2.0		ug/L	150007	1	08/05/2011 18:26	SB
Surr: 4-Bromofluorobenzene	86.5	64.7-130		%REC	150007	1	08/05/2011 18:26	SB
Surr: Dibromofluoromethane	95.3	80.7-129		%REC	150007	1	08/05/2011 18:26	SB
Surr: Toluene-d8	92.2	71.1-120		%REC	150007	1	08/05/2011 18:26	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 Peachtree Env. Work Order Number 1108440

Checklist completed by PT 8/5/11
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 ✓

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

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

Cooler #1 3.3°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 PT

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: Peachtree Environmental
Project: Former Loef Facility
Lab Order: 1108440

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1108440-001A	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/06/2011
1108440-001B	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	GC Analysis of Gaseous Samples		08/08/2011	08/08/2011
1108440-001C	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	Total Organic Carbon (TOC)			08/05/2011
1108440-001D	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	Sulfide by SW9030/9034		08/09/2011	08/09/2011
1108440-001E	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	ION SCAN			08/05/2011
1108440-001E	HRE-0811-MW-6	8/4/2011 7:05:00AM	Groundwater	Ferrous Iron			08/05/2011
1108440-002A	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/06/2011
1108440-002B	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	GC Analysis of Gaseous Samples		08/08/2011	08/08/2011
1108440-002C	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	Total Organic Carbon (TOC)			08/05/2011
1108440-002D	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	Sulfide by SW9030/9034		08/09/2011	08/09/2011
1108440-002E	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	ION SCAN			08/05/2011
1108440-002E	HRE-0811-MW-3A	8/4/2011 8:15:00AM	Groundwater	Ferrous Iron			08/05/2011
1108440-003A	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/06/2011
1108440-003B	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	GC Analysis of Gaseous Samples		08/08/2011	08/08/2011
1108440-003C	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	Total Organic Carbon (TOC)			08/05/2011
1108440-003D	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	Sulfide by SW9030/9034		08/09/2011	08/09/2011
1108440-003E	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	ION SCAN			08/05/2011
1108440-003E	HRE-0811-MW-4A	8/4/2011 9:15:00AM	Groundwater	Ferrous Iron			08/05/2011
1108440-004A	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/06/2011
1108440-004A	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	Volatile Organic Compounds by GC/MS		08/05/2011	08/06/2011
1108440-004B	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	GC Analysis of Gaseous Samples		08/08/2011	08/08/2011
1108440-004C	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	Total Organic Carbon (TOC)			08/05/2011
1108440-004D	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	Sulfide by SW9030/9034		08/09/2011	08/09/2011
1108440-004E	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	ION SCAN			08/05/2011
1108440-004E	HRE-0811-MW-2A	8/4/2011 10:45:00AM	Groundwater	Ferrous Iron			08/05/2011
1108440-005A	HRE-0811-MW-9A	8/4/2011 11:45:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/08/2011
1108440-006A	HRE-0811-MW-8A	8/4/2011 11:45:00AM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/08/2011
1108440-007A	HRE-0811-MW-7A	8/4/2011 1:00:00PM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/08/2011
1108440-008A	HRE-0811-DUP	8/4/2011 2:00:00PM	Groundwater	TCL VOLATILE ORGANICS		08/05/2011	08/08/2011

Client: Peachtree Environmental
Project: Former Loef Facility
Lab Order: 1108440

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1108440-009A	TRIP BLANK	8/5/2011 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		08/05/2011	08/05/2011

Client: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150006

Sample ID: **MB-150006** Client ID: Units: **ug/L** Prep Date: **08/08/2011** Run No: **202659**
SampleType: **MBLK** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **150006** Analysis Date: **08/08/2011** Seq No: **4235118**

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-150006** Client ID: Units: **ug/L** Prep Date: **08/08/2011** Run No: **202659**
SampleType: **LCS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **150006** Analysis Date: **08/08/2011** Seq No: **4235123**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	114.3	9	200	0	57.1	37.8	115	0	0	0	
Ethylene	76.56	7	200	0	38.3	24.4	115	0	0	0	
Methane	121.7	4	200	0	60.9	38	115	0	0	0	

Sample ID: **LCSD-150006** Client ID: Units: **ug/L** Prep Date: **08/08/2011** Run No: **202659**
SampleType: **LCSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **150006** Analysis Date: **08/08/2011** Seq No: **4235125**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	114.5	9	200	0	57.2	37.8	115	114.3	0.177	20	
Ethylene	76.90	7	200	0	38.4	24.4	115	76.56	0.439	20	
Methane	124.2	4	200	0	62.1	38	115	121.7	1.99	20	

Sample ID: **1108440-001BMS** Client ID: **HRE-0811-MW-6** Units: **ug/L** Prep Date: **08/08/2011** Run No: **202659**
SampleType: **MS** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **150006** Analysis Date: **08/08/2011** Seq No: **4235299**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	120.1	9	200	0	60	37.5	115	0	0	0	
Ethylene	79.82	7	200	0	39.9	23.1	115	0	0	0	
Methane	127.2	4	200	0	63.6	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150006

Sample ID: **1108440-001BMSD** Client ID: **HRE-0811-MW-6** Units: **ug/L** Prep Date: **08/08/2011** Run No: **202659**
SampleType: **MSD** TestCode: **GC Analysis of Gaseous Samples SOP-RSK 175** BatchID: **150006** Analysis Date: **08/08/2011** Seq No: **4235316**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Ethane	120.8	9	200	0	60.4	37.5	115	120.1	0.573	20	
Ethylene	80.54	7	200	0	40.3	23.1	115	79.82	0.902	20	
Methane	127.4	4	200	0	63.7	37.7	115	127.2	0.115	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150007

Sample ID: **MB-150007** Client ID: Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234439**

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 disulfide	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	

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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150007

Sample ID: **MB-150007** Client ID: Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **MBLK** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234439**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
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	43.93	0	50	0	87.9	64.7	130	0	0	0	
Surr: Dibromofluoromethane	46.94	0	50	0	93.9	80.7	129	0	0	0	
Surr: Toluene-d8	47.56	0	50	0	95.1	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150007

Sample ID: **LCS-150007** Client ID: Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **LCS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234438**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	44.70	5.0	50	0	89.4	60	140	0	0	0	
Benzene	54.92	5.0	50	0	110	70	130	0	0	0	
Chlorobenzene	48.94	5.0	50	0	97.9	70	130	0	0	0	
Toluene	55.23	5.0	50	0	110	70	130	0	0	0	
Trichloroethene	55.95	5.0	50	0	112	70	130	0	0	0	
Surr: 4-Bromofluorobenzene	51.27	0	50	0	103	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.91	0	50	0	97.8	80.7	129	0	0	0	
Surr: Toluene-d8	53.06	0	50	0	106	71.1	120	0	0	0	

Sample ID: **1108440-004AMS** Client ID: **HRE-0811-MW-2A** Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **MS** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	74.25	5.0	50	19.49	110	46.2	183	0	0	0	
Benzene	70.44	5.0	50	12.73	115	62.2	143	0	0	0	
Chlorobenzene	54.05	5.0	50	0	108	72.2	137	0	0	0	
Toluene	73.61	5.0	50	12.87	121	57.8	149	0	0	0	
Trichloroethene	782.1	5.0	50	810.5	-56.8	70.5	149	0	0	0	SE
Surr: 4-Bromofluorobenzene	53.84	0	50	0	108	64.7	130	0	0	0	
Surr: Dibromofluoromethane	48.55	0	50	0	97.1	80.7	129	0	0	0	
Surr: Toluene-d8	51.52	0	50	0	103	71.1	120	0	0	0	

Sample ID: **1108440-004AMSD** Client ID: **HRE-0811-MW-2A** Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234444**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	80.22	5.0	50	19.49	121	46.2	183	74.25	7.73	20	
Benzene	77.18	5.0	50	12.73	129	62.2	143	70.44	9.13	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150007

Sample ID: **1108440-004AMSD** Client ID: **HRE-0811-MW-2A** Units: **ug/L** Prep Date: **08/05/2011** Run No: **202628**
SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **150007** Analysis Date: **08/05/2011** Seq No: **4234444**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	58.09	5.0	50	0	116	72.2	137	54.05	7.21	20	
Toluene	78.38	5.0	50	12.87	131	57.8	149	73.61	6.28	20	
Trichloroethene	850.3	5.0	50	810.5	79.7	70.5	149	782.1	8.36	20	E
Surr: 4-Bromofluorobenzene	51.61	0	50	0	103	64.7	130	53.84	0	0	
Surr: Dibromofluoromethane	47.50	0	50	0	95	80.7	129	48.55	0	0	
Surr: Toluene-d8	52.69	0	50	0	105	71.1	120	51.52	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: 150089

Sample ID: **MB-150089** Client ID: Units: **mg/L** Prep Date: **08/09/2011** Run No: **202781**
SampleType: **MBLK** TestCode: **Sulfide by SW9030B/9034** BatchID: **150089** Analysis Date: **08/09/2011** Seq No: **4237657**

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-150089** Client ID: Units: **mg/L** Prep Date: **08/09/2011** Run No: **202781**
SampleType: **LCS** TestCode: **Sulfide by SW9030B/9034** BatchID: **150089** Analysis Date: **08/09/2011** Seq No: **4237658**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	356.0	2.00	356	0	100	40	120	0	0	0	

Sample ID: **1108264-003CMS** Client ID: Units: **mg/L** Prep Date: **08/09/2011** Run No: **202781**
SampleType: **MS** TestCode: **Sulfide by SW9030B/9034** BatchID: **150089** Analysis Date: **08/09/2011** Seq No: **4237662**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	35.60	2.00	35.6	0	100	71.9	119	0	0	0	

Sample ID: **1108264-003CMSD** Client ID: Units: **mg/L** Prep Date: **08/09/2011** Run No: **202781**
SampleType: **MSD** TestCode: **Sulfide by SW9030B/9034** BatchID: **150089** Analysis Date: **08/09/2011** Seq No: **4237663**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfide	35.60	2.00	35.6	0	100	71.9	119	35.60	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: R202632

Sample ID: **MB-R202632**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **202632**	
SampleType: **MBLK**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R202632**		Analysis Date: **08/05/2011**		Seq No: **4234474**	
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-R202632**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **202632**	
SampleType: **LCS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R202632**		Analysis Date: **08/05/2011**		Seq No: **4234471**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	25.07	1.00	25	0	100	90	110	0	0	0

Sample ID: **1108225-001AMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **202632**	
SampleType: **MS**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R202632**		Analysis Date: **08/05/2011**		Seq No: **4234478**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	35.12	1.00	25	9.831	101	80	120	0	0	0

Sample ID: **1108225-001AMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **202632**	
SampleType: **MSD**	TestCode: **Total Organic Carbon (TOC) SW9060A**				BatchID: **R202632**		Analysis Date: **08/05/2011**		Seq No: **4234480**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit Qual
Organic Carbon, Total	35.25	1.00	25	9.831	102	80	120	35.12	0.369	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: R202648

Sample ID: **MB-R202648** Client ID: Units: **mg/L** Prep Date: Run No: **202648**
SampleType: **MBLK** TestCode: **ION SCAN SW9056A** BatchID: **R202648** Analysis Date: **08/05/2011** Seq No: **4234832**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	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-R202648** Client ID: Units: **mg/L** Prep Date: Run No: **202648**
SampleType: **LCS** TestCode: **ION SCAN SW9056A** BatchID: **R202648** Analysis Date: **08/05/2011** Seq No: **4234837**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	4.788	0.25	5	0	95.8	90	110	0	0	0	
Sulfate	24.57	1.0	25	0	98.3	90	110	0	0	0	

Sample ID: **1108440-001EMS** Client ID: **HRE-0811-MW-6** Units: **mg/L** Prep Date: Run No: **202648**
SampleType: **MS** TestCode: **ION SCAN SW9056A** BatchID: **R202648** Analysis Date: **08/05/2011** Seq No: **4234868**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	5.346	0.25	5	0.4275	98.4	90	110	0	0	0	
Sulfate	24.96	1.0	25	0	99.8	90	110	0	0	0	

Sample ID: **1108440-001EMSD** Client ID: **HRE-0811-MW-6** Units: **mg/L** Prep Date: Run No: **202648**
SampleType: **MSD** TestCode: **ION SCAN SW9056A** BatchID: **R202648** Analysis Date: **08/05/2011** Seq No: **4234873**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Nitrate	5.364	0.25	5	0.4275	98.7	90	110	5.346	0.326	20	
Sulfate	24.98	1.0	25	0	99.9	90	110	24.96	0.062	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: Peachtree Environmental
Project Name: Former Loef Facility
Workorder: 1108440

