

**UST Modified Corrective  
Action Plan  
Dual Phase Extraction**

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**University Mini Mart  
740 Opelika Rd.  
Auburn, Lee County, Alabama**

**Facility I.D. No.: 22171-081-009103**

**Incident No.: UST06-02-10**

**Harmon Project No.: 639-01-06**

**November 14, 2025  
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## CERTIFICATION

*I certify under penalty of law that this Corrective Action Plan and all plans, specifications, and technical data submitted within were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiring of the person or persons who directly gathered the enclosed information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information.*

  
M. Allen Tucker, P.E.



17611  
Registration Number

2/24/2026  
Date

# I. Introduction

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## A. Executive Summary

The University Mini-Mart site is located at 740 Opelika Road, Auburn, Lee County, Alabama. The site is located at the intersection of Opelika Road and Dean Road. Figure 1 is included as the Location Map. As shown on the Location Map, the facility is located in the southwest quarter of Section 20 of Township 19 North and Range 26 East. Elevation of the site is approximately 720 feet MSL. Longitude of the facility is 32°36'58" North; Latitude of the facility is 85°27'53" West.

Historically, the site has been utilized as a retail UST facility and convenience store. Improvements on site include the building, canopy, concrete pavement, and UST system. Standard utilities for an urban setting are also present. Except for minimal landscaped areas, the entire site is covered with reinforced concrete pavement or other impermeable surfacing. The building is single-level and constructed on a concrete slab with no basement. A Vicinity Map is included in Figure 2.

Underground storage tanks are located on the north side of the building and the east side of the lot. The larger tank pit at the north side of the building contains the 3 gasoline and 1 diesel tank(s). Fill spouts for three of these tanks are located in an unpaved area. Fuel service islands are located on the west side and east side of the building. The tank pit at the east side of the lot contains a kerosene UST. The kerosene dispenser is located adjacent to the tank. The fill spout is located in an unpaved area.

Areas surrounding the site consist of residential and commercial properties. On-site underground utilities include electrical, telephone, water, gas, storm sewer, and sanitary sewer.

In August 2009, Harmon prepared a Corrective Action Plan (CAP) for the site to include remediation by Natural Attenuation. In order to expedite attenuation Mobile Enhanced Multiphase Extraction (MEME) was proposed. Three extraction wells EW-1, EW-3, & EW-4 were installed adjacent to suspected source soil locations.

The CAP was modified and chemical oxidation injection events were conducted in the tank pit area, and these activities significantly reduced concentrations in this area.

During subsequent monitoring and investigations COC concentrations rebounded and other source areas became apparent, including the piping on both sides of the tank pit, and possibility an historic tank site. The CAP was modified again in 2023 to remove more shallow source soils in the area of the north piping trench and to conduct surfactant injections. Subsequent MEME events exhibited significant vapor recovery rates leading to the recommendation to install an on-site Dual Phase Extraction (DPE) system. The proposed modification includes installation of a DPE system.

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## B. Purpose of Corrective Action

This Corrective Action Plan (CAP) has been prepared in accordance with ADEM Administrative Code 335-6-15-.29 and basically follows the Alabama Department of Environmental Management (ADEM) Guidance Manual Section VII: UST Corrective Action Standard Formats for Remediation of Soil and Groundwater (May 1995).

This CAP utilizes site characteristics to develop a strategy to reduce subsurface petroleum contaminate concentrations. After analysis of these characteristics, Harmon recommends Dual Phase Extraction (DPE) to reduce COC concentrations to levels below Corrective Action Levels.

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### **C. Geology and Hydrogeology**

The Geologic Map of Alabama (GSA 1988) indicates the Site is located in the Inner Piedmont Physiographic province. The Inner Piedmont is characterized by high-grade igneous and metamorphic rocks of Precambrian to Paleozoic age. Basaltic dikes of Jurassic age are also present. These dikes trend north-south and crosscut the southwest-to-northeast trend of the Piedmont formations.

Geologic formations exposed at the surface in the vicinity of the site include the Auburn Gneiss of the Opelika Complex. The Auburn Gneiss is a biotite oligoclase gneiss that exhibits schistose textures at locations due to abundant coarse mica and oligoclase phenocrysts.

In-place weathering and decomposition of these rocks have produced saprolite soil deposits that average 50 feet thick. These soils are typically composed of sandy to silty clays. Depending on the degree and depth of weathering, relict rock textures are likely present and will be more apparent with depth.

The topography in the study area is rolling to hilly. Elevations of the study area range from topographic highs of approximately 620 feet MSL to topographic lows of approximately 450 feet MSL. The site elevation is approximately 720 feet MSL. The base level is a surface stream located approximately 175 feet west of the site. This stream flows northwest through commercial and residential properties. It joins with other streams and eventually drains to the Saugahatchee Creek in the Tallapoosa River watershed.

Groundwater usage in the Piedmont is generally limited to rural residences and/or livestock. The site is located within a high-density urban center with a long-established PWS. No usage of groundwater or surface water was identified in the vicinity of the site.

The uppermost aquifer is an unconfined aquifer contained within the saprolite soils derived from the Auburn Gneiss. Flow within this aquifer is by pore seepage. Observations of soil samples indicate the presence of silty clay with interbedded gravel. The gravel is more abundant with depth and derived from discordant feldspar-quartz-rich zones and creates relatively higher permeable zones.

The next lower aquifer is a competent rock with a transition zone of partially weathered rock (PWR). A hydraulic connection would likely exist; however, a decrease in the conductivity would be expected. PWR was observed in borings B-3 & 4; it consisted of fine to medium-grained biotite and feldspar.

Groundwater flow is northwest. This direction is from topographic highs toward topographic lows. The hydraulic gradient is approximately 0.01.

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### **D. Previously Conducted Significant Site Assessments and Corrective Action**

Previous site assessments have involved closure assessment, tank tightness testing, preliminary investigation, secondary investigation, additional secondary investigation, ARBCA Tier 1 & Tier 2 Evaluation, corrective action activities, mobile enhanced multi-phase extraction, and groundwater monitoring. More significant mile stone projects are described below.

Soil contamination maps are included; in addition, the most recent potentiometric surface maps and groundwater contamination maps are also included.

### ***Contamination Assessment***

A petroleum contamination assessment was conducted by Harmon Engineering in February 2006 as part of a pending commercial property transaction. Three soil borings were installed near the primary tank pit (three gasoline, one diesel) and fuel islands. One soil boring was installed near the kerosene tank pit and dispenser. Total BTEX concentrations in soil ranged from non-detect to 0.730 PPM; MTBE concentrations in soil ranged from non-detect to 0.506. Total BTEX concentrations in groundwater ranged from non-detect to 29.2 PPM; MTBE concentrations in groundwater ranged from non-detect to 7.500 PPM.

### ***Preliminary Investigation CP-1***

Release indicated during contamination assessment activities prompted ADEM to issue a notice to perform a Preliminary Investigation. The Preliminary Investigation was conducted in May 2006. Four soil borings/monitoring wells (B-1/MW-1, B-2/MW-2, B-3/MW-3, & B-4/MW-4) were installed. Total BTEX concentrations in soil ranged from non-detect to 0.595 PPM; MTBE concentrations in soil ranged from non-detect to 0.490 PPM. Total BTEX concentrations in groundwater ranged from non-detect to 49.000 PPM; MTBE concentrations in groundwater ranged from non-detect to 15.000 PPM. Two surface water samples were collected and analyzed for BTEX/MTBE with non-detect concentrations.

Depth to water at the site ranged from 22.50 to 23.68 feet below top of casing. Groundwater flow was determined to be northwest with a calculated hydraulic gradient of 0.01.

### ***Tank Tightness Testing CP-2***

As response to the Notification of Release form submitted to the Department after results of the contamination assessment, the site owners were required to perform tank tightness testing on all underground storage tanks. Tank tightness testing was performed on April 5, 2006 by Quality Cathodic Tank and Line Testing. All tanks passed testing.

### ***Secondary Investigation Plan CP-3***

Denied and resubmitted as Cost Proposal 4 to include installation of a Type III monitoring well.

### ***Secondary Investigation CP-4***

The Secondary Investigation was conducted in August-September 2007. Three soil borings/monitoring wells (B-5/MW-5, B-6/MW-6, and B-7/MW-7) were installed. Total BTEX concentrations in soil were non-detect; MTBE concentrations in soil were non-detect. Total BTEX concentrations in groundwater ranged from non-detect to 8.300 PPM at MW-3; MTBE concentrations in groundwater ranged from non-detect to 18.300 PPM at MW-3. One soil sample was collected from the soil cuttings and analyzed for TPH. The sample contained a concentration of 48 PPM indicating non regulated soil.

Depth to water ranged from 19.40 feet to 26.72 feet. Groundwater flow is in the northwest direction.

### ***Additional Secondary Investigation CP-5***

The Additional Secondary Investigation was conducted in January 2009. Two shallow soil borings/monitoring wells (B-8/MW-8 & B-9/MW-9) of Type II construction were installed. One deep soil boring/monitoring well (B-10/MW-10) of Type III construction was installed. Total BTEX and MTBE concentrations in soil in shallow wells were non-detect. Total BTEX in soil for the deep well was non-detect; MTBE in soils in the deep well ranged from non-detect to 0.140 PPM. Total BTEX concentrations in groundwater ranged from non-detect to 9.345 PPM at MW-3; MTBE concentrations in groundwater ranged from non-detect to 3.040 PPM at MW-3. Total

BTEX and MTBE concentrations in groundwater for the deep well were 0.094 PPM and 0.034 PPM respectively.

#### ***ARBCA Evaluation CP-6***

An ARBCA Tier 1 & 2 evaluation was conducted in September 2008. Conclusions are discussed below in section C.

#### ***Groundwater Monitoring CP-7***

A GWM event was conducted on May 27, 2009 by Harmon Engineering. The GWM report was submitted to ADEM on June 23, 2009.

Groundwater samples were collected from monitoring wells MW- 1, 2, 3, 4, 5, 6, 7, 8, 9, & 10 for BTEX, MTBE, and PAH analysis. Total BTEX ranged from non-detect to 13.199 PPM at MW-2. MTBE concentrations ranged from non-detect to 2.240 PPM at MW-2. PAH concentrations ranged from non-detect to 0.254 PPM at MW-2.

#### ***Groundwater Monitoring CP-8 & 9***

Cost Proposals 8 & 9 for continued groundwater monitoring were denied by the Department.

