

**ALABAMA TANK TRUST FUND
UNDERGROUND STORAGE TANK**

**REVISED
CORRECTIVE ACTION PLAN
(CP #17)**

**Middleton Oil Company Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama
Facility ID No. 13434-035-016054
Incident No. AST11-02-01**

Prepared For:
**Middleton Oil Company, Inc.
P.O. Box 39
Greenville, Alabama 36037**

Prepared By:
**CDG Engineers & Associates, Inc.
1840 East Three Notch Street
Andalusia, Alabama 36421-2404**

October 2016



Engineering. Environmental. Answers.

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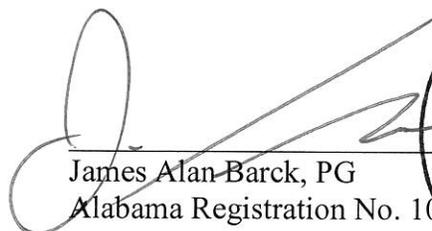
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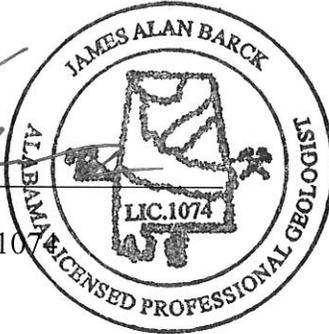
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CERTIFICATION PAGE

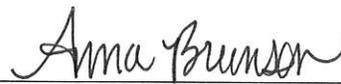
“I hereby certify that, in my professional judgment, the components of this document and associated work satisfy the applicable requirements set forth in Chapter 335-6 of the ADEM Administrative Code, and are consistent with generally accepted professional consulting principles and practices. The information submitted herein, to the best of my knowledge and belief, is true accurate, and complete. I am aware that there are significant penalties for submitting false information.”

This document has been prepared based on historical site assessment data and has been prepared to address soil and groundwater contamination at the Middleton Oil Company Bulk Plant (Facility Identification Number 13434-035-016054) in Evergreen, Conecuh County, Alabama. The recommended action should not be construed to apply to any other site.


James Alan Barck, PG
Alabama Registration No. 1074



10-24-16
Date


Anna Brunson
Project Manager

10/21/16
Date

UST RELEASE FACT SHEET

GENERAL INFORMATION:

SITE NAME: Middleton Oil Company Bulk Plant
 ADDRESS: 121 Pecan Street
Evergreen, Conecuh County, Alabama

FACILITY I.D. NO.: 13434-035-016054
 UST INCIDENT NO.: AST11-02-01

RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 ft. of site?	0
How many public water supply wells are located within 1 mile of the site?	2
Have any drinking water supply wells been impacted by contamination from this release?	No
Is there an imminent threat of contamination to any drinking water wells?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have vapors or contaminated groundwater posed a threat to the public?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are any underground utilities impacted or imminently threatened by the release?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Have surface waters been impacted by the release?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there an imminent threat of contamination to surface waters?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
What is the type of surrounding population?	Commercial/Residential

CONTAMINATION DESCRIPTION:

Type of contamination at site: Gasoline, Diesel, Waste Oil
 Kerosene, Other _____

Free product present in wells? Yes No Maximum thickness measured:

Maximum TPH/ BTEX concentrations measured in soil: BTEX in MW-1 (27.30ppm)

Maximum BTEX or PAH concentrations measured in groundwater: BTEX in MW-1 (34.1175 ppm) on 07/15/13

ADEM GROUNDWATER BRANCH

UST SITE CLASSIFICATION SYSTEM

CHECKLIST

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information, but answer the statements with the knowledge obtained during the closure site assessment.

SITE NAME: Middleton Oil Company Bulk Plant
 SITE ADDRESS: 121 Pecan Street
Evergreen, Conecuh County, Alabama
 FACILITY I.D. NO.: 113434-035-016054
 UST INCIDENT NO.: AST 11-02-01

OWNER NAME: Middleton Oil Company, Inc.
 OWNER ADDRESS: P.O. Box 39
Greenville, Alabama 36037

NAME & ADDRESS OF PERSON
 COMPLETING THIS FORM: James Alan Barck, PG - Project Manager
CDG Engineers and Associates Inc.
P.O. Box 278, Andalusia, Alabama 36420

<i>CLASSIFICATION</i>	<i>DESCRIPTION</i>	<i>YES</i>	<i>NO</i>
CLASS A	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
A.1	Vapor concentrations at or approaching explosive levels that could cause health effects, are present in a residence or building.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A.2	Vapor concentrations at or approaching explosive levels are present in subsurface utility system(s), but no buildings or residences are impacted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B.2	An active domestic water supply well, domestic water supply line or domestic surface water intake is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
B.3	The release is located within a designated Wellhead Protection Area I.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<i>CLASSIFICATION</i>	<i>DESCRIPTION</i>	<i>YES</i>	<i>NO</i>
CLASS D	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
D.1	There is a potential for explosive levels, or concentrations of vapors that could cause acute effects, to accumulate in a residence or other building.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D.2	A non-potable water supply well is impacted or immediately threatened.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
D.3	Shallow contaminated surface soils are open to public access, and dwellings, parks, playgrounds, day care centers, schools or similar use facilities are within 500 feet of those soils.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS E	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
E.1	A sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, etc.) are impacted and affected.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS F	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
F.2	Groundwater is impacted and a domestic well is located within 1,000 feet of the site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
F.3	Contaminated soils and/or groundwater are located within designated Wellhead Protection Areas (Areas II or III).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS G	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS H	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
H.1	Impacted surface water, stormwater or groundwater discharges within 500 feet of a surface water body used for human drinking water, whole body water-contact sports, or habitat to a protected or listed endangered plant and animal species.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CLASS I	LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
I.1.	Site has contaminated soils and/or groundwater but does not meet any of the above mentioned criteria.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ADDITIONAL COMMENTS:

Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.

Enter the determined classification ranking:	F.1.
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ADEM GROUNDWATER BRANCH
SITE CLASSIFICATION CHECKLIST
(5/8/95)

1.0 INTRODUCTION

The Middleton Oil Bulk Plant facility is located at 121 Pecan Street, Evergreen, Conecuh County, Alabama. Topographically the site is an area of low to moderate relief in northeastern Conecuh County. The site is situated in the NE ¼ of NE ¼ of SE ¼ of Section 4, Township 5 North, Range 11 East. The geographical coordinates are: Latitude 31° 25' 44.87" North, Longitude 86° 57' 31.57" West. The Middleton Oil Bulk Plant is owned by Middleton Oil Company, Inc. of Greenville, AL. The site is currently inactive.

The Middleton Oil Company Bulk Plant facility previously served as a petroleum products distribution location for Evergreen, Alabama and the surrounding area. The site is surrounded by commercial and residential development. Five (5) aboveground storage tanks (AST's) are located on the property that formerly contained various grades of gasoline, diesel fuel, and fuel oils. The property is bounded to the east by Pecan Street and to the west by the Louisville and Nashville Railroad. Water, electric and sewer services are provided by the City of Evergreen. There are both overhead and buried utilities located at the site. Two water lines run underground to the operations building located along the southern edge of the property. There are overhead electrical lines along the eastern portion of the property. Sanitary sewer service is located beneath Pecan Avenue along the eastern side of the property. All utility locations are illustrated on Figure 3. There are two public water supply wells located within one mile of the site as shown in Figure 8. The wells are owned by the City of Evergreen and are both active. Well #1 is 225 feet in depth with 32 feet of screen. Well #2 has a depth of 180 feet with 30 feet of screen. No private water wells have been identified within 1000 feet of the site.

In order to address the onsite dissolved hydrocarbon plume, ADEM requested that a Corrective Action Evaluation be prepared for the site. The cost proposal for Corrective Action Evaluation was submitted to ADEM on October 12, 2015 and approved by ADEM on November 10, 2015.

The approved scope of work under cost proposal CP#17 was to develop a site-specific CAP for Natural Attenuation with MPE events for the remediation of groundwater and soil, incorporating the results of the previous investigation efforts. This report summarizes the results of these activities.

2.0 SUMMARY OF PREVIOUS SITE INVESTIGATIONS

During investigation activities conducted at an Alabama Tank Trust Fund (ATTF) site to the south of the Middleton Oil Bulk Plant facility, soil and groundwater contaminant concentrations were observed up-gradient of that site. In addition, surface water samples collected from the upstream surface water samples collected from the surface drainage indicated the possible contribution of contaminants from an off-site source. The Middleton Oil Bulk Plant facility was identified as one of several potential sources

located in the area. On February 11, 2011, ADEM responded with a letter requiring Middleton Oil Company to conduct investigative activities at the bulk plant site to determine if a significant release of petroleum product had occurred on the property. In a second letter also dated February 11, 2011, ADEM stated that the Middleton Oil Bulk Plant was eligible under the ATTF.

Middleton Oil Company contracted with CDG Engineers & Associates (CDG) to perform the work required by ADEM under the ATTF. On March 17, 2011, personnel from CDG mobilized to the site to conduct the Preliminary Investigation activities. Four (4) soil borings were completed and permanent groundwater monitoring wells (MW-1 through MW-4) were constructed in each boring. Soil samples were collected from each soil boring. Groundwater sampling was also conducted following the installation of the monitoring wells.

The results of the Preliminary Investigation indicated that a release of petroleum product had occurred on the property. Based on these findings, CDG submitted a Secondary Investigation plan and cost proposal, which was subsequently approved by ADEM on December 8, 2011. In March 2012, CDG personnel mobilized to the site to conduct the Secondary Investigation activities. A total of seven monitoring wells (MW-5 through MW-11) and one vertical delineation well (VW-1) were installed during the Secondary Investigation activities. Soil samples were collected from each soil boring. Two (2) undisturbed soil samples (Shelby Tubes) were also collected and submitted to determine soil physical properties including moisture content, dry bulk density, porosity, grain size analysis, and fraction organic carbon (FOC) in accordance with ASTM Methods D-2216-92, D2937-94, D-854 and U.S. Army Corps of Engineers (COE) EM 1110-2-1906, and the Walkley Black Method, respectively. Groundwater sampling was also conducted following the installation of the monitoring wells.

Based on the results of the Preliminary and Secondary Investigations, ADEM required the initiation of groundwater monitoring activities at the site. Following two quarters of groundwater monitoring, ADEM requested an Alabama Risk Based Corrective Action (ARBCA) evaluation and Additional Well Installation at the site. The Additional Well Installation activities were completed in May 2014. A total of two monitoring wells (MW-12 and MW-13) were installed. The ARBCA evaluation was completed and submitted to ADEM on July 3, 2014. ADEM accepted the corrective action limits (CALs) as proposed by the ARBCA report on August 15, 2014.

3.0 SUMMARY OF PREVIOUSLY CONDUCTED CORRECTIVE ACTION

Corrective action activities outside of groundwater monitoring have not yet been performed at the site. To date, a total of thirteen groundwater monitoring events have been conducted at the former Middleton Oil Bulk Plant facility.

4.0 REMEDIAL OBJECTIVES AND EXPOSURE ASSESSMENT

4.1 General Remedial Objectives

The general objectives of this corrective action plan and the remedial efforts for the facility are as follows:

- Ensure that the health and safety of all project personnel is maintained during remediation activities.
- Prevent hydrocarbon contaminant migration to sensitive receptors.
- Reduce adsorbed phase petroleum hydrocarbons from soils within the vadose and saturated zone, to below approved Corrective Action Limits (CALs).
- Reduce dissolved petroleum hydrocarbons from groundwater to below approved CALs.
- Accomplish these objectives within the proposed period of operation.

4.2 Exposure Assessment

An exposure assessment was conducted by CDG during the ARBCA evaluation. The following receptor survey information has been drawn from the ARBCA Tier II Evaluation report:

Receptor Type	Actual Receptor	Onsite/Offsite	Pathway Status
Commercial Sites	Commercial 10 hr/day	On Site	Complete. Soil & Groundwater Vapor Inhalation. Future - Dermal Contact
	Commercial 10 hr/day	Off Site	Complete. Soil & Groundwater Vapor Inhalation. Future - Dermal Contact
	Construction Worker	On Site	Complete. Dermal Contact, Soil & Groundwater Vapor Inhalation.
	Construction Worker	Off Site	Complete. Dermal Contact, Soil & Groundwater Vapor Inhalation.
Residences	Resident 24 hr/day	On Site	Not Complete. The site is a commercial property in a commercial area and will likely remain so.
	Resident 24 hr/day	Off Site	Complete. Soil & Groundwater Vapor Inhalation. Future - Dermal Contact
Utilities	Water	On Site	Not Complete. Water and sewer is supplied by municipal sources. Utilities are not impacted nor potentially impacted by this release.

The current land use site conceptual exposure model indicates that *complete* exposure pathways for vapor inhalation exist for onsite/offsite commercial and construction workers. Any commercial facility would likely have consistent hours of operation for employees at the facility. No soil or groundwater

contamination was observed offsite; therefore, it is apparent that the release is confined to the onsite property and offsite properties are not impacted by this release.

Offsite residential properties exist to the Northeast, East, Southeast and South. Offsite commercial properties exist to the North, Northwest, West, Southwest, and South. Land use of the site and the surrounding area is expected to remain the same for the foreseeable future.

Results of the water well inventory indicate that there are two public water supply wells located within one mile of the site.

4.3 Site-Specific Target Levels

To assess the risk to human health and the environment of the dissolved hydrocarbon plume associated with the Middleton Oil Bulk Plant site, an ARBCA Tier I/ Tier II evaluation was performed. Details of this evaluation are contained in a report submitted to ADEM in July 2014. Based on the ARBCA Tier II evaluation, Site Specific Target Levels (SSTLs) for site remediation were calculated for the various media (soil and groundwater) at the site. The SSTLs developed during this process have been approved by ADEM as ACALs that would not pose a significant risk to any recognized actual or potential receptors. The ACALs for soil and groundwater are summarized in the following table.

Alternate Corrective Action Limits For Middleton Oil Bulk Plant						
Chemicals of Concern	Soil				Groundwater	
	Dermal Contact	On-site Indoor Inhalation	Off-Site Indoor Inhalation	Groundwater Resource Protection	On-site Indoor Inhalation	Off-Site Indoor Inhalation
	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/L)	(mg/L)
Benzene	69.8	1.24	0.189	0.412	13.4	2.05
Toluene	111	111	12.9	103	526	118
Ethylbenzene	41.7	41.7	38.8	41.7	169	169
Xylenes	46.6	46.6	14	46.6	175	99.8
MTBE	375	6380	617	1.29	48,000	5,800
Naphthalene	22.4	22.4	6.8	7	31	11.4

A more detailed presentation of these values is provided in the July 2014 ARBCA Evaluation Report. The individual Groundwater Resource Protection (GRP) ACALs generated for each of the site monitoring wells are presented in Table 3.

5.0 RECENT MONITORING ACTIVITIES, RESULTS, AND COMPARISONS TO CALS

ADEM requested the development of a CAP that would address both soil and groundwater contamination at the site. As part of CAP development, current representative concentrations for the chemicals of concern (COC) are needed in the evaluation and design of a plan to effectively treat and reduce contaminants. The site has had multiple approved groundwater monitoring events conducted. The most recent groundwater monitoring-sampling event was completed on May 9, 2016. The following details the activities and results of the May 9, 2016 groundwater monitoring event.

5.1 Groundwater Monitoring Activities

Personnel from CDG mobilized the Middleton Oil Bulk Plant site on May 9, 2016 to collect groundwater samples for BTEX/MTBE/Naphthalene analyses. Upon arriving at the site, the technician removed the well caps from a total of sixteen monitoring wells and one vertical delineation well (VW-1), thirteen of which are located at the Middleton Oil Bulk Plant site and three monitoring wells (MW-19, MW-30, and MW-31) associated with the Stinson Petroleum Bulk Plant. The water levels in the wells were allowed to stabilize. Potentiometric levels were then measured with an electronic water level indicator and recorded in the site field book. After all measurements were completed, the wells were sufficiently purged by the removal of approximately 54.5 gallons of groundwater. Purge water was containerized and transported to CDG's Andalusia office for subsequent disposal through the sanitary sewer system per CDG's agreement with the City of Andalusia.

Groundwater samples were collected and analyzed from all seventeen wells using new, disposable bailers and transferred to 40 mL glass VOA vials preserved with HCl. The samples were placed on ice and transported under chain of custody protocol to the CDG laboratory in Andalusia, Alabama where they were analyzed by EPA Method 8260B for the presence of BTEX/MTBE/Naphthalene constituents.

5.2 Laboratory Analytical Results

Laboratory analyses indicate that BTEX/MTBE and/or Naphthalene constituent concentrations exceed the accepted ARBCA Tier II SSTLs for Groundwater Resource Protection (GRP) and/or Stream Protection in two of the seventeen monitoring wells sampled (Table 2). None of the concentrations exceeded the Indoor Inhalation SSTL established for the site.

	<u>COC</u>	<u>Concentration (mg/L)</u>	<u>SSTLs (mg/L)</u>
MW-1	MTBE	1.7487	0.722 (GRP)
	Benzene	4.5993	0.18 (GRP); 0.0293 (Stream)
	Ethylbenzene	6.2686	1.21 (Stream)
	Naphthalene	0.8966	0.722 (GRP)

	<u>COC</u>	<u>Concentration (mg/L)</u>	<u>SSTLs (mg/L)</u>
MW-12	MTBE	0.3682	0.298 (GRP)
	Benzene	0.8382	0.0745 (GRP); 0.0121 (Stream)
	Ethylbenzene	0.9367	0.498 (Stream)

5.3 *Conclusions*

Based on the exposure assessment that onsite/offsite commercial and construction pathways are complete, current soil and groundwater concentrations were compared to the proposed ACALs calculated in the ARBCA evaluation. Based on the historical soil and groundwater concentrations, it appears that the lateral extent of the contaminant plume is confined to the Middleton Oil Property.

Soil samples collected from each monitoring well were below the proposed Tier II ACALs for Inhalation with the exception of MW-1, MW-3, and MW-12, which was above the proposed ACALs for both GRP and Indoor Air Inhalation (Table 2).

Based on the most recent groundwater sampling event conducted on May 9, 2016, two of the seventeen monitoring wells (MW-1 and MW-12) contained groundwater COC concentrations exceeding the ACALs for GRP for MTBE, Benzene, Ethylbenzene, and/or Naphthalene. All groundwater concentrations were below the ACALs for Indoor Air Inhalation.

6.0 *REMEDIATION RATIONALE AND APPROACH*

A comparison of the current groundwater data indicates that exceedances of the ACALs concentrations exist in MW-1 and MW-12. However, the BTEX/MTBE/Naphthalene concentrations in the wells outside of the contamination plume indicate that natural attenuation is effectively confining the extent of the plume to the immediate vicinity of the onsite source area. A review of the historical data for the site also indicates a general decreasing trend in the COC concentrations over the history of the project (Table 3).

The proposed corrective action involves allowing natural attenuation to continue to reduce contaminant concentrations outside of the source area to acceptable levels for site closure. Tri-annual groundwater monitoring events will be conducted for an initial period of two years to monitor the natural attenuation progress toward the remediation goals. Monitoring wells will be sampled for BTEX/MTBE/Naphthalene analytes and for natural attenuation parameters (DO, pH, and Redox).

To address the source area, CDG proposes to install two recovery wells within the source area. Each month for the first six months during each tri-annual period, one 12-hour MPE event will be conducted,

provided these efforts prove effective. It is anticipated that following the initial six month period, one 12-hour MPE event will be conducted each tri-annual period until COC concentrations have been reduced to the proposed ACALs.

Additionally, CDG will propose to install six Air Sparge (AS) wells within the source area. The proposed AS wells will be completed with one inch diameter schedule 40 PVC and will be screened with a 2 foot section of porous media sparge point. The AS wells will be installed approximately 2-4 feet below the water level. A third party vendor will be contracted to conduct the Air Sparging events. Compressed air will be injected into the proposed AS points simultaneously with MPE events. An Underground Injection Control (UIC) permit application for injection of compressed air was submitted on August 9, 2016. The Air Sparge events, along with MPE, are anticipated to rapidly reduce the COC concentrations within the source area to levels below the proposed ACALs. Based on this anticipation, Air Sparge events will be conducted each month for the first six months during each tri-annual period. Once the COC concentrations are reduced to below the ACALs, corrective actions activities will be discontinued and re-bounce monitoring will be initiated.