ANALYTICAL QC SUMMARY REPORT

BatchID: R202903

Sample ID: **MB-R202903**	Client ID:			Units: **mg/L**	Prep Date:		Run No: **202903**
SampleType: **MBLK**	TestCode: **Ferrous Iron** **SM3500-Fe-B**			BatchID: **R202903**	Analysis Date: **08/05/2011**		Seq No: **4240139**

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-R202903**	Client ID:			Units: **mg/L**	Prep Date:		Run No: **202903**
SampleType: **LCS**	TestCode: **Ferrous Iron** **SM3500-Fe-B**			BatchID: **R202903**	Analysis Date: **08/05/2011**		Seq No: **4240140**

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)	0.5267	0.100	0.5	0	105	85	115	0	0	0	

Sample ID: **1108440-004EMS**	Client ID: **HRE-0811-MW-2A**			Units: **mg/L**	Prep Date:		Run No: **202903**
SampleType: **MS**	TestCode: **Ferrous Iron** **SM3500-Fe-B**			BatchID: **R202903**	Analysis Date: **08/05/2011**		Seq No: **4240149**

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)	69.37	5.00	25	46.96	89.6	80	120	0	0	0	

Sample ID: **1108440-004EMSD**	Client ID: **HRE-0811-MW-2A**			Units: **mg/L**	Prep Date:		Run No: **202903**
SampleType: **MSD**	TestCode: **Ferrous Iron** **SM3500-Fe-B**			BatchID: **R202903**	Analysis Date: **08/05/2011**		Seq No: **4240151**

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)	70.41	5.00	25	46.96	93.8	80	120	69.37	1.49	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		

APPENDIX D

NATURAL ATTENUATION INPUT AND OUTPUT PARAMETERS

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

Score: 25

Scroll to End of Table

* reductive dechlorination

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	○	◉	0
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	◉	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	◉	○	2
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	◉	○	3
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	◉	○	2
Sulfide*	>1 mg/L	Reductive pathway possible	○	◉	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	◉	○	3
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	○	◉	0
pH*	5 < pH < 9	Optimal range for reductive pathway	◉	○	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	◉	○	2
Temperature*	>20^{o}C	At T >20^{o}C biochemical process is accelerated	◉	○	1
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	○	
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	○	
Chloride*	>2x background	Daughter product of organic chlorine	○	○	
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	○	
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	○	
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	○	◉	0
TCE*		Daughter product of PCE [a/]	◉	○	2
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE[a/]; 1,1-DCE can be a chem. reaction product of TCA	◉ ○	○ ○	2
VC*		Daughter product of DCE[a/]			2
1,1,1-Trichloroethane*		Material released			

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

Score: 25

Scroll to End of Table

* reductive dechlorination

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
DCA		Daughter product of TCA under reducing conditions	◉	○	2
Carbon Tetrachloride		Material released	○	○	
Chloroethane*		Daughter product of DCA or VC under reducing conditions	○	◉	0
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene	○	◉	0
	>0.1 mg/L	Daughter product of VC/ethene	◉	○	3
Chloroform		Daughter product of Carbon Tetrachloride	○	◉	0
Dichloromethane		Daughter product of Chloroform	○	◉	0

* required analysis.

a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

SCORE

Reset

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Hull (Loef)
Athens, 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	187.5	(ft/yr)
or			
Hydraulic Conductivity	K	2.5E-03	(cm/sec)
Hydraulic Gradient	i	0.0145	(ft/ft)
Effective Porosity	n	0.2	(-)

2. DISPERSION

Alpha x*	67.5	(ft)
(Alpha y) / (Alpha x)*	6.75	(-)
(Alpha z) / (Alpha x)*	7.E-01	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R
or

Soil Bulk Density, rho	1.7	(kg/L)	
FractionOrganicCarbon, foc	2.0E-3	(-)	
Partition Coefficient	Koc		
PCE	155	(L/kg)	3.64 (-)
TCE	166	(L/kg)	3.82 (-)
DCE	36	(L/kg)	1.60 (-)
VC	19	(L/kg)	1.32 (-)
ETH	0	(L/kg)	1.00 (-)

Common R (used in model)* = 1.60

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

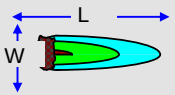
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.877	0.79	0.79
TCE → DCE	0.936	0.74	0.74
DCE → VC	1.083	0.64	0.64
VC → ETH	1.540	0.45	0.45

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*	100	(yr)
Modeled Area Width*	425	(ft)
Modeled Area Length*	675	(ft)
Zone 1 Length*	675	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Decaying Single Planar

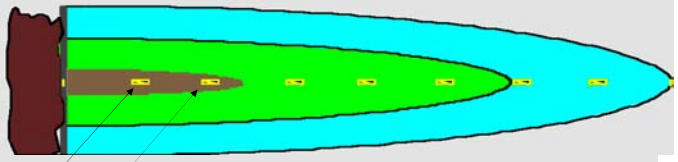
Source Options

Source Thickness in Sat. Zone* 25 (ft)

Width* (ft) Y1: 425

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE	.0	0
TCE	.71	0
DCE	.017	0
VC	.054	0
ETH	0.007	0

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)	.0	.0										
TCE Conc. (mg/L)	.71	.0										
DCE Conc. (mg/L)	.017	.0										
VC Conc. (mg/L)	0.1	.0										
ETH Conc. (mg/L)	0.0	.0										
Distance from Source (ft)	0	365										
Date Data Collected	2011											

8. CHOOSE TYPE OF OUTPUT TO SEE:

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

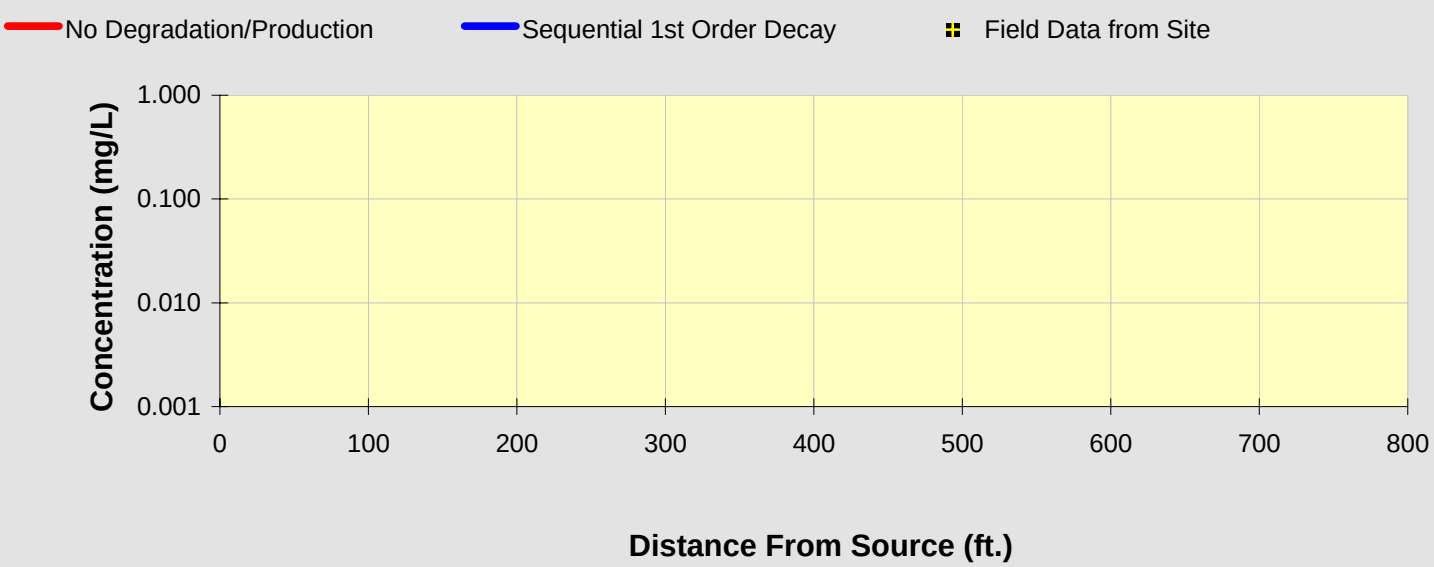
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

PCE	0	68	135	203	270	338	405	473	540	608	675
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)

	0	365									
Field Data from Site	0.000	0.000									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

100.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Start Here → ◉ PCE ○ TCE ○ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

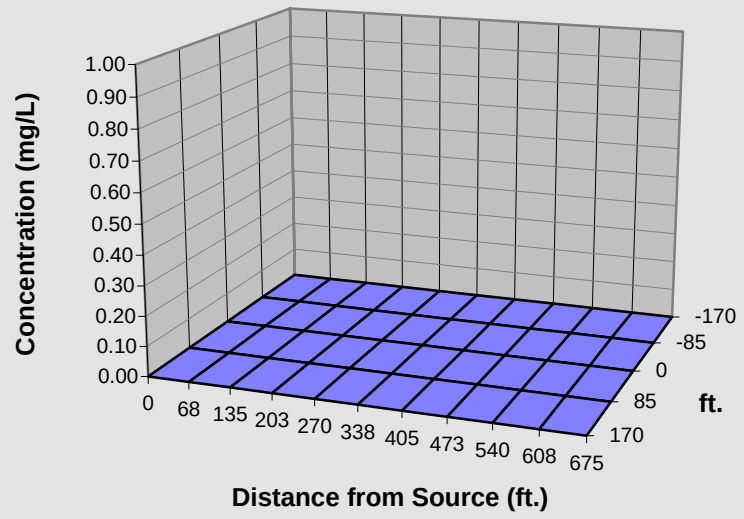
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **0.005** mg/L Displayed Model: **No Degradation** **PCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation 0.0 *(Kg)*

- Plume Mass If Biotransformation/Production 0.0 *(Kg)*

Mass Removed 0.0 *(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = **#VALUE!** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume 0.00 *MGal*

Flow Rate of Water Through Source Area 0.008 *MGD*

Compare to Pump and Treat

Pumping Rate *(gpm)*

Pore Volumes Removed Per Yr. #DIV/0!

Pore Volumes to Clean-Up

Clean-Up Time *(yr)*

Plot All Data | Plot Data > Target | **Mass HELP** | **To Centerline** | **Return to Input**

Start Here → ◉ PCE ○ TCE ○ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

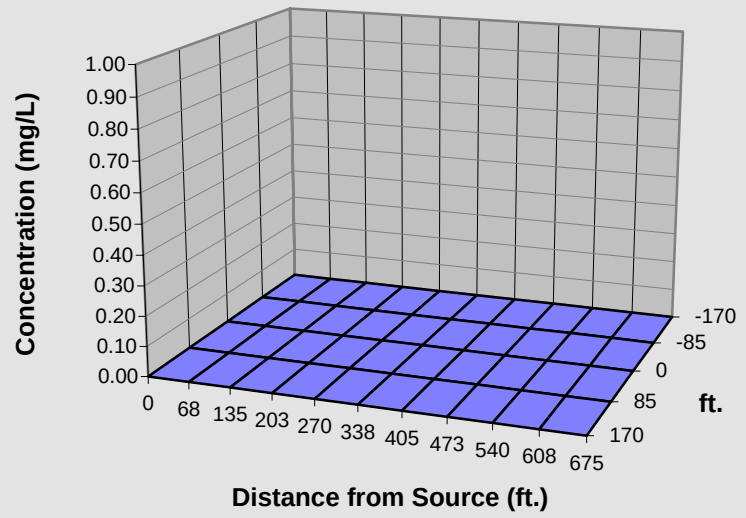
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **0.005** mg/L Displayed Model: **Biotransformation** **PCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation 0.0 *(Kg)*

- Plume Mass If Biotransformation/Production 0.0 *(Kg)*

Mass Removed 0.0 *(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = **#VALUE!** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume 0.00 *MGal*

Flow Rate of Water Through Source Area 0.008 *MGD*

Compare to Pump and Treat

Pumping Rate *(gpm)*

Pore Volumes Removed Per Yr. #DIV/0!