#### ***MEME Pilot Testing CP-10***

Mobile Enhanced Multi-Phase Extraction pilot testing was conducted on May 6, 2009 for eight hours at the location of monitoring wells MW-2 & 3. A vacuum of 10 to 15 inches of mercury was applied to MW-2. A vacuum of 14 inches of mercury was applied to MW-3. A total of 942 gallons of liquids was removed throughout the eight-hour event. Contaminant concentrations in recovered vapors ranged from 800 PPM to 1,800 PPM. Approximately 11 pounds of hydrocarbon vapors was removed throughout the event corresponding to removal of 1.8 equivalent gallons of gasoline. Effective radius of influence is estimated at approximately 50 feet.

#### ***Corrective Action Plan CP-11***

In August 2009, Harmon prepared a CAP for the site. In the CAP report, Harmon recommended Remediation by Natural Attenuation as the most cost-effective means to reduce the COC concentrations in soil and groundwater to below the ACAL's developed during the ARBCA evaluation. MEME was recommended to expedite attenuation. Three extraction wells EW-1, EW-3, & EW-4 were installed near source soils to remediate them through MEME.

#### ***Modified Corrective Action Plan CP-19***

In 2013 the CAP was modified to include oxidization injection in the area north of the tank pit. The injection and subsequent MEME were effective in reducing concentrations.

#### ***Additional Injection Activities CP-29***

In 2015 additional oxidant injections were performed.

#### ***Additional Injection Activities CP-36***

In 2016 additional injection wells were installed and additional oxidant injections were performed.

#### ***High Resolution Study CP-49***

In 2021 a High-Resolution study was performed resulting in the location of source soils with elevated COC concentrations.

#### ***Modified Corrective Action Plan CP-55***

In December 2023 shallow excavation of the source soils discovered in the high-resolution study was performed. Additional Extraction wells were installed, and surfactant injections were

performed. Injections were followed up with MEME events which yielded elevated soil vapor concentrations and up to 170 gallons of equivalent product per event.

### ***MEME Events***

Thirty MEME events with a total equivalent free product removal of 1016.3 gallons removed to date. MEME results are included in Appendix B.

## **II. Proposed Remediation Method-Dual Phase Extraction**

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### **A. Overview**

Analytical testing has detected volatile organic compounds including benzene, toluene, ethylbenzene, & xylenes (BTEX). Fuel oxygenate MTBE and Naphthalene have also been detected. Soil and groundwater analytical testing results are included in Appendix B.

In order to expedite remediation of the soil and groundwater, Harmon proposes dual-phase extraction (DPE) with vapor and groundwater treatment. DPE is a technology that uses vacuum pump(s) to remove contaminated groundwater and vapors from subsurface saturated and unsaturated zones. Extracted liquids and vapors are then treated and discharged.

The proposed DPE system will be a refurbished unit designed and built by MK Environmental and refurbished for the site. A refurbished unit was chosen based on cost effectiveness and savings based on new pre-manufactured and built on site systems.

Cost proposals for system purchase and installation, system startup, and four quarters of operations and maintenance will be forwarded under separate cover.

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### **B. System Components & Description**

Manufacturer's information, relevant figures, and system layout are included in Appendix C.

The DPE system will include:

- Modification of 10 existing extraction wells, including access vaults and stingers
- Connecting piping, valves, gauges
- Treatment system
- Air Pollution Control Equipment, oxidizer is anticipated
- Electrical service provided by Alabama Power, 400 amp, 3/60/460/230
- Potable water supply (6 gpm) from municipal water supply (City of Auburn)
- Connection to Sanitary Sewer, to include tap and piping
- 6' wooden privacy fence

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## C. Extraction Wells

Sixteen extraction wells currently exist on-site and have been used during mobile extraction events. These extraction wells provide adequate coverage in the areas of known soil contamination both north and south of the tank pit. Review of the pilot test data indicates a radius of influence (ROI) of significant vacuum levels (greater than .1" Hg) to be less than 25 feet. Experience has shown the effective remediation area to be less than the ROI and is estimated to be at least 10'. The existing extraction wells vary from 6 to 12 feet on center allowing significant overlap with an ROI of 10'. Existing extraction well locations and system layout are shown on Figure 6. Schematic construction of extraction wells are shown on Figure 8.

Existing extraction wells are constructed as 4" type II wells. Ten wells will be modified for the connection to the DPE system as per Figure 8. A larger manhole will be installed and concreted in place. The stinger will be installed with connecting piping and fittings. A pressure gage and valve will allow independent operation of each well. 1 1/2 inch HDPE stingers will be lowered into each well. The stingers will be held in place with a 4" to 1 1/2" reducing fernco type well seal. The stinger will be lowered to approximately 12" below the water lower normal ground water elevation to expose more soil to the vapor phase extraction.

Ten of these wells, selected based on their location and expected yield, are to be connected to the DPE. These wells include EW-3, EW-16, EW-15, and IW-2R south of the tank pit, and EW-7, EW-10, EW-11, EW-12, EW-13, and EW-14 north of the tank pit. Extraction and/or IW wells not connected to the DPE system will be used for make-up air for the connected wells. An open well within the ROI of an extraction well will act to infuse air into the soil at the screened interval above the water table. This directs air flow between the wells as opposed to drawing make-up from the surface potentially exposing different soils to lower pressure air flow. Because of the potential to create a short circuit, these wells may need to be opened individually and intermittently. This procedure will be discussed under operation and maintenance.

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## D. Extraction Piping

Piping will be installed below grade to minimize interference with the on-site commercial business. Extraction piping will be installed in trenches approximately 12" below grade in accordance with Figure 9. 1 to 2" of sand will be placed over the pipe and sand bedding. A 5" concrete slab will be poured in existing concrete paved areas. Trench will be backfilled with soil and grassed in non-paved areas. Pipe trenches are designed as shallow as possible due to the numerous utilities in the area. Care has been taken to prevent crossing of fuel system product piping. During previous excavation activities, product piping was found to be less than 6" deep which will prohibit crossing over product piping.

Based on previous MEME data, extraction wells are expected to produce approximately 20 cfm per well on average. Piping has been sized to keep cumulative friction loss to less than 1" of Hg. at 30 acfm for each well. The DPE system is sized to produce approximately 200 cfm. The extraction piping will be extended to the well system by a properly sized main pipe with branches to each well. Each extraction well pipe will be fitted with individual flow control valves, visual flow indicators, and vacuum gages at the well head. These valves can be used to balance the system, and alternate wells on and off line as desired.

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## E. Treatment System

Extracted groundwater will be treated through aeration utilizing a multi-tray air stripper. A water-to-water heat exchanger will be utilized to transfer heat generated in the liquid ring pump to groundwater, thereby increasing the efficiency of the air stripper. All treatment system components, electrical and controls, with the exception of the oxidizer are installed in an insulated skid mounted enclosure approximately 8.5 feet by 16 feet. The enclosure has removable sliding wall panels for ease of maintenance. The enclosure is fully insulated and has rigging eyes for lifting in to place. The Air Pollution Control Device (APCD) will be installed on a separate skid if required. System specifications of the treatment system are included in Appendix C.

The system will be installed on the existing concrete pavement. Shims if required, will be utilized to level the equipment. A crane of size to be determined by the manufacturer will be utilized to unload the system and position it.

The vacuum applied to the subsurface creates vapor-phase pressure gradients towards the recovery well. The higher the applied vacuum, the larger the gradient that can be achieved and thus the greater vapor and liquid recovery rates. The liquid ring pump and piping has been sized and meets requirements to achieve vacuum pressure and flow rate.

Extracted vapors can contain condensate, entrained groundwater, and particulates that can damage equipment parts and inhibit the effectiveness of treatment system components. In order to minimize damage, extracted vapors and groundwater will be passed through an air/water separator then particulate filter prior to entering the vacuum pump. Liquids are separated from vapors by cyclonic action. The liquid flows into a sump where it is pumped to an oil/water separator and air stripper for treatment then discharged. The vapors continue into the vacuum pump and then into a second air/water separator. Extracted vapors are discharged from the liquid ring vacuum pump at the rate of approximately 300 acfm. Initial concentrations may be high but will decrease over time. Air pollution control equipment is discussed below in Section G.

Treated groundwater will discharge via pump from the sump of the air stripper to the sanitary sewer. Volumes of treated groundwater discharged to the sewer will be metered. Contaminants are expected to be near non-detect concentrations. NPDES permit is not required for discharging treated groundwater to sanitary sewer.

The treatment system specifications include:

- 40 Hp 3 Phase electric motor
- Liquid Ring Pump with maximum vacuum of 490 CFM @ 20" of Hg
- 2-Air/Water Separators (AWS-1 & AWS-2)
- Intrinsically Safe High Temperature Switch
- Temperature Gauge, 0-300 F
- Explosion Proof Solenoid Valve for Tap Water Control
- Epoxy Coated Structural Steel Base and Exterior
- Air/Water Heat Exchanger Fan located under AWS-2 Seal Water Tank
- Water/Water Heat Exchangers

- Site Glass and Stilling Wells
- Automatic Vacuum Relief and Dilution Valve with Muffler
- Full Recirculation Seal Water Package
- Tap Water Flow Meter Assembly with Shut-off Valve & Hose Barb Connection.
- 12-Extraction Wells

Specifications of each air/water separator include:

#### Air/Water Separator AWS-1

- 200 gallons with conductivity probe level switches
- 6-inch diameter clean out port with vacuum rated quick release lid
- Clear PVC Sight Glass Piping
- Liquid filled vacuum gauge
- Vacuum assist hose
- 2-inch drain valve
- Vacuum relief valve
- Dilution valve with filter/silencer
- Inlet Screen

#### Air/Water Separator AWS-2

- 85-gallon sealed water tank
- Electronic conductivity sensors and valves
- Automatic filling low seal water level switch and valve
- 6-inch diameter clean out port with pressure rated quick release cap
- Site Glass for centerline inspection
- 2-inch drain valve.

Groundwater treatment system specifications are as follows:

- MK Environmental Model SA30 Stripperator
- 30 gallon per minute Oil/Water Separator and Air Stripper Treatment System with additional air stripper tray for increased removal efficiency
- Coalescing Separator with Product Skimming Weir
- Multiple polypropylene coalescing pack with ½ inch spacing for efficient oil removal
- Low profile air stripper with 3 hp AMCA Type B spark resistant aluminum blower
- Nylon tube aeration air stripper for high mass removal rates with low maintenance
- Low, High, and High-High sump conductivity probes
- 12-inch clean out hatch

- Low blower pressure alarm
- Sump Level sight glass
- 1.5 hp transfer pumps with 3450 rpm TEFC motor
- Groundwater flow totalizer with pulse output and Zener Barrier for remote tantalization.