CDG will recommend the site for NFA status if remediation goals are met. Should the COC concentrations remain above the ACALs after the two year period, CDG will re-evaluate the corrective action plan.

7.0 REMEDIATION RECOMMENDATION PLAN

The proposed corrective action at the Middleton Oil Bulk Plant site involves the application of periodic multiphase extraction and air sparge events in conjunction with natural attenuation monitoring. CDG recommends the following approach.

Well Installation

Personnel from CDG will travel to the site, conduct eight soil borings (Figure 8), and collect soil samples, from the two recovery well borings, from selected depths determined by a Photo Ionization Detector (PID) field screening method. During soil boring advancement, representative portions of the soil from each sample interval, from the two recovery well borings, will be retained for further analysis. One portion will be placed in a cooler on ice, for possible submission to the laboratory for analysis. The other portion will be allowed to volatilize for approximately one hour prior to head space analysis for organic vapors using a PID. The headspace of the samples will be analyzed with the PID, the values recorded, and the two samples with the highest levels of VOCs from each boring will be submitted for laboratory analysis.

Two soil samples from each of the recovery well soil borings will be submitted for laboratory analysis based on the PID results. Following the collection of samples for analysis, the samples will be transferred to laboratory-supplied containers (4 ounce, unpreserved jars with Teflon-lined lids), placed on ice, and transported to Waypoint Analytical Laboratory in Memphis, Tennessee, maintaining chain of custody protocol. Samples will be analyzed for BTEX/MTBE/Naphthalene using EPA Method 8260B. Additionally, one soil sample will be collected and submitted to the laboratory for TCLP Lead results as required by ADEM to get a Solid Waste Profile.

Two of the eight soil borings will be converted into 4" recovery wells to be utilized for extraction if needed for MPE events. The recovery wells will be drilled with 10 ¼" OD hollow stem augers and will be constructed of 4-inch 0.020" slot PVC screen and solid riser and installed a total depth of 20 feet below ground surface (bgs) and contain 15 feet of screen. The annular space of the borehole will be filled with 6/14-fraction silica sand from the bottom of the borehole to a level of one foot above the top of the screened interval. A two foot granular bentonite seal will be placed above the sand pack and hydrated for at least two hours. The wells will then be grouted to within 6 inches of the ground surface. A locking watertight cap fit with a padlock will be placed on top of the wells. The recovery wells will be completed at the surface with a manway with a bolt-down steel cover.

Six of the eight soil borings will be converted into 1" Air Sparge (AS) wells to be utilized during the MPE events. The air sparge wells will be drilled with a 6 ¼" OD hollow stem auger to an approximate depth of 25 feet below ground surface (ft-bgs) and will be screened with approximately two (2) feet of 0.020-inch slotted screen. Four (4) of the AS wells will be located in the vicinity of proposed recovery well RW-1 and two (2) of the AS wells will be located in the vicinity of proposed recovery well RW-2 (Figure 8). The proposed AS wells will be completed with 1-inch diameter schedule 40 PVC and will contain a two (2) foot section of 1-inch diameter porous media sparge point. The AS wells will have supplemental 20/40 size filter sand emplaced across the screened interval and a bentonite seal, approximately two (2) feet thick, will be placed and hydrated above the sand pack. The annulus above the bentonite seal will be grouted, leaving room at the surface to install a flush mounted, traffic-rated well cover assembly. A well cap and lock will be installed to limit unauthorized entry.

MPE Events

CDG recommends that monthly 12-hour duration MPE events be conducted at the site in order to reduce dissolved hydrocarbon concentrations in the source area. Each 12-hour MPE event will be conducted using a mobile system operated by a third party vendor. The primary objective will be vapor recovery and PCW removal, utilizing total fluids extraction from the wells.

Air Sparge Events

CDG recommends that monthly air sparge events be conducted at the site in order to reduce dissolved hydrocarbon concentrations in the source area by stripping the contaminants by volatilization. Each air sparge event will be conducted simultaneously with MPE events using a mobile system operated by a third party vendor. The primary objective will be to increase the COC recovery concentrations.

Natural Attenuation

Groundwater samples will be collected quarterly from all site monitoring wells. The groundwater samples will be collected from the monitoring wells using new clean plastic bailers and transferred to 40 milliliter (mL) glass volatile organic analysis (VOA) vials preserved with hydrochloric acid (HCl) for BTEX, MTBE, and naphthalene analysis using EPA Method 8260B. During each groundwater sampling event, all monitoring wells will also be monitored for natural attenuation parameters (DO, pH, and ORP).

8.0 PROPOSED REPORTING REQUIREMENTS

CDG will submit reports in accordance with ADEM requirements. These reports will include the following:

Reporting of Natural Attenuation with MPE/Air Sparge Events Effectiveness - CDG proposes to submit tri-annual NAMR reports, which will summarize field activities and the progress of site groundwater constituent concentrations towards achieving approved corrective action levels. The following data will be included in each report: field activities performed, groundwater elevations, groundwater analytical results as compared to target levels, potentiometric surface maps, BTEX/MTBE contour maps, and MPE/Air Sparge data results. The reports will also include remediation effectiveness and recommendations concerning additional measures deemed necessary.

Request for Closure Evaluation of Corrective Action - This report will include data that demonstrates that remediation goals have been achieved and will request a status of No Further Action (NFA) for the site. Methods for abandonment of monitoring and recovery wells will be described.

Site Closure Report - This report will describe in detail the closure of the site and removal of all monitoring wells.

9.0 SCHEDULE OF IMPLEMENTATION

It is anticipated that the proposed corrective action plan will begin with the first groundwater-monitoring event following the approval of the CAP. The following schedule indicates the timetable for major project events to be completed as part of this corrective action plan:

Time Following Cap Approval (months)	Project Event	Project Event Length
1	Injection and Recovery Well Installation	1 Week
0 – 24	Tri-annual groundwater monitoring, MPE/Air Sparge events, evaluation of performance, and recommendations for further corrective action if required	2 Years
25	Well abandonment; completion and submittal of final report if allowable by ADEM	2 Months

10.0 PROPOSED SAMPLING AND MONITORING ACTIVITIES

Following the approval of the CAP, groundwater samples will be collected tri-annually from all monitoring wells. The groundwater samples will be collected from the monitoring wells using new clean plastic bailers and transferred to 40 ml glass VOA vials preserved with HCl for BTEX/MTBE analysis using Method 8260. All monitoring wells will also be sampled for natural attenuation parameters (DO, pH, and Redox) during the tri-annual events. The natural attenuation parameters will provide information concerning the recovery of the shallow aquifer down gradient of the release area.

A summary of the scheduled sampling points is presented below:

Sample Location & Medium	Sample Frequency	Sample Parameters
MW-1 through MW-13, VW-1, proposed RW-1 and RW-2, proposed IW-1 through IW-6, and offsite wells MW-19, MW-30, and MW-31	Tri-annually	BTEX/MTBE (EPA Method 8260)
MW-1 through MW-13, VW-1, proposed RW-1 and RW-2, proposed IW-1 through IW-6, and offsite wells MW-19, MW-30, and MW-31	Tri-annually	ORP, pH, DO (Field Methods)

TABLES

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-A	03/22/11			277.03	NA	NA
MW-1	03/22/11	15'	10	276.00	7.97	268.03
	04/02/12				8.48	267.52
	01/04/13				9.68	266.32
	04/16/13				5.56	270.44
	07/15/13				8.23	267.77
	10/17/13				12.04	263.96
	05/12/14				5.47	270.53
	01/13/15				9.28	266.72
	03/25/15				9.14	266.86
	06/02/15				7.53	268.47
	09/24/15				12.06	263.94
	02/23/16				6.10	269.90
	05/09/16				7.39	268.61
MW-2	03/22/11	18'	10	276.88	7.73	269.15
	04/02/12				8.29	268.59
	01/04/13				9.71	267.17
	04/16/13				5.14	271.74
	07/15/13				7.96	268.92
	10/17/13				12.05	264.83
	05/12/14				5.00	271.88
	01/13/15				9.13	267.75
	03/25/15				8.94	267.94
	06/02/15				6.86	270.02
	09/24/15				11.94	264.94
	02/23/16				5.43	271.45
	05/09/16				6.83	270.05

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-3	03/22/11	15'	10	277.21	8.04	269.17
	04/02/12				8.72	268.49
	01/04/13				10.48	266.73
	04/16/13				5.44	271.77
	07/15/13				8.52	268.69
	10/17/13				12.66	264.55
	05/12/14				5.20	272.01
	01/13/15				9.67	267.54
	03/25/15				9.49	267.72
	06/02/15				7.40	269.81
	09/24/15				12.62	264.59
	02/23/16				5.57	271.64
05/09/16	7.04	270.17				
MW-4	03/22/11	15'	10	274.24	5.24	269.00
	04/02/12				5.71	268.53
	01/04/13				6.71	267.53
	04/16/13				3.00	271.24
	07/15/13				5.24	269.00
	10/17/13				9.16	265.08
	05/12/14				2.97	271.27
	01/13/15				6.32	267.92
	03/25/15				6.20	268.04
	06/02/15				4.37	269.87
	09/24/15				9.00	265.24
	02/23/16				3.48	270.76
05/09/16	4.58	269.66				
MW-5	04/02/12	15'	10	270.88	4.73	266.15
	01/04/13				5.62	265.26
	04/16/13				2.38	268.50
	07/15/13				4.64	266.24
	10/17/13				7.92	262.96
	05/12/14				2.35	268.53
	01/13/15				5.50	265.38
	03/25/15				5.57	265.31
	06/02/15				4.30	266.58
	09/24/15				8.07	262.81
	02/23/16				2.81	268.07
	05/09/16				4.07	266.81

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-6	04/02/12	15'	10	276.42	9.42	267.00
	01/04/13				10.93	265.49
	04/16/13				6.13	270.29
	07/15/13				9.22	267.20
	10/17/13				13.06	263.36
	05/12/14				5.92	270.50
	01/13/15				10.38	266.04
	03/25/15				10.41	266.01
	06/02/15				7.62	268.80
	09/24/15				12.24	264.18
	02/23/16				6.47	269.95
	05/09/16				7.99	268.43
MW-7	04/02/12	17.5'	10	279.50	10.94	268.56
	01/04/13				12.99	266.51
	04/16/13				7.47	272.03
	07/15/13				10.81	268.69
	10/17/13				15.05	264.45
	05/12/14				7.13	272.37
	01/13/15				12.08	267.42
	03/25/15				11.86	267.64
	06/02/15				9.62	269.88
	09/24/15				15.11	264.39
	02/23/16				7.53	271.97
	05/09/16				9.16	270.34
MW-8	04/02/12	17.5'	10	279.66	10.38	269.28
	01/04/13				12.51	267.15
	04/16/13				6.94	272.72
	07/15/13				10.32	269.34
	10/17/13				14.61	265.05
	05/12/14				6.60	273.06
	01/13/15				11.58	268.08
	03/25/15				11.23	268.43
	06/02/15				8.89	270.77
	09/24/15				14.54	265.12
	02/23/16				6.90	272.76
	05/09/16				8.54	271.12

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-9	04/02/12	15'	10	278.13	8.75	269.38
	01/04/13				10.52	267.61
	04/16/13				5.57	272.56
	07/15/13				8.58	269.55
	10/17/13				12.82	265.31
	05/12/14				5.33	272.80
	01/13/15				9.82	268.31
	03/25/15				9.51	268.62
	06/02/15				7.22	270.91
	09/24/15				12.65	265.48
	02/23/16				5.71	272.42
05/09/16	7.24	270.89				
MW-10	04/02/12	15'	10	276.26	7.00	269.26
	01/04/13				8.24	268.02
	04/16/13				4.16	272.10
	07/15/13				6.69	269.57
	10/17/13				10.74	265.52
	05/12/14				4.08	272.18
	01/13/15				7.78	268.48
	03/25/15				7.63	268.63
	06/02/15				5.51	270.75
	09/24/15				10.45	265.81
	02/23/16				4.47	271.79
05/09/16	5.89	270.37				
MW-11	04/02/12	15'	10	273.47	6.33	267.14
	01/04/13				7.21	266.26
	04/16/13				3.60	269.87
	07/15/13				6.02	267.45
	10/17/13				9.58	263.89
	05/12/14				3.66	269.81
	01/13/15				6.92	266.55
	03/25/15				6.92	266.55
	06/02/15				5.45	268.02
	09/24/15				9.60	263.87
	02/23/16				4.21	269.26
05/09/16	5.44	268.03				

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-12	05/12/14	15'	10	272.14	4.59	267.55
	01/13/15				7.06	265.08
	03/25/15				7.08	265.06
	06/02/15				6.12	266.02
	09/24/15				9.53	262.61
	02/23/16				4.91	267.23
	05/09/16				6.00	266.14
MW-13	05/12/14	15'	10	274.09	5.25	268.84
	01/13/15				8.10	265.99
	03/25/15				8.18	265.91
	06/02/15				6.79	267.30
	09/24/15				10.62	263.47
	02/23/16				5.72	268.37
	05/09/16				6.87	267.22
VW-1	04/02/12	15'	10'	273.14	6.40	266.74
	01/04/13				7.40	265.74
	04/16/13				3.69	269.45
	07/15/13				6.20	266.94
	10/17/13				9.74	263.40
	05/12/14				3.67	269.47
	01/13/15				7.15	265.99
	03/25/15				7.14	266.00
	06/02/15				5.71	267.43
	09/24/15				9.82	263.32
	02/23/16				4.19	268.95
	05/09/16				5.49	267.65

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
MW-19 (Stinson)	04/09/09	13'	7.5'	274.16	4.28	269.88
	09/21/09				6.35	267.81
	02/17/10				3.49	270.67
	02/24/11				9.45	264.71
	08/10/11				10.90	263.26
	03/20/14				5.44	268.72
	06/30/14				6.84	267.32
	08/25/14				10.80	263.36
	11/20/14				12.43	261.73
	01/13/15				8.77	265.39
	03/25/15				9.04	265.12
	06/02/15				7.52	266.64
	09/24/15				11.48	262.68
	02/23/16				5.19	268.97
05/09/16	6.64	267.52				
MW-30 (Stinson)	02/24/11	15'	10'	273.10	7.97	265.13
	08/10/11				9.22	263.88
	03/20/14				3.80	269.30
	06/30/14				5.50	267.60
	08/25/14				9.24	263.86
	11/20/14				10.90	262.20
	01/13/15				7.18	265.92
	03/25/15				7.19	265.91
	06/02/15				5.72	267.38
	09/24/15				9.90	263.20
	02/23/16				4.08	269.02
05/09/16	5.44	267.66				
MW-31 (Stinson)	02/24/11	20'	15'	278.48	12.70	265.78
	08/10/11				14.23	264.25
	03/20/14				7.25	271.23
	06/30/14				9.24	269.24
	08/25/14				13.92	264.56
	11/20/14				15.95	262.53
	01/13/15				11.79	266.69
	03/25/15				11.73	266.75
	06/02/15				9.68	268.80
	09/24/15				14.83	263.65
	02/23/16				7.43	271.05
05/09/16	9.04	269.44				

TABLE 1**Summary of Potentiometric and Surface Elevations****Middleton Oil Bulk Plant****Pecan Avenue****Evergreen, Conecuh County, Alabama**

Well Number	Date	Well Depth	Screen Length	Casing Elevation	Depth to Water (ft)	Potentiometric Head Elevation
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Notes:

- 1) All depths and elevations are in feet relative to sea level.
- 2) Groundwater elevations are referenced to top of casing, and are based on elevation data from USGS quadrangle map of Evergreen Alabama.

TABLE 2

Summary of Soil BTEX/MTBE/Naphthalene Chemical Analyses

Middleton Oil Bulk Plant
Pecan Avenue
Evergreen, Conecuh County, Alabama

WELL NUMBER & DEPTH (ft)	DATE	CONCENTRATIONS OF CONSTITUENTS (mg/Kg)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
MW-1 @ 0 - 3'	03/17/11	0.0422	0.0158	<0.0056	0.0478	0.0370	0.1006	<0.0660
MW-1 @ 3 - 8'		0.0623	0.1499	0.3259	7.0987	19.7277	27.3022	0.2610
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-2 @ 0 - 3'	03/17/11	<0.0054	<0.0054	<0.0054	<0.0054	<0.0054	<0.0216	<0.0660
MW-2 @ 8 - 13'		<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0236	<0.0660
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-3 @ 3 - 8'	03/17/11	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0228	<0.0660
MW-3 @ 8 - 13'		<0.0293	<0.0293	<0.0293	0.9262	<0.0293	0.9262	0.7470
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-4 @ 5 - 10'	03/17/11	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0660
MW-4 @ 10 - 15'		<0.0065	<0.0065	<0.0065	<0.0065	<0.0065	<0.0260	<0.0660
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-5 @ 3 - 8'	03/26/12	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
MW-5 @ 8 - 13'		<0.0067	<0.0067	<0.0067	<0.0067	<0.0067	<0.0268	<0.0067
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-6 @ 3 - 8'	03/26/12	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0228	<0.0057
MW-6 @ 8 - 13'		<0.0063	<0.0063	<0.0063	<0.0063	<0.0063	<0.0252	<0.0063
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-7 @ 3 - 8'	03/26/12	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0236	<0.0059
MW-7 @ 8 - 13'		<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7

TABLE 2**Summary of Soil BTEX/MTBE/Naphthalene Chemical Analyses**

**Middleton Oil Bulk Plant
Pecan Avenue
Evergreen, Conecuh County, Alabama**

WELL NUMBER & DEPTH (ft)	DATE	CONCENTRATIONS OF CONSTITUENTS (mg/Kg)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
MW-8 @ 3 - 8'	03/27/12	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0228	<0.0057
MW-8 @ 8 - 13'		<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-9 @ 3 - 8'	03/27/12	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0224	<0.0056
MW-9 @ 8 - 13'		<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-10 @ 3 - 8'	03/27/12	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0228	<0.0057
MW-10 @ 8 - 13'		<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-11 @ 0 - 5'	03/27/12	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0232	<0.0058
MW-11 @ 5 - 10'		<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0264	<0.0066
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-12 @ 5 - 10'	05/05/14	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0236	<0.0059
MW-12 @ 10 - 15'		0.1118	0.0106	<0.0061	0.0314	0.0069	0.0489	0.0104
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7
MW-13 @ 5 - 10'	05/05/14	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0228	<0.0057
MW-13 @ 10 - 15'		<0.0060	<0.0060	<0.0060	0.0149	<0.0060	0.0149	0.0281
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7

TABLE 2

Summary of Soil BTEX/MTBE/Naphthalene Chemical Analyses

Middleton Oil Bulk Plant

Pecan Avenue

Evergreen, Conecuh County, Alabama

WELL NUMBER & DEPTH (ft)	DATE	CONCENTRATIONS OF CONSTITUENTS (mg/Kg)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
VW-1 @ 3 - 8'	03/26/12	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0236	<0.0059
VW-1 @ 8 - 13'	03/26/12	<0.0062	<0.0062	<0.0062	0.1151	0.0725	0.1876	0.0395
Indoor Inhalation SSTLs		6380	1.24	111	41.7	46.6	-	22.4
GRP SSTLs		1.29	0.412	103	41.7	46.60	-	7

- NOTES:
- 1) All samples were analyzed by CDG Andalusia, Alabama according to purge and trap analysis Method 8260B for the presence of BTEX analytes.
 - 2) mg/kg = Milligrams per kilogram or parts per million.
 - 3) ppm = parts per million (mg/L)
 - 4) **BOLD** indicates an exceedance of ADEM's Initial Screening Levels (ISL) for each constituent.