Pore Volumes to Clean-Up

Clean-Up Time *(yr)*

Plot All Data | Plot Data > Target | **Mass HELP** | **To Centerline** | **Return to Input**

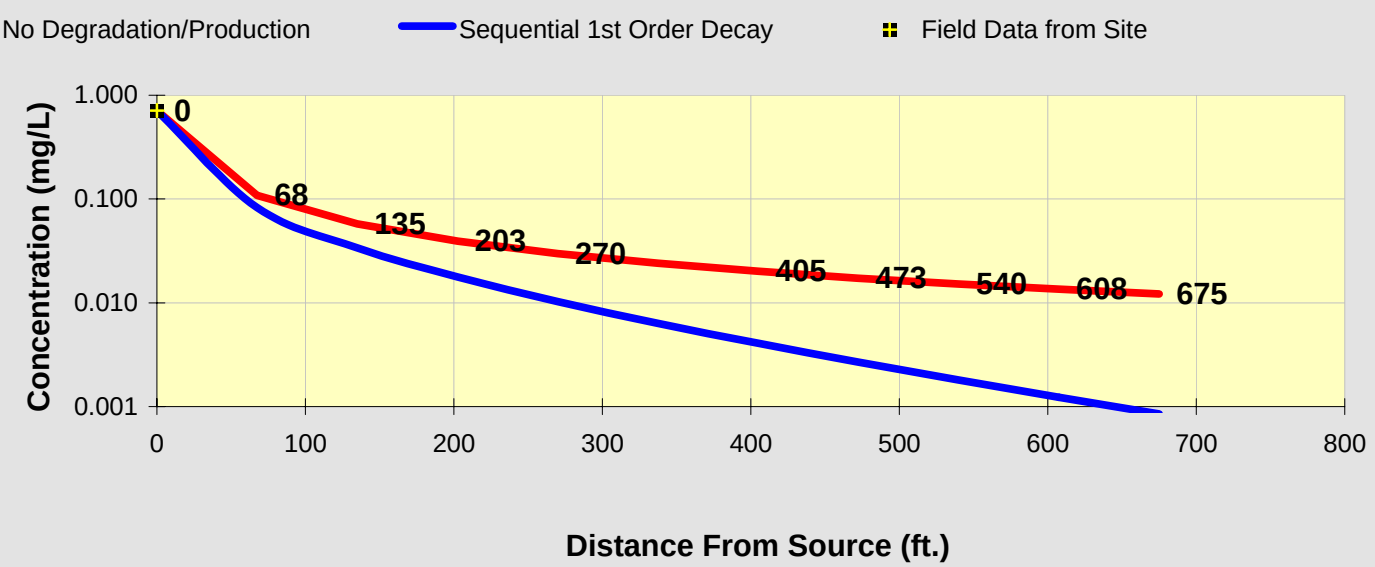
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	68	135	203	270	338	405	473	540	608	675
No Degradation	0.710	0.108	0.058	0.039	0.030	0.024	0.020	0.017	0.015	0.014	0.012
Biotransformation	0.7100	0.083	0.034	0.018	0.010	0.006	0.004	0.003	0.002	0.001	0.001

Monitoring Well Locations (ft)

	0	365									
Field Data from Site	0.710	0.000									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

100.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Start Here → ○ PCE ◉ TCE ○ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

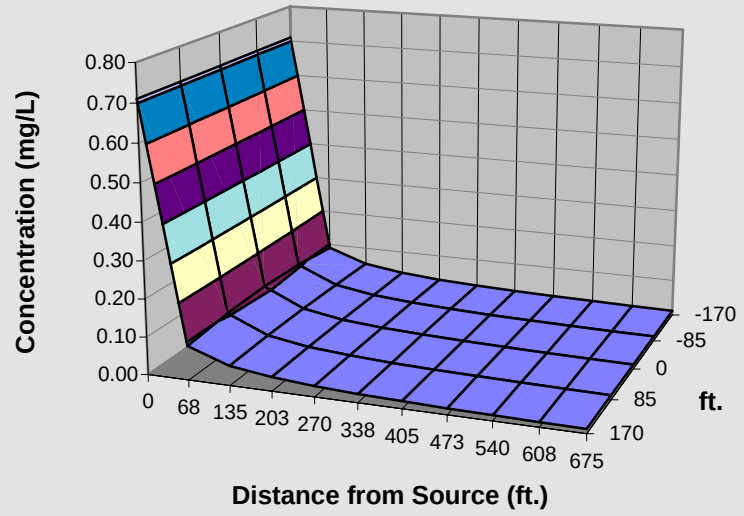
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.710	0.090	0.052	0.037	0.028	0.023	0.019	0.017	0.015	0.013	0.012
85	0.710	0.103	0.056	0.039	0.029	0.024	0.020	0.017	0.015	0.013	0.012
0	0.710	0.108	0.058	0.039	0.030	0.024	0.020	0.017	0.015	0.014	0.012
-85	0.710	0.103	0.056	0.039	0.029	0.024	0.020	0.017	0.015	0.013	0.012
-170	0.710	0.090	0.052	0.037	0.028	0.023	0.019	0.017	0.015	0.013	0.012
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **0.005** mg/L Displayed Model: **No Degradation** | **TCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation: 4.4 (Kg)

- Plume Mass If Biotransformation/Production: 3.3 (Kg)

Mass Removed: 1.1 (Kg)

If "Can't Calc.", make model area longer

% Biotransformed = +25.1%

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume: Can't Calc. MGal

Flow Rate of Water Through Source Area: 0.008 MGD

Compare to Pump and Treat

Pumping Rate: (gpm)

Pore Volumes Removed Per Yr.:

Pore Volumes to Clean-Up:

Clean-Up Time: (yr)

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

Start Here → ○ PCE ◉ TCE ○ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

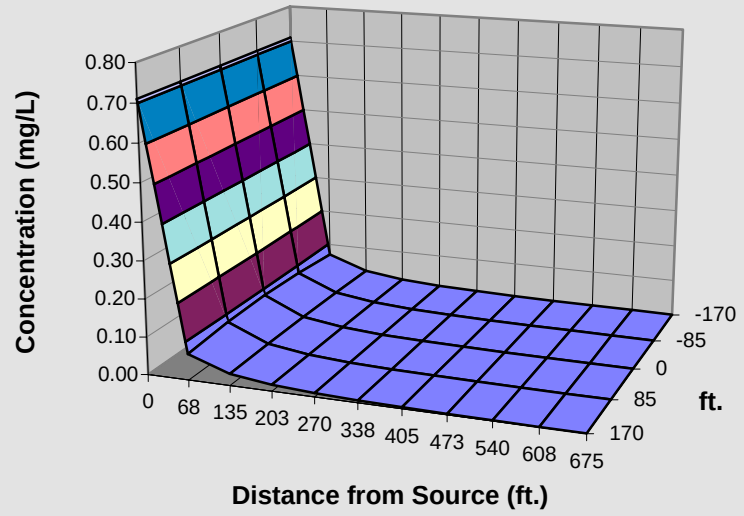
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.710	0.069	0.031	0.016	0.010	0.006	0.004	0.003	0.002	0.001	0.001
85	0.710	0.079	0.033	0.017	0.010	0.006	0.004	0.003	0.002	0.001	0.001
0	0.710	0.083	0.034	0.018	0.010	0.006	0.004	0.003	0.002	0.001	0.001
-85	0.710	0.079	0.033	0.017	0.010	0.006	0.004	0.003	0.002	0.001	0.001
-170	0.710	0.069	0.031	0.016	0.010	0.006	0.004	0.003	0.002	0.001	0.001
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **0.005** mg/L Displayed Model: **Biotransformation** **TCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation 4.4 *(Kg)*

- Plume Mass If Biotransformation/Production 3.3 *(Kg)*

Mass Removed 1.1 *(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed = **+25.1%**

% Change in Mass Rate = **#VALUE!** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume 6.44 *MGal*

Flow Rate of Water Through Source Area 0.008 *MGD*

Compare to Pump and Treat

Pumping Rate *(gpm)*

Pore Volumes Removed Per Yr. 0.00

Pore Volumes to Clean-Up

Clean-Up Time *(yr)*

Plot All Data Plot Data > Target

Mass HELP **To Centerline** **Return to Input**

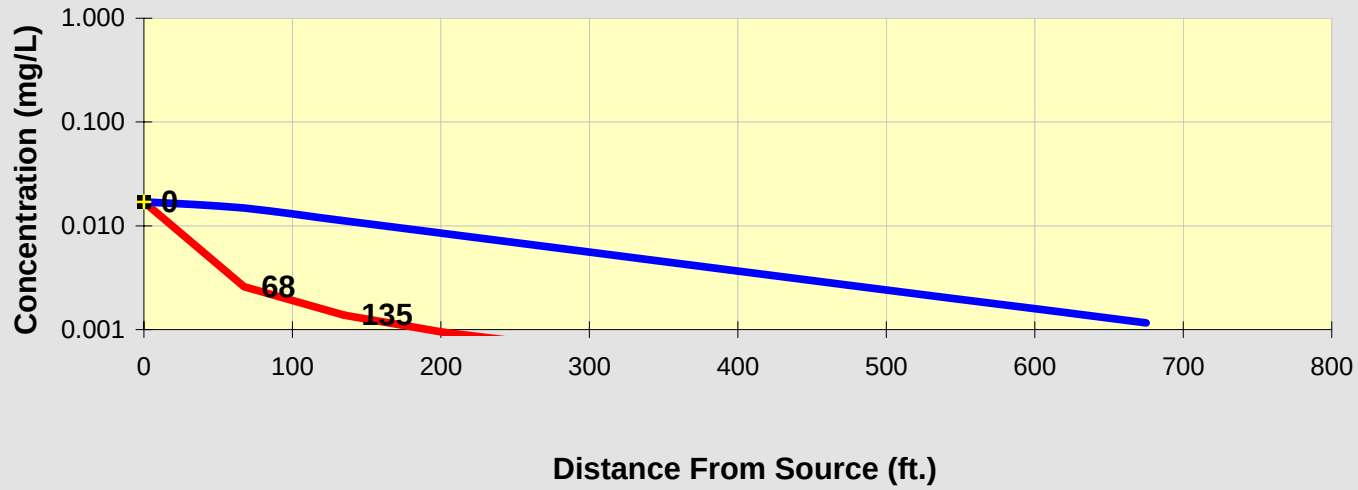
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

DCE	0	68	135	203	270	338	405	473	540	608	675
No Degradation	0.017	0.003	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0170	0.015	0.011	0.008	0.006	0.005	0.004	0.003	0.002	0.002	0.001

Monitoring Well Locations (ft)

	0	365									
Field Data from Site	0.017	0.000									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

100.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Start Here → ○ PCE ○ TCE ◉ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

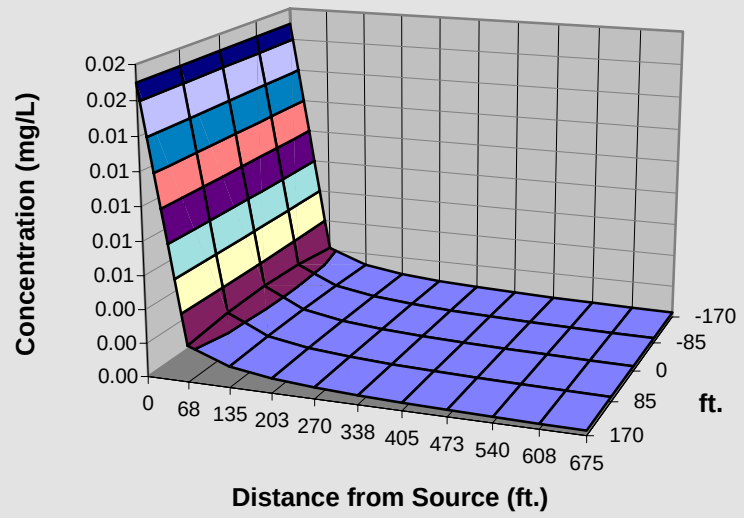
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.017	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
85	0.017	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
0	0.017	0.003	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
-85	0.017	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
-170	0.017	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **1.022** mg/L Displayed Model: **No Degradation** | **DCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation: 0.1 (Kg)

- Plume Mass If Biotransformation/Production: 0.4 (Kg)

Mass Removed: -0.3 (Kg)

If "Can't Calc.", make model area longer

% Biotransformed = -285.8 %

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume: 1.07 MGal

Flow Rate of Water Through Source Area: 0.008 MGD

Compare to Pump and Treat

Pumping Rate: (gpm)

Pore Volumes Removed Per Yr.: 0.00

Pore Volumes to Clean-Up:

Clean-Up Time: (yr)

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

Start Here → ○ PCE ○ TCE ◉ DCE ○ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