The DPE system includes a complete automatic control system. Instrumentation and Control systems include the following:

- Main Control Panel
- System run time totalizing hour meter
- Automatic shutdown of liquid ring pump upon high liquid levels, high oil tank levels, and air stripper blower low pressure
- Telemetry system with data logger
- Sample ports.

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## **F. Air Pollution Control**

Groundwater remediation systems with volatile organic compounds (VOCs) emissions in excess of 0.1 lbs./hr require evaluation and modeling by the Air Division to determine if an APCD is required. ADEM form 448 "Remediation Approval" and appropriate system information including historical groundwater data and emission calculations has been submitted to the Air Division. A copy of the information submitted and the Air Division authorization letter is included in Appendix D.

VOC emissions from the liquid ring vacuum pump exhaust are expected to decrease over time. The Air Division requires quarterly air sampling. The sampling will be conducted in accordance with the Remediation System Air Sampling Guidance Document. VOC data will be plotted over time.

Since there is no recent history of phase separated hydrocarbons (free product) at the site, a APCD is not anticipated to be required. If the Air Division determines that an APCD is necessary, activated carbon canisters will be considered evaluated. If higher concentrations of VOC emissions require, a catalytic thermal oxidizer will then be considered.

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## **G. Anticipated Clean-up Time**

Clean-up time to reach ACAL levels of all wells is dependent on the vapor flow characteristics of the soil, and the proximity of the extraction wells to the contamination mass. As indicated by the pilot MEME events, on-site soils are very dense and vapor flow characteristics are low. An effective radius of influence of less than 5' is anticipated for this site.

As the system operates, soil concentrations immediately adjacent to the extraction well will initially release contaminants rapidly. VOC removal rate will decrease over time as the higher volatile fractions are removed and the concentrations around the well are reduced leaving less VOCs in the soil to be stripped.

The volume of contaminant mass has not been determined. Based on average soil BTEX concentrations and a volume of impacted soil of 80,000 cubic feet, gives 200 to 300 lbs. of BTEX compounds, indicating a low mass of contaminant in the soil. However, MEME events conducted on the extraction wells yield around 1000 lbs. of hydrocarbons removed per event indicating a large mass of contaminant present. Based on experience with similar sites, Harmon estimates the bulk of contaminant mass should be removed in less than one year. Harmon anticipates groundwater concentrations may not be below ACALs at this point due to the heavy soils and additional measures such as relocated extraction wells, additional surfactant injection, or similar may be required in the second year.

### **III. DPE Installation and Startup**

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#### **A. Installation**

The Dual Phase Extraction (DPE) system will be skid mounted in a portable enclosure. A crane (cherry picker) of appropriate capacity will be used to off load the equipment including the DPE and air pollution control system. The system will be placed as shown in the attached figures.

Existing 4” extraction wells will be modified by removing the well covers and installation of the square traffic rated vaults. Each well will be retrofitted with a stinger and valve to allow independent control of each well. (See attached details) A single trunk pipe will be routed back to the DPE. Because previous work on site revealed that product piping and other utilities are shallow (just below the slab), extraction piping will be run as shallow as possible. The concrete paving will be saw cut to install pipe, and then replaced to minimize interruption of the on-going retail operations.

Utilities installation will include power, water, and sewer:

Power will be provided by Alabama Power Company (APC) from the existing 3-phase, 208 vac service on site. The DPE is to be located adjacent to the service pole, so a direct drop from the pole to the unit is anticipated.

Water will be provided by the City of Auburn Water Resources. A standard commercial ¾” service meter installed per City of Auburn requirements will be located at the ROW. A ¾” service line will be extended to the DPE.

Sewer will also be provided by the City of Auburn Water Resources. A tap and cleanout will be installed in the service line of the store. Upon removal of the system, the sewer will be disconnected, sealed and the clean out left in service.

Installation will include start-up assistance provided by the equipment manufacturer.

### **IV. Operation and Maintenance**

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#### **A. General**

Operation of the dual phase extraction (DPE) system will require maintenance activities as described below. The major O&M activities will include start-up & shake down and then quarterly remedial progress monitoring. The start-up & shake down will occur for approximately 1 week. Remedial progress monitoring will be conducted on a quarterly basis for the duration.

#### **B. DPE System Start-up and Operation**

The start-up phase of operations will include up to 1 week of daily adjustments of the vacuum pump settings and depth of extraction tube inlet as required. The start-up phase may also include

pipings valve adjustments to balance flow between the recovery wells and optimize DPE effectiveness. In addition, vacuum readings and VOC concentrations will be recorded daily from each extraction well, the DPE inlet, and from the effluent stack.

The DPE will be operated continuously. Individual wells may be operated independently via individual valves to maximize recovery and/or coverage area. High concentrations are anticipated initially in the vapor phase, to prevent overload of the DPE or oxidizer, some wells may not be opened initially.

Additionally, extraction wells not connected to the system can be opened to allow a direct source of make-up air to the connected vacuum wells. This may create a “short circuit” extending the radius of influence in the direction of the open well and a reshape of the cone of influence.

Anticipated schedule of operation:

Quarter 1 – Wells north of tank pit (EW-10 to 14, and EW-7)

Quarter 2 – Add wells south of tank pit (IW-2R, EW-3, EW-15, and EW-16)

Quarter 3 – Open one extraction well not connected to the vacuum system each week and close the previous open well so only one well is open at a time. Close vacuum extraction wells south of the tank pit as necessary to maintain vacuum.

Quarter 4 – Repeat the above sequence.

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## **C. DPE System Monitoring & Maintenance**

Activities associated to monitoring and maintenance is proposed to be conducted on a weekly, monthly, and yearly basis. Unforeseen but inevitable mechanical breakdown may require more frequent site visits and repair.

### ***Weekly Maintenance Schedule***

1. Check the product tank level and empty if necessary.
2. Note and record the backpressure of the Stripper blower. A high backpressure indicates that the aeration tubes need to be cleaned.
3. Monitor the operation of the Stripper effluent pump and note the reading of the totalizing flow meter.
4. Drain solids from AWS-1 and AWS-2.
5. Note the reading of the effluent totalizing flow meter
6. Back flush seal water lines using Hand mode on tap water control in panel. Shut off liquid ring pump and close main ball valve on liquid ring. Open drain valve on AWS2. Let run 5 minutes. Reverse procedure and restart system.

### ***Monthly Maintenance Schedule***

1. Inspect the OWS packing, clean if necessary.
2. Inspect the aeration tubes in the Stripper, clean if necessary.
3. Grease the bearings on the liquid ring pump (every other month). Give each grease fitting 2 shots of grease.

4. Clean and flush the seal water system.
5. Check and clean the effluent totalizing flow meter.
6. Check and clean conductivity level probe rods in AWS-1 and Stripperator sump.
7. Clean radiator of dust, dirt, leaves, etc.

***Quarterly Maintenance Schedule (as needed)***

1. Clean the Stripperator aeration tubes.
2. Clean Stripperator OWS packing and drain solids from the bottom of the OWS chamber
3. Acid clean all transfer pumps.
4. Clean solids from the Stripperator effluent sump.
5. Acid clean the liquid ring pump.
6. Tighten all electrical connections in the control panel.
7. Check all electrical connections at the motor junction box. Check the wires for corrosion.
8. Grease all motors
9. Check heat exchangers and hoses for buildup. Replace as required.
10. Test high level and high temperature sensors and alarms
11. Test E stop button
12. Calibrate vacuum transducer. Turn span screw to adjust
13. Test AWS2 water level controls

***Yearly Maintenance Schedule***

1. Replace transfer pump mechanical seals and check valves
2. Replace seal water hoses
3. Inspect AWS2 construction

**System Performance Monitoring**

Phase	Monitoring Frequency	Parameter	Units	Location	Sampling Point
Start-up (7-10 days)	Daily	Groundwater elevation	ft	All on-site monitoring wells	
		Vacuum readings	in Hg	Inlet and well	Gauge
		Vapor concentrations, VOCs	ppm	Inlet and both exhaust (prior and post APC)	PID
		Flow (extracted gw)	gallons	Influent totalizer	Meter
		Flow (treated water)	gallons	Effluent totalizer	Meter
		Pressure	PSI	Blower	Gauge
Remedial Progress	Monthly	Vacuum readings	in Hg	Inlet and well	Gauge
		Pressure	In gw	Blower	Gauge
		Flow (extracted gw)	gallons	Influent totalizer	Meter
		Flow (treated water)	gallons	Effluent totalizer	
		Vapor concentrations, VOCs	ppm	Inlet and both exhaust (prior and post APC)	PID
		GW influent concentration, BTEX, MTBE,	ug/L	AWS-1 sample port	
		GW effluent concentrations, BTEX, MTBE,	ug/L	Air stripper sump sample port	
		Vapor concentrations, VOC	mg/m <sup>3</sup>	Exhaust (prior to APC)	Tedlar bag
		Vapor extraction flow rate	acfm	AWS-3 stack and air stripper stack	
		Flow (extracted gw)	gallons	Influent totalizer	
Flow (treated water)	gallons	Effluent totalizer			
		Remedial Progress monitoring		See Section D	

---

## **D. Remedial Progress Monitoring**

Groundwater monitoring will be conducted to evaluate remedial progress. Frequency of GWM is proposed quarterly for the first 3 years. Frequency of monitoring will be reevaluated after 1 years and adjusted accordingly. Each monitoring event will involve collection and analysis of groundwater samples from monitoring wells MW-2R, 3, 7, EW-1, EW-9, IW-3 and IW-5. Monitoring wells that have historically been BDL or redundant, are not to be included in the regular quarterly sampling. During the fourth quarter, all wells not used for extraction will be sampled as well as collecting stream samples. These additional wells include; MW-1, 4, 5, 6, EW-5, 6, 8, IW-1 and IW-4.

Laboratory analytical parameters will include:

- BTEX, MTBE, and Naphthalene Method 8260.

### ***Frequency of Monitoring***

Groundwater will be monitored quarterly for the duration of the system. Based on site trends and characteristics, the suite of wells sampled will be reviewed annually, or as directed by the Department. Groundwater monitoring should continue until effectiveness of remediation is confirmed and site levels have stabilized near or below the ACALs.