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)							
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene	
MW-1	03/22/11	10.9693	5.8675	0.9254	3.4629	8.0472	18.3030	0.4341	
	04/02/12	2.6854	7.3322	0.3218	5.8136	14.9318	28.3994	1.1303	
	01/04/13	3.0925	6.9505	0.2041	7.2940	14.3320	28.7806	1.2980	
	04/16/13	2.3117	6.1131	0.2602	6.2048	14.9482	27.5263	0.9309	
	07/15/13	2.9406	6.9601	0.2186	7.8458	19.0930	34.1175	1.3125	
	10/17/13	4.8950	7.0874	0.1732	6.7784	13.5791	27.6181	1.1263	
	05/12/14	1.7115	4.9990	0.1133	5.9108	11.6425	22.6656	0.9294	
	01/13/15	4.5723	6.4536	0.1364	6.5531	5.9521	19.0952	1.0270	
	03/25/15	2.9786	5.6692	0.1379	7.4719	8.9882	22.2672	0.7911	
	06/02/15	1.7338	5.4187	0.1105	5.9561	9.6579	21.1432	0.9603	
	09/24/15	4.5025	6.6237	0.1287	6.9914	1.3979	15.1417	1.0651	
	02/23/16	2.8153	5.5691	0.0736	6.3961	6.1440	18.1828	0.9915	
	05/09/16	1.7487	4.5993	0.0767	6.2686	7.0163	17.9609	0.8966	
	<i>SSTL - Inhal.</i>		48000	13.4	526	169	175	-	31
	<i>SSTL-GRP Source</i>		0.722	0.18	36.1	25.3	175	-	0.722
<i>SSTL-Stream Protection Source</i>		N/A	0.0293	0.466	1.21	N/A	-	1.65	
MW-2	03/22/11	<0.001	0.0094	<0.001	<0.001	0.0024	0.0118	0.0018	
	04/02/12	0.0011	0.0018	<0.001	0.0011	0.0030	0.0059	<0.001	
	01/04/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	04/16/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	07/15/13	0.0011	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	10/17/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	<i>SSTL - Inhal.</i>		48000	13.4	526	169	175	-	31
	<i>SSTL-GRP POC</i>		0.722	0.18	36.1	25.3	175	-	0.722
<i>SSTL-Stream Protection POC</i>		N/A	0.0293	0.466	1.21	N/A	-	1.65	

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)							
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene	
MW-3	03/22/11	0.0686	0.2666	0.0736	0.2612	0.1566	0.7580	0.1204	
	04/02/12	0.0376	0.2409	0.0224	0.1365	0.0284	0.4282	0.1086	
	01/04/13	0.0438	0.2467	0.0129	0.1086	0.0096	0.3778	0.0640	
	04/16/13	0.0117	0.0746	0.0029	0.0128	0.0055	0.0958	0.0229	
	07/15/13	0.0255	0.0867	0.0076	0.0728	0.0277	0.1948	0.0340	
	10/17/13	0.0551	0.1841	0.0053	0.1538	0.0018	0.3450	0.0764	
	05/12/14	0.0102	0.0311	0.0011	0.0016	0.0037	0.0375	0.0269	
	01/13/15	0.0083	0.0453	0.0301	0.0156	0.1035	0.1945	0.0538	
	03/25/15	0.0061	0.0298	0.0486	0.1241	0.1218	0.3243	0.0426	
	06/02/15	0.0061	0.0047	<0.001	0.0019	0.0019	0.0085	<0.001	
	09/24/15	0.0107	0.0541	0.0103	0.0845	0.0108	0.1597	0.0472	
	02/23/16	0.0028	0.0212	0.0031	0.0343	0.0078	0.0664	0.0295	
	05/09/16	0.0056	0.0038	<0.001	<0.001	<0.001	0.0038	0.0012	
	<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
	MW-4	03/22/11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
		04/02/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
01/04/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
04/16/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
07/15/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
10/17/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
05/12/14		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
01/13/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
03/25/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
06/02/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
09/24/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
02/23/16		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
05/09/16		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>	
MW-5		04/02/12	0.1756	0.0149	0.0252	0.0301	0.0519	0.1221	0.0093
		01/04/13	0.0320	0.0137	<0.001	0.0021	<0.001	0.0158	0.0034
	04/16/13	1.1503	0.2266	0.3558	0.3080	0.6764	1.5668	0.0674	
	07/15/13	0.6017	0.0780	0.0126	0.0616	0.0751	0.2273	0.0191	
	10/17/13	0.6826	0.1332	0.0084	0.0691	0.0078	0.2185	0.0242	
	05/12/14	0.5776	0.0082	<0.005	<0.005	<0.005	0.0082	<0.005	
	01/13/15	0.2568	<0.005	<0.005	0.0057	0.0072	0.0129	<0.005	
	03/25/15	0.1757	0.0052	<0.001	0.0058	0.0014	0.0124	0.0013	
	06/02/15	0.0192	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	09/24/15	0.0275	0.0123	<0.001	0.0051	<0.001	0.0174	0.0018	
	02/23/16	0.2547	0.0062	<0.001	0.0011	0.0019	0.0092	0.0016	
	05/09/16	0.0473	0.0590	0.0157	0.0620	0.0318	0.1685	0.0135	
	<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
	<i>SSTL-GRP POC</i>		<i>0.403</i>	<i>0.101</i>	<i>20.2</i>	<i>14.1</i>	<i>175</i>	<i>-</i>	<i>0.403</i>
	<i>SSTL-Stream Protection POC</i>		<i>N/A</i>	<i>0.0164</i>	<i>0.261</i>	<i>0.675</i>	<i>N/A</i>	<i>-</i>	<i>0.924</i>

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
MW-6	04/02/12	<0.001	0.0105	<0.001	0.0481	0.0012	0.0598	0.0320
	01/04/13	0.0010	0.0109	<0.001	0.0192	<0.001	0.0301	0.0180
	04/16/13	<0.001	<0.001	<0.001	0.0017	<0.001	0.0017	0.0028
	07/15/13	<0.001	0.0041	<0.001	0.0122	<0.001	0.0163	0.0163
	10/17/13	<0.001	0.0134	<0.001	0.0373	<0.001	0.0507	0.0200
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	0.0025	<0.001	0.0032	<0.001	0.0057	0.0136
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	0.0017
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	0.0053	<0.001	0.0027	<0.001	0.0080	0.0040
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
	MW-7	04/02/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004
01/04/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
04/16/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
07/15/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
10/17/13		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
05/12/14		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
01/13/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
03/25/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
06/02/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
09/24/15		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
02/23/16		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
05/09/16		<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
MW-8		04/02/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004
	01/04/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	04/16/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	07/15/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	10/17/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
MW-9	04/02/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/04/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	04/16/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	07/15/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	10/17/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
MW-10	04/02/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/04/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	04/16/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	07/15/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	10/17/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
MW-11	04/02/12	0.0112	0.1070	0.0036	0.1581	0.0036	0.2723	0.0722
	01/04/13	0.0013	0.0475	0.0011	0.1482	0.0019	0.1987	0.0441
	04/16/13	0.0017	0.0534	0.0022	0.1150	0.0021	0.1727	0.0314
	07/15/13	<0.001	0.0033	<0.001	0.0030	<0.001	0.0063	0.0027
	10/17/13	0.0011	0.0599	0.0011	0.0973	0.0017	0.1600	0.0108
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	0.0032	<0.001	0.0015	<0.001	0.0047	<0.001
	03/25/15	<0.001	0.0014	<0.001	<0.001	<0.001	0.0014	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	0.0124	<0.001	0.0549	<0.001	0.0673	0.0126
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
<i>SSTL-GRP POC</i>	<i>0.701</i>	<i>0.175</i>	<i>35</i>	<i>24.5</i>	<i>175</i>	<i>-</i>	<i>0.701</i>	
<i>SSTL-Stream Protection POC</i>	<i>N/A</i>	<i>0.0285</i>	<i>0.453</i>	<i>1.17</i>	<i>N/A</i>	<i>-</i>	<i>1.61</i>	

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene
MW-12	05/12/14	1.1203	0.3907	0.1274	0.3743	0.2200	1.1124	0.0749
	01/13/15	<0.001	<0.001	<0.001	0.0020	0.0033	0.0053	<0.001
	03/25/15	<0.001	<0.001	<0.001	0.0018	<0.001	0.0018	<0.001
	06/02/15	0.0024	0.0055	<0.001	<0.001	<0.001	0.0055	0.0029
	09/24/15	0.0081	0.1506	0.0038	0.1318	0.0040	0.2902	0.0063
	02/23/16	0.8315	0.8993	0.0781	1.2584	0.0653	2.3011	0.2983
	05/09/16	0.3682	0.8382	0.1285	0.9367	0.2572	2.1606	0.1941
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
<i>SSTL-GRP POC</i>	<i>0.298</i>	<i>0.0745</i>	<i>14.9</i>	<i>10.4</i>	<i>149</i>	<i>-</i>	<i>0.298</i>	
<i>SSTL-Stream Protection POC</i>	<i>N/A</i>	<i>0.0121</i>	<i>0.193</i>	<i>0.498</i>	<i>N/A</i>	<i>-</i>	<i>0.682</i>	
MW-13	05/12/14	<0.001	0.0042	<0.001	0.0042	0.0034	0.0118	0.0053
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	0.0011	<0.001	0.0013	<0.001	0.0024	<0.001
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	0.0011	0.0206	0.0019	0.0106	0.0015	0.0346	0.0085
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
<i>SSTL-GRP POC</i>	<i>0.548</i>	<i>0.137</i>	<i>27.4</i>	<i>19.2</i>	<i>175</i>	<i>-</i>	<i>0.548</i>	
<i>SSTL-Stream Protection POC</i>	<i>N/A</i>	<i>0.0222</i>	<i>0.354</i>	<i>0.916</i>	<i>N/A</i>	<i>-</i>	<i>1.25</i>	
VW-1	04/02/12	<0.001	<0.001	<0.001	<0.001	0.0021	0.0021	<0.001
	01/04/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	04/16/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	07/15/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	10/17/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/12/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	01/13/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001
	<i>SSTL - Inhal.</i>	<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
	<i>Allowable POC Level (GRP)</i>	<i>0.63</i>	<i>0.158</i>	<i>31.5</i>	<i>22.1</i>	<i>175</i>	<i>-</i>	<i>0.63</i>
	<i>Allowable POC Level (Stream)</i>	<i>N/A</i>	<i>0.0256</i>	<i>0.407</i>	<i>1.05</i>	<i>N/A</i>	<i>-</i>	<i>1.44</i>

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)							
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene	
MW-19 (Stinson)	04/09/09	<0.001	0.0224	<0.001	0.0977	0.0052	0.1253	0.0607	
	09/21/09	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	02/17/10	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	02/24/11	<0.001	0.0272	<0.001	0.0330	0.0015	0.0617	0.0175	
	08/10/11	<0.001	0.0334	<0.001	0.0380	<0.001	0.0714	0.0209	
	03/20/14	<0.001	0.0015	<0.001	<0.001	<0.001	0.0015	<0.001	
	06/30/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	08/25/14	<0.001	0.0033	<0.001	0.0027	<0.001	0.0060	0.0040	
	11/20/14	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
	01/13/15	<0.001	0.0030	<0.001	0.0018	0.0019	0.0067	0.0052	
	03/25/15	<0.001	0.0053	<0.001	0.0033	<0.001	0.0086	0.0021	
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	09/24/15	<0.001	0.0096	<0.001	0.0227	<0.001	0.0323	0.0063	
	02/23/16	<0.001	<0.001	<0.001	0.0019	<0.001	0.0019	<0.001	
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>
	MW-30 (Stinson)	09/27/10	6.5025	2.8462	13.5424	2.4965	10.0152	28.9003	0.5999
02/24/11		1.2291	1.3890	12.7335	2.8580	10.5838	27.5643	0.5616	
08/10/11		7.8099	2.1741	10.0141	2.4808	10.0489	24.7179	0.4681	
03/20/14		1.9303	1.1084	1.6610	1.0682	2.6511	6.4887	0.1754	
06/30/14		0.1340	0.0896	0.0479	0.6212	0.4403	1.1990	0.2257	
08/25/14		2.1741	0.9553	0.3728	0.7576	1.4840	3.5697	0.2203	
11/20/14		6.7498	1.8985	0.3974	1.0931	1.8339	5.2229	0.2350	
01/13/15		7.8970	1.8619	2.5390	1.6286	3.9044	9.9339	0.3196	
03/25/15		3.3680	1.3221	1.1234	1.2381	2.5319	6.2155	0.1977	
06/02/15		0.0088	0.0028	0.0017	0.0632	0.0110	0.0787	0.0241	
09/24/15		5.2972	1.5729	0.2609	1.0014	1.3595	4.1947	0.2163	
02/23/16		0.8700	0.6648	0.3517	0.6895	1.1831	2.8891	0.1840	
05/09/16		0.0888	0.1107	0.0212	0.4240	0.1808	0.7367	0.1604	
<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>	
MW-31 (Stinson)	09/27/10	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	02/24/11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	08/10/11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	03/20/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	06/30/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	08/25/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	11/20/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	01/13/15	<0.001	<0.001	<0.001	<0.001	0.0013	0.0013	0.0014	
	03/25/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	06/02/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	09/24/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	02/23/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
	05/09/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.001	
<i>SSTL - Inhal.</i>		<i>48000</i>	<i>13.4</i>	<i>526</i>	<i>169</i>	<i>175</i>	<i>-</i>	<i>31</i>	

TABLE 3

Summary of Groundwater BTEX/MTBE Chemical Analysis

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

WELL NUMBER	DATE	Concentration of Constituents (mg/L)						
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Naphthalene

NOTES:

- 1) Samples analyzed by CDG Andalusia, Alabama by purge and trap analysis (Method 8260B).
- 2) mg/L = Milligrams per liter or parts per million.
- 3) **Bold** numbers indicate an exceedance in ADEM's Site Specific Target Levels (SSTL) for each constituent.

TABLE 4

Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
MW-1	03/22/11	3.28	6.4	NR
	04/02/12	NR	NR	NR
	01/04/13	NR	NR	NR
	04/16/13	NR	NR	NR
	07/15/13	NR	NR	NR
	10/17/13	NR	NR	NR
	05/12/14	NR	NR	NR
	01/13/15	NR	NR	NR
	03/25/15	NR	NR	NR
	06/02/15	NR	NR	NR
	09/24/15	NR	NR	NR
	02/23/16	NR	NR	NR
	05/09/16	NR	NR	NR
	MW-2	03/22/11	1.53	6.5
04/02/12		2.44	5.7	166
01/04/13		2.49	6.2	186
04/16/13		1.89	5.4	241
07/15/13		3.18	5.4	224
10/17/13		1.13	5.4	217
05/12/14		1.89	5.1	134
01/13/15		1.26	5.1	141
03/25/15		1.98	5.8	84
06/02/15		1.35	5.4	124
09/24/15		NR	5.2	127
02/23/16		2.19	6.1	187
05/09/16		2.86	6.2	139
MW-3		03/22/11	NR	NR
	04/02/12	NR	NR	NR
	01/04/13	NR	NR	NR
	04/16/13	NR	NR	NR
	07/15/13	NR	NR	NR
	10/17/13	NR	NR	NR
	05/12/14	NR	NR	NR
	01/13/15	NR	NR	NR
	03/25/15	NR	NR	NR
	06/02/15	NR	NR	NR
	09/24/15	NR	NR	NR
	02/23/16	NR	NR	NR
	05/09/16	NR	NR	NR

TABLE 4**Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential**

**Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama**

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
MW-4	03/22/11	3.24	6.8	NR
	04/02/12	2.67	6.1	138
	01/04/13	2.77	5.8	225
	04/16/13	2.62	5.8	198
	07/15/13	4.36	5.8	142
	10/17/13	1.51	5.5	234
	05/12/14	3.42	5.0	128
	01/13/15	1.67	5.7	151
	03/25/15	1.56	5.5	139
	06/02/15	1.59	5.9	67
	09/24/15	NR	5.4	98
	02/23/16	2.82	6.4	229
	05/09/16	2.41	5.8	125
MW-5	04/02/12	2.33	5.8	187
	01/04/13	2.58	6.2	237
	04/16/13	2.43	5.4	259
	07/15/13	3.42	5.6	109
	10/17/13	1.81	5.7	-12
	05/12/14	NR	NR	NR
	01/13/15	NR	NR	NR
	03/25/15	NR	NR	NR
	06/02/15	1.37	5.5	24
	09/24/15	NR	6.1	11
	02/23/16	NR	NR	NR
	05/09/16	NR	NR	NR
	MW-6	04/02/12	1.79	5.5
01/04/13		1.81	6.0	188
04/16/13		3.02	5.9	205
07/15/13		2.81	5.3	132
10/17/13		1.84	5.8	-29
05/12/14		2.75	5.2	125
01/13/15		1.92	5.9	190
03/25/15		1.42	5.7	86
06/02/15		1.75	5.3	180
09/24/15		NR	6.2	25
02/23/16		2.44	5.9	232
05/09/16		2.72	6.3	156

TABLE 4**Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential**

**Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama**

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
MW-7	04/02/12	2.80	6.0	192
	01/04/13	1.94	5.5	155
	04/16/13	1.83	5.5	118
	07/15/13	2.44	5.5	177
	10/17/13	1.43	5.3	189
	05/12/14	5.25	5.2	131
	01/13/15	1.40	5.3	165
	03/25/15	1.94	5.4	154
	06/02/15	1.45	5.8	19
	09/24/15	NR	5.3	83
	02/23/16	3.64	6.2	281
	05/09/16	2.64	6.2	139
	MW-8	04/02/12	2.42	6.1
01/04/13		2.21	5.9	243
04/16/13		1.44	5.8	303
07/15/13		3.61	5.2	135
10/17/13		1.82	5.7	54
05/12/14		4.46	4.9	124
01/13/15		1.83	5.8	152
03/25/15		1.65	5.9	176
06/02/15		1.49	5.9	64
09/24/15		NR	5.2	112
02/23/16		2.33	5.7	208
05/09/16		3.42	6.4	172
MW-9		04/02/12	2.54	6.1
	01/04/13	2.36	6.3	227
	04/16/13	1.84	5.6	264
	07/15/13	3.12	5.7	152
	10/17/13	1.12	4.9	212
	05/12/14	1.92	5.8	94
	01/13/15	1.51	5.7	180
	03/25/15	2.19	6.2	138
	06/02/15	1.63	5.6	56
	09/24/15	NR	5.3	121
	02/23/16	2.73	6.0	224
	05/09/16	2.16	5.8	144

TABLE 4

Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
MW-10	04/02/12	1.97	5.7	155
	01/04/13	2.54	6.0	198
	04/16/13	2.73	6.1	343
	07/15/13	2.48	6.0	241
	10/17/13	1.27	5.8	224
	05/12/14	2.64	5.0	126
	01/13/15	1.80	5.4	131
	03/25/15	1.85	5.4	64
	06/02/15	1.88	5.8	181
	09/24/15	NR	5.1	113
	02/23/16	2.36	5.5	176
	05/09/16	2.81	5.9	157
	MW-11	04/02/12	2.24	5.9
01/04/13		NR	NR	NR
04/16/13		2.41	5.7	175
07/15/13		2.55	5.5	168
10/17/13		1.55	6.2	-37
05/12/14		1.56	5.3	120
01/13/15		1.59	5.2	163
03/25/15		1.32	5.2	49
06/02/15		2.16	5.6	170
09/24/15		NR	5.7	63
02/23/16		2.41	5.8	154
05/09/16		NR	NR	NR
MW-12		05/12/14	NR	NR
	01/13/15	NR	NR	NR
	03/25/15	NR	NR	NR
	06/02/15	1.62	5.7	143
	09/24/15	NR	6.0	23
	02/23/16	NR	NR	NR
	05/09/16	NR	NR	NR
MW-13	05/12/14	2.45	5.4	108
	01/13/15	1.70	5.8	182
	03/25/15	1.34	5.4	44
	06/02/15	1.96	5.3	84
	09/24/15	NR	6.1	-7
	02/23/16	3.23	6.2	249
	05/09/16	3.24	6.5	134

TABLE 4

Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
VW-1	04/02/12	2.77	6.4	228
	01/04/13	3.12	6.4	268
	04/16/13	1.96	5.4	225
	07/15/13	2.98	6.4	272
	10/17/13	1.78	5.5	46
	05/12/14	2.15	5.4	128
	01/13/15	2.34	6.0	200
	03/25/15	1.77	6.4	221
	06/02/15	2.59	6.2	198
	09/24/15	NR	5.6	115
	02/23/16	2.69	6.3	251
	05/09/16	2.94	6.4	197
MW-19 (Stinson)	03/20/14	3.07	5.4	144
	06/30/14	6.18	5.9	153
	08/25/14	2.12	6.3	127
	11/20/14	Well Dry	Well Dry	Well Dry
	01/13/15	1.91	5.6	195
	03/25/15	1.97	6.1	124
	06/02/15	1.65	5.5	178
	09/24/15	NR	6.0	2
	02/23/16	NR	NR	NR
	05/09/16	NR	NR	NR
MW-30 (Stinson)	03/20/14	NR	NR	NR
	06/30/14	NR	NR	NR
	08/25/14	NR	NR	NR
	11/20/14	NR	NR	NR
	01/13/15	NR	NR	NR
	03/25/15	NR	NR	NR
	06/02/15	NR	NR	NR
	09/24/15	NR	NR	NR
	02/23/16	NR	NR	NR
05/09/16	NR	NR	NR	

TABLE 4**Summary of Analysis for Dissolved Oxygen, pH, and Redox Potential**

Middleton Oil Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama

Well Identification	Date	Dissolved Oxygen (mg/L)	pH	Redox Potential (mV)
MW-31	03/20/14	2.36	5.2	124
(Stinson)	06/30/14	4.17	6.1	181
	08/25/14	1.82	5.8	152
	11/20/14	1.68	5.8	170
	01/13/15	1.78	5.4	166
	03/25/15	1.68	5.5	152
	06/02/15	1.72	5.8	134
	09/24/15	NR	5.4	107
	02/23/16	3.41	5.8	197
	05/09/16	2.57	6.1	169

Notes:

- 1) DO, pH, and Redox are measured with field equipment by personnel from CDG.
- 2) mg/L = Milligrams per Liter.
- 3) mV = Millivolts.
- 4) NR = No Reading.