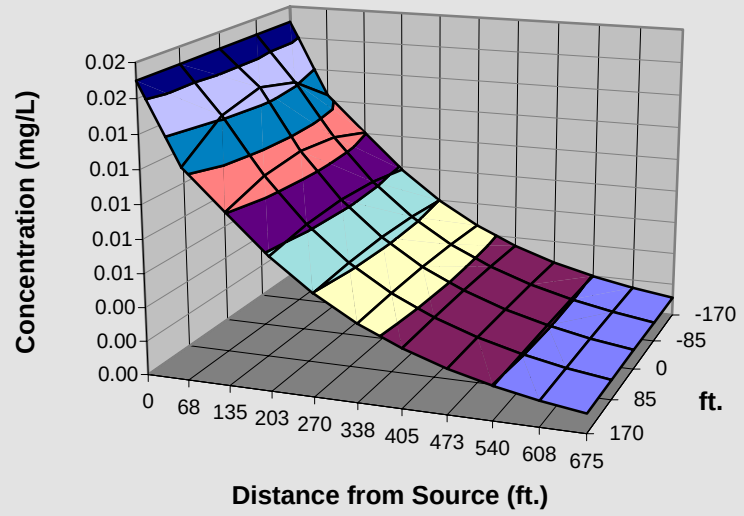
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.017	0.012	0.010	0.008	0.006	0.005	0.003	0.003	0.002	0.001	0.001
85	0.017	0.014	0.011	0.008	0.006	0.005	0.004	0.003	0.002	0.002	0.001
0	0.017	0.015	0.011	0.008	0.006	0.005	0.004	0.003	0.002	0.002	0.001
-85	0.017	0.014	0.011	0.008	0.006	0.005	0.004	0.003	0.002	0.002	0.001
-170	0.017	0.012	0.010	0.008	0.006	0.005	0.003	0.003	0.002	0.001	0.001
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **1.022** mg/L Displayed Model: **Biotransformation** **DCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation 0.1 *(Kg)*

- Plume Mass If Biotransformation/Production 0.4 *(Kg)*

Mass Removed -0.3 *(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed = **-285.8 %**

% Change in Mass Rate = **#VALUE!** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume 5.36 *MGal*

Flow Rate of Water Through Source Area 0.008 *MGD*

Compare to Pump and Treat

Pumping Rate *(gpm)*

Pore Volumes Removed Per Yr. 0.00

Pore Volumes to Clean-Up

Clean-Up Time *(yr)*

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

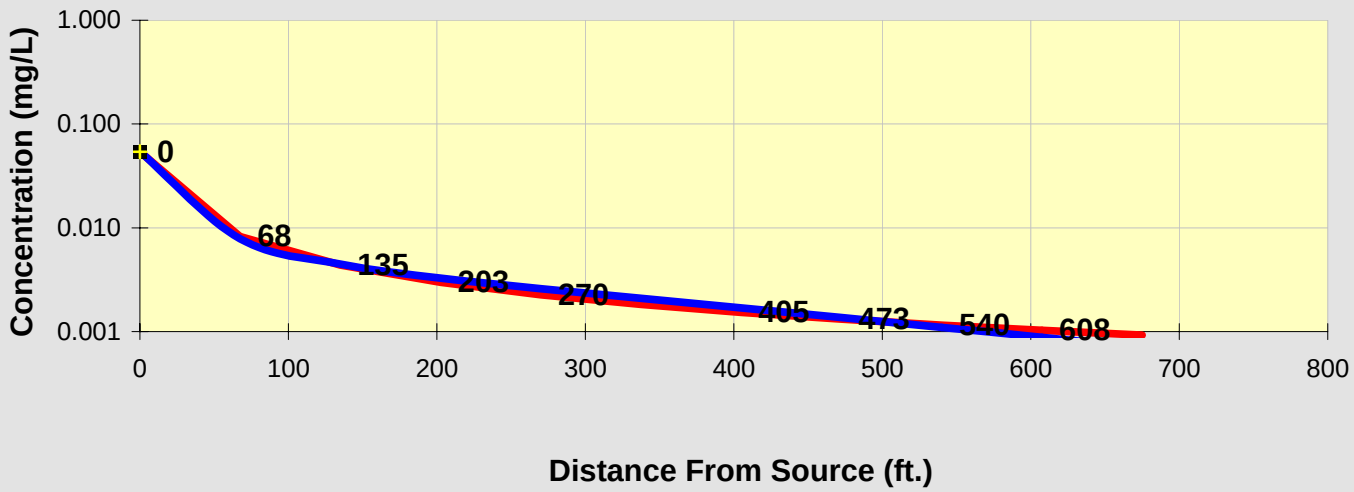
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

VC	0	68	135	203	270	338	405	473	540	608	675
No Degradation	0.054	0.008	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Biotransformation	0.0540	0.008	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001

Monitoring Well Locations (ft)

	0	365									
Field Data from Site	0.054	0.000									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

100.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Start Here → ○ PCE ○ TCE ○ DCE ◉ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

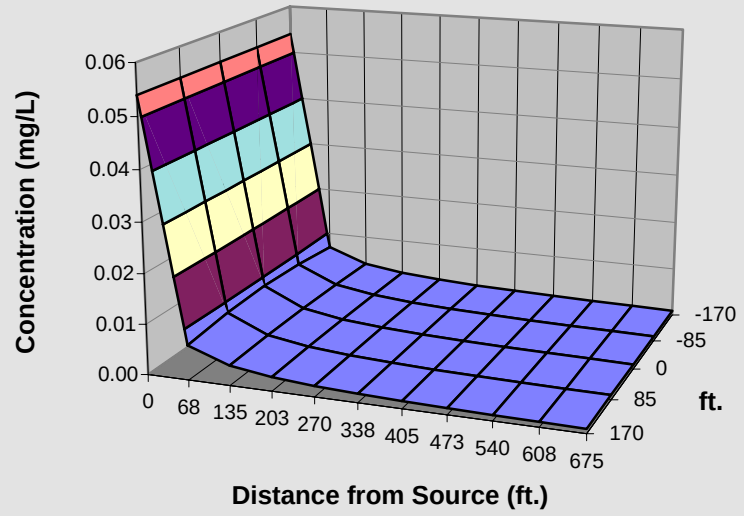
Transverse Distance (ft) \ Distance from Source (ft)	0	68	135	203	270	338	405	473	540	608	675
170	0.054	0.007	0.004	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.001
85	0.054	0.008	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
0	0.054	0.008	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
-85	0.054	0.008	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
-170	0.054	0.007	0.004	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.001
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: 0.002 mg/L Displayed Model: No Degradation | VC



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation: 0.3 (Kg)

- Plume Mass If Biotransformation/Production: 0.3 (Kg)

Mass Removed: 0.0 (Kg)

If "Can't Calc.", make model area longer

% Biotransformed = -0.6 %

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume: 2.15 MGal

Flow Rate of Water Through Source Area: 0.008 MGD

Compare to Pump and Treat

Pumping Rate: (gpm)

Pore Volumes Removed Per Yr.: 0.00

Pore Volumes to Clean-Up:

Clean-Up Time: (yr)

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

Start Here → ○ PCE ○ TCE ○ DCE ◉ VC ○ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

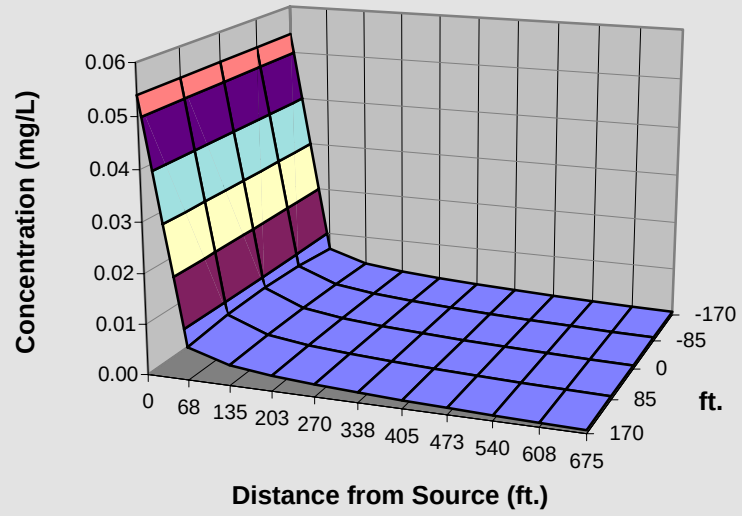
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.054	0.007	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
85	0.054	0.007	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001
0	0.054	0.008	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001
-85	0.054	0.007	0.004	0.003	0.003	0.002	0.002	0.001	0.001	0.001	0.001
-170	0.054	0.007	0.004	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: **0.002** mg/L Displayed Model: **Biotransformation** **VC**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation 0.3 *(Kg)*

- Plume Mass If Biotransformation/Production 0.3 *(Kg)*

Mass Removed 0.0 *(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed = **-0.6 %**

% Change in Mass Rate = **#VALUE!** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume 2.15 *MGal*

Flow Rate of Water Through Source Area 0.008 *MGD*

Compare to Pump and Treat

Pumping Rate *(gpm)*

Pore Volumes Removed Per Yr. 0.00

Pore Volumes to Clean-Up

Clean-Up Time *(yr)*

Plot All Data Plot Data > Target

Mass HELP **To Centerline** **Return to Input**

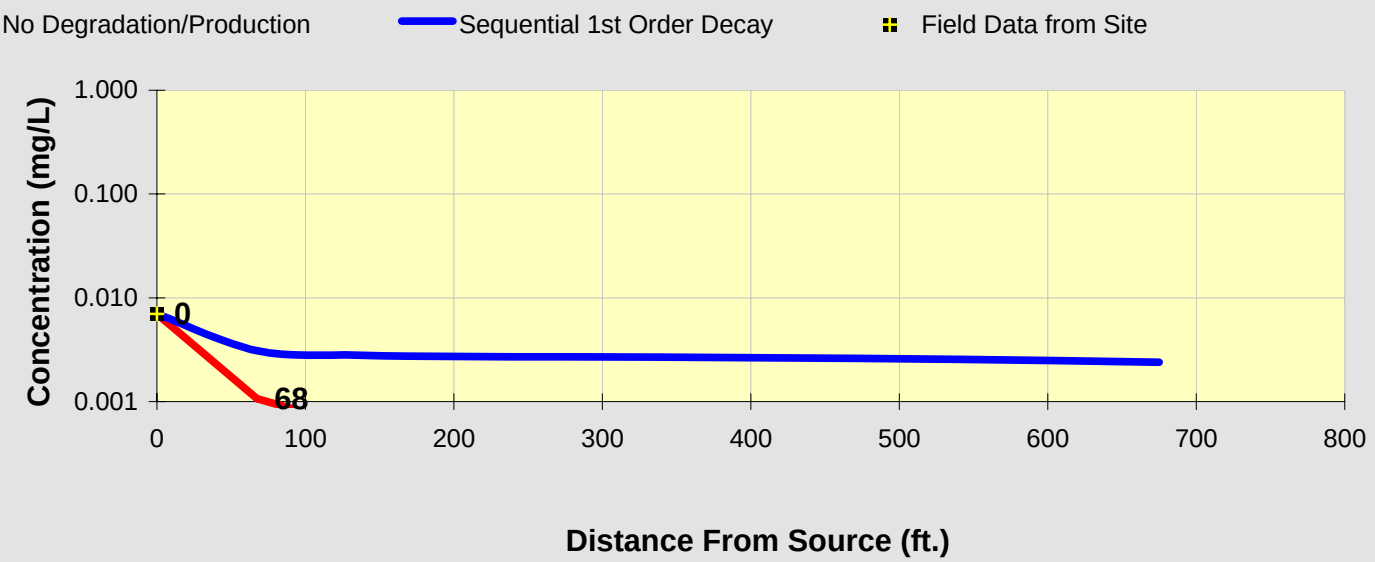
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

ETH	0	68	135	203	270	338	405	473	540	608	675
No Degradation	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0070	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002

Monitoring Well Locations (ft)

	0	365									
Field Data from Site	0.007	0.000									



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

100.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Start Here → ○ PCE ○ TCE ○ DCE ○ VC ◉ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

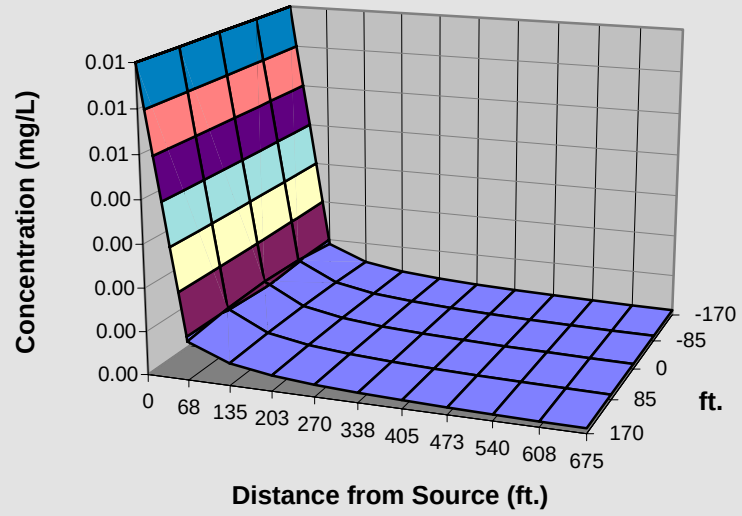
Transverse Distance (ft) ↓ / Distance from Source (ft) →	0	68	135	203	270	338	405	473	540	608	675
170	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
85	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-85	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-170	0.007	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: mg/L Displayed Model: No Degradation | ETH