### ***Field Methods***

Groundwater sampling procedures will involve measurement of depth to water in all sampled site monitoring wells utilizing an electronic interface probe capable of detecting 0.01 feet of floating hydrocarbons. The interface probe will be deconned with a detergent & water and then rinsed between well locations to reduce the risk of cross contamination. The depth to water data and calculated groundwater elevation data will be utilized to generate a potentiometric surface map for each sampling event. Monitoring wells with an apparent accumulation of phase-separated hydrocarbons (PSH) will not be included in the sampling event.

Purging and sampling will be performed using disposable equipment to eliminate the need for decontamination and reduce the risk of cross contamination. The monitoring wells will be purged of three wetted casing volumes or until dry with new disposable polyethylene bailers and new cord. Groundwater level will be allowed to stabilize prior to sample collection. Site personnel will don disposable nitrile gloves used once per well while conducting purging and sampling operations.

The quantity of purge water generated and disposal technique will be recorded and reported. Purge water will be emptied into the influent stream for treatment then discharge.

BTEX, MTBE, and Naphthalene groundwater sample containers will include 2-40 ml. The 40 ml vials will be spiked with hydrochloric acid for VOC preservation. In addition, sample containers will be appropriately labeled, bagged in re-sealable plastic and packed on ice for sample preservation.

Shipment to the analytical laboratory will be over-night delivery in an ice packed cooler or hand delivered in an ice packed cooler. A chain of custody record will accompany all sample shipments and will be included with the laboratory data sheets in the monitoring report.

Secondary lines of evidence of RNA will be determined by field measured parameter including dissolve oxygen, oxidation-reduction potential, pH, and temperature. The method(s) utilized will involve a one-time reading upon sample collection.

---

## **E. Air Monitoring**

A catalytic thermal oxidizer will be used to control vapors from the DPES. As required by the Air Division, one air sample for benzene will be collected quarterly prior to the APC. Harmon will measure VOC's weekly utilizing a PID organic vapor analyzer prior to, and after the APC.

## V. Reporting Requirements

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### A. General

One report will be prepared and submitted to ADEM UST Corrective Action Section for each major scope of work which corresponds to a specific Cost Proposal. These include:

- System Purchase Report, CP 64
- Installation and Start-up, CP 65
- Quarterly Remedial Progress Monitoring, CP 66
- Quarterly Remedial Progress Monitoring, CP 67
- Quarterly Remedial Progress Monitoring, CP 68
- Quarterly Remedial Progress Monitoring, CP 69

At the conclusion of one year of remedial monitoring, four additional Cost Proposals will be submitted for continued quarterly remedial monitoring, if needed.

---

### B. System Purchase Report, CP 64

Within 7 days of delivery of the equipment, a letter report will be prepared and submitted to the ADEM UST Corrective Action Section. The report will include replacement parts, list of equipment vendors and description of the equipment.

---

### C. Installation and Start-up Report, CP 65

Start-up notification will be submitted within 15 days of system start-up. Notification will consist of written notification to the ADEM Corrective Action Project Manager.

---

### D. Remedial Progress Monitoring Report(s), CP 66-69

Remedial monitoring and reporting are proposed quarterly for three years. Remedial monitoring reports will be completed and submitted to the ADEM UST Corrective Action Section and will include:

- Summary of field activities
- Original laboratory analytical reports and chain of custody records
- Water elevation measurements
- VOC concentrations at intake and outlet of bio-vent pipes measured with PID
- Appropriate site maps
- Comparison of groundwater concentration levels to the site specific ACALs
- Analytical results of groundwater, influent, and effluent samples
- Water level measurements,
- discharge rates and volumes,
- ADEM form System Effectiveness Monitoring Report,
- Discussions of any modifications or changes to the system

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**E. Air Division Semi-Annual Remediation Report(s)**

A Semi-Annual Remediation Report will be submitted to the ADEM Air Division when required. Copies of the report will be included in the Corrective Action Effectiveness Report.

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**F. Site Closure Report**

Upon confirmation of achieving site specific ACALs, and/or at the request of ADEM, all wells will be properly abandoned for site closure. Abandonment of the DPE system will also be conducted. Results of the abandonment and other site restoration activities will be summarized in a Site Closure Report for submittal to the ADEM UST Corrective Action Section.

## VI. Schedule of Implementation

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### Implementation Schedule

<b>Item</b>	<b>Time Frame Field Activities</b>
Place order for major equipment	2 weeks after approval of CAP and cost proposal
Equipment Delivery	Estimated 8 to 10 weeks
Install equipment	8 weeks after delivery of equipment
Start-up	2 weeks after installation
Total	22 weeks

## **VII. Quality Assurance/Quality Control**

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### **A. Drilling and/or Soil Sampling**

Down hole tools and soil sampling devices will be deconned between bore hole locations and sample locations to reduce the risk of cross contamination. Disposable nitrile gloves will be donned while handling soil samples. Soil samples will be placed in laboratory supplied containers. These samples will then be double-bagged and placed on ice for sample preservation. Sample shipment will be priority overnight delivery in a cooler packed with double-bagged ice for sample preservation. A chain of custody record will be prepared and will accompany the sample shipment(s).

---

### **B. Groundwater Sampling**

Purging and sampling of the monitoring wells will be performed with new disposable bailers and new cord, or new tubing if peristaltic pump is used. New bailers or tubing will be used for purging and sampling to reduce the chance of cross contamination. Disposable nitrile gloves will be donned while conducting groundwater sampling operations. Groundwater samples will be placed in laboratory supplied chemically preserved containers. These samples will then be double-bagged and placed on ice for sample preservation. Sample shipment will be priority overnight delivery in a cooler packed with double-bagged ice for sample preservation. A chain of custody record will be prepared and will accompany the sample shipment(s).

---

### **C. System Operation**

Regular site visits and visual observation of the system during operation will be conducted per this plan. Operational parameters will be recorded and documented. Upon discovery of a system malfunction, corrective action will be initiated immediately. Preventive maintenance will be conducted as per manufacturers recommendation.

## VIII. Site Health & Safety Plan

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This Corrective Action Plan will be executed in accordance with the Health & Safety procedures outlined in Harmon Engineering & Construction Co., Inc.'s "Safety Handbook".

Site specific procedures required for this CAP include:

- Level "D" PPE consisting of disposable coveralls and nitrile gloves to be worn by all personnel exposed to excavated earth.
- Daily tail gate safety briefings.
- Hard hats required during drilling operations and equipment setting operations
- Ear protection shall be worn when inside the equipment enclosure.

## IX. Figures

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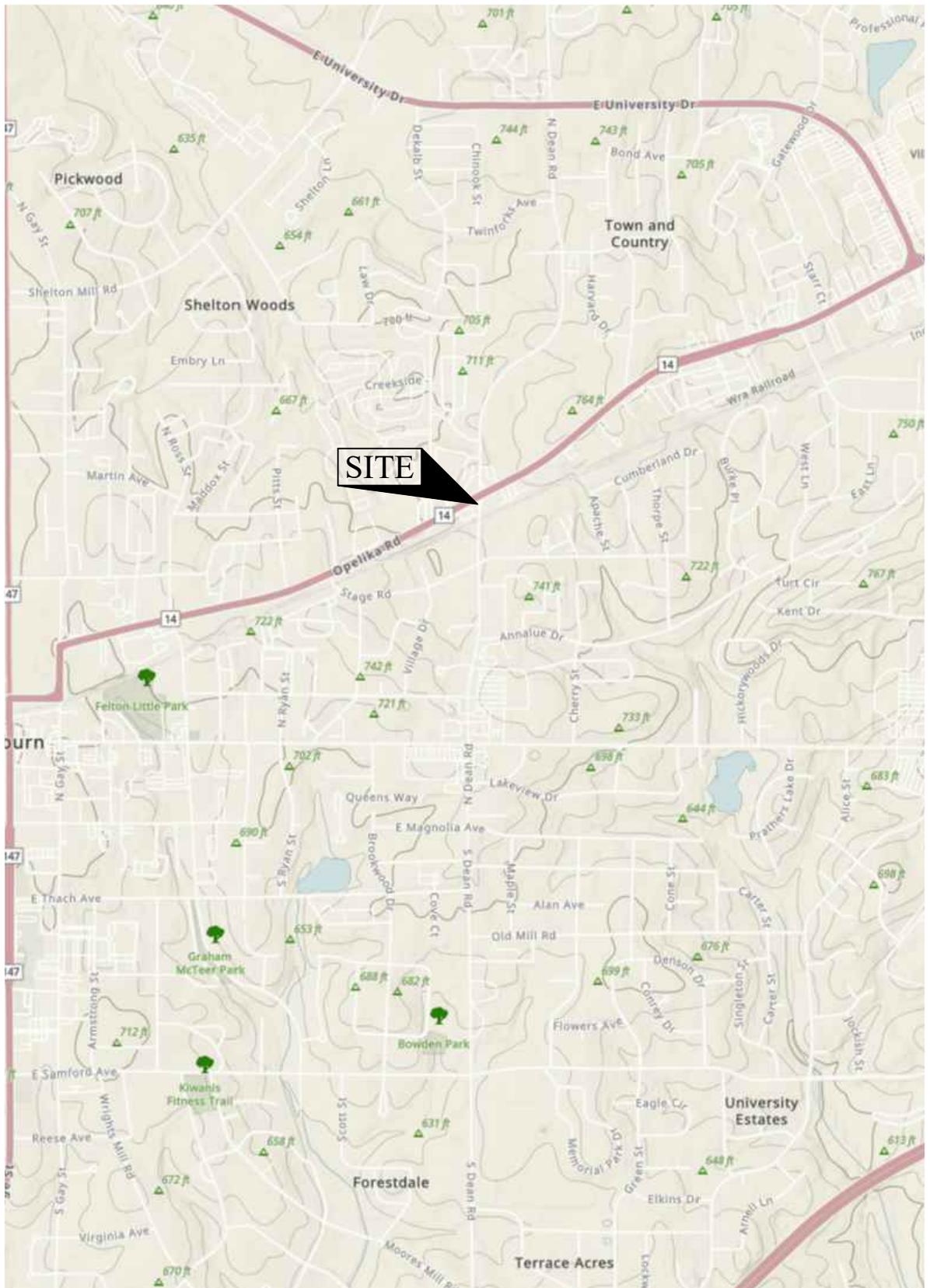
1. Location Map
2. Site Plan
3. Soil Contaminant Concentration Map
4. Potentiometric Surface Map (most recent)
5. Constituent Isoconcentration in Groundwater (most recent)
6. Dual Phase Extraction System
7. Dual Phase Extraction System
8. Dual Phase Extraction Well
9. Detail Sheet
10. Sanitary Sewer Connection & Clean Out Detail
11. VOC Control System