FIGURES

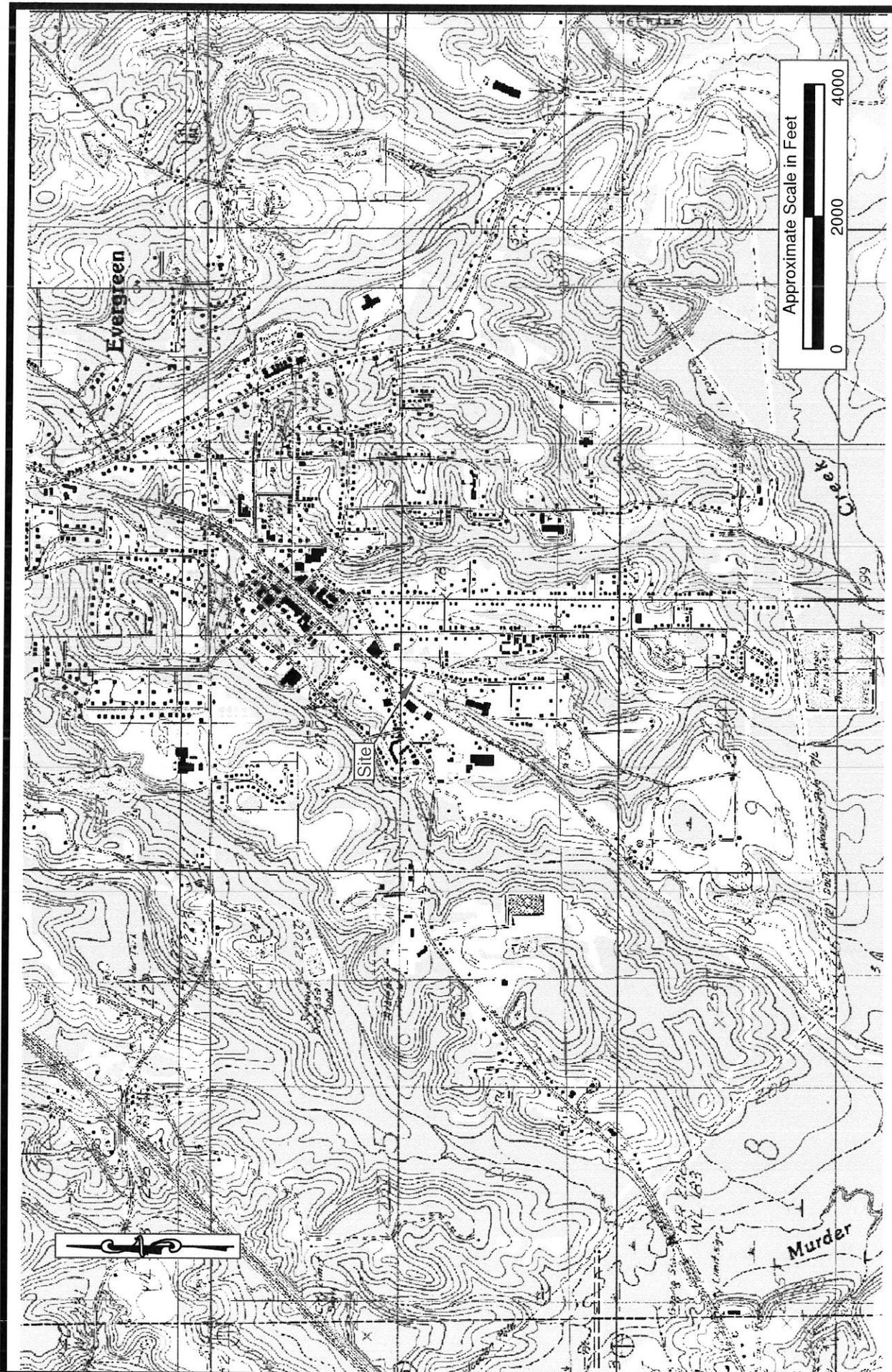


Figure 1
Site Location Map

Drafter: Ray Hollinghead

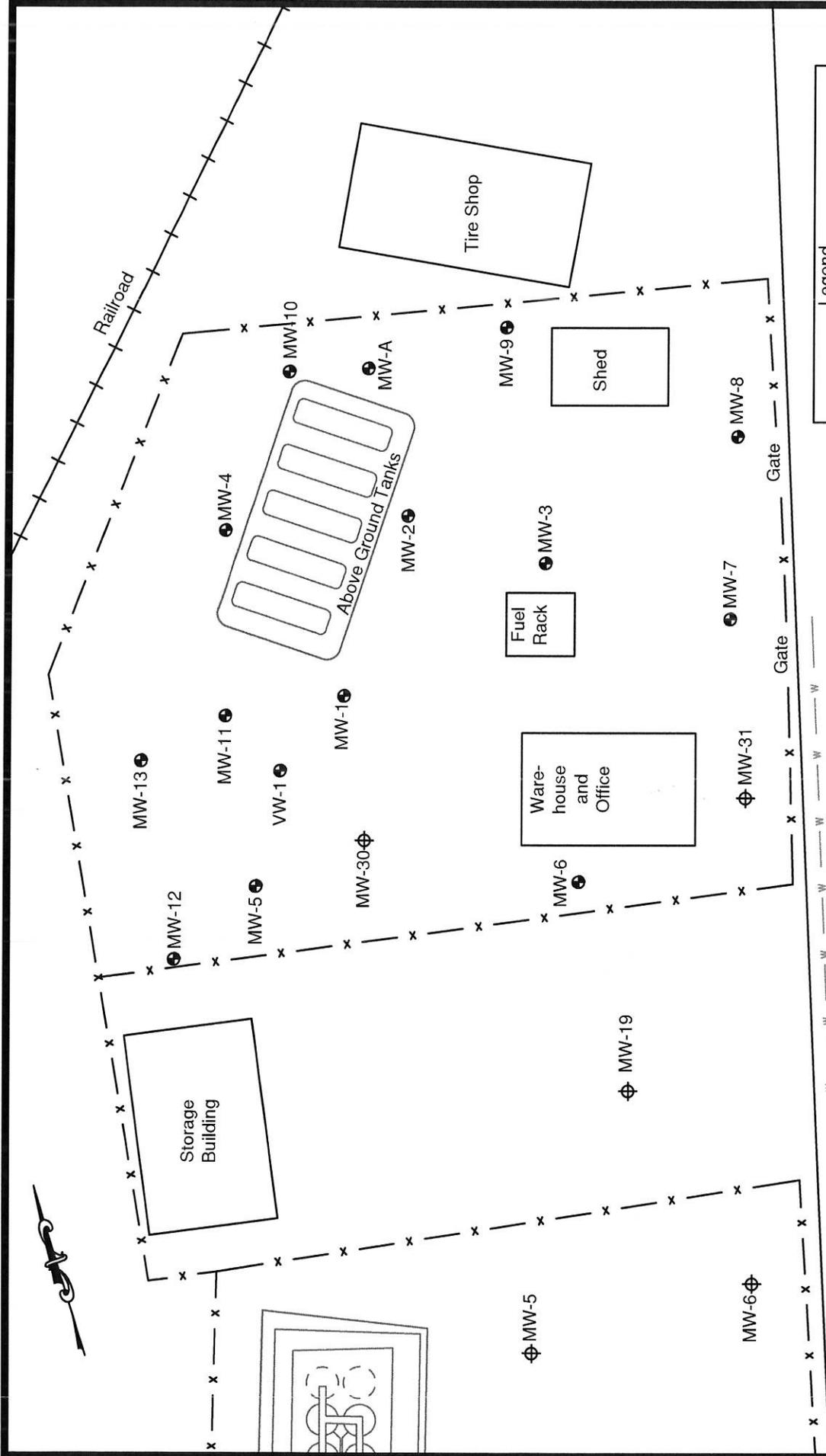
BIRMINGHAM, ALABAMA
(205) 733-9431
DOTHAN, ALABAMA
(334) 677-9431
HUNTSVILLE, ALABAMA
(256) 539-7470



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ANDALUSIA, ALABAMA
(334) 222-9431
AUBURN, ALABAMA
(334) 466-9431

Middleton Oil Bulk Plant
Evergreen, Alabama
091100217



Legend

- Middleton Oil Bulk Plant Monitoring Well
- ⊕ Stinson Petroleum Bulk Plant Monitoring Well
- W — Water Line



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HUNTSVILLE, ALABAMA
(256) 539-7470



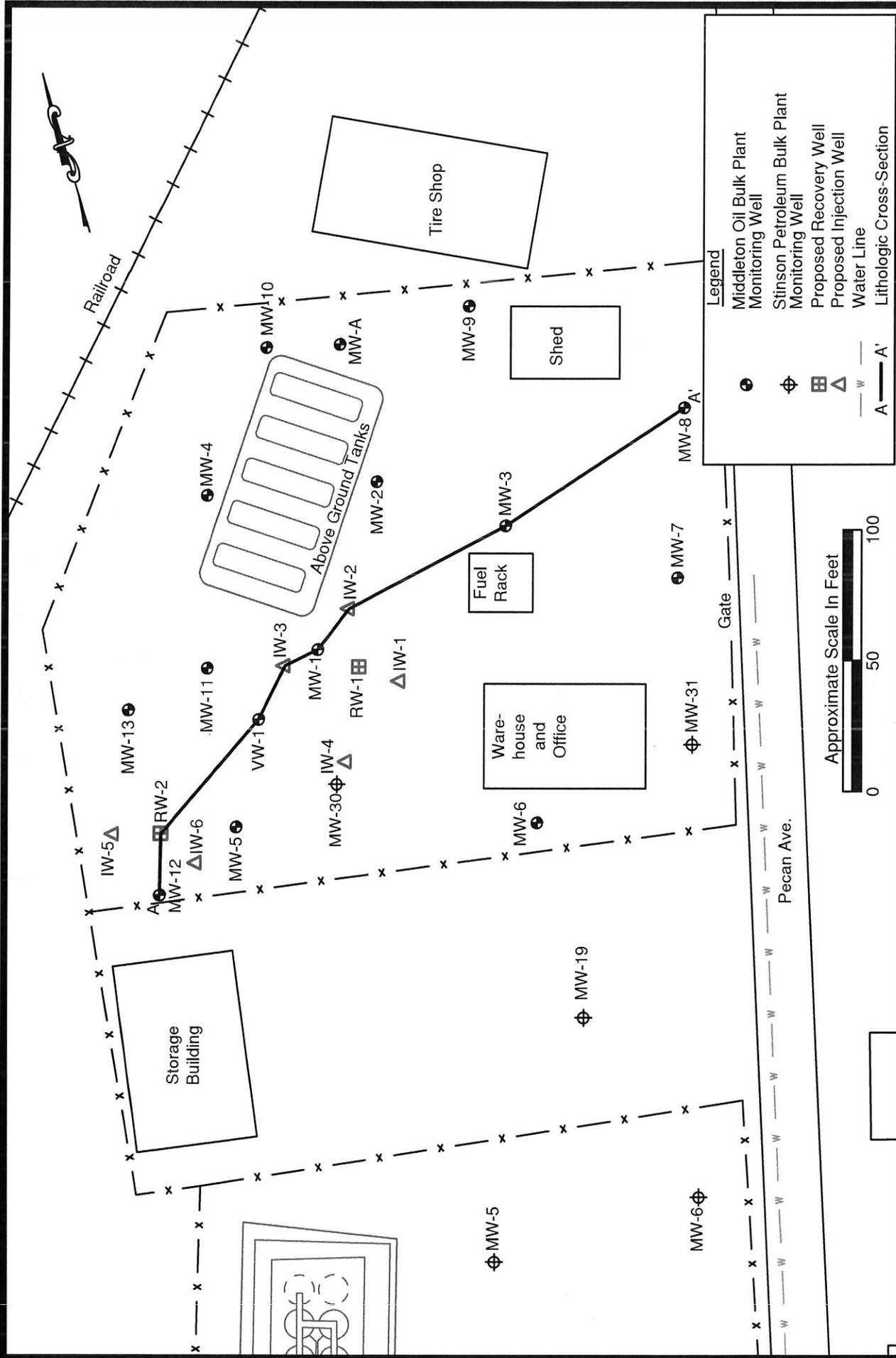
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ANDALUSIA, ALABAMA
(334) 222-9431
AUBURN, ALABAMA
(334) 466-9431

Middleton Oil Bulk Plant
Evergreen, Alabama
091100217

Figure 2
Site Map with Utility and Well Locations

Drafter: Ray Hollinghead



Legend

- Middleton Oil Bulk Plant Monitoring Well
- ⊕ Stinson Petroleum Bulk Plant Monitoring Well
- ⊕ Proposed Recovery Well
- △ Proposed Injection Well
- W — Water Line
- A — A' Lithologic Cross-Section

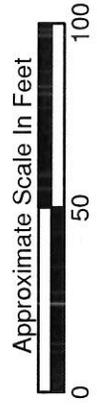


Figure 3
Lithologic Cross-Section Location Map

BIRMINGHAM, ALABAMA
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DOTHAN, ALABAMA
(334) 677-9431
HUNTSVILLE, ALABAMA
(256) 539-7470



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Middleton Oil Bulk Plant
Evergreen, Alabama
091100217

Drafter: Ray Hollinghead

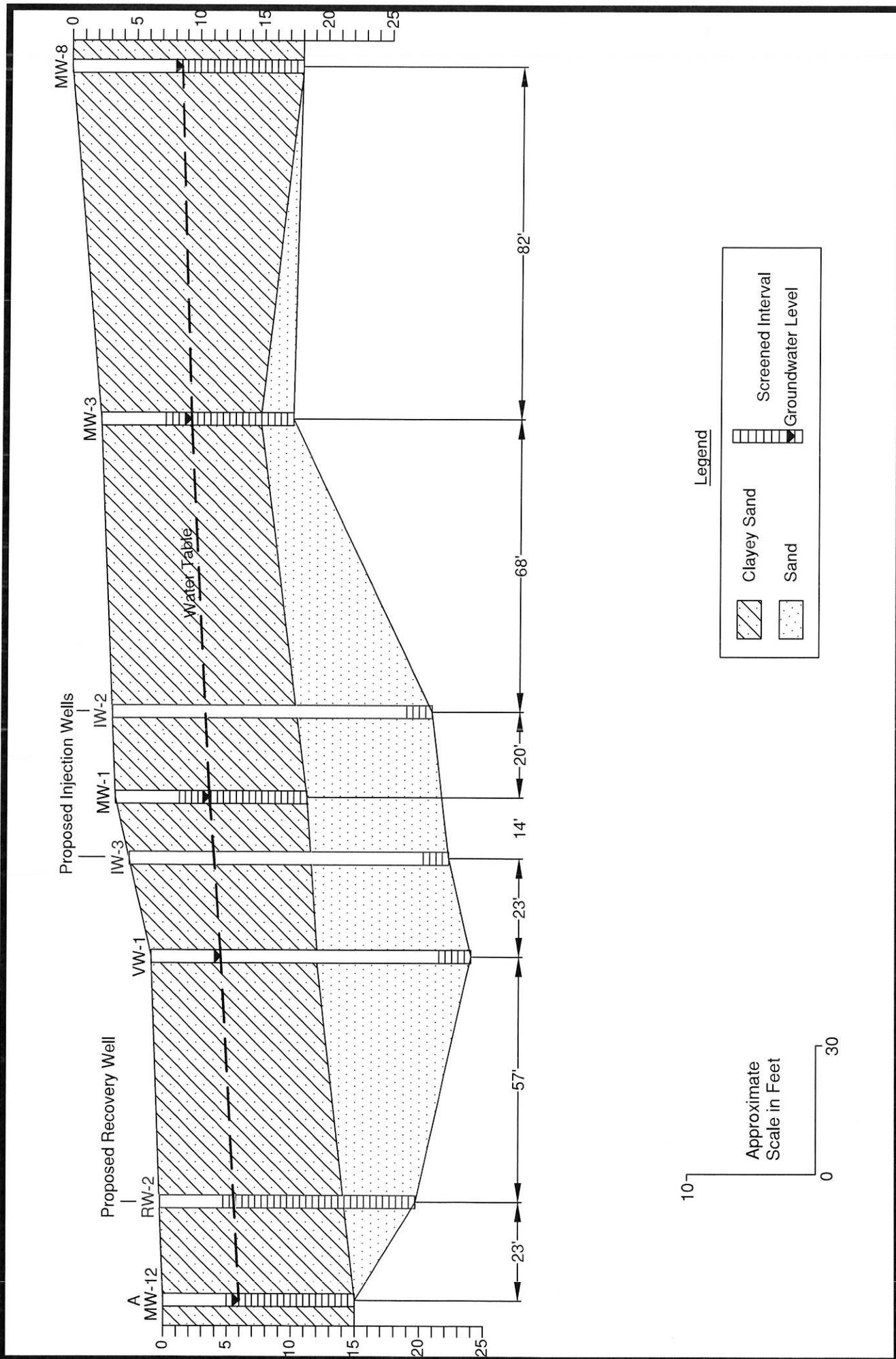


Figure 4
Lithologic Cross-Section A-A'