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation: 0.0 (Kg)

- Plume Mass If Biotransformation/Production: 0.2 (Kg)

Mass Removed: -0.1 (Kg)

If "Can't Calc.", make model area longer

% Biotransformed = -340.3 %

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume: 1.07 MGal

Flow Rate of Water Through Source Area: 0.008 MGD

Compare to Pump and Treat

Pumping Rate: (gpm)

Pore Volumes Removed Per Yr.: 0.00

Pore Volumes to Clean-Up:

Clean-Up Time: (yr)

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

Start Here → ○ PCE ○ TCE ○ DCE ○ VC ◉ ETH

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

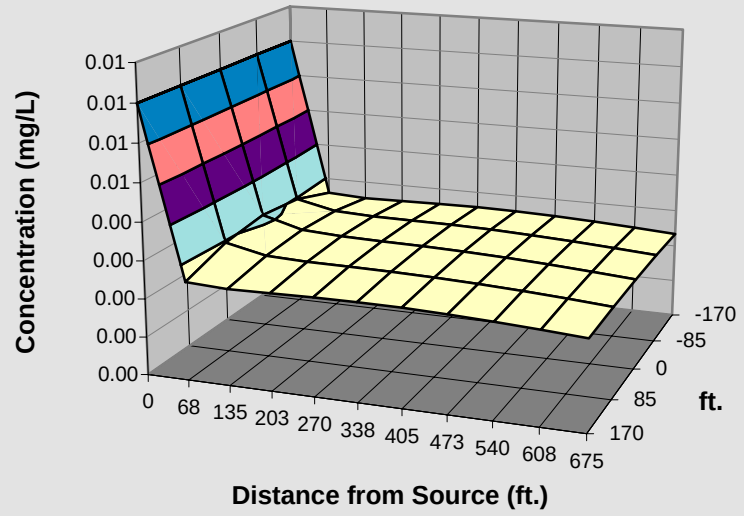
Transverse Distance (ft) ↓ / *Distance from Source (ft)* →	0	68	135	203	270	338	405	473	540	608	675
170	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002
85	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002
0	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002
-85	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002
-170	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002
MASS RATE (mg/day)	-	-	-	-	-	-	-	-	-	-	-

Show No Degradation

Show Biotransformation

Displayed Compound

Time: 100 yr Target Level: mg/L Displayed Model: Biotransformation | ETH



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation: 0.0 (Kg)

- Plume Mass If Biotransformation/Production: 0.2 (Kg)

Mass Removed: -0.1 (Kg)

If "Can't Calc.", make model area longer

% Biotransformed = -340.3 %

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume: 1.07 MGal

Flow Rate of Water Through Source Area: 0.008 MGD

Compare to Pump and Treat

Pumping Rate: (gpm)

Pore Volumes Removed Per Yr.: 0.00

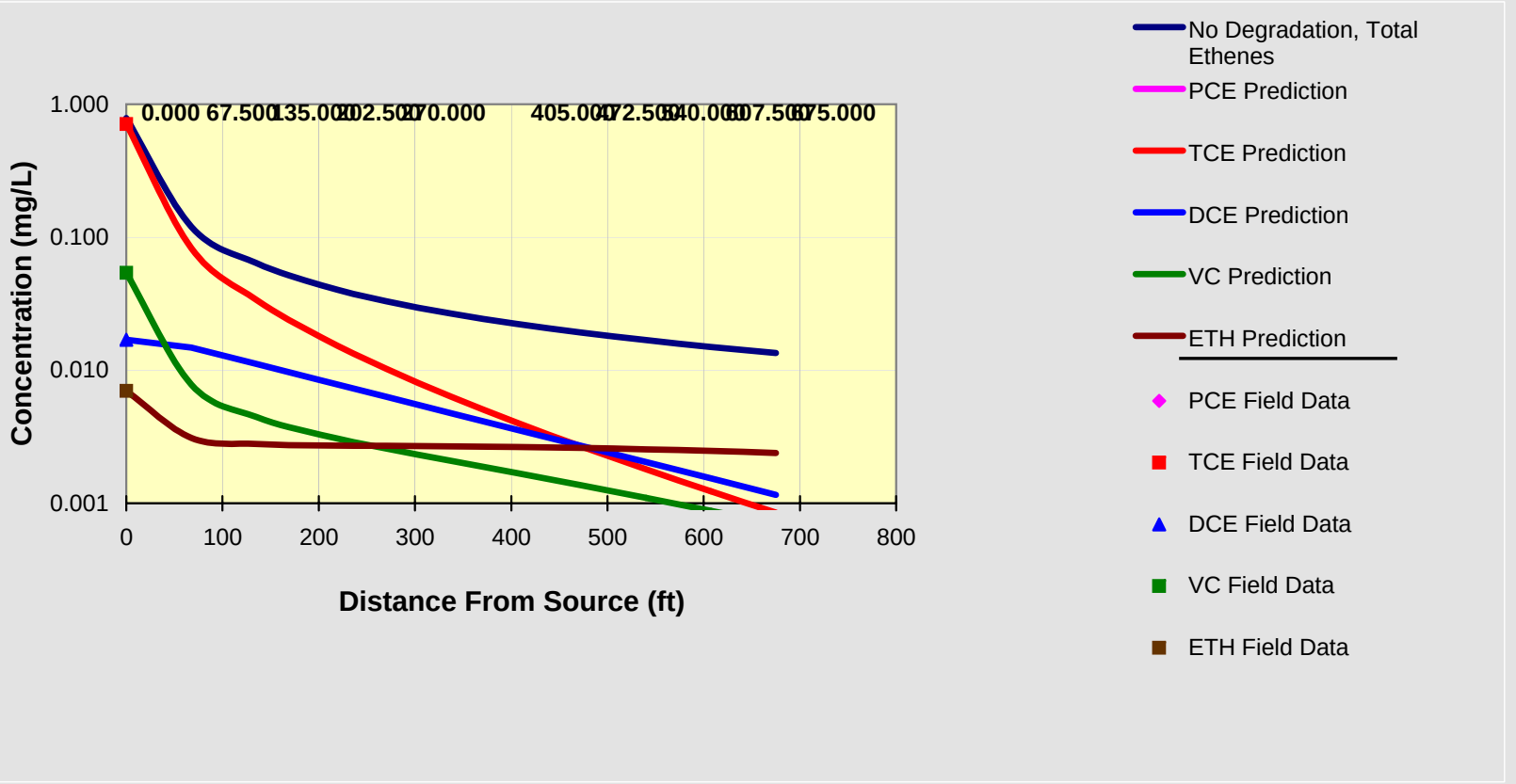
Pore Volumes to Clean-Up:

Clean-Up Time: (yr)

Plot All Data | Plot Data > Target

Mass HELP | To Centerline | Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE



Log ⟺ Linear

Time:

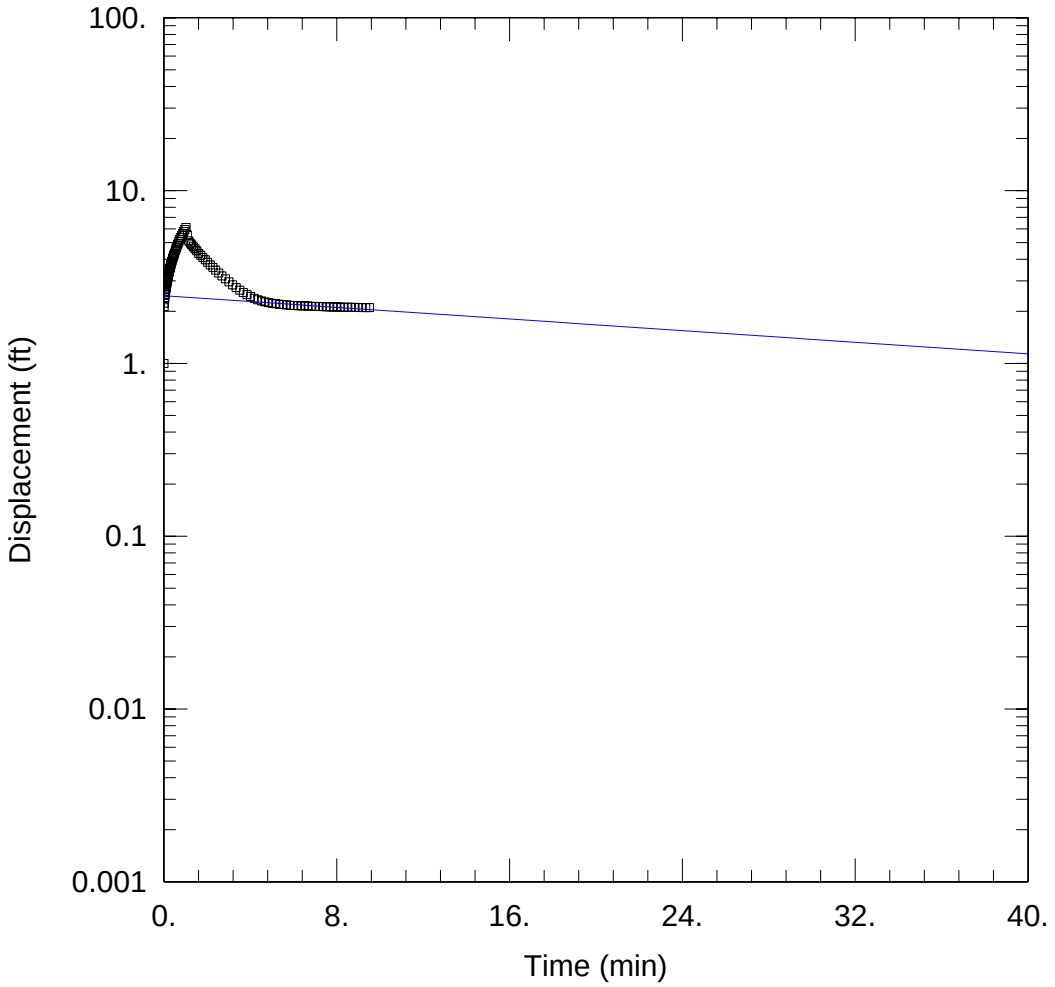
100 Years

To Input

To Individual Compounds

APPENDIX E

SLUG TESTING DATA TABLES AND GRAPHS



WELL TEST ANALYSIS

Data Set: \\SERVER\MY FILES\PROJECTS\2318-H~1\500-DR~1\GROUND~1\MW-2A.AQT
Date: 10/07/10 Time: 11:05:36

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Test Location: Athens, GA
Test Well: MW-2A
Test Date: 6/24/10

AQUIFER DATA

Saturated Thickness: 12.15 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 1. ft
Casing Radius: 0.9 ft
Screen Length: 10. ft
Water Column Height: 12.15 ft
Wellbore Radius: 0.56 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001541 ft/min
y0 = 2.462 ft

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Location: Athens, GA
Test Date: 6/24/10
Test Well: MW-2A