## **X. Appendices**

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- A. ADEM Program Forms
- B. MEME Equipment Product Recovery Table
- C. System Specifications & Schematics
- D. Air Division Permit/Approval Applications

## **FIGURES**



REFERENCE USGS TOPOGRAPHICAL MAP AUBURN, ALABAMA

LOCATION MAP

UNIVERSITY MININ MART/BIG CAT  
AUBURN, ALABAMA



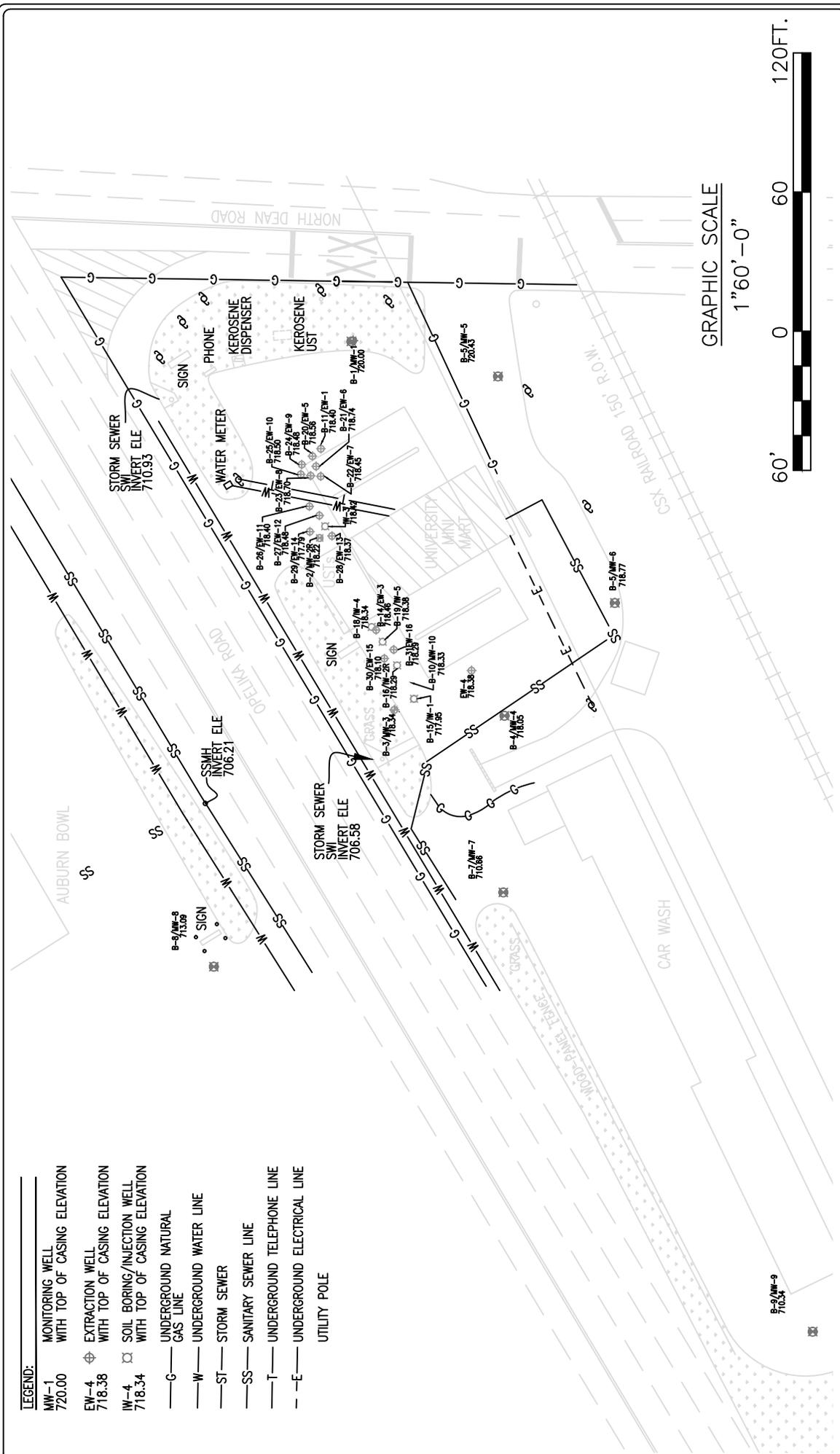
HARMON ENGINEERING & CONTRACTING CO., INC.

ENGINEERING • CONTRACTING • ENVIRONMENTAL MANAGEMENT

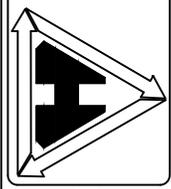
13376 C.L. Torbert, Jr. Parkway / LaFayette, Alabama 36862  
(334) 864-9135 / FAX (334) 864-8046

FIGURE NO.	PROJECT NO.	DRAWN	CHECKED	SCALE	FILENAME	DATE
1	639-01-06	GLS	MAT	1:18000	S:\STACEY\UMM\GW MONITORING.DWG	10/20/2025

- LEGEND:**
- MW-1 MONITORING WELL WITH TOP OF CASING ELEVATION 720.00
  - EW-4 EXTRACTION WELL WITH TOP OF CASING ELEVATION 718.38
  - IW-4 SOIL BORING/INJECTION WELL WITH TOP OF CASING ELEVATION 718.34
  - G UNDERGROUND NATURAL GAS LINE
  - W UNDERGROUND WATER LINE
  - ST STORM SEWER
  - SS SANITARY SEWER LINE
  - T UNDERGROUND TELEPHONE LINE
  - E UNDERGROUND ELECTRICAL LINE
  - UTILITY POLE



GRAPHIC SCALE  
1" = 60' - 0"

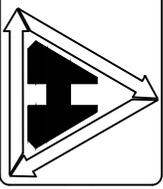
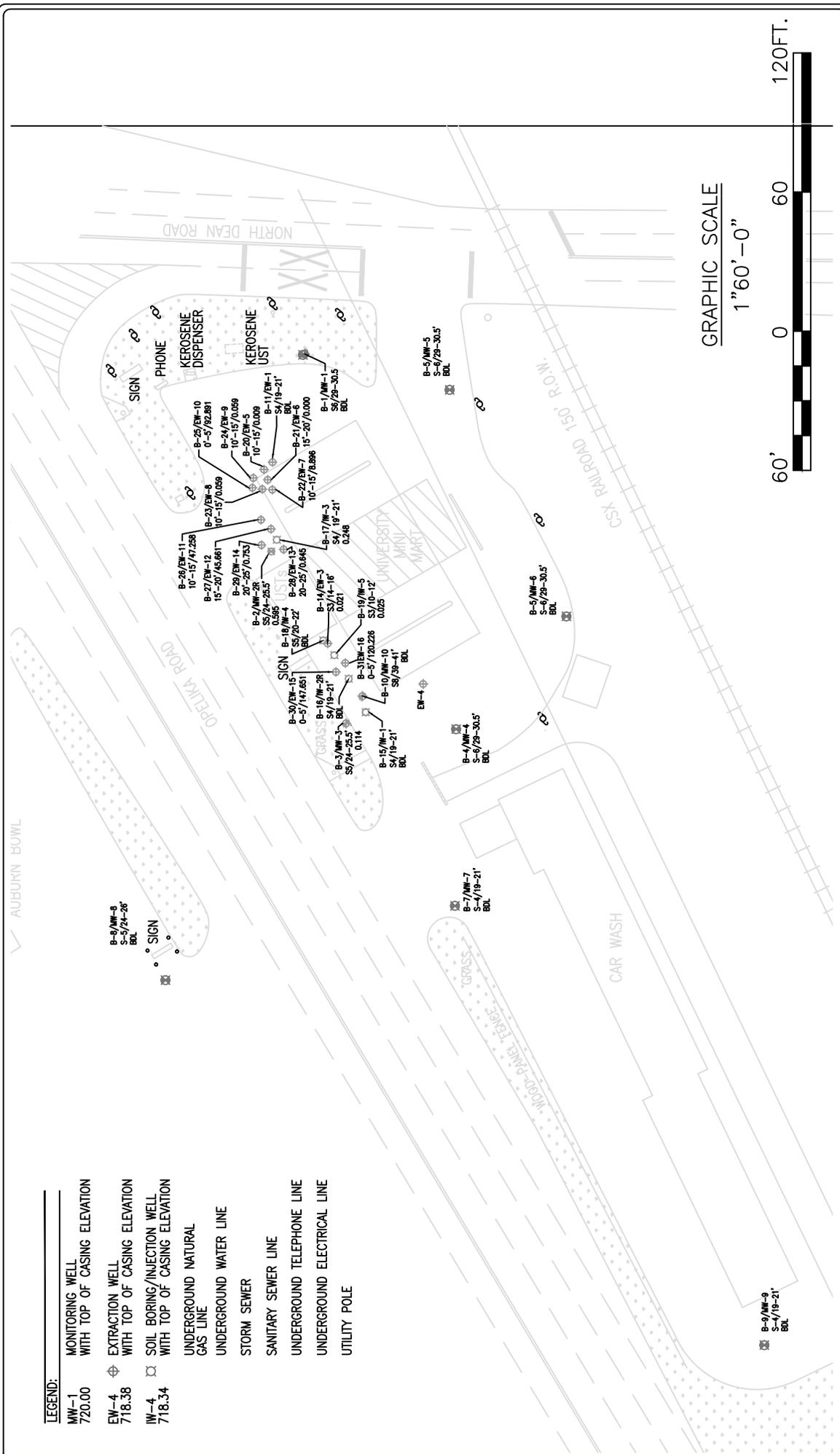


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**SITE PLAN**  
**GROUNDWATER MONITORING REPORT**  
 UNIVERSITY MINI MART/BIG CAT  
 AUBURN, ALABAMA

FIGURE NO.	PROJECT NO.	DRAWN	CHECKED	SCALE	DATE
2	639-01	GLS	MAT	1" = 60'	9/19/2025
FILENAME		DATE			
S:\USTA\639-01 University Mini Mart\		9/19/2025			
CP-63 CAP Drawings for CAP					

- LEGEND:**
- MW-1 MONITORING WELL WITH TOP OF CASING ELEVATION 720.00
  - EW-4 EXTRACTION WELL WITH TOP OF CASING ELEVATION 718.38
  - IW-4 SOIL BORING/INJECTION WELL WITH TOP OF CASING ELEVATION 718.34
  - UNDERGROUND NATURAL GAS LINE
  - UNDERGROUND WATER LINE
  - STORM SEWER
  - SANITARY SEWER LINE
  - UNDERGROUND TELEPHONE LINE
  - UNDERGROUND ELECTRICAL LINE
  - UTILITY POLE