Drafter: Ray Hollinghead

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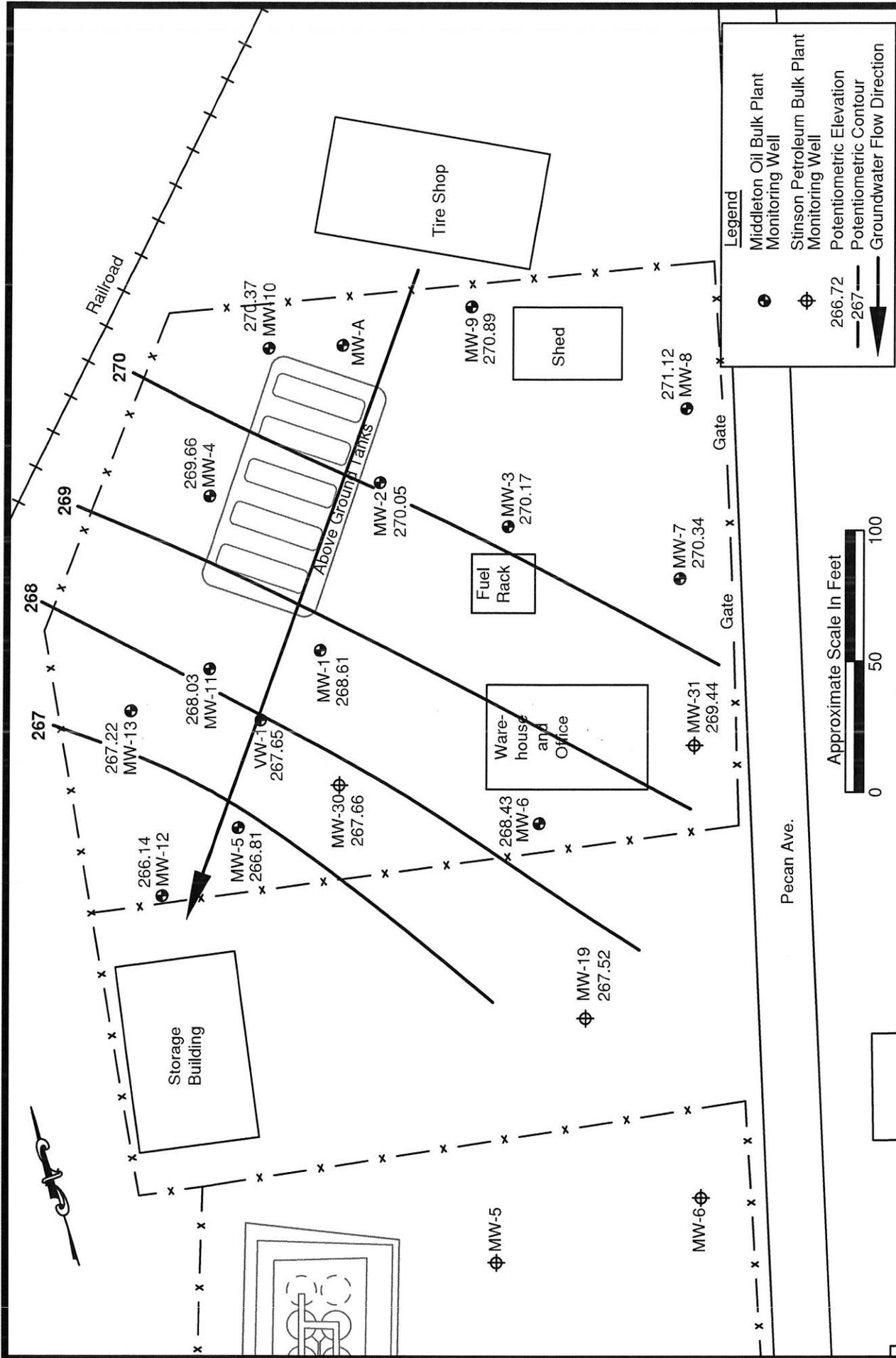


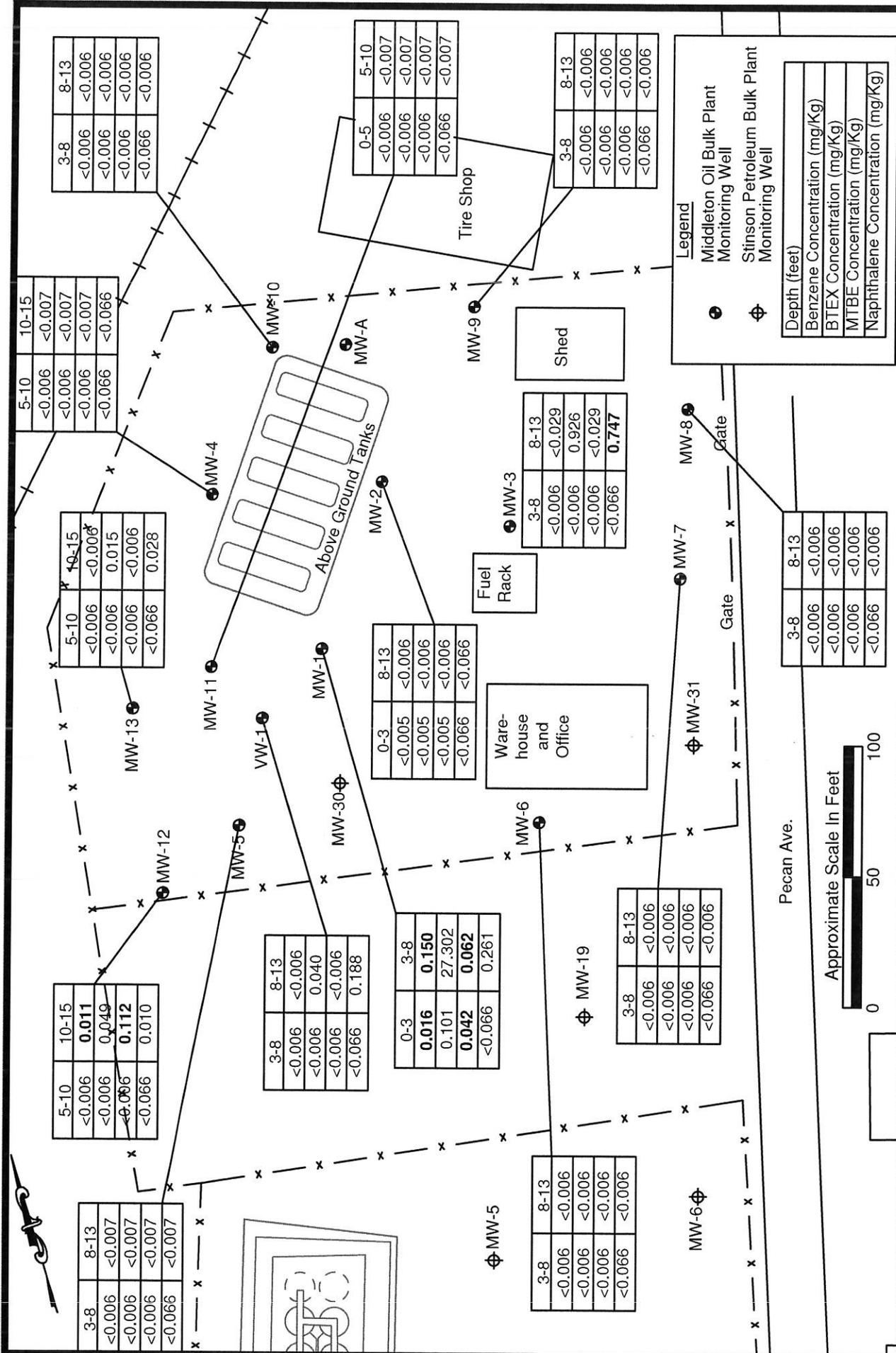
Figure 5
Potentiometric Surface Map
May 2016
Drafter: Ray Hollinghead

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5-10	10-15
<0.006	0.011
<0.006	0.049
0.066	0.112
<0.066	0.010

5-10	10-15
<0.006	<0.006
<0.006	0.015
<0.006	<0.006
<0.066	0.028

3-8	8-13
<0.006	<0.006
<0.006	<0.006
<0.006	<0.006
<0.066	<0.066

3-8	8-13
<0.006	<0.006
<0.006	0.040
<0.006	<0.006
<0.066	0.188

0-3	3-8
0.016	0.150
0.101	27.302
0.042	0.062
<0.066	0.261

0-3	8-13
<0.005	<0.006
<0.005	<0.006
<0.005	<0.006
<0.066	<0.066

3-8	8-13
<0.006	<0.006
<0.006	<0.006
<0.006	<0.006
<0.066	<0.066

3-8	8-13
<0.006	<0.029
<0.006	0.926
<0.006	<0.029
<0.066	0.747

0-5	5-10
<0.006	<0.007
<0.006	<0.007
<0.006	<0.007
<0.066	<0.007

3-8	8-13
<0.006	<0.006
<0.006	<0.006
<0.006	<0.006
<0.066	<0.006

3-8	8-13
<0.006	<0.006
<0.006	<0.006
<0.006	<0.006
<0.066	<0.066

3-8	8-13
<0.006	<0.006
<0.006	<0.006
<0.006	<0.006
<0.066	<0.066

Pecan Ave.

Approximate Scale In Feet



Legend

- Middleton Oil Bulk Plant Monitoring Well
- ⊕ Stinson Petroleum Bulk Plant Monitoring Well

Depth (feet)
Benzene Concentration (mg/Kg)
BTEX Concentration (mg/Kg)
MTBE Concentration (mg/Kg)
Naphthalene Concentration (mg/Kg)

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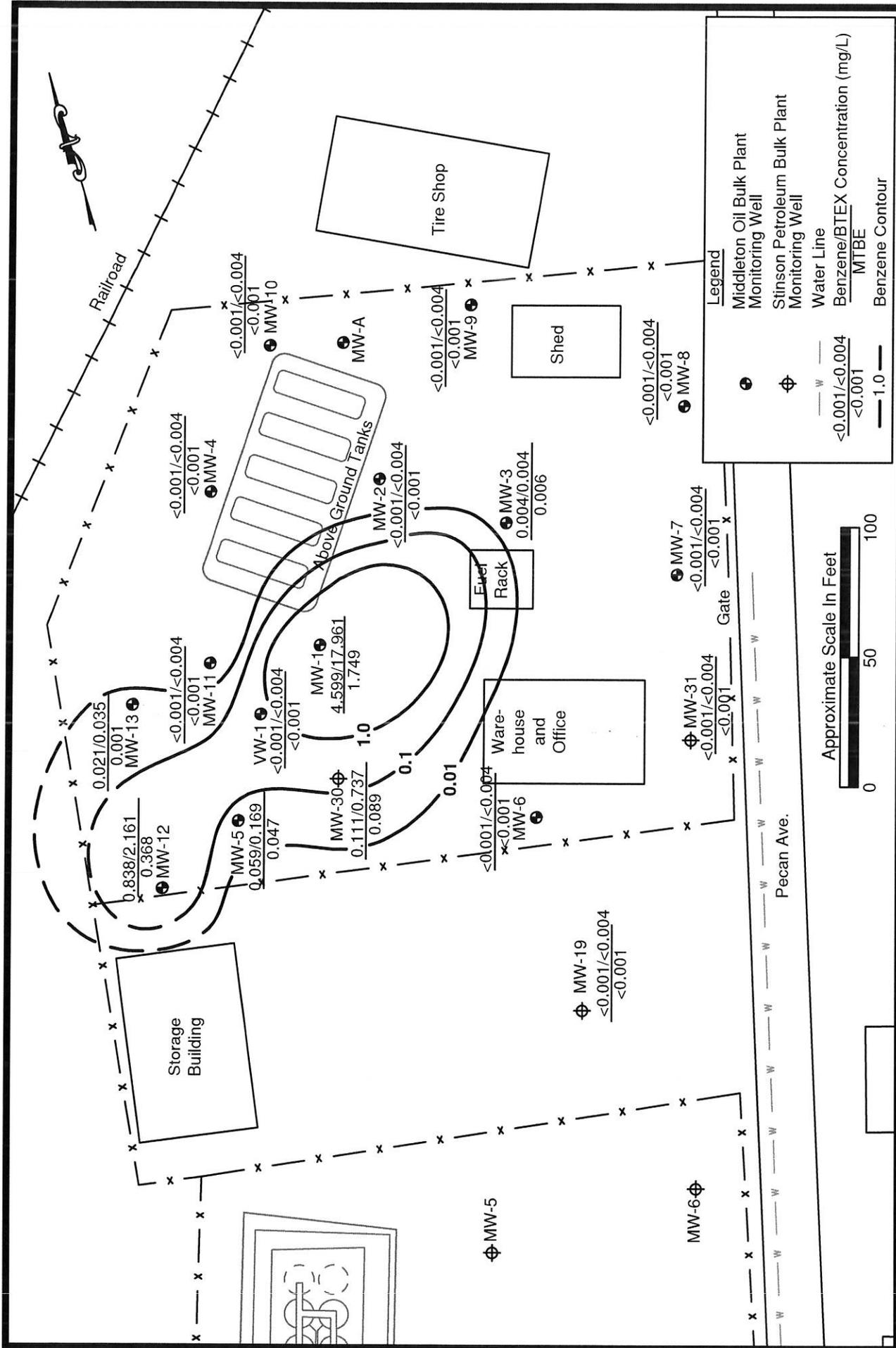
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Figure 6
Soil Constituent Concentration Map

Drafter: Ray Hollinghead



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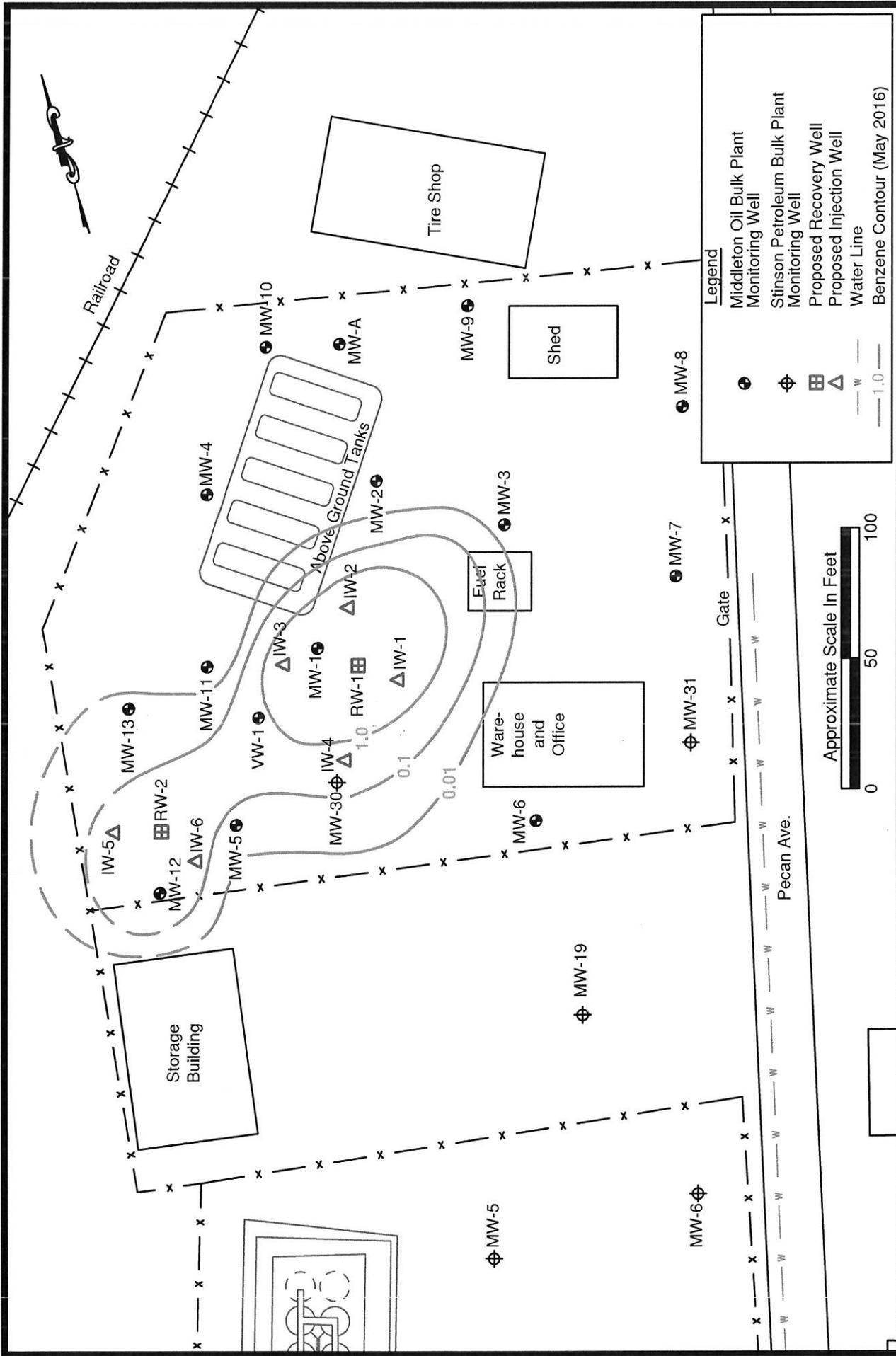


Figure 8
 Site Map with Proposed Well Locations
 Drafter: Ray Hollinghead

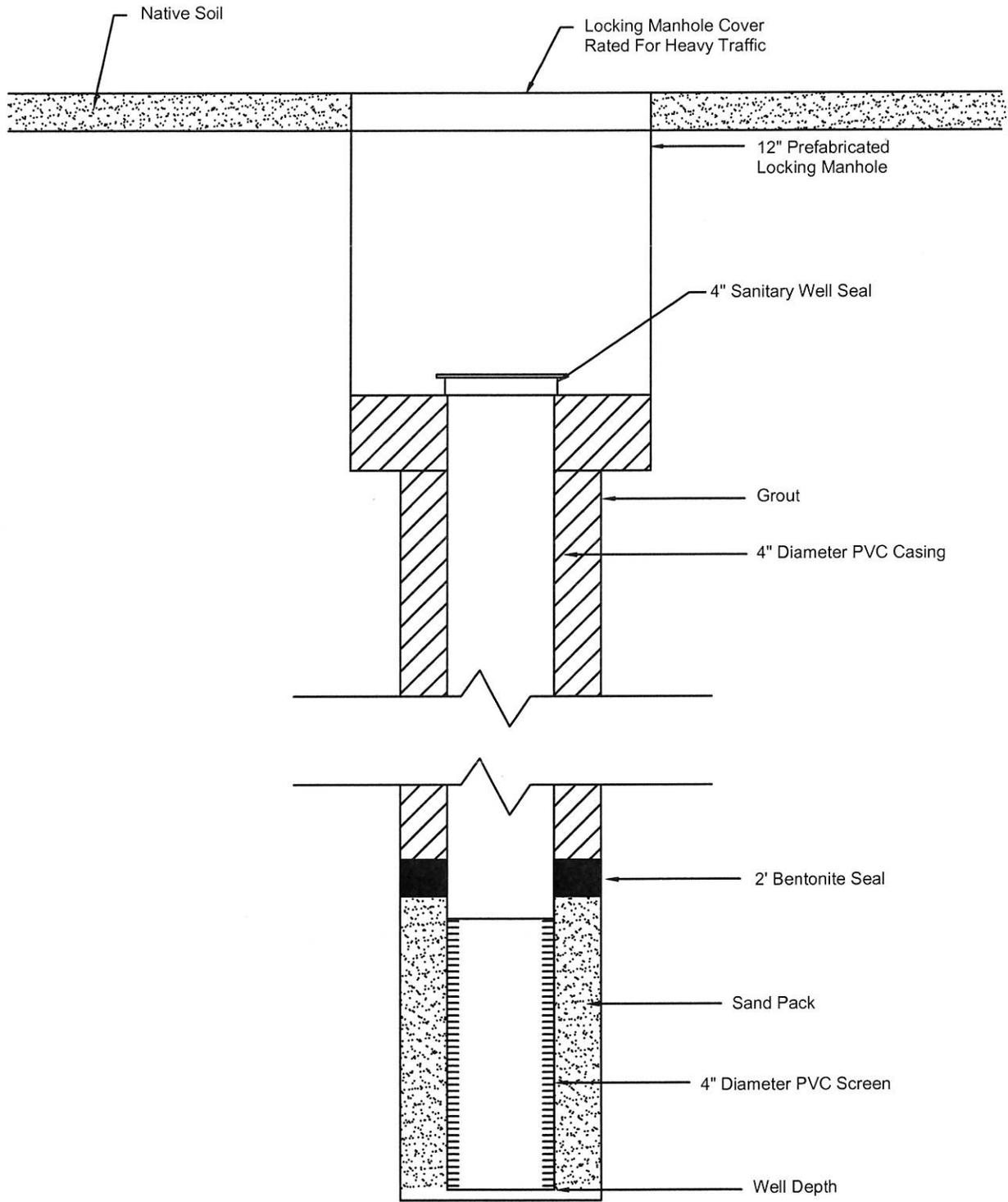
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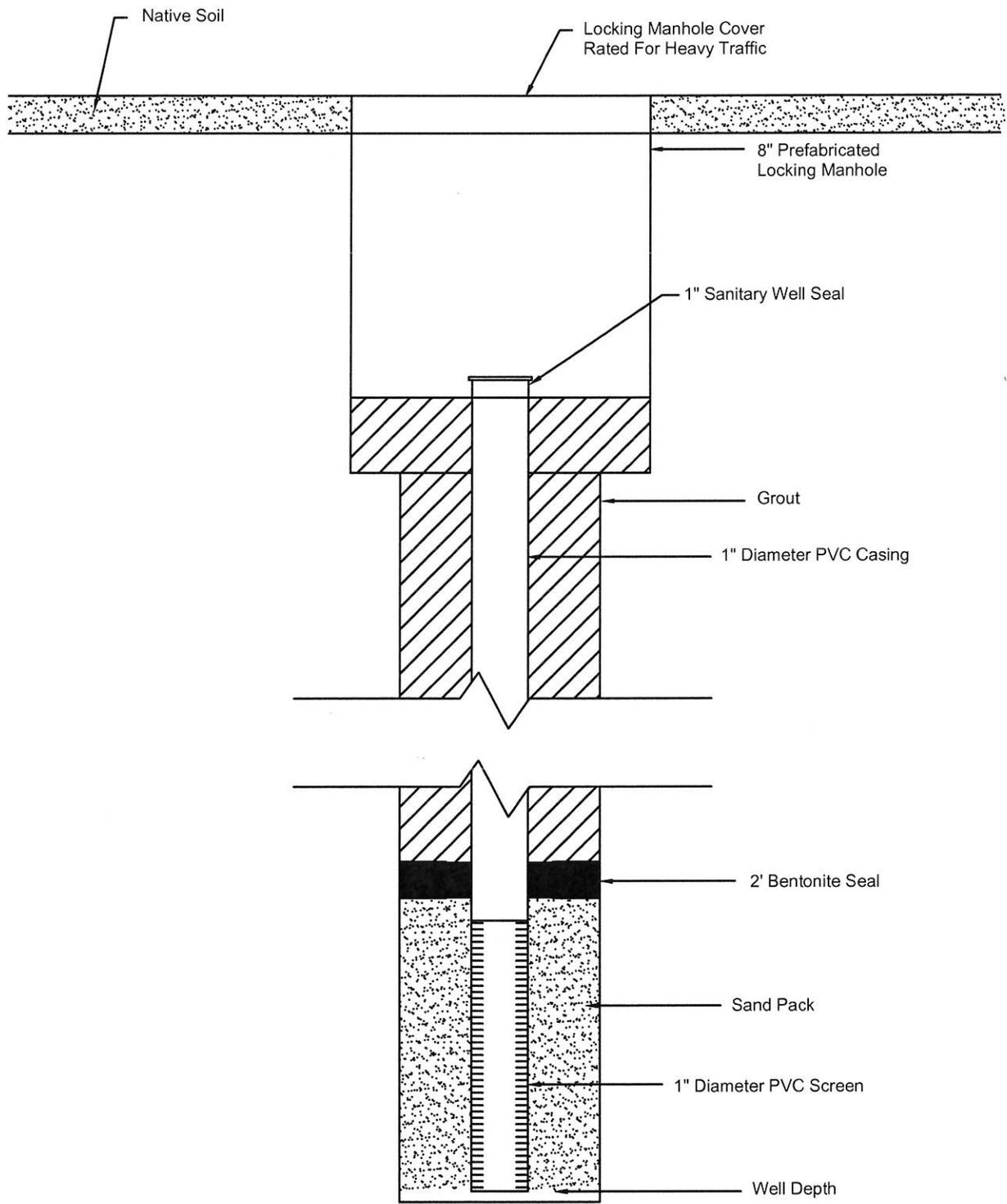
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Figure 9
Typical Recovery Well
Construction Diagram