AQUIFER DATA

Saturated Thickness: 12.15 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

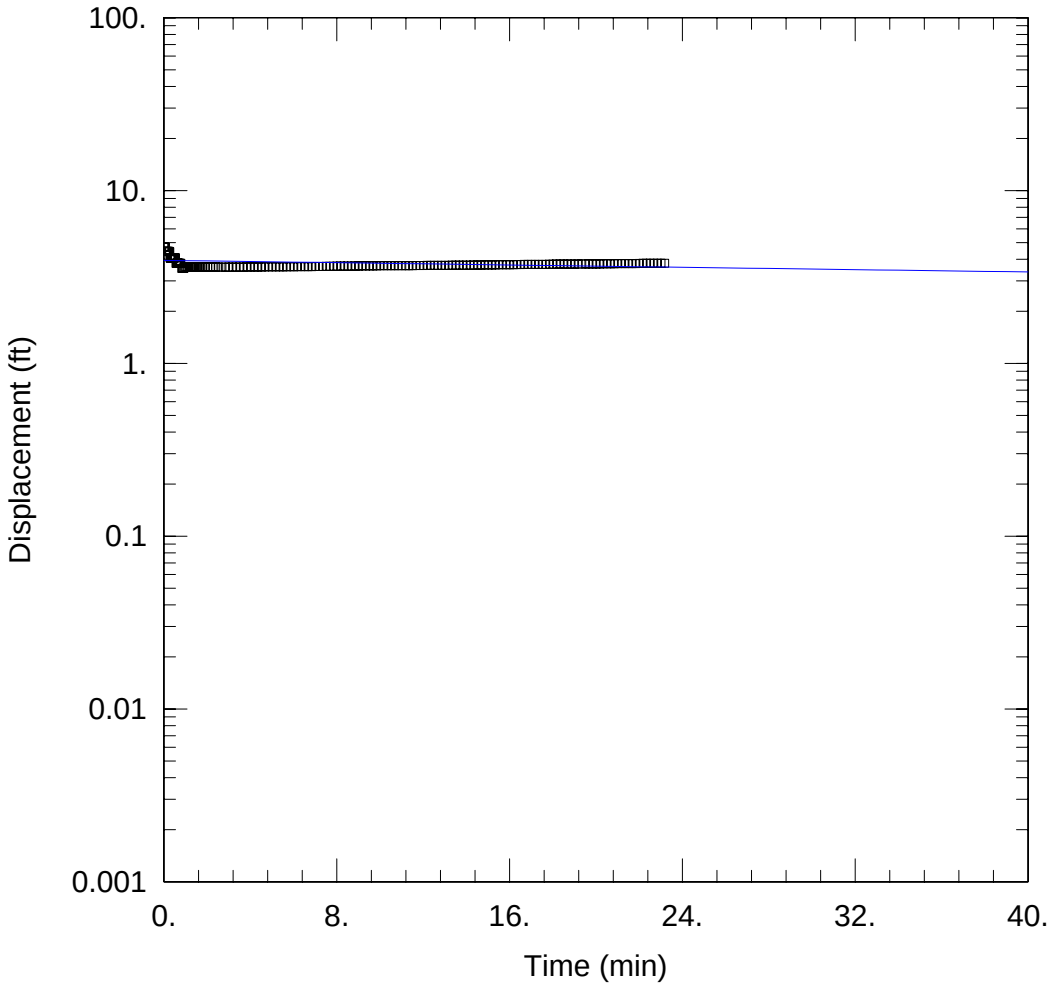
Observation Well No. 1: MW-2A

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

No. of observations: 107

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.011	2.133	0.5315	4.488	3.846	2.497
0.022	2.231	0.5612	4.6	4.013	2.433
0.033	2.335	0.5925	4.713	4.179	2.379
0.044	2.405	0.6257	4.834	4.346	2.332
0.055	2.491	0.6608	4.952	4.513	2.298
0.066	2.558	0.6982	5.079	4.679	2.269
0.077	2.618	0.7377	5.217	4.846	2.246
0.088	2.682	0.7795	5.35	5.013	2.226
0.099	2.728	0.8238	5.491	5.179	2.211
0.11	2.788	0.8708	5.638	5.346	2.2
0.121	2.84	0.9207	5.791	5.513	2.188
0.132	2.895	0.9733	5.95	5.679	2.179
0.143	2.947	1.029	6.117	5.846	2.165
0.154	3.005	1.088	5.537	6.013	2.162
0.165	3.048	1.151	5.114	6.179	2.159
0.176	3.1	1.217	4.969	6.346	2.153
0.187	3.152	1.288	4.845	6.513	2.151
0.198	3.207	1.362	4.727	6.679	2.148
0.209	3.256	1.441	4.606	6.846	2.139
0.22	3.305	1.525	4.479	7.013	2.136
0.231	3.351	1.613	4.329	7.179	2.133
0.2427	3.406	1.707	4.219	7.346	2.13
0.2552	3.455	1.807	4.101	7.513	2.127
0.2683	3.507	1.912	3.974	7.679	2.125
0.2823	3.562	2.023	3.847	7.846	2.122
0.2972	3.619	2.142	3.717	8.013	2.119
0.3128	3.68	2.267	3.591	8.179	2.116
0.3295	3.746	2.399	3.461	8.346	2.113



WELL TEST ANALYSIS

Data Set: \\SERVER\MY FILES\PROJECTS\2318-H~1\500-DR~1\GROUND~1\MW-4A.AQT
Date: 10/07/10 Time: 11:16:03

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Test Location: Athens, GA
Test Well: MW-4A
Test Date: 6/24/10

AQUIFER DATA

Saturated Thickness: 6.29 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.715 ft
Water Column Height: 6.29 ft
Casing Radius: 0.9 ft
Wellbore Radius: 0.56 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
K = 0.0002522 ft/min
Solution Method: Bouwer-Rice
y0 = 3.945 ft

Data Set: \\SERVER\MY FILES\PROJECTS\2318-H~1\500-DR~1\GROUND~1\MW-4A.AQT
Date: 10/07/10
Time: 11:04:55

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Location: Athens, GA
Test Date: 6/24/10
Test Well: MW-2A

AQUIFER DATA

Saturated Thickness: 6.29 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4A

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

No. of observations: 189

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.011	4.704	2.399	3.604	12.85	3.693
0.022	4.698	2.54	3.604	13.01	3.69
0.033	4.692	2.689	3.604	13.18	3.693
0.044	4.692	2.846	3.606	13.35	3.696
0.055	4.689	3.013	3.606	13.51	3.696
0.066	4.447	3.179	3.606	13.68	3.699
0.077	4.447	3.346	3.606	13.85	3.702
0.088	4.447	3.513	3.606	14.01	3.699
0.099	4.447	3.679	3.606	14.18	3.702
0.11	4.447	3.846	3.612	14.35	3.705
0.121	4.447	4.013	3.612	14.51	3.705
0.132	4.447	4.179	3.615	14.68	3.708
0.143	4.447	4.346	3.615	14.85	3.713
0.154	4.447	4.513	3.615	15.01	3.713
0.165	4.447	4.679	3.618	15.18	3.716
0.176	4.444	4.846	3.618	15.35	3.716
0.187	4.447	5.013	3.621	15.51	3.719
0.198	4.444	5.179	3.621	15.68	3.719
0.209	4.444	5.346	3.624	15.85	3.722
0.22	4.444	5.513	3.624	16.01	3.722

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.231	4.444	5.679	3.624	16.18	3.725
0.2427	4.444	5.846	3.627	16.35	3.728
0.2552	4.444	6.013	3.624	16.51	3.731
0.2683	4.421	6.179	3.627	16.68	3.736
0.2823	4.069	6.346	3.627	16.85	3.736
0.2972	4.08	6.513	3.63	17.01	3.736
0.3128	4.08	6.679	3.632	17.18	3.736
0.3295	4.08	6.846	3.632	17.35	3.739
0.3472	4.08	7.013	3.635	17.51	3.742
0.3658	4.08	7.179	3.638	17.68	3.742
0.3857	4.08	7.346	3.638	17.85	3.745
0.4067	4.08	7.513	3.641	18.01	3.748
0.4288	4.083	7.679	3.641	18.18	3.751
0.4523	4.083	7.846	3.644	18.35	3.754
0.4772	4.083	8.013	3.65	18.51	3.751
0.5035	4.08	8.179	3.65	18.68	3.751
0.5315	4.086	8.346	3.65	18.85	3.754
0.5612	3.797	8.513	3.65	19.01	3.757
0.5925	3.797	8.679	3.653	19.18	3.757
0.6257	3.797	8.846	3.656	19.35	3.762
0.6608	3.797	9.013	3.658	19.51	3.762
0.6982	3.797	9.179	3.667	19.68	3.765
0.7377	3.794	9.346	3.667	19.85	3.765
0.7795	3.797	9.513	3.667	20.01	3.765
0.8238	3.546	9.679	3.67	20.18	3.765
0.8708	3.543	9.846	3.67	20.35	3.768
0.9207	3.543	10.01	3.673	20.51	3.771
0.9733	3.592	10.18	3.673	20.68	3.771
1.029	3.598	10.35	3.673	20.85	3.774
1.088	3.598	10.51	3.673	21.01	3.777
1.151	3.598	10.68	3.673	21.18	3.777
1.217	3.601	10.85	3.676	21.35	3.78
1.288	3.601	11.01	3.676	21.51	3.78
1.362	3.601	11.18	3.676	21.68	3.78
1.441	3.601	11.35	3.673	21.85	3.78
1.525	3.601	11.51	3.676	22.01	3.788
1.613	3.601	11.68	3.682	22.18	3.791
1.707	3.604	11.85	3.684	22.35	3.791
1.807	3.604	12.01	3.684	22.51	3.794
1.912	3.604	12.18	3.687	22.68	3.794
2.023	3.604	12.35	3.69	22.85	3.791
2.142	3.606	12.51	3.693	23.01	3.791
2.267	3.604	12.68	3.693	23.18	3.794

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0002522	ft/min
y0	3.945	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.0002522	4.438E-05	ft/min
y0	3.945	0.0299	ft

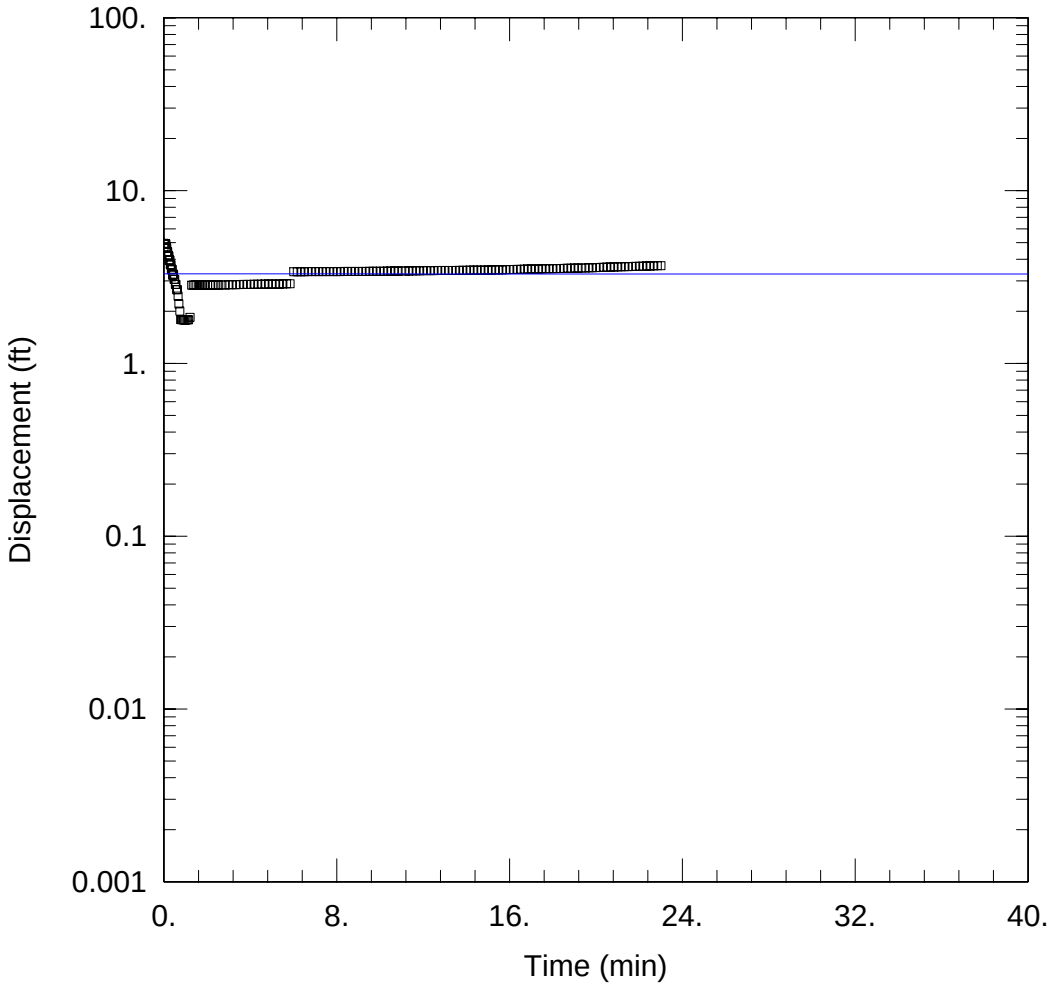
Parameter Correlations

	K	y0
K	1.00	0.74
y0	0.74	1.00

Residual Statistics

for weighted residuals

Sum of Squares . . . . 13.28 ft^2
Variance . . . . . 0.07103 ft^2
Std. Deviation . . . . . 0.2665 ft
Mean. . . . . 4.731E-05 ft
No. of Residuals. . . . 189.
No. of Estimates. . . . 2



WELL TEST ANALYSIS

Data Set: \\SERVER\MY FILES\PROJECTS\2318-H~1\500-DR~1\GROUND~1\MW-9A.AQT
Date: 10/07/10 Time: 11:14:34

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Test Location: Athens, GA
Test Well: MW-9A
Test Date: 6/24/10

AQUIFER DATA

Saturated Thickness: 6.29 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 4.715 ft
Water Column Height: 6.29 ft
Casing Radius: 0.9 ft
Wellbore Radius: 0.56 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined
K = 1.59E-06 ft/min
Solution Method: Bouwer-Rice
y0 = 3.294 ft

Data Set: \\SERVER\MY FILES\PROJECTS\2318-H~1\500-DR~1\GROUND~1\MW-9A.AQT
Date: 10/07/10
Time: 11:15:04