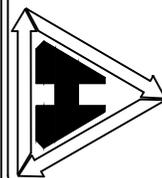
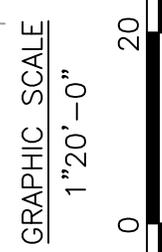
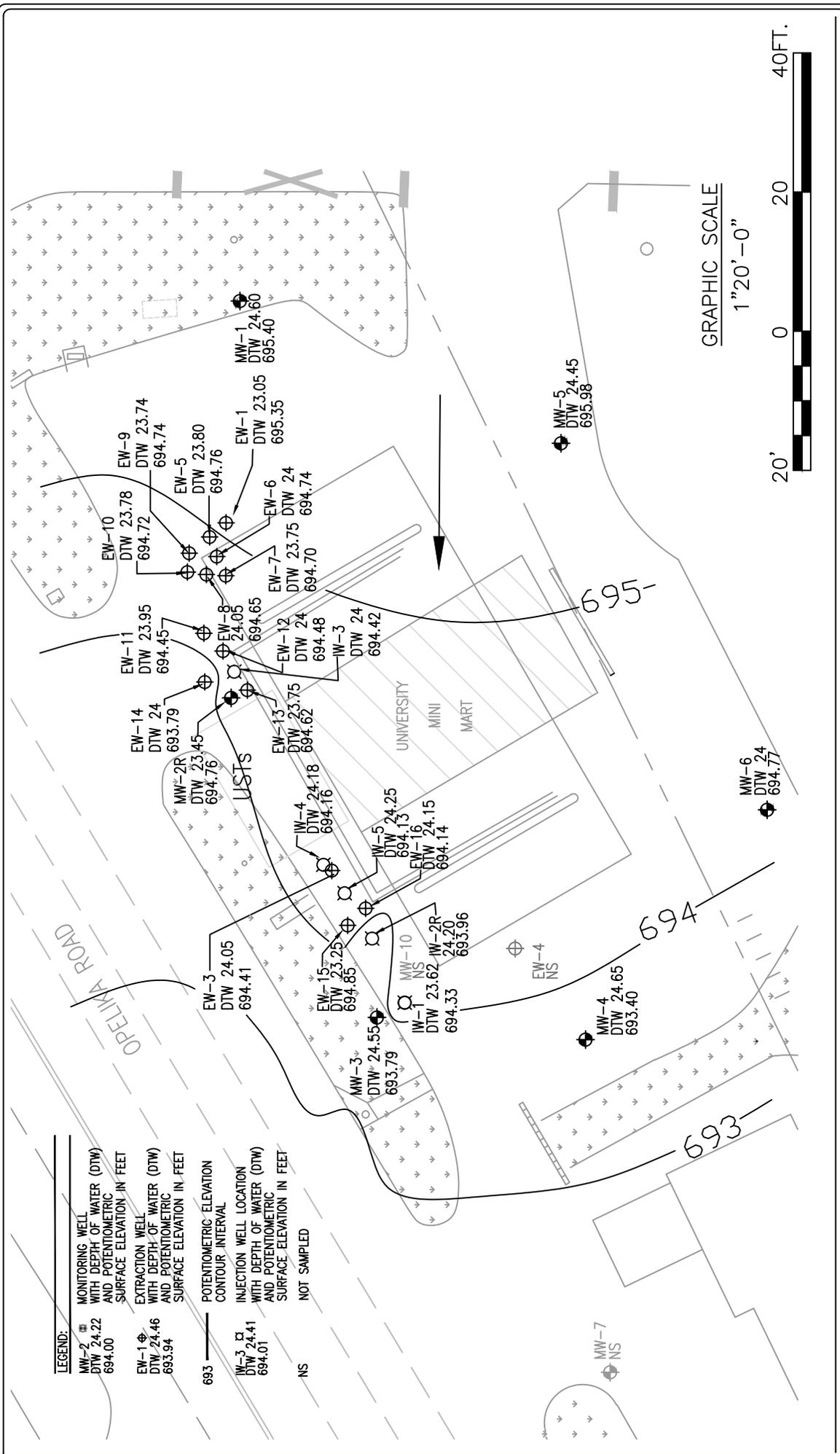
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**SOIL CONTAMINANT CONCENTRATION MAP  
 PRELIMINARY INVESTIGATION  
 UNIVERSITY MINI MART/BIG CAT  
 AUBURN, ALABAMA**

FIGURE NO.	PROJECT NO.	DRAWN	CHECKED	SCALE	FILENAME	DATE
3	639-01	GLS	MAT	1" = 60'	S:\USTA\639-01 University Mini Mart\CP-63 CAP\Drawings for CAP	9/19/2025

**LEGEND:**

- MW-2  WITH DEPTH OF WATER (DTW) AND POTENTIOMETRIC SURFACE ELEVATION IN FEET  
DTW 24.22  
694.00
- EW-1  WITH DEPTH OF WATER (DTW) AND POTENTIOMETRIC SURFACE ELEVATION IN FEET  
DTW 24.46  
693.94
- 693  POTENTIOMETRIC ELEVATION CONTOUR INTERVAL
- IW-3  INJECTION WELL LOCATION AND POTENTIOMETRIC SURFACE ELEVATION IN FEET  
DTW 24.41  
694.01
- NS NOT SAMPLED

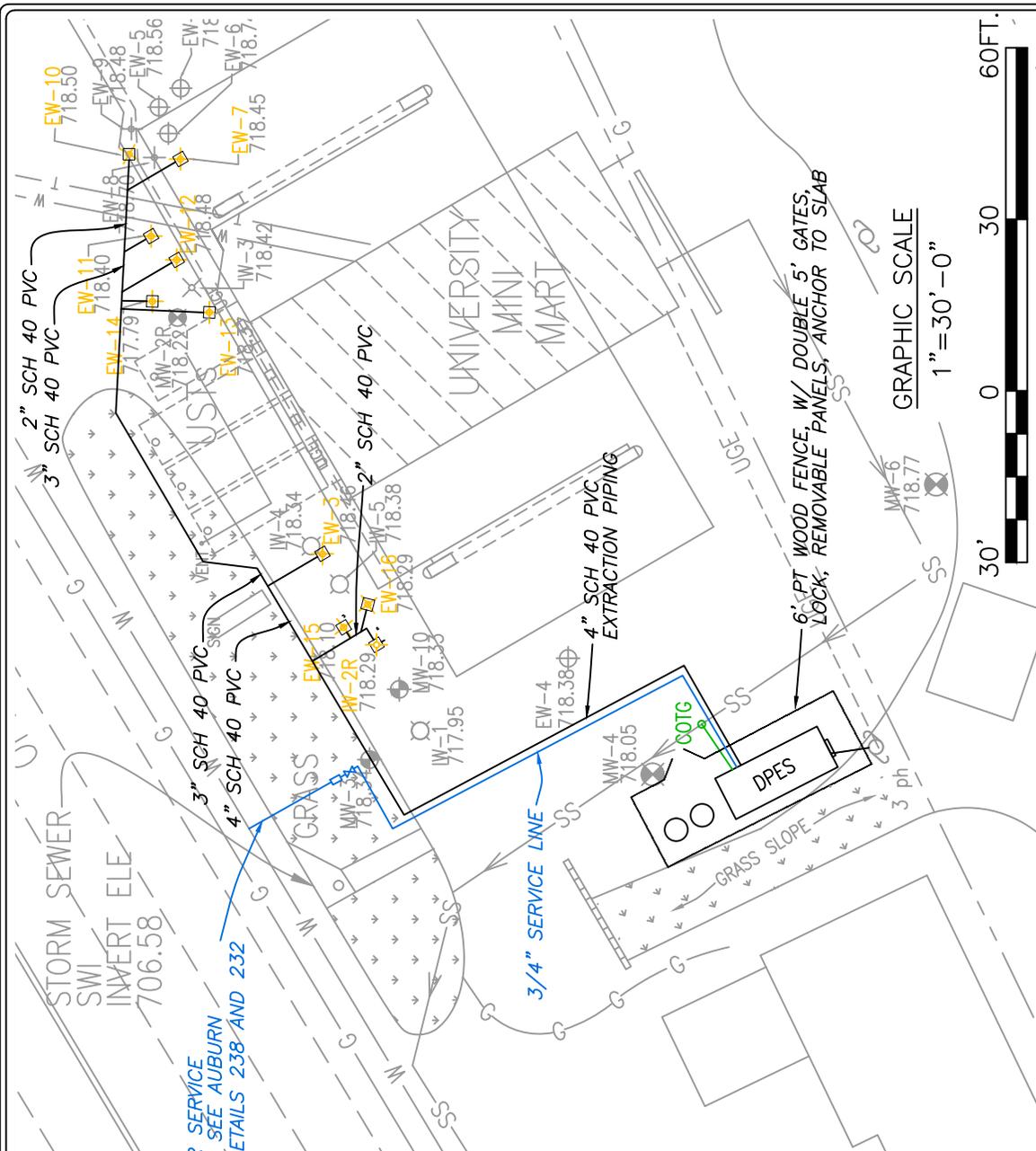


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**POTENTIOMETRIC SURFACE ELEVATION MAP  
 GROUNDWATER MONITORING REPORT  
 UNIVERSITY MINI MART/BIG CAT  
 AUBURN, ALABAMA**

FIGURE NO. 4	PROJECT NO. 639-01	DRAWN GLS	CHECKED MAT	SCALE 1" = 20'	FILENAME S:\UTA\639-01 University Mini Mart\CP-63 CAP\Drawings for CAP	DATE 9/19/2025
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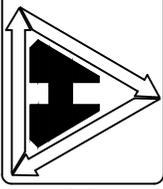


3/4" WATER SERVICE AND METER, SEE AUBURN STANDARD DETAILS 238-AND 232

**LEGEND:**

- MW-1 720.00 MONITORING WELL WITH TOP OF CASING ELEVATION
- EW-4 718.38 EXTRACTION WELL WITH TOP OF CASING ELEVATION
- EW-4 718.38 EXTRACTION WELL, ELEVATED SOIL OR GW
- IW-4 718.34 SOIL BORING/INJECTION WELL WITH TOP OF CASING ELEVATION
- IW-4 718.34 SOIL BORING/INJECTION WELL ELEVATED SOIL OR GW, W/ TOC EL.
- UNDERGROUND NATURAL GAS LINE
- UNDERGROUND WATER LINE
- STORM SEWER
- SANITARY SEWER LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND ELECTRICAL LINE
- UTILITY POLE