Drafter: Ray Hollinghead



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Figure 10
Typical Injection Well
Construction Diagram

Drafter: Ray Hollinghead

APPENDIX A
Boring and Well Completion Logs

BOREHOLE LOG



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1840 E. Three Notch Street
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Job Number: 091100201	Client:	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.:
Location: Evergreen, Alabama	Groundwater Elevation:	
Hole Number: MW-1	Datum Elevation: MSL	
Driller: Judd Channell	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3/17/11	Date Completed:
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Lithology	Recovered Interval	Description of Materials	USCS
		0				Gravel, sand, clayey sand fill, loose to moderately cohesive, moderate odor, dark gray, wet	SC
535							
		5				Clayey sand, light brown, cohesive, moderately plastic, fine-grained, wet, strong gasoline odor	SC
1,630							
		10				Clayey sand, light brown grading to pale gray with pale brown mottling, cohesive, plastic, wet to saturated at 12 feet, strong gasoline odor	SC
1,906							
		15					

BOREHOLE LOG



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Job Number: 091100201	Client:	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.:
Location: Evergreen, Alabama	Groundwater Elevation:	
Hole Number: MW-2	Datum Elevation: MSL	
Driller: Judd Channell	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 18'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3/17/11	Date Completed:
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Lithology	Recovered Interval	Description of Materials	USCS
		0				Gravel and sand to 1 foot, then silty sand, dark gray to light gray banded, dry, no odor, loose	SM
159							
45		5				Clayey sand, light brown grading to light brown with reddish-brown and light gray mottling at 7.2 feet, moist, no odor, fine-grained, cohesive, moderately plastic	SC
139		10				Clayey sand, mottled light brown and gray and dark brown and reddish-brown, fine-grained, cohesive, stiff, moderately plastic, slight HC odor	SC
305		15				Clayey sand, light reddish-brown, occasional dark gray lense of clayey sand, wet, moderately plastic, moderate HC odor	SC
		20					

BOREHOLE LOG



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Job Number: 091100201	Client:	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.:
Location: Evergreen, Alabama	Groundwater Elevation:	
Hole Number: MW-3	Datum Elevation: MSL	
Driller: Judd Channell	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed Undisturbed
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3/17/11	Date Completed:
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Lithology	Recovered Interval	Description of Materials	USCS
		0				Gravel and sand down to 0.8 feet, then clayey sand, reddish-brown, cohesive, moderately plastic to slightly plastic, dry, fine-grained, no HC odor	SC
7.3						Clayey sand, light reddish-brown, cohesive, slightly to moderately plastic, fine to medium-grained, moist, no HC odor	SC
66		5				Clayey sand, mottled reddish-brown and gray and red and light brown, cohesive, plastic, strong gasoline odor, sand at 12.5 feet, wet to saturated	SC
568		10					SP
		15					

BOREHOLE LOG



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Job Number: 091100201	Client:	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.:
Location: Evergreen, Alabama	Groundwater Elevation:	
Hole Number: MW-4	Datum Elevation: MSL	
Driller: Judd Channell	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed	Undisturbed
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3/17/11	Date Completed:
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Lithology	Recovered Interval	Description of Materials	USCS
		0				Clayey sand, reddish-brown to light brown, cohesive, moderately plastic, no HC	SC
		5				Clayey sand, reddish-brown to light brown, cohesive, moderately plastic, no HC	SC
		10				Clayey sand, reddish-brown to light brown, cohesive, moderately plastic, no HC	SC
		15					

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: 270.88	Casing Elev.: 270.88
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 266.15	
Hole Number: MW-5	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-26-12	Date Completed: 3-26-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 10'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil, brown sandy loam down to 0.5 ft., then clayey sand, light reddish-brown, cohesive, slightly plastic, no HC, moist	SC
0		5			Clayey sand, light reddish-brown with red mottling in lower 0.5 ft. of interval associated with indurated angular ironstone nodules, moist, no HC	SC
50.2		10			Clayey sand, light reddish-brown with red and gray mottling becoming more frequent with depth, medium-grained, cohesive, moderately plastic, moderate HC odor, wet at 9 ft., abrupt change to dark gray clayey sand at 10 ft.	SC
8.3		15			Sand, medium to fine-grained, loose, light gray, saturated, moderate to strong hydrocarbon odor	SP

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.: 276.42
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 267.00	
Hole Number: MW-6	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-26-12	Date Completed: 3-26-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 11.5'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology	Interval	Description of Materials	USCS
0		0			0 - 0.8 ft.	Topsoil down to 0.8 ft., then clayey sand, reddish-brown, medium-grained, cohesive, slightly to moderately plastic, moist, no HC	SC
0		5			0.8 - 10.5 ft.	Clayey sand, light reddish-brown, massive, medium-grained, cohesive, slightly to moderately plastic, moist, no HC evident	SC
0		10			10 - 10.5 ft.	Clayey sand, light reddish-brown, massive, medium-grained, cohesive, slightly to moderately plastic, moist, no HC evident	SC
0		10 - 10.5			10 - 10.5 ft.	Clayey sand, mottled red and dark gray and pale gray, slight HC odor, moist to wet at 10 - 10.5 ft.	SC
27.1		15			10.5 - 15 ft.	Clayey sand, mottled gray and dark gray with occasional red and pale gray, cohesive, plastic, saturated, moderate HC odor	SC

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: Casing Elev.: 279.50	
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 268.56	
Hole Number: MW-7	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed Undisturbed	
Total Depth of Boring: 18'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-26-12	Date Completed: 3-26-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 9.5'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil down to 2 ft., light to dark brown sandy loam with red clayey sand at base in shoe, no HC	SP
0		5			Clayey sand, light reddish-brown, cohesive, slightly to non-plastic, medium-grained, no HC, moist	SC
0		10			Clayey sand, light reddish-brown, cohesive, slightly to non-plastic, medium-grained, no HC, moist, grading to clayey sand, light reddish-brown with pale gray and red banding/mottling, stiff, cohesive, slightly to non-plastic, moist to wet at 11 ft.	SC
0		15			Clayey sand, light reddish-brown with pale gray and red banding/mottling, stiff, cohesive, slightly to non-plastic, sampler wet for last 3 ft. indicating at least 3 ft. of water in hole, clayey sand in shoe of sampler with fine to medium-grained sand around top of shoe	SC
		20				

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation:	Casing Elev.: 279.66
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 269.28	
Hole Number: MW-8	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 18'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-27-12	Date Completed: 3-27-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 10'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil down to 0.8 ft., then clayey sand, light reddish-brown, cohesive, slightly plastic, moist, abundant roots, medium-grained, no HC	SC
0		5			Shelby tube 3 - 5 ft. Clayey sand, light reddish-brown, cohesive, slightly plastic, medium-grained, massive, no HC, moist	SC
0		10			Clayey sand, light reddish-brown banded red and pale brown, medium to fine-grained, (20-30% clay content), cohesive, moderately plastic, wet at base with increased frequency of red banding, no HC	SC
0		15			Clayey sand, stiff, plastic, medium-grained, reddish-brown banded/mottled pale gray and red, (30% clay content), wet, fine-grained sand at base of interval	SC
		20				

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: Casing Elev.: 278.13	
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 269.38	
Hole Number: MW-9	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed Undisturbed	
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-27-12	Date Completed: 3-27-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 12'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil, brown sandy loam down to 0.8 ft., then clayey sand, light reddish-brown, medium-grained, cohesive, slightly to non-plastic, moist, no HC	SC
0		5			Clayey sand, reddish-brown grading to light reddish-brown with occasional pale brown mottling, cohesive, slightly plastic, moist, no HC	SC
0		10			Shelby tube 8 - 10 ft. Clayey sand, light reddish-brown with red and gray banding, medium-grained, cohesive, moderately plastic, (30% clay content), no HC	SC
0		15			Clayey sand, light reddish-brown with red and gray banding, medium-grained, cohesive, moderately plastic, (30% clay content), no HC, wet at 14 ft.	SC

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: 276.26	Casing Elev.: 276.26
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 269.26	
Hole Number: MW-10	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-27-12	Date Completed: 3-27-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 12'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil down to 1.5 ft., then reddish-brown clayey sand, cohesive, slightly plastic, moist, no HC	SC
0		5			Clayey sand, light reddish-brown, massive, medium to fine-grained, cohesive, slightly to non-plastic, wet at 7 ft., occasional light reddish-brown lenses, no HC	SC
0		10			Clayey sand, light reddish-brown, massive, medium to fine-grained, cohesive, slightly to non-plastic, occasional light reddish-brown lenses, no HC	SC
0		15			Clayey sand, mottled red and pale brown, cohesive, moderately plastic with 1/2" - 1/4" indurated angular nodules, saturated below 10 ft., no HC	SC
0					Clayey sand grading to sand, reddish-brown mottled red and very pale brown, saturated, no HC	SC

BOREHOLE LOG



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Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: Casing Elev.: 273.47	
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 267.14	
Hole Number: MW-11	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed Undisturbed	
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-27-12	Date Completed: 3-27-12
Remarks: 10 Feet = Screen Length	Total Core Recovery: 11'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology	Interval	Description of Materials	USCS
0		0				Topsoil and gravel and debris down to 1.5 ft., then clayey sand, light reddish-brown, cohesive, slightly plastic, massive, moist, no HC evident	SC
		5				Clayey sand, light reddish-brown, cohesive, slightly plastic, massive, moist, no HC evident	SC
833						Clayey sand, reddish-brown mottled gray and red becoming dark gray and gray with depth, strong HC odor increasing with depth, moist to wet in lower 1 ft. of interval	SC
		10				Clayey sand grading to sand at 11 ft., moderate HC odor, saturated, medium-grained, cohesive to loose	SC
56.5		15					SP

BOREHOLE LOG



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Job Number: 091100208	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: Casing Elev.: 272.14	
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 267.55	
Hole Number: MW-12	Datum Elevation: MSL	
Driller: Melvin Jeffcoat	Size and Type of Auger: 4 1/4" Hollow Stem Auger	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler: Grab	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed Undisturbed	
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 5-5-14	Date Completed: 5-5-14
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology	Interval	Description of Materials	USCS
		0				Topsoil, dark brown, then clayey sand	SC
0.3		5				Clayey sand, reddish-brown, cohesive, moderately plastic, moist to wet, no odor	SC
1.9		10				Clayey sand, light reddish-brown, cohesive, moderately plastic, wet, moderate HC odor	SC
65.2		15					

BOREHOLE LOG



1840 E. Three Notch Street
Andalusia, Alabama 36420
(334) 222-9431

Engineering. Environmental. Answers.

Job Number: 091100208	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: Casing Elev.: 274.09	
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 268.84	
Hole Number: MW-13	Datum Elevation: MSL	
Driller: Melvin Jeffcoat	Size and Type of Auger: 4 1/4" Hollow Stem Auger	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler: Grab	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples: Disturbed Undisturbed	
Total Depth of Boring: 15'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 5-5-14	Date Completed: 5-5-14
Remarks: 10 Feet = Screen Length	Total Core Recovery:	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
		0			Topsoil and gravel and debris, then clayey sand, light reddish-brown, cohesive, slightly plastic, massive, moist, no odor	SC
0.6		5			Clayey sand, light reddish-brown, cohesive, slightly plastic, massive, moist, no HC evident	SC
2.7		10			Clayey sand grading to sand at 11 ft., moderate HC odor, saturated, medium-grained, cohesive to loose	SC
467		15				SP

BOREHOLE LOG



1840 E. Three Notch Street
Andalusia, Alabama 36420
(334) 222-9431

Job Number: 091100202	Client: Middleton Oil Company	Sheet 1 of 1
Project: Middleton Oil Bulk Plant	Ground Elevation: 273.14	Casing Elev.: 273.14
Location: Evergreen, Conecuh County, AL	Groundwater Elevation: 266.74	
Hole Number: VW-1	Datum Elevation: MSL	
Driller: Jody Cook	Size and Type of Auger:	
Direction of Boring: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Inclined:	Size and Type of Sampler:	
Thickness of Overburden: N/A	Drill Rig Manufacture:	
Depth Drilled into Rock: N/A	No. of Overburden Samples:	Disturbed <input type="checkbox"/> Undisturbed <input type="checkbox"/>
Total Depth of Boring: 25'	Total Number of Core Boxes:	
Log Prepared By: Alan Barck	Date Started: 3-26-12	Date Completed: 3-26-12
Remarks: 2.5 Feet = Screen Length	Total Core Recovery: 14'	

PID (ppm)	Well Construction	Depth (Feet)	Water Levels	Recovered Lithology Interval	Description of Materials	USCS
0		0			Topsoil, moist, dark brown sandy loam down to 1 ft., then clayey sand, light reddish-brown, cohesive, moderately plastic, wet, no HC	SC
0		5			Clayey sand, light reddish-brown, medium to fine-grained, massive, cohesive, moderately plastic, moist to wet, no HC	SC
735		10			Clayey sand, light reddish-brown with gray and red banding/mottling beginning at 8.5 ft., grading to dark gray and brown mottling at 9.8 ft., moderate HC odor beginning at 9 ft., moist to wet at base of interval	SC
0.8		15			Sand, light gray and gray banded light reddish-brown, medium to fine-grained, loose, saturated, moderate HC odor	SP
		20				
		25				

APPENDIX B
UIC Permit Applications / Approvals

LANCE R. LEFLEUR
DIRECTOR



ROBERT J. BENTLEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

August 24, 2016

LARRY COON, OWNER
MIDDLETON OIL COMPANY
P.O. BOX 39
GREENVILLE AL 36037

RE: Middleton Oil Company
121 Pecan Street
Evergreen, AL 36401
Conecuh County (035)

Dear Mr. Coon:

Based on your request (as evidenced by the submittal of a Notice of Intent) coverage under **UIC General Permit Number ALIG010001** is granted. The effective date of coverage is September 1, 2016.

Coverage under this permit does not authorize the discharge of any pollutant or wastewater that is not specifically identified in the permit and by the Notice of Intent which resulted in the granting of coverage. Those discharges identified in the NOI are: Air, Ozone Gas, and Oxygen Gas.

A copy of the UIC General Permit under which coverage of your discharges has been granted is enclosed. If you have any questions concerning this permit, please contact Joe Kelly at 334/271-7844.

Sincerely,

A handwritten signature in black ink that reads "Glenda L. Dean". The signature is written in a cursive, slightly slanted style.

Glenda L. Dean
Chief
Water Division

Enclosure: Permit



UNDERGROUND INJECTION CONTROL PERMIT

DISCHARGE AUTHORIZED: Discharges associated with the injection of air, oxygen gas, and/or ozone gas for the purposes of remediating soil and groundwater contamination.

AREA OF COVERAGE: The State of Alabama

PERMIT NUMBER: ALIG010001

INJECTION WELL CLASS: Class V

In accordance with and subject to the provisions of the Safe Drinking Water Act, as amended, 42 U.S.C. §§ 300f-300j (the "SWDA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14, (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§ 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to construct and operate injection well(s) of the above-described class.

ISSUANCE DATE: June 9, 2016

EFFECTIVE DATE: June 9, 2016

EXPIRATION DATE: June 8, 2021



Alabama Department of Environmental Management

NOTICE OF INTENT – GENERAL PERMIT NUMBER ALIG010000

(ADEM Form ____)

Discharges associated with injection of Air, Oxygen, or Ozone to aid in the remediation of existing soil and/or groundwater contamination.

ANSWER ALL QUESTIONS. INCOMPLETE OR WRONG ANSWERS WILL RESULT IN PROCESSING DELAYS AND POSSIBLE DENIAL OF THE PERMIT APPLICATION. IF SPACE IS INSUFFICIENT TO ADDRESS ANY ITEM BELOW PLEASE CONTINUE ANSWER ON AN ATTACHED SHEET OF PAPER.

FOR OFFICE USE ONLY

Permit Number _____

Facility Number _____

Permit Applicant Information

- A. Applicant Name: Anna Brunson
- B. Responsible Official*: Larry Coon, Owner
- C. Mailing Address: P.O. Box 39, Greenville, AL 36037
- D. Phone Number: 334-382-3312

Property Owner Information (if different from the applicant)

- E. Name: Middleton Oil Company, Inc., Owner
- F. Mailing Address: P.O. Box 39, Greenville, AL 36037
- G. Phone Number: 334-382-3312

Facility Information

- H. Facility Name: Middleton Oil Company
- I. Physical Address: 121 Pecan Street, Evergreen, AL 36401
- J. Phone Number: 334-382-3312
- K. Latitude: 31.428994 Longitude: -86.958656
- L. Directions to site:
121 Pecan Street

Process Information

M. Describe the fluids and/or pollutants to be injected and proposed operational procedures. Include estimated average and maximum daily injection rates as well as total volume to be injected.
Compressed air

N. Number of injection wells (each point of injection is considered a separate well): ⁶ _____

Signature

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature: ^{eNOI} _____

Printed Name and Official Title: ^{Larry Coon, Owner} _____

Date: ^{08/10/2016} _____

*NOTE: This Notice of Intent must be signed by the responsible official who represents the permit applicant. Please check the appropriate box indicating the responsible official (only the people listed below may sign this Notice):

- In the case of a corporation, the principal executive officer of at least the level of vice-president
- In the case of a partnership, a general partner
- In the case of a sole proprietorship, the owner
- In the case of a municipal, state, federal, or other public agency, either a principal executive officer or ranking elected official

APPENDIX C
Quality Assurance/Quality Control
Monitoring/Sampling Plan

QA/QC MONITORING/SAMPLING PLAN

FIELD ACTIVITIES

Groundwater Monitoring/Sampling Activity Protocols

Groundwater monitoring/sampling includes the following associated activities:

- 1) Measurement of free product if present;
- 2) Measurement of static water level;
- 3) Calculation of standing water volume (in well);
- 4) Collection of samples; and
- 5) Decontamination of equipment

Groundwater sampling parameters are recorded in the field on a monitoring well sampling record form. The details for each of the above referenced monitoring/sampling activities are described in the following sections.