PROJECT INFORMATION

Company: Peachtree Environmental, Inc.
Client: Former Loef Facility
Project: 2318
Location: Athens, GA
Test Date: 6/24/10
Test Well: MW-9A

AQUIFER DATA

Saturated Thickness: 6.29 ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-9A

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

No. of observations: 188

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.0108	4.949	2.396	2.844	12.84	3.451
0.0217	4.935	2.536	2.841	13.01	3.451
0.0325	4.923	2.685	2.844	13.18	3.448
0.0433	4.918	2.843	2.841	13.34	3.451
0.0542	4.915	3.009	2.85	13.51	3.451
0.065	4.912	3.176	2.85	13.68	3.453
0.0758	4.912	3.343	2.853	13.84	3.453
0.0867	4.909	3.509	2.856	14.01	3.456
0.0975	4.637	3.676	2.862	14.18	3.459
0.1083	4.64	3.843	2.864	14.34	3.459
0.1192	4.64	4.009	2.864	14.51	3.462
0.13	4.637	4.176	2.867	14.68	3.465
0.1408	4.392	4.343	2.867	14.84	3.465
0.1517	4.401	4.509	2.867	15.01	3.468
0.1625	4.401	4.676	2.873	15.18	3.471
0.1733	4.401	4.843	2.876	15.34	3.474
0.1842	4.245	5.009	2.876	15.51	3.479
0.195	4.175	5.176	2.876	15.68	3.479
0.2058	4.175	5.343	2.879	15.84	3.488
0.2167	4.175	5.509	2.882	16.01	3.491

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.2277	4.175	5.676	2.888	16.18	3.494
0.2393	3.947	5.843	2.888	16.34	3.497
0.2518	3.95	6.009	3.387	16.51	3.503
0.265	3.95	6.176	3.387	16.68	3.508
0.279	3.95	6.343	3.39	16.84	3.511
0.2938	3.722	6.509	3.39	17.01	3.511
0.3095	3.725	6.676	3.393	17.18	3.514
0.3262	3.725	6.843	3.393	17.34	3.517
0.3438	3.479	7.009	3.393	17.51	3.523
0.3625	3.5	7.176	3.393	17.68	3.526
0.3823	3.5	7.343	3.396	17.84	3.529
0.4033	3.234	7.509	3.396	18.01	3.531
0.4255	3.274	7.676	3.396	18.18	3.54
0.449	3.274	7.843	3.399	18.34	3.54
0.4738	3.067	8.009	3.399	18.51	3.546
0.5002	3.061	8.176	3.399	18.68	3.552
0.5282	2.862	8.343	3.401	18.84	3.555
0.5578	2.864	8.509	3.404	19.01	3.557
0.5892	2.668	8.676	3.404	19.18	3.563
0.6223	2.668	8.843	3.407	19.34	3.563
0.6575	2.449	9.009	3.407	19.51	3.569
0.6948	2.206	9.176	3.407	19.68	3.572
0.7343	2.004	9.343	3.407	19.84	3.578
0.7762	1.791	9.509	3.41	20.01	3.583
0.8205	1.791	9.676	3.413	20.18	3.592
0.8675	1.788	9.843	3.41	20.34	3.598
0.9173	1.788	10.01	3.413	20.51	3.604
0.97	1.788	10.18	3.413	20.68	3.606
1.026	1.788	10.34	3.416	20.84	3.612
1.085	1.788	10.51	3.419	21.01	3.618
1.148	1.788	10.68	3.422	21.18	3.624
1.214	1.846	10.84	3.419	21.34	3.63
1.284	2.833	11.01	3.422	21.51	3.632
1.359	2.833	11.18	3.425	21.68	3.638
1.438	2.836	11.34	3.427	21.84	3.644
1.522	2.836	11.51	3.43	22.01	3.647
1.61	2.836	11.68	3.433	22.18	3.65
1.704	2.836	11.84	3.43	22.34	3.656
1.803	2.836	12.01	3.439	22.51	3.658
1.909	2.838	12.18	3.439	22.68	3.667
2.02	2.838	12.34	3.439	22.84	3.673
2.138	2.838	12.51	3.439	23.01	3.679
2.263	2.841	12.68	3.445		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	1.59E-06	ft/min
y0	3.294	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	1.59E-06	0.000123	ft/min
y0	3.294	0.07099	ft

Parameter Correlations

	K	y0
K	1.00	0.75
y0	0.75	1.00

Residual Statistics

for weighted residuals

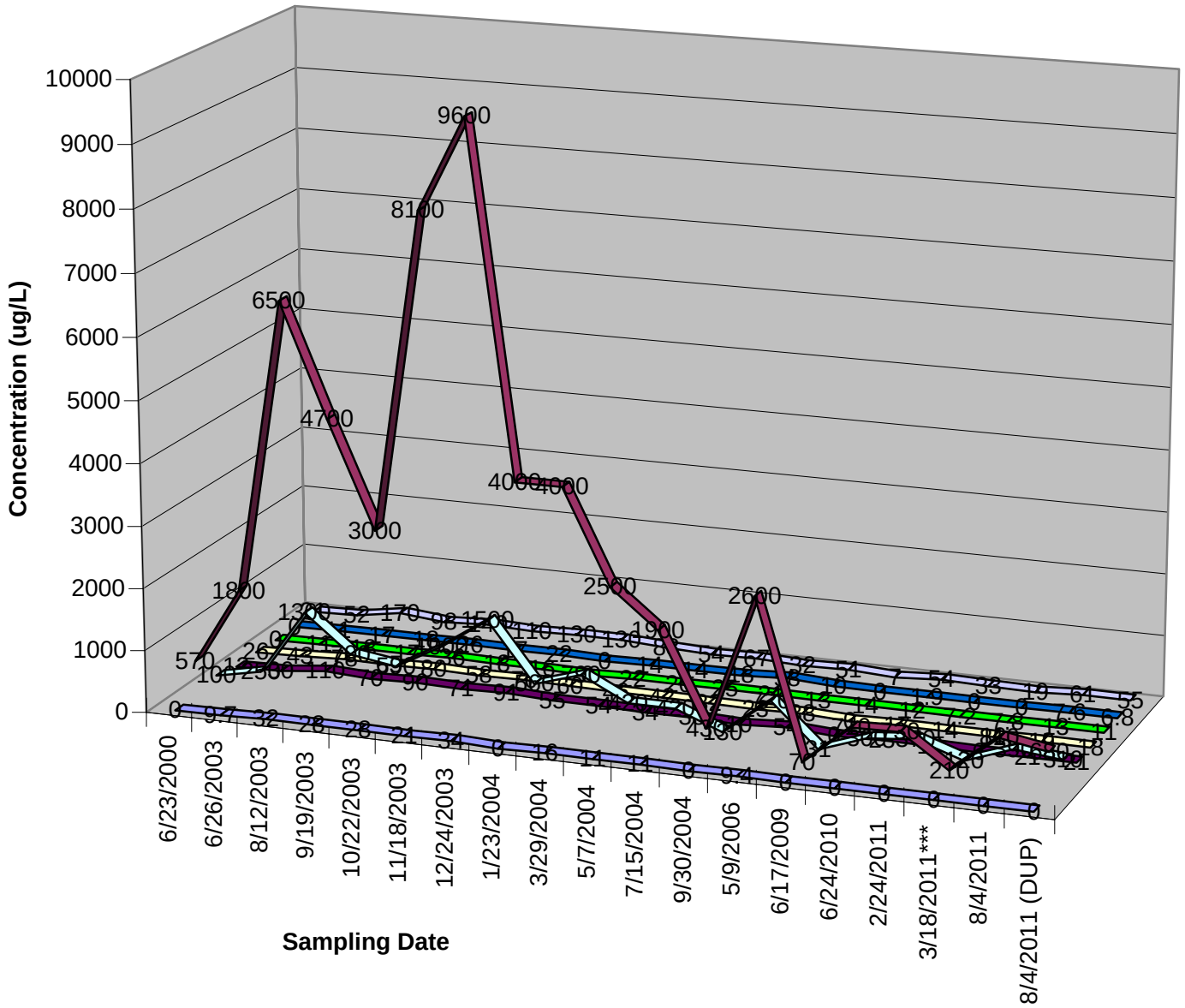
Sum of Squares .... 75.87 ft^2
Variance ..... 0.4079 ft^2
Std. Deviation ..... 0.6387 ft
Mean..... 0.09692 ft
No. of Residuals.... 188.
No. of Estimates.... 2

APPENDIX F

HISTORIC GROUNDWATER CONCENTRATION TREND GRAPHS

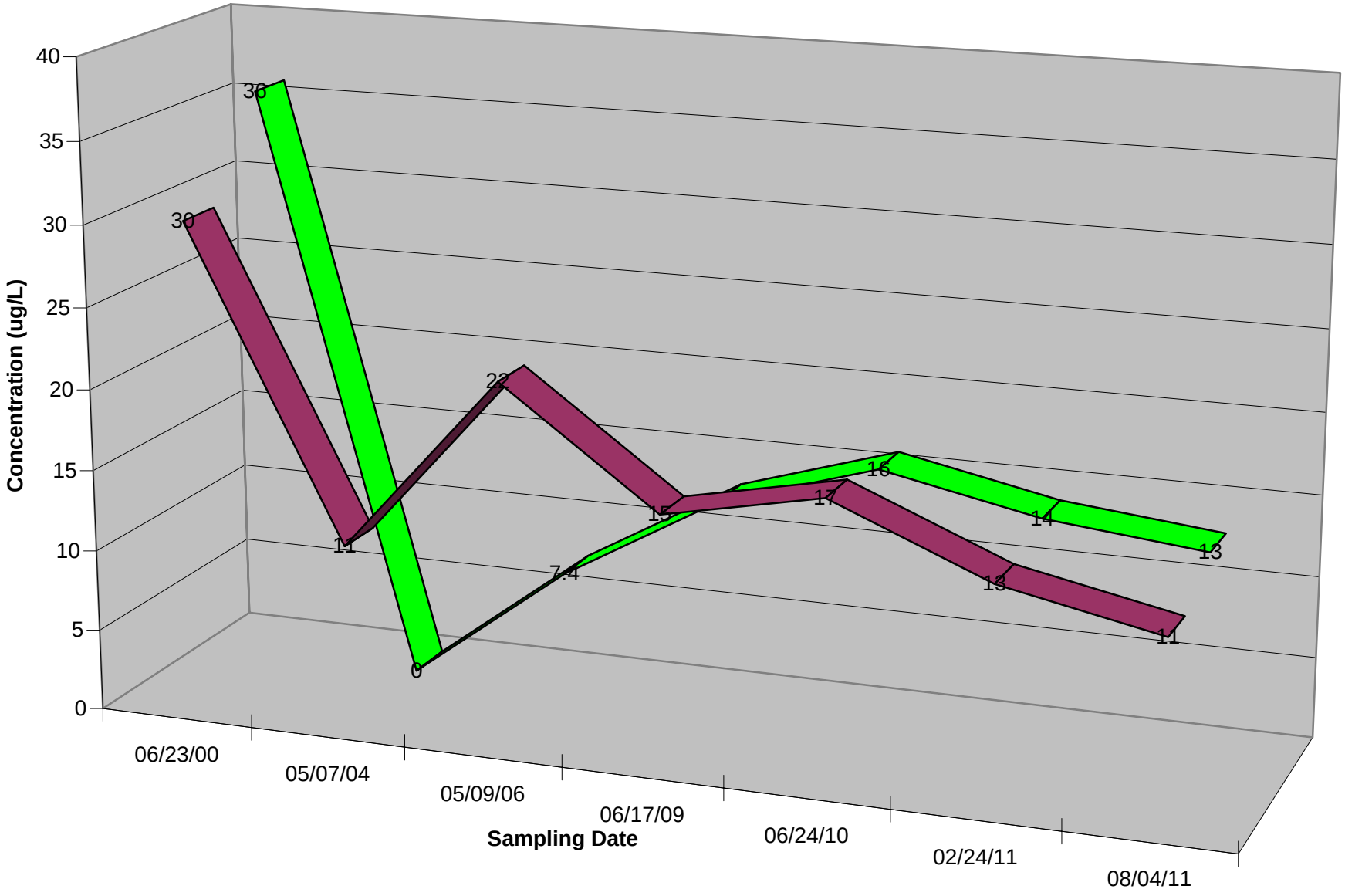
Former Loef Facility (Hull)
Athens, Clarke County, Georgia