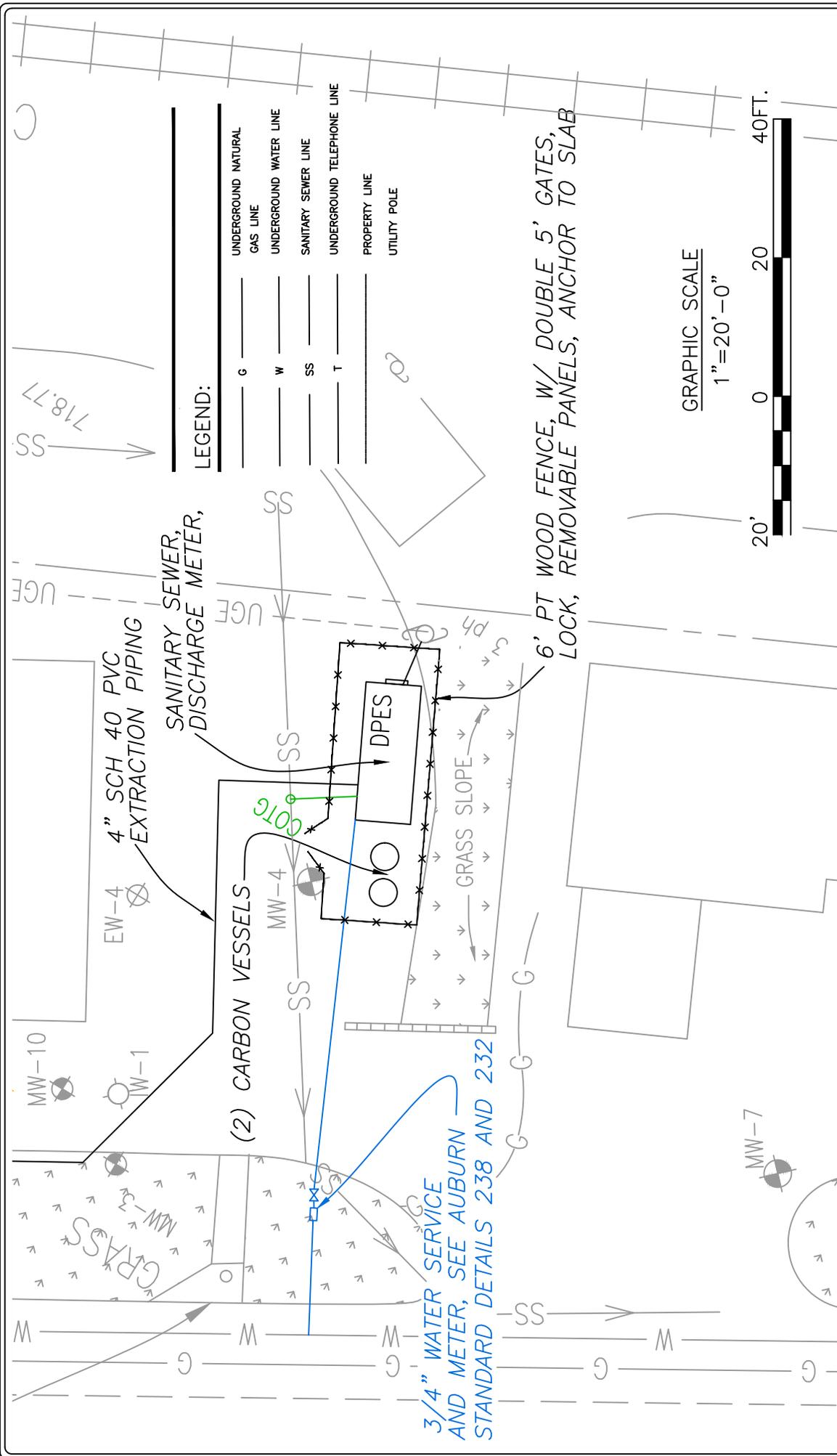
**SITE PLAN**  
**DUAL PHASE EXTRACTION SYSTEM**  
**UNIVERSITY MINI MART/BIG CAT**  
**AUBURN, ALABAMA**



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FIGURE NO.	6	PROJECT NO.	639-01	DRAWN	GLS	CHECKED	MAT	SCALE	1" = 30'	FILENAME	S:\UST1639-01 University Mini Mart\CP-63 CAP	
											DATE	10/20/2025





LEGEND:

- G — UNDERGROUND NATURAL GAS LINE
- W — UNDERGROUND WATER LINE
- SS — SANITARY SEWER LINE
- T — UNDERGROUND TELEPHONE LINE
- — PROPERTY LINE
- — UTILITY POLE

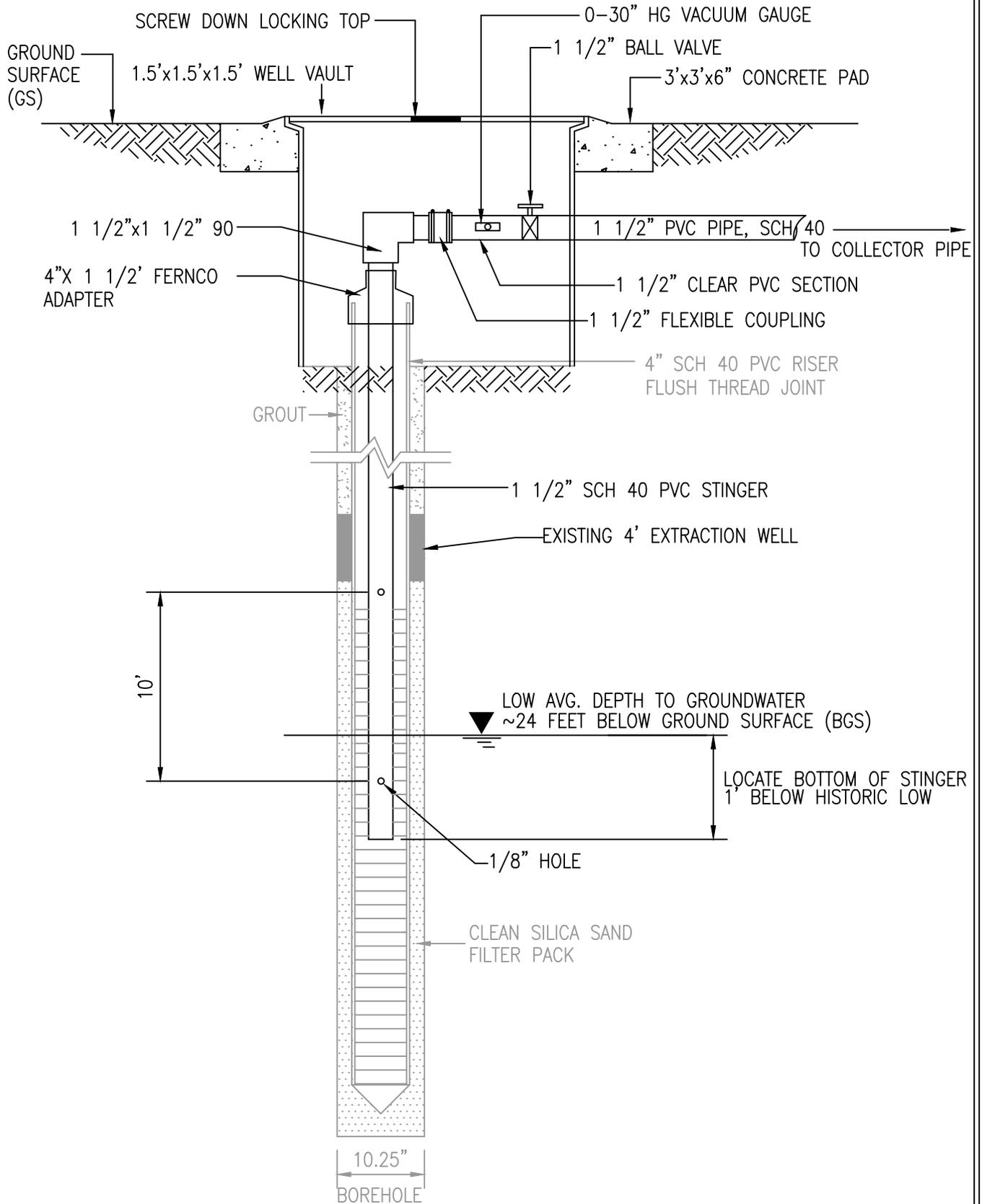
GRAPHIC SCALE  
1" = 20' - 0"



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**SITE PLAN**  
**DUAL PHASE EXTRACTION SYSTEM**  
 UNIVERSITY MINI MART/BIG CAT  
 AUBURN, ALABAMA

FIGURE NO.	7	PROJECT NO.	639-01	DRAWN	GLS	CHECKED	MAT	SCALE	1" = 20'	FILENAME	S:\UST\639-01 University Mini Mart\CP-63 CAP	DATE	10/20/2025
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DUAL PHASE EXTRACTION WELL  
CORRECTIVE ACTION PLAN

ALAMO FIREWORKS  
LANETT, ALABAMA



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FIGURE NO.  
8

PROJECT NO.  
639-01

DRAWN  
GLS

CHECKED  
MAT

SCALE  
N.T.S.

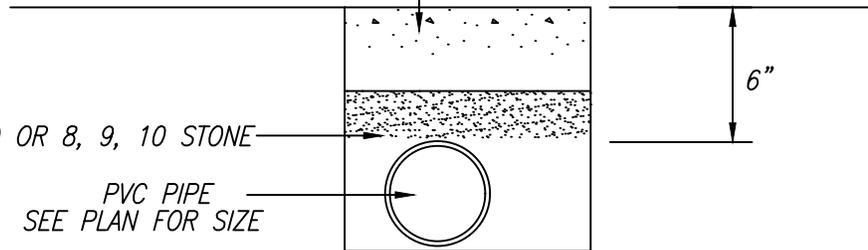
FILENAME  
S:\UST\639-01UMM  
\CP-63CAP

DATE  
20 OCT. 2025

CONCRET PAVING, 5" THICK  
(EXISTING PAVED AREAS ONLY)

SAND OR 8, 9, 10 STONE

PVC PIPE  
SEE PLAN FOR SIZE



TYPICAL TRENCH CROSS-SECTION FOR VACUUM PIPING

N.T.S.