Calculation of Standing Water Volume

The standing water volume in a monitoring well is calculated using the equation:

$v = 3.14 \times r^2 \times l$ (where v = well volume, r = well radius, and l = length of the column of water in the well).

The column of water in the well can be calculated using the equation:

$l = w - d$ (where w = distance from the top of casing to the bottom of the well and d = distance from the top of casing to the top of the water).

Well Evacuation

Well evacuation is initiated after the static water level is measured and the standing water volume has been calculated. Well evacuation is conducted by either using a new disposable (single-use) bailer, a well-dedicated PVC bailer, or a surface mounted pneumatic operated diaphragm pump (a diaphragm pump is only used in deep wells (greater than 25 feet) or in wells that yield such large volumes that hand-bailing is not practical).

Well evacuation with a bailer is performed by attaching a new nylon line to the bailer, and then lowering the bailer in to the well until the bailer is submerged. The bailer is then retrieved from the well in such a manner that the bailer and nylon line do not contact the ground or surrounding vegetation (to prevent contaminating the bailer or line). The water removed from the well is poured into a graduated bucket so that the amount of water removed can be determined. This procedure is repeated until three well volumes of water are removed, or until the well is purged dry. For wells that recharge very slowly, the purge water is limited to one well volume. The volume of groundwater purged from each well will be recorded.

Well evacuation with a diaphragm pump is conducted by lowering disposable tubing (hose) into the well, to sufficient depth. For deeper wells, a PVC pipe, equipped with a foot valve (to stage-lift the water out of the well) will be employed. The piping will be dedicated to each well to prevent cross-contamination. Pumping will be performed until at least three well volumes are recovered (purge volume will be recorded).

Petroleum contaminated water (PCW) purged from wells in conjunction with groundwater monitoring/sampling activities will be containerized on-site in labeled 55-gallon drums. PCW will be removed periodically from the site to an appropriate disposal/treatment/recycling facility approved by the ADEM. Records will be maintained as to the volume of PCW accumulated at the site, and identification labels will be affixed to PCW containers. Prior to disposal, samples will be collected and analyzed as required by the ADEM and the disposal/treatment/recycling facility. No waste will be removed from the site without ADEM knowledge/approval.

Groundwater Sample Collection

Groundwater samples are collected from monitoring wells not containing free-phase hydrocarbons unless otherwise directed by the ADEM. Groundwater sampling is performed using a new disposable bailer for each sampled well. The disposable bailers are purchased in individually wrapped packages, and are not opened until ready to use.

Once opened, the bailers are attached to a length of new nylon string. The bailer and string are not allowed to touch the ground or vegetation, and are disposed of after each well. Sampling is accomplished by slowly lowering the bailer into the well to a depth where the bailer is almost completely submerged. The bailer is then slowly retrieved from the well to minimize agitation of the sample. Once collected, the water sample is immediately transferred (poured slowly to minimize agitation and formation of air bubbles) into the designated sample containers.

Groundwater samples collected for BTEX/MTBE analysis (volatile organics) are poured very slowly down the inside of the sample vial to avoid aeration. The sample vials, consisting of 40 ml glass with a Teflon septum cap, are provided directly from the CDG analytical laboratory. The groundwater sample is added to the vial until a convex meniscus is formed across the top of the vial. The Teflon septum cap is placed on the vial and the vial is upended to check for trapped air bubbles. If bubbles are present, the sample container is opened, and topped off again until an air-free sample is obtained. If the vial cannot be closed "air-free" after three tries, it is discarded. Two samples are collected for each BTEX/MTBE (volatile) analysis. The preservation employed for BTEX/MTBE (volatile) analysis will include either of the following (depending on holding time constraints):

- Cool collected sample to 4°C and maintain (7-day holding time), or
- Add 4 drops concentrated HCl to sample vial (typically the acid is pre-added by the laboratory to the sample vial) and then cool sample to 4°C and maintain (14-day holding time).

Immediately following collection of each groundwater sample, the sample is labeled, placed in bubble pack (to prevent the glass vial from breaking during shipping), and stored in an ice chest with sufficient ice. Each sample label includes the site location, sample identification number, name of collector, date/time of collection, and parameter(s) requested.

Following collection of all samples, the ice chest will be sealed and transported to the laboratory following appropriate chain of custody protocols (refer to description of Chain of Custody protocols provided below).

Decontamination of Groundwater Sampling Equipment

All equipment used for groundwater sampling is either well-dedicated or is used only once and disposed of. As a result, cleaning/decontamination of sampling equipment are minimal.

QA/QC PROCEDURES DISCUSSION

Chain of Custody

Sample custody begins with the CDG laboratory when sample kits are prepared and shipped for field personnel use at a specified project location. Responsibility for sample container materials and preparation lies with the CDG laboratory. Upon receipt of the kits, CDG field personnel complete an inventory of the contents to confirm that the containers, etc. are adequate for the number of wells and specified analytes. Sample bottles may be pre-labeled and contain the proper preservative. The individual sample vials and/or other sample containers are not opened until used in the field. CDG will secure the sample kits inside the office until the specific sampling project is to be performed.

The samples remain in the custody of the CDG field personnel representative until delivered to the CDG laboratory or dispatched via common carrier for shipment to the laboratory. In cases where samples leave the direct control of CDG personnel, such as shipment to a laboratory by a common carrier (FedEx, UPS, etc.), a seal will be provided on the shipping container or individual sample bottles to ensure that the samples have not been opened or otherwise disturbed during transportation.

To establish and maintain the documentation necessary to trace sample possession from the time of collection, a chain of custody record will be completed and will accompany every sample. The record contains the following types of information:

- Sample number
- Signature of collector
- Date and time of collection
- Sample type (soil, groundwater, air, etc.)
- Identification of well
- Number of containers
- Parameters requested for analysis
- Required detection limit
- Signature of person(s) involved in the chain of possession.

Field QA/QC Program

Various types of field blanks are collected to verify that the sample collection and handling process has not affected the quality or integrity of the samples.

- 1) Trip Blanks – A trip blank is a field blank that is transported from the laboratory to the sampling site, handled in the same manner as other samples, and then returned to the laboratory for analysis in determining QA/QC of sample handling procedures. The trip blank is prepared in the laboratory with distilled/organic free water and is utilized at a frequency of 1 trip blank for each cooler (or other shipping container) used to transport samples from the laboratory to the field and back to the laboratory.

- 2) Duplicate Sample – Duplicate samples are collected simultaneously from the same source, under identical conditions, into separate sample containers. These samples provide a check on the sampling techniques as well as laboratory equipment. Duplicate samples are only collected on groundwater samples at a frequency of one sample per sampling event.

The results of the analysis of the blanks will not be used to correct the groundwater data. If contaminants are found in the blanks, an attempt to identify the source of contamination will be initiated and corrective action, including re-sampling if necessary, will be evaluated.

After completing a sampling program, the field data package (field logs, calibration records, chain of custody forms, etc.) will be reviewed for completeness and accuracy. Some of the items considered in the Field Data Package Validation Procedure include but are not limited to the following:

- A completeness review of field data contained on water and soil sampling logs;
- A verification that sampler blanks were properly prepared, identified, and analyzed;
- A check on field analyses for equipment calibration and condition; and
- A review of chain of custody forms for proper completion, signatures of field personnel and the laboratory sample custodian, and dates.

Laboratory QA/QC Program

The selection of a contract laboratory can be directed either by the client or by CDG. In either case, the selection of the laboratory is typically based upon several facts including cost, laboratory certification, quality of data and reporting, and turn around time. The most critical factor in the selection of an analytical laboratory by CDG is the quality of data and reporting provided by the laboratory. Typically, the results of analytical laboratory testing dictate the activities conducted at a site. The activities conducted when selecting a laboratory include discussions with current and past customers, discussions with regulatory agencies, and review of laboratory QA/QC practices.

The normal turn around for samples will be two weeks for most samples. Prior to contracting a laboratory to conduct analysis, an estimate of the turn around time is obtained. If the expected turn around is in excess of three weeks then a backup

laboratory is contacted to determine their availability. A decision of which laboratory to use in a particular instance is made on a case-by-case basis.

Once an analytical report is received by CDG, validation of the analytical data package will be performed. The Analytical Data Package Validation procedure will include but is not limited to the following:

- A comparison of the Data Package to the reporting level requirements designed for the project, to ensure completeness;
- A comparison of sampling dates, sample extraction dates, and analysis dates to determine if samples were extracted and/or analyzed within the proper holding times' as failure in this area may render the data unusable;
- A review of analytical methods and required detection limits to verify that they agree with set standards; as failure in this area may render the data unusable;
- A review of sample blanks to evaluate possible sources of contamination. The preparation techniques and frequencies, and the analytical results (if appropriate) will be considered; and
- A review of blanks (trip blanks, reagent blanks, method blanks, and extraction blanks) to assure that they are contamination free at the lowest possible detection limit. All blank contaminants must be explained or the data applicable to those blanks will be labeled suspect and may only be sufficient for qualitative purposes.
- A review of detection limits, to ensure sample results are accurate to below the levels specified as ADEM Initial Screening Levels.
- A review of data "qualifiers" reported by the laboratory for significance to the results.

APPENDIX D
Site Health and Safety Plan

Site Health and Safety Plan

**Middleton Oil Company Bulk Plant
121 Pecan Street
Evergreen, Conecuh County, Alabama
Facility ID No. 13434-035-016054
Incident No. AST11-02-01**

Prepared For:

**Middleton Oil Company, Inc.
P.O. Box 39
Greenville, Alabama 36037**

Prepared By:

**CDG Engineers & Associates, Inc.
1840 East Three Notch Street
Andalusia, Alabama 36421-2404**



Engineering. Environmental. Answers.

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1.0 Introduction

This Health and Safety Plan (HASP) has been prepared specifically for corrective action activities to be conducted by CDG Engineers & Associates, Inc. (CDG) for the Middleton Oil Bulk Plant site in Evergreen, Conecuh County, Alabama. These activities include all fieldwork necessary to conduct soil and groundwater remediation of petroleum hydrocarbons at the site.

2.0 Purpose

This HASP describes the preventative measures, person protection, and safety procedures to be followed by CDG personnel and subcontractors during all field activities. The HASP has been prepared in accordance with and meets the requirements of the Occupation Safety and Health Administration (OSHA) General Safety Standards for industry under 29 CFR 1910 and construction under 29 CFR 1926, the joint NIOSH/OSHA/USCG/EPA, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, dated October 1985, and NFPA Safety Guidelines. Should any unexpected conditions arise, the HASP will be amended to accommodate site specific conditions.

3.0 Key Personnel and Responsibilities

All CDG personnel have received an initial 40-hour HAZWOPER certification, which is updated annually through an 8-hour refresher course. This training course meets the requirements of the OSHA 29 CFR 1910.120 standards. CDG personnel assigned to the project include:

NAME	TITLE	RESPONSIBILITIES
James Alan Barck	Professional Geologist	Overall management of entire project from beginning to completion. Responsible for preparation and implementation of the HASP and reporting of all hazard incidents to appropriate enforcement agencies. Coordinates and oversees all field activities.
Anna Brunson	Project Manager	Performs all field activities and is responsible for recognizing site hazards and reporting hazard incidents to Corporate HSO.

4.0 Scope of Work

Work to be performed will include groundwater monitoring activities, MPE events, and air sparge events. No installation activities or operation and maintenance are anticipated at this site.

4.1 Installation Activities

Installation activities generally involve preparing the site for installation activities and also the construction of the MPVE unit onsite. More specifically this will include:

- Preparing the site for work to be performed
- Saw-cutting concrete surface, excavating, and installing well vaults
- Directional boring and installing polyvinyl chloride (PVC) extraction piping and subsurface utility lines
- Installing piping connections from extraction piping to wellhead
- Overseeing placing and leveling of remediation system
- Completing all piping connections from extraction and utility lines to remediation unit
- Completing all electrical connections
- Installing wooden security fence
- Inspecting rotation on all electric motors
- Inspecting PVC piping, extraction lines, treatment system, and associated connections for leaks at start up

4.2 Operation and Maintenance Activities

Subsequent to the construction and installation of the MPVE unit, the unit must periodically undergo inspections or maintenance. CDG field personnel will inspect the unit on a weekly basis, taking certain instrument readings necessary to determine the progress of the remediation being performed at that particular site. Maintenance of the unit is performed on an as needed basis. The following applies to operation and maintenance activities associated with the MPVE unit:

- Inspecting proper working condition of telemetry system
- Lubricating motors
- Inspecting piping for leaks
- Inspecting belts on Liquid Ring Vacuum Pump (LRVP) system

- Periodic cleaning of equipment and components
- Periodic inspections of electrical connections
- Measuring induced vacuum in on site monitoring wells
- Removing silt and sludge buildup from knockout pot air stripper, filtration system and other system components
- Measuring air flow from MPVE unit
- Measuring liquid levels in wells
- Sampling effluent for discharge parameters
- Measuring volume of liquids removed and discharged

5.0 Chemical Hazards

When conducting the corrective action activities, the primary chemicals of concern are gasoline.

5.1 Gasoline

Gasoline is a substance to be potentially encountered in the soil and groundwater at the site. Gasoline components include benzene, toluene, ethylbenzene, and xylenes (BTEX).

5.2 Hazard Identification

During the corrective action activities, many hazards or potential hazards may be encountered when dealing with gasoline or diesel. This section serves as a guideline in recognizing hazards associated with these chemicals that exist or may potentially arise during field activities. Recognition is the first step in eliminating exposure to these hazards.

Occasionally, methyl-tertiary butyl ether (MTBE) is encountered. MTBE has been used since 1979 as an oxygenate to gasoline in order to decrease carbon monoxide production in cars, particularly older model cars; however, MTBE has been determined to be a potential carcinogen. MTBE has low taste and odor thresholds, which can make a water supply non-potable even at low concentrations.

Exposure to MTBE will only be seen through exposure to gasoline containing MTBE and the effects of gasoline containing MTBE are relatively similar to gasoline not containing MTBE. The following are hazards associated with exposure to gasoline:

- Contact may irritate or burn the skin and eyes and absorption through the skin may be poisonous
- Vapors may be poisonous if inhaled and are irritating to the respiratory tract
- Vapors are an explosion hazard and may travel to a source of ignition and produce flashback
- A gasoline fire may produce irritating and poisonous gases
- Gasoline and diesel are flammable/combustible materials that may be ignited by heat, sparks, or flames, and a gasoline container may explode when exposed to heat or fire

The primary hazard associated with exposure to gasoline is the inhalation of vapors.

5.3 Hazard Prevention

Preventing exposure to chemical hazards generally requires the use of personal protective equipment (PPE). Level D equipment will provide the protection necessary to prevent exposure to these hazards. Level D equipment is discussed further in Section 10.1, Personal Protective Equipment.

5.4 Symptoms and First Aid Procedures

Many of the constituents found in gasoline and diesel act as central nervous system (CNS) depressants. The following table includes first aid measures for CNS depressants, which affect a person through inhalation (breathing), dermal (skin), or ingestion (mouth) exposure. In addition, the eye can be very sensitive to exposure to chemicals and is therefore included in the following table:

ROUTES OF EXPOSURE	SYMPTOMS	TREATMENT
Inhalation	Dizziness, nausea, lack of coordination, headache, irregular and rapid breathing, weakness, loss of consciousness, coma	Bring victim to fresh air. Rinse eyes or throat with plenty of water, if irritated. If symptoms are severe (victim vomits, is very dizzy or groggy, etc.), evacuate to hospital. Be prepared to administer CPR if certified. Monitor victim for at least 48 hours.
Dermal	Irritation, rash, or burning	Flush affected area with water for at least 15 minutes. Apply clean dressing and get medical attention.

Ingestion	Dizziness, nausea with stomach, cramps, loss of consciousness, coma	Evacuate victim to hospital. Do not induce vomiting.
Eye	Redness, irritation, pain, impaired vision	Flush with an abundant amount of water for at least 15 minutes. If severe, seek medical attention immediately.

6.0 Equipment/Operational Hazards

The following sections will address the hazards, preventative measures, and first aid procedures associated with the drill rig, backhoes, and other heavy equipment. The drill rig used during these field activities generally requires the use of augers for probing. These augers are designed to rotate in a circular motion while being forced downward through the soil. Field personnel are required to assemble and disassemble these parts. Contact with these rotating parts is one recognized hazard. In addition, the machinery also contains parts that become increasingly heated during operation.

6.1 Hazard Identification

There are several hazardous associated with use of any type of drill rig and heavy machinery while performing corrective action activities. Generally during these field operations, the general public may become fascinated with the operation and approach the work area. All unauthorized personnel are required to remain 100 feet away from the work area. The site HSO officer will be responsible for keeping all unauthorized personnel away from the work area. The hazardous associated with the use of a drill rig or other heavy machinery is as follows:

- Gasoline vapors from nearby dispensers can potentially enter the diesel-operated engine thereby causing fire/explosion hazards
- Rotating augers may catch onto gloves or clothing thereby pulling hands arms into the rotating machinery
- Drilling equipment may rupture hydraulic hoses thereby releasing hydraulic fluids
- Engine and exhaust system of an engine are extremely hot during and following operation
- Potential contact with overhead and underground utilities
- Open excavations/boreholes can be the source of trips and falls

- Digging machinery such as backhoes may puncture subsurface utilities
- Operators of heavy machinery may be unable to locate pedestrians near the operating equipment; therefore, all field personnel are to remain with eye contact of the operator at all times during operation

6.2 Hazard Prevention

Hazards associated with heavy machinery can easily be avoided with additional planning. The key to avoiding these hazards includes being familiar with the equipment and the process. In addition, being familiar with and implementing the precautionary measures listed below may reduce or eliminate the risks of a hazardous situation.

- Wear hard hat when working near or around the machinery
- Wear safety glasses when performing maintenance to machinery or power tools
- Shut down the machine engine when repairing or adjusting equipment
- Prevent accidental starting of engine during maintenance procedures by removing or tagging ignition key
- Block wheels or lower leveling jacks and set hand brakes to prevent equipment from moving during drilling procedures
- When possible, release all pressure on hydraulic systems, drilling fluid systems, and air pressure systems of heavy machinery prior to performing maintenance
- Know the location of the emergency shut-off switch for all equipment
- Avoid contact with engine or exhaust system of engine following its operation
- Avoid using gasoline or other volatile/flammable liquids as a cleaning agent on or around heavy machinery
- Replace all caps, filler plugs, protective guards or panels, and high-pressure hose clamps, chains or cables moved during maintenance prior to excavation
- Avoid wearing rings or jewelry during drilling or installation procedures
- Be aware of all overhead and underground utilities
- Avoid alcohol or other CNS depressants or stimulants prior to excavation
- Avoid contact with equipment parts during freezing weather. Freezing of moist skin to metal can occur almost instantaneously
- Shut all field operations during an electrical storm
- Do not operate heavy equipment within 20 feet of overhead power lines

6.3 Symptoms and First Aid Procedure

Hazards associated with heavy equipment were identified in Section 6.1. Unlike hazards associated with temperature or chemicals, symptoms will not be apparent with these types of hazards. In addition, these hazards will occur rapidly as opposed to over a period of time. Due to the size and composition of hydraulic vehicles, exposure to these hazards will range from extremely serious to life-threatening; therefore CDG requires that exposed field personnel seek medical attention at the nearest medical facility and the Project Manager be notified immediately. A site location map to the nearest hospital is presented in the back.

7.0 Temperature Hazards

Another hazard associated with corrective action activities involves working in extreme weather conditions. Temperatures in the Southeast USA during the spring, summer, and occasionally the fall seasons can vary from mild to extremely hot. During this season, extra precautions are necessary to prevent hazards associated with elevated temperatures, which result in various forms of heat stress. In addition, the Southeast is known for its rather mild winter condition; however, on occasion, the Southeast may experience freezing conditions; therefore, precautions are also necessary to prevent hazards associated with these extreme temperatures.