Analytical Data Trends - Monitoring Well MW-2A



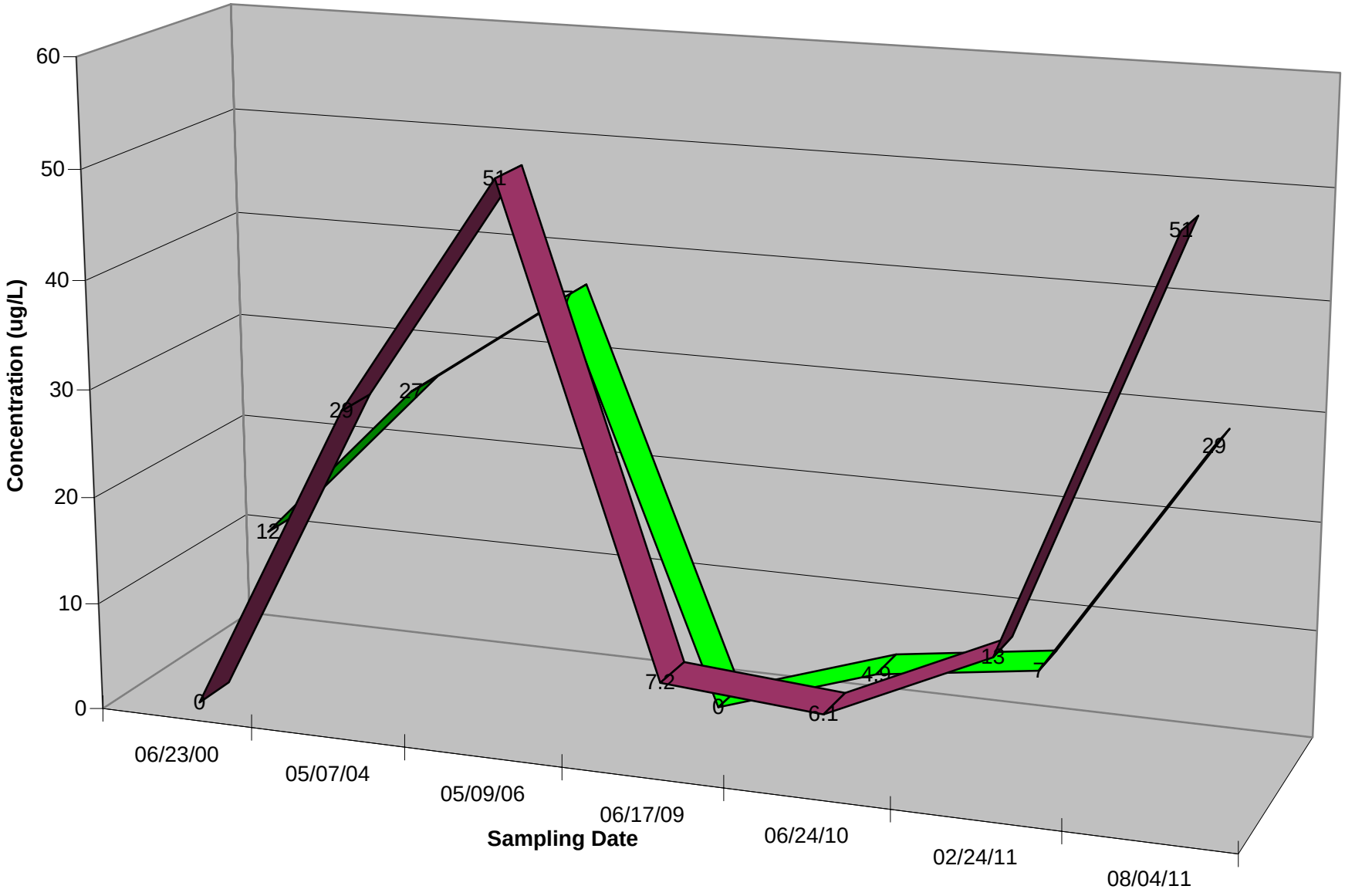
Former Loef Facility (Hull)
Athens, Clarke County, Georgia

Analytical Data Trends - Monitoring Well MW-3



Former Loef Facility (Hull)
Athens, Clarke County, Georgia

Analytical Data Trends - Monitoring Well MW-4



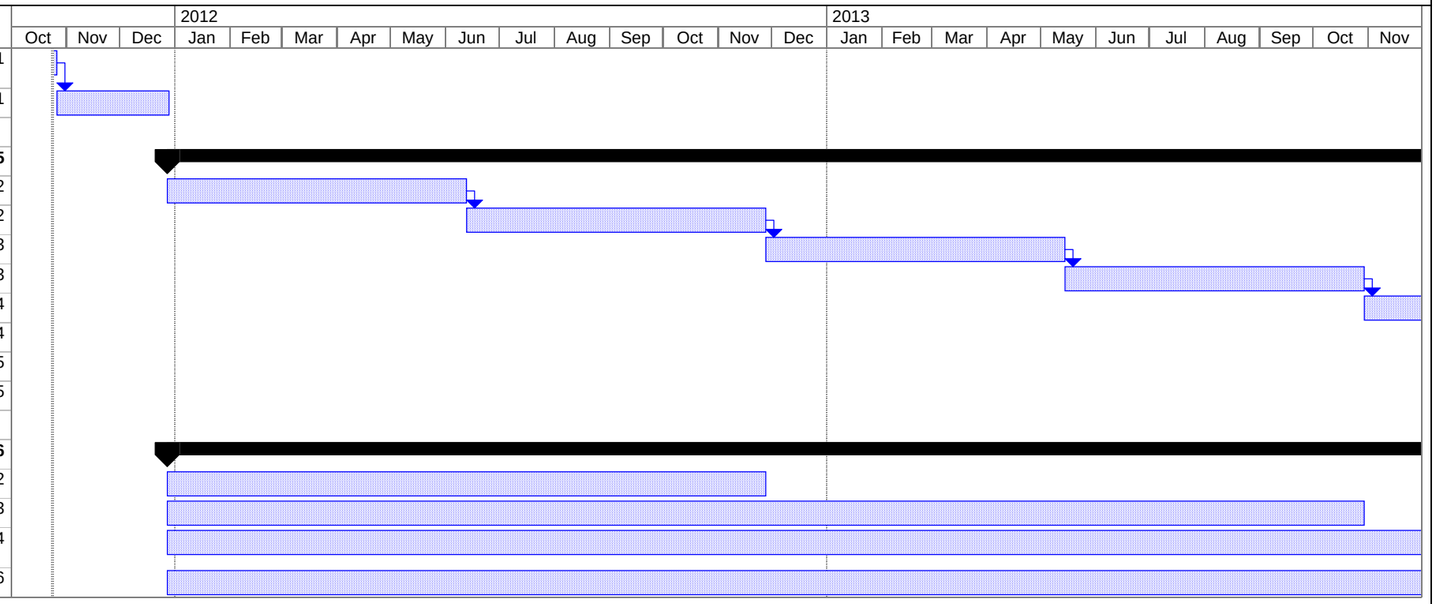
APPENDIX G

SCHEDULE

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN APPLICATION

FORME LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA
HSI# 10376

ID	Task Name	Duration	Start	Finish
1	**I. Submission of VRP Application Including Conceptual Site Model**	3 days	Mon 10/24/11	Wed 10/26/11
2	EPD Approval of VRP Application	45 days	Thu 10/27/11	Wed 12/28/11
3				
4	**II. Semi-Annual Report/CSM Updates**	**960 days**	**Wed 12/28/11**	**Tue 9/1/15**
5	1st Semi-Annual Report Preparation	6 mons	Wed 12/28/11	Tue 6/12/12
6	2nd Semi-Annual Report Preparation	6 mons	Wed 6/13/12	Tue 11/27/12
7	3rd Semi-Annual Report Preparation	6 mons	Wed 11/28/12	Tue 5/14/13
8	4th Semi-Annual Report Preparation	6 mons	Wed 5/15/13	Tue 10/29/13
9	5th Semi-Annual Report Preparation	6 mons	Wed 10/30/13	Tue 4/15/14
10	6th Semi-Annual Report Preparation	6 mons	Wed 4/16/14	Tue 9/30/14
11	7th Semi-Annual Report Preparation	6 mons	Wed 10/1/14	Tue 3/17/15
12	8th Semi-Annual Report Preparation	6 mons	Wed 3/18/15	Tue 9/1/15
13				
14	**III. Project Milestones**	**1200 days**	**Wed 12/28/11**	**Tue 8/2/16**
15	Horizontal Delineation of Constituents of Concern on-Site	12 mons	Wed 12/28/11	Tue 11/27/12
16	Horizontal Delineation of Constituents of Concern off-Site	24 mons	Wed 12/28/11	Tue 10/29/13
17	Vertical Delineation, Remedial Plan Preparation, and Cost Estimate	30 mons	Wed 12/28/11	Tue 4/15/14
18	Preparation of Compliance Status Report	60 mons	Wed 12/28/11	Tue 8/2/16



Project: Former Loef Facility
VRP Application Schedule
Date: Mon 10/24/11

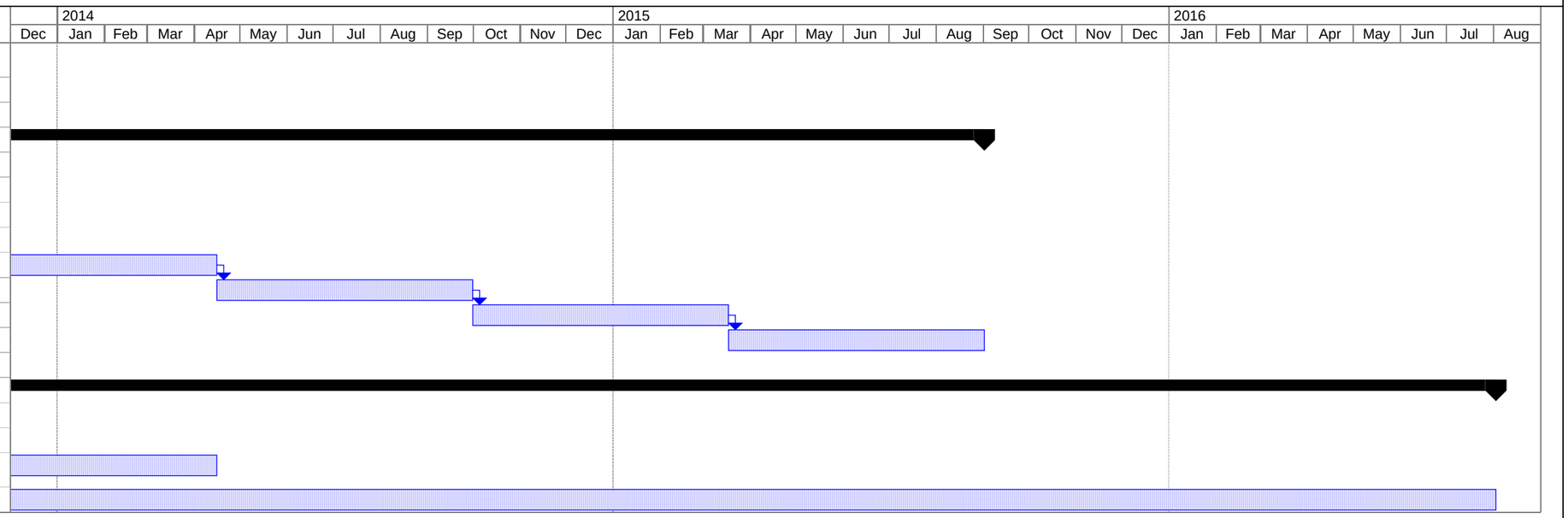
Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Peachtree Environmental, Inc.

VOLUNTARY INVESTIGATION AND REMEDIATION PLAN APPLICATION

FORME LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA
HSI# 10376

ID	Task Name
1	**I. Submission of VRP Application Including Conceptual Site Model**
2	EPD Approval of VRP Application
3	
4	**II. Semi-Annual Report/CSM Updates**
5	1st Semi-Annual Report Preparation
6	2nd Semi-Annual Report Preparation
7	3rd Semi-Annual Report Preparation
8	4th Semi-Annual Report Preparation
9	5th Semi-Annual Report Preparation
10	6th Semi-Annual Report Preparation
11	7th Semi-Annual Report Preparation
12	8th Semi-Annual Report Preparation
13	
14	**III. Project Milestones**
15	Horizontal Delineation of Constituents of Concern on-Site
16	Horizontal Delineation of Constituents of Concern off-Site
17	Vertical Delineation, Remedial Plan Preparation, and Cost Estimate
18	Preparation of Compliance Status Report



Project: Former Loef Facility
VRP Application Schedule
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Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Peachtree Environmental, Inc.

APPENDIX H

SUMMARY OF PROFESSIONAL GEOLOGISTS HOURS

HULL REAL ESTATE
ATHENS, CLARKE COUNTY, GEORGIA

VOLUNTARY REMEDIATION PLAN APPLICATION
SUMMARY OF PROFESSIONAL SERVICES HOURS

Activity	Hours
Preparation of VRP Application	10
Groundwater Modeling	10
Total =>	**20**