7.1 Heat

As stated in OSHA's regulatory guidelines for heat exposure operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing heat stress. Additional factors to consider in the determination of heat stress on an individual include age, weight, degree of physical fitness, degree of acclimatization, metabolism, use of alcohol or drugs, and a variety of medical conditions such as hypertension (high blood pressure). The following sections will identify the hazards associated with heat stress, the measures needed in order to prevent exposure to these hazards, and first aid procedures in the event exposure to these hazards should occur.

7.1.1 Hazard Identification

Heat stress is a major hazard, especially for workers wearing protective clothing. Depending on the ambient conditions and the work being performed, heat stress can occur very rapidly- within as little as 15 minutes. The key to preventing excessive heat stress is educating personnel on the hazards associated with working in heat and the benefits of implementing proper controls and work practices. The hazards associated with heat stress range from heat fatigue (mild

discomfort) to heat stroke (extreme danger, which may result in death, and are discussed in the following sections.

7.1.1.1 Heat Fatigue

Heat fatigue occurs due to a lack of acclimatization (adjusting one's tolerance to work in elevated temperatures). Acclimatization is a gradual process. This process should include all field personnel being permitted to work in elevated temperatures in specified increments. On a daily basis, the maximum allowable work period should gradually be increased until the worker is able to perform his/her duties more proficiently under these conditions. The use of an acclimatization program is recommended in the regulatory guidelines established by OSHA.

7.1.1.2 Heat Rash

Heat rash (prickly heat) is the most common heat stress factor, and may result from continuous exposure to heat or humid air where the skin remains wet due to lack of evaporation. Under these conditions, sweat ducts become plugged, and a skin rash appears, generally in areas where clothing is restrictive. This uncomfortable rash can be prevented by resting in a cool place during breaks and by implementing good daily personal hygiene.

7.1.1.3 Heat Collapse

Heat collapse is commonly referred to as "fainting." Fainting generally occurs when the brain does not receive enough oxygen. As a result of this condition, the exposed individual may lose consciousness. Heat collapse is rapid and unpredictable; therefore, acclimatization is an important factor in preventing this condition.

7.1.1.4 Heat Cramps

Heat cramps are muscular spasms, which usually occur in the abdomen or limbs due to loss of electrolytes following profuse sweating. Cramps are caused by either too much or too little salt intake. During the sweating process, salt exits the body; therefore, without the proper replenishment, the body experiences an electrolyte imbalance thereby inducing heat cramps. Thirst cannot be relied upon as a guide to the need for water. When working in hot environments, water must be replenished every 15 to 20 minutes.

7.1.1.5 Heat Exhaustion

Heat exhaustion is a result of overexertion in hot or warm weather. It is highly possible for an

onsite worker to experience heat exhaustion due to the use of worker-protective coveralls, boots, gloves, and respirator protection, even when ambient temperatures are mild. Fainting may also occur with heat exhaustion. This can become an extreme hazard if operating heavy machinery.

Caution: Individuals with heart problems or on a “low sodium” diet who work in these environments should consult a physician and Corporate HSO prior to working in these conditions.

7.1.1.6 Heat Stroke

Heat stroke is the most severe form of heat stress. The body’s temperature control system is maintained through sweat production. Perspiration is a cooling process for the body and keeps the body core temperature within a stable range. During heat stroke, sweat production is inhibited and the body temperature begins to rapidly rise. Brain damage and death may occur if body core temperature is extremely elevated and is not reduced.

7.1.2 Hazard Prevention

Hazards associated with temperature extremes can also be prevented with additional planning and preparation. The hazards associated with temperature can range from heat fatigue to heat stroke as described previously in Section 7.1.1 Measures to ensure the prevention of temperature hazards are as follows:

- Adhere to acclimatization process by exposing field personnel to progressively longer periods of time in hot environments.
- Schedule work for early morning or evening during warm weather
- Work in shifts; limit exposure time of personnel and allow frequent breaks
- Have cool liquids at an Exclusion Zone border for exposed personnel to continuously replace body fluids. As stated in the previous section, OSHA recommends that fluids, preferably water and/or a water-electrolyte solution be replenished every 15 to 20 minutes.
- Avoid caffeine and alcoholic beverages both during work hours and 24 hours prior to performing field activities

The site HSO or designee should continually monitor personnel for signs of heat stress. If any signs of heat disorders are apparent, all field personnel must immediately rest and replenish fluids until body core temperature is lowered and remains stable.

7.1.3 Symptoms and First Aid Procedures

As discussed previously in Section 7.1.1, hazards associated with heat stress range from heat fatigue to heat stroke. Taking precautionary measures to ensure that personnel are not exposed to extreme temperatures for long periods of time can prevent these hazards. First aid measures for heat fatigue, heat rash, and heat collapse include taking frequent breaks so that the body core temperature can cool down. The following table includes first aid measures for signs of overexposure to heat.

TEMPERATURE HAZARDS	SYMPTOMS	TREATMENT
Heat Fatigue	Impaired performance of skilled sensorimotor, mental or vigilance jobs	No known treatment. Victim should be placed under cooler conditions until body core temperature lowers.
Heat Rash	Rash due to plugged sweat ducts, generally where clothing is restrictive	Keep dry towels or paper towels at the site to dry skin when excessive sweating occurs. Rash usually disappears when affected individual returns to cooler environment.
Heat Collapse	Loss of consciousness	Attempt to awaken individual. Relocate victim to a cooler area until body core temperature lowers and replenish fluids. Victim should rest for a few days.
Heat Cramps	Uncontrollable muscle spasms	Apply warm, moist heat and pressure to reduce pain. Give electrolyte drinks by mouth. Victim should intake additional potassium (Bananas are good potassium source).
Heat Exhaustion	Pale, clammy skin, profuse perspiration, weakness, headache, and nausea	Get victim into shade or cooler place. Immediately remove any protective clothing. Victim should drink plenty of fluids. Victim should lie down with feet raised. Fan and cool victim with wet compresses. If vomiting occurs, transport to hospital. Victim should rest for a few days.
Heat Stroke	Pale, dry skin due to lack of perspiration, weakness, unconsciousness	Immediately take precautions to cool body core temperature by removing clothing and sponging body with cool water, or placing in tub of cool water until temperature is lowered sufficiently (102°F). Stop cooling and observe victim for 10 minutes. Once temperature remains lowered, dry person off. Use fans or air conditioning, if available. Do not give the victim stimulants. Transfer to medical facility. Under no condition is the victim to be left unattended unless authorized by a physician.

8.0 Explosion/Electrocution Hazards

As stated previously in Section 4.1, extensive efforts are made in order to determine the location of subsurface utilities prior to corrective action activities. Efforts are made to obtain the location of underground utilities through the Line Locator Services, and utility companies are notified in advance to perform a site inspection and utility marking; however, the potential for a subsurface utility to go unnoticed exists. Therefore, the hazards associated with exposure to these utilities are identified and preventative measures and first aid procedures are discussed further in the following sections.

8.1 Explosion

Primarily when dealing with subsurface utilities, two potentially life-threatening hazards exist. The first hazards identified in association with subsurface utilities during excavation activities are discussed further in the following section.

8.1.1 Hazard Identification

The main hazard associated with puncturing a subsurface utility gas line is explosion. By releasing gas (usually natural gas, which is generally methane gas or propane gas) into the atmosphere, explosive conditions are favorable; therefore, ignition sources must be immediately eliminated in the event a gas release occurs. Due to the flammability of gasoline, ignition sources will be minimized; however, the engines are needed during field activities. Therefore, the only alternative to reducing the explosion hazard is to stop the release as soon as possible. However, when dealing with gases under pressure, the volatilization process may occur at such a rapid speed that an explosive situation is inevitable.

8.1.2 Hazard Prevention

Preventative measures are ensured prior to field activities. These measures generally encompass locating subsurface utilities. In addition, CDG will request local utility companies to perform site inspections and mark all subsurface utilities. In addition to this notification, if a particular subsurface utility is not identified and CDG suspects the utility to exist, CDG will take additional precautionary measures to ensure the suspected utility does not exist. These measures generally include locating utility meter boxes, etc. In addition, a field technician or subcontractor will generally probe the ground with a small rod in order to possibly identify the existence of subsurface utilities. This is conducted usually when machinery reaches 2-3 feet below the ground surface (ft-bgs).

8.2 *Electrocution*

8.2.1 *Hazard Identification*

The main hazard associated with puncturing a subsurface electrical line or coming into contact with an overhead power line is electrocution. When dealing with electricity, all things are classified as either conductors or insulators. Conductors allow electricity to pass through them while insulators prevent electricity to pass through. Examples of conductors are metals, wood, and water, and examples of insulators are rubber and PVC. Humans are also classified as conductors; therefore, contact with electrical sources can be fatal.

Because the heavy machinery is metal, which has been classified as one of the best sources of electrical conduction, contact with exposed electrical lines will allow current to flow. The National Electrical Code (NEC) has determined that 20 milliamps (mA) of current can be fatal. For comparison, a common household circuit breaker may conduct 15, 20, or 30 amps of electrical current.

8.2.2 *Hazard Prevention*

As stated previously in Section 8.1.2, preventative measures to locate subsurface and overhead electrical lines prior to corrective action activities are required by CDG. CDG will notify local utility companies to provide a site inspection and mark any existing subsurface electrical lines. In addition, CDG will contact the local power provider to insulate overhead lines if necessary. When dealing with the electrical components of the dewatering system, the following precautionary measures may prevent exposure to electrocution:

- Avoid contact with exposed connections/wiring and other related components
- If unfamiliar with the system, do not attempt contact with any component
- Call the Project Manager if unsure of any connections associated with the operations of the system.

8.2.3 *Symptoms and First Aid Procedures*

As discussed previously in Section 8.2.1, the hazard associated with puncturing subsurface electrical utilities and contacting electrical components of dewatering system is electrocution. The primary route of exposure is contact. The transmission of electricity is allowed because the metal equipment serves as a conductor for electrical current. Symptoms and treatment for

exposure to electrical current is presented in the following table:

Caution: NEVER attempt to dislodge or remove someone that is contacting a high voltage line
Use an insulating material (PVC) to release the victim from the electrocution source.

9.0 Miscellaneous Hazards

The last hazard identified when performing corrective action activities has been classified as miscellaneous hazards due to the variety of these hazards. These hazards generally are nothing more than nuisances and with additional planning should be entirely avoidable; however, there are instances in which exposure to these hazards will occur. Therefore, these hazards are identified and preventative measures and first aid procedures are discussed in further detail in the following sections.

9.1 Hazard Identification

Occasionally, exposure to common nuisances may potentially result in a life-threatening situation. For example, a wasp or bee sting for some individuals only causes irritation or localized soreness; however, to others with little tolerance for wasp or bee venom, an allergic reaction can result which could potentially lead to death if not treated immediately. Therefore, allergic reactions to these insects have been identified as a potential hazard. In addition to the insects, contact with black widow spiders (red hourglass), brown recluse spiders (violin shape on back), and snakes are also potential hazard.

9.2 Hazard Prevention

Prevention, with regards to miscellaneous hazards, is more difficult to plan ahead. Generally, prior to conducting corrective action activities, the primary location for the activities has been established; therefore, barricades such as cones and company vehicles can be placed around the work area to prevent exposure to incoming and ongoing vehicles. However, the limitation to using cones is that they are often small and unnoticeable to drivers once inside the vehicles; therefore, the best prevention with regards to this miscellaneous hazard is to constantly be aware of your surroundings. This preventative measure can also be applied to exposure to insects, snakes, and spiders. Be aware of your surrounding when working around dark, secluded areas such as cracks and crevices, where snakes, spiders, and mice like to hide.

9.3 Symptoms and First Aid Procedures

If an employee or subcontractor shows any signs of an allergic reaction (anaphylactic shock, hives, or difficulty breathing) to a sting or bite, immediately seek medical attention at the nearest hospital. In the event that an operating vehicle strikes a person, seek medical attention immediately. In the meantime, a first aid kit and eye wash bottle will be provided by CDG and should be kept in all company vehicles. If field personnel are aware of their allergic reactions to insect bites, CDG requires that medication be kept on hand during field activities and at least one other field technician be made aware of the medication in the event of an allergic reaction should occur.

10.0 Additional Precautions

Additional precautions have been implemented in order to ensure overall safety for all field personnel. The safety protocols listed in this segment are to be considered the minimum requirements to be met by all field personnel engaging in corrective action activities.

10.1 Personal Protective Equipment

PPE is the most effective measure to prevent exposure to chemical hazards. There are four levels of PPE protection ranging from Level A to Level D equipment. Level A protection serves as the most conservative protective equipment, and Level D protection serves as the least conservative protective equipment. These levels are described further in the following table:

LEVELS OF PPE PROTECTION	PPE REQUIREMENTS
Level A	Worn when the highest level of respiratory, skin, and eye protection is necessary.
Level B	Worn when the highest level of respiratory protection is needed, but a lesser level of skin protection is necessary.
Level C	Worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is necessary.
Level D	Refers to work conducted without respiratory protection. This level should be used only when the atmosphere contains no known or suspected airborne chemical or radiological contaminants and oxygen concentrations are between 19.5 % and 23.0%

Level D protective clothing, as indicated below, shall be considered the minimum requirements for installation and excavation operations:

- Hard hat
- Coveralls*
- Non permeable gloves
- Steel-toe, non-permeable boots
- Hearing protection*
- Safety goggles (chemical)*

*These items are mandatory on an “as needed” basis. Generally, normal site conditions do not warrant the use of this equipment; however, under certain conditions where large amounts of free product are encountered, the issue of coveralls and safety goggles may be warranted. Safety goggles and hearing protection are mandatory when near the drill rig to reduce stress on the ear and also prevent objects from the soil or drill rig from lodging in the eye.

Equipment may be upgraded to Level C depending on the site conditions and/or monitoring results. Level C protection, in addition to Level D protection, includes the following:

- Rubber/chemical resistant outer gloves
- Face-shield if splash hazards exists
- Outer disposable booties
- Half-mask respirator

10.2 Signs, Signals, and Barricades

As stated previously in Section 9.1, corrective action activities are generally conducted at retail gasoline facilities and convenience stores, and are therefore, high traffic areas. All CDG field personnel must be aware of his/her surroundings at all times. In addition, the items listed below will be provided to secure the area in order to protect all field personnel as well as the general public.

- Utilize barricades to protect workers, pedestrians and vehicles from work activities
- Post area for “NO SMOKING”
- Utilize cones to protect workers from incoming and ongoing vehicles

10.3 Fire Protection and Prevention

As stated previously in Section 5.1, gasoline is a highly flammable substance. CDG requires that

the work area be posted with “NO SMOKING” signs in an attempt to prevent fires from occurring; however, as a secondary precaution CDG plans to implement the following:

- Maintain a 20 lb. ABC Dry Chemical fire extinguisher on site at all times
- Eliminate ALL ignition sources in the vicinity of any releases
- The contractor will clean up all small spills using absorbent materials or by pumping

10.4 Storage and Decontamination

During the corrective action activities, impacted soils will be encountered. Groundwater will be treated and pumped to an NPDES outfall. Contaminated soil will be temporarily stored until transported for disposal. Decontamination procedures will be implemented should chemical exposure occur. The procedures are detailed below:

- Avoid contact with liquid gasoline or diesel
- Place contaminated soil on visqueen and cover once removed from the excavation
- Change any product contaminated soil immediately
- Wash any contaminated skin surfaces immediately with soap and water

Caution: All personnel are required to wash hands at the completion of work, before and after restroom use and before eating in order to prevent dermal contact with or ingestion of contaminants encountered during field activities.

11.0 Emergency Contingency Plan

If an incident occurs that requires declaring an emergency, all personnel will assemble at a designated emergency meeting location for further instruction. Arrangement for decontamination, evacuation and/or transport will be made at that time. The client and appropriate CDG personnel will be notified of the incident as soon as possible.

11.1 Notification/Reporting Procedures

In the event of an emergency, CDG Project Manager will be notified as soon as possible regarding the nature of the incident and emergency service contact will be notified as needed (see Section 11.7, Contingency Contacts). It is the responsibility of the Site HSO to report all incidents to the CDG Corporate HSO so that the required reporting procedures may be implemented.

11.2 Hazardous Substance Release

In the event that potentially hazardous substances migrate from the work zone and potentially endanger unprotected personnel or the community all on site activities will cease until the release is brought under control. CDG will immediately notify the proper authorities so that they may be able to ensure that public health and safety is maintained throughout this process event to the extent of evacuation if necessary.

11.3 Personnel Injury

In the event of an injury, all personnel will assemble at the designated emergency meeting location. The Site HSO, prior to the beginning of filed activities should designate this location. If the injured person is immobile one or more persons should remain nearby to provide any necessary first aid techniques. If medical help is necessary, the Site HSO will summon the appropriate assistance for transportation to the nearest medical facility. Due to the potential for these situations, CDG recommends that at least one qualified person be CPR/First Aid certified.

11.4 Evacuation Plan

Gasoline and diesel are flammable substances; therefore, a fire/explosion potential exists during the excavation activities. In the event of an onsite evacuation, the following plan will be implemented:

- A signal consisting of one continuous blast of a vehicle or air horn will be used
- All personnel will immediately evacuate the area and report to the designated emergency meeting location for further instruction

11.5 Spill Prevention and Response

In the event of a leak or spill, the area will be blocked using barricades, and the spill contained until absorbed and removed by authorized personnel. Unauthorized persons will be denied access to the area until all spills have been removed and field operations completed. CDG will follow prescribed procedures for reporting and responding to large releases by notifying the National Response Center (see Section 11.7). All materials will be disposed of according to regulatory guidelines.

11.6 Emergency Communication

In the event of an emergency situation, the following standard hand signals will be used onsite as

a means of communication:

- Hand gripping throat- (cannot breathe)
- Grip partner's wrist or both hands around waist- (leave area immediately)
- Hands on top of head- (need assistance)
- Thumbs up- (OK, I am all right, I understand)
- Thumbs down- (No, negative)

11.7 Contingency Contacts

In the event of an emergency, CDG has provided several emergency contacts. These contacts, along with phone numbers, are listed in the following table. The Site HSO will be responsible for the notification of these contacts in the event of an emergency.

AGENCY	CONTACT	TELEPHONE NO.
Fire Department		251-578-1574
Police Department		251-578-1111
Ambulance		251-578-6040
Hospital	Evergreen Medical Center	251-578-2840
Corporate HSO	Robert Shepard	334-222-9431
Project Manager	Anna Brunson	334-222-9431
EPA RCRA-Superfund Hotline		800-424-9346
Chemtrec (24 hours)		800-424-9300
Bureau of Explosives (24 hours)		202-293-4048
Centers for Disease Control (Biological Agents)		404-633-5353
National Response Center		800-424-8802

Medical Facility

Name of Hospital: Evergreen Medical Center

Address: 101 Crestview Avenue
Evergreen, Alabama 36401

Phone: 251-578-2840

Route to Hospital: Start out going north on Pecan Street toward Belleville Street. Take Belleville Street to Highway 31 N/84 E. Take Highway 31 N/84 E (1.0 Miles). Turn right onto Brooklyn Road (0.3 Miles). Turn left onto Lewis Street and continue on to Crestview Street. Arrive at the Evergreen Medical Center on the right.

Travel Time from Site: 5 Minutes

Distance to Hospital: 1.5 Miles

Name/Number of 24-hour Ambulance Service: Conecuh County Emergency Medical Service
251-578-6040

In cases of construction accidents, rapid notification to OSHA is required.

APPENDIX E
Personnel Tasks

Task Completed by Personnel/Title:	Griffin Gatschet, P.G./PM	Alan Barck, P.G/P.E./PM	Anna Brunson, PM	Anna Williams, PM	Kyle Marshall, Staff Geo	Ray Hollinghead, Drafter	Kim Ballard, Admin	Leigh Caylor, Admin
Project Management			X	X				
Work Plan Preparation/Review		X		X			X	
Cost Proposal Preparation/Review	X			X			X	
Field Work								
Data Interpretation/Tabulations			X		X			
Drafting						X		
Report Preparation/Review		X	X		X		X	
Payment Request Preparation/Review	X		X		X		X	

Notes:

- DO=Drilling Oversight
- BL=Boring Log Description/Soil Classification
- WG=Well Gauging
- GSC=Groundwater Sample Collection
- MEME=MEME Oversight
- PM=Project Management
- O&M=Routine Operation & Maintenance