DETAIL SHEET  
CORRECTIVE ACTION PLAN

UNIVERSITY MINI MART / BIG CAT  
AUBURN ALABAMA



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FIGURE NO.  
9

PROJECT NO.  
639-01

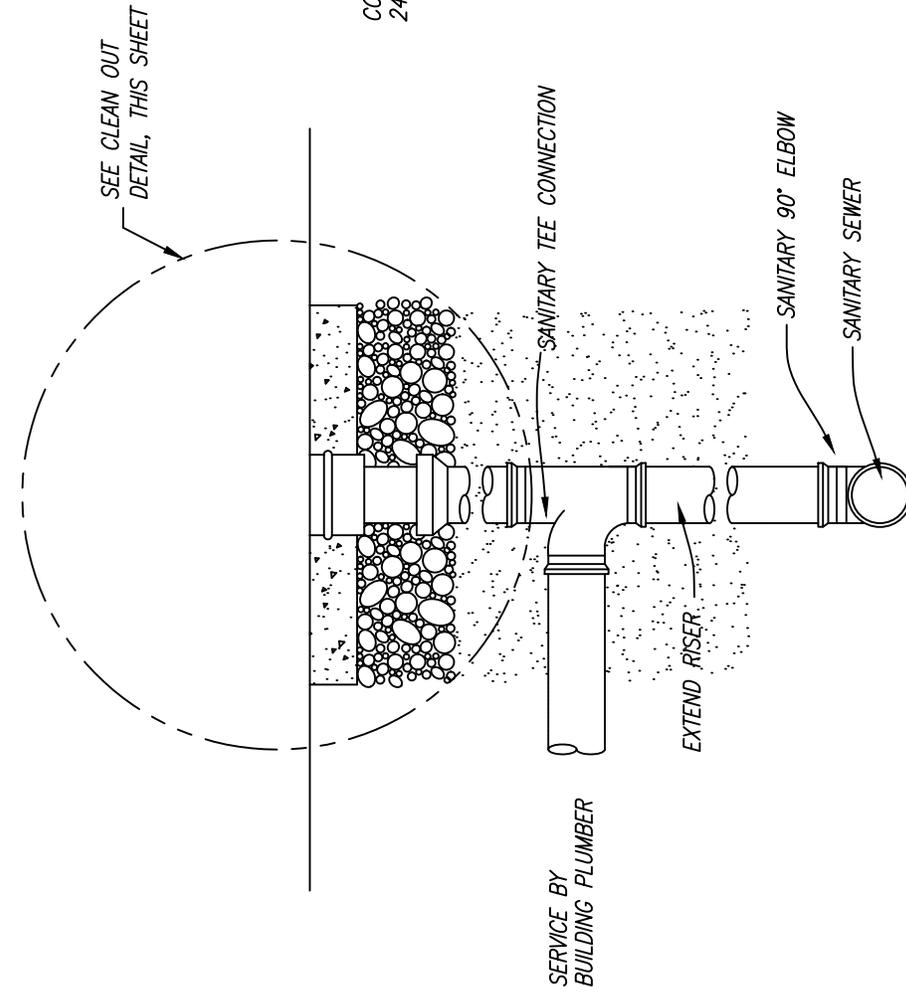
DRAWN  
GLS

CHECKED  
MAT

SCALE  
NONE

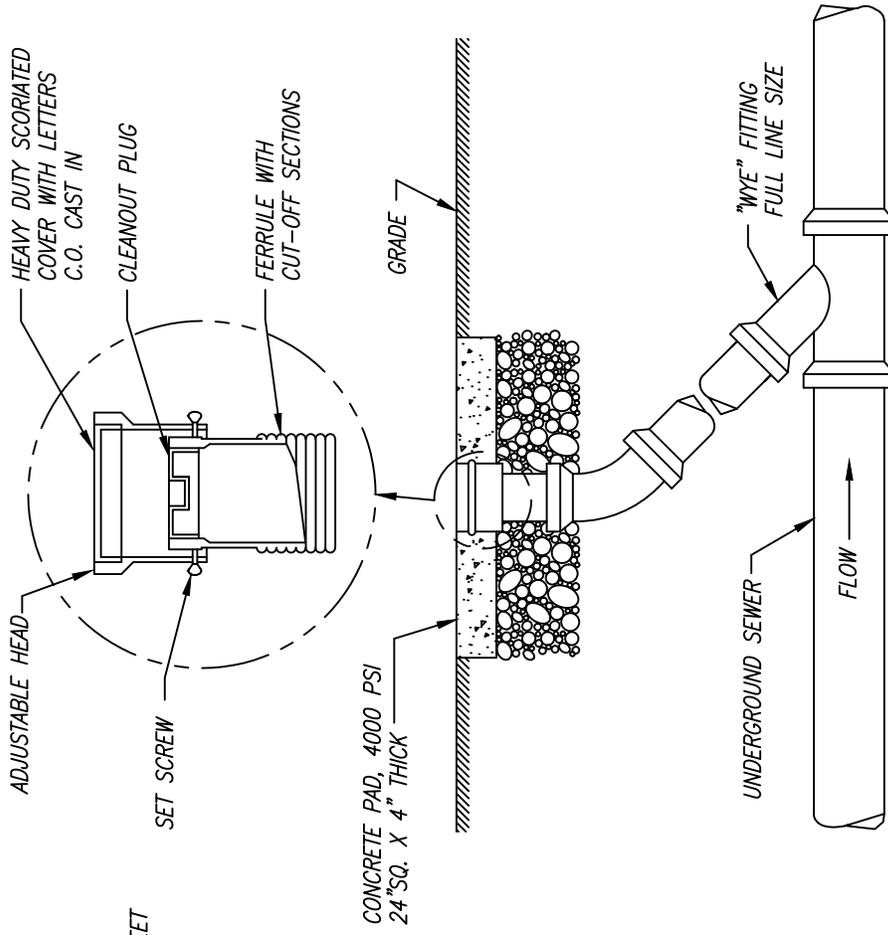
FILENAME  
S:\UST\639-01UMM\  
CP-63CAP

DATE  
20 OCT. 2025



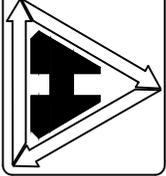
CONNECTION AT BUILDING SANITARY SEWER

N.T.S.



SANITARY SEWER CLEAN OUT AND CONNECTION DETAIL

N.T.S.



**HARMON ENGINEERING & CONTRACTING CO., INC.**

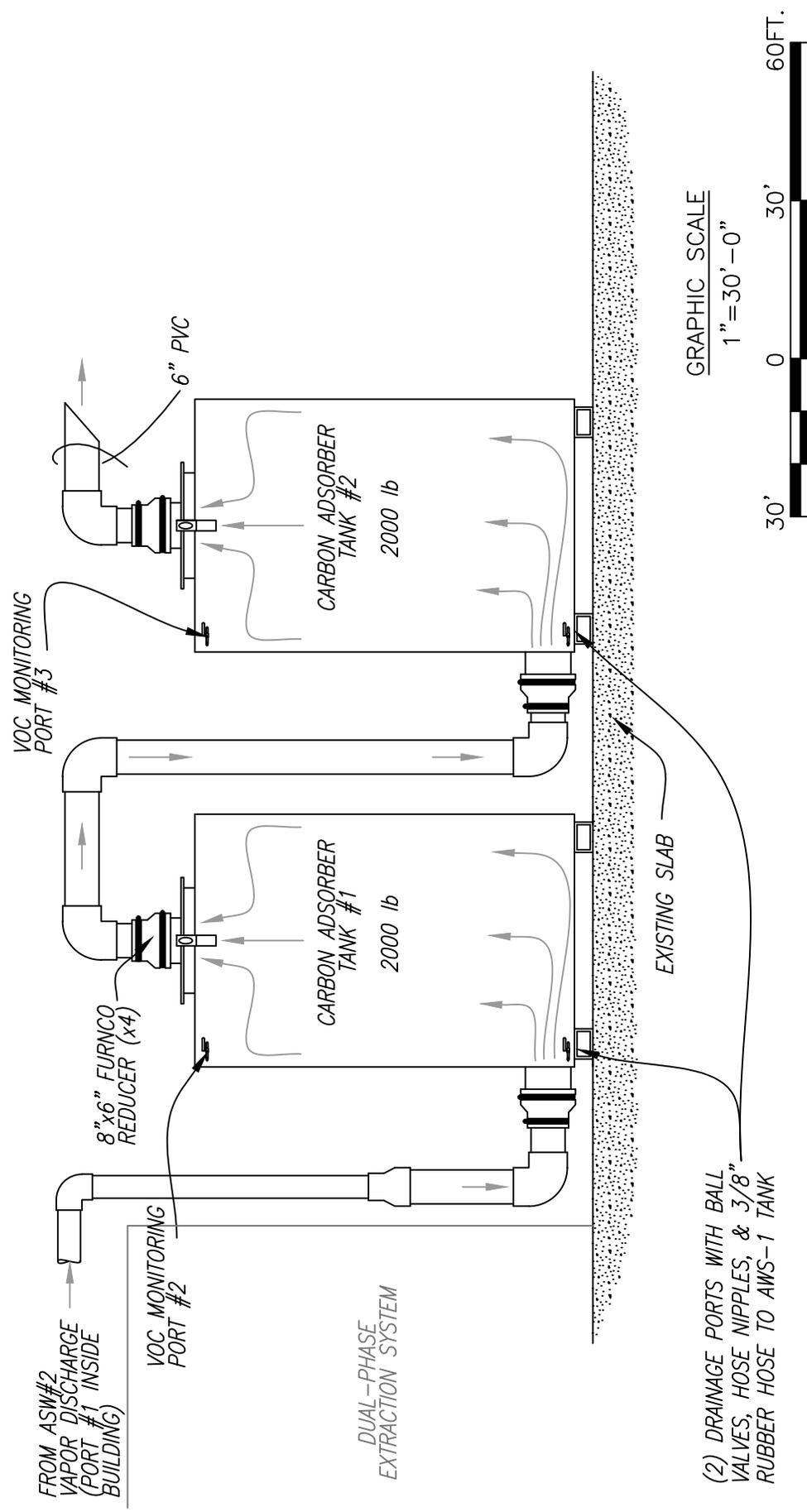
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SANITARY SEWER CONNECTION AND CLEAN OUT DETAIL  
CORRECTIVE ACTION PLAN

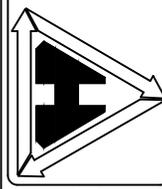
UNIVERSITY MINI MART/BIG CAT  
AUBURN, ALABAMA

FIGURE NO. 10	PROJECT NO. 639-01	DRAWN GLS	CHECKED MAT	SCALE N.T.S.	FILENAME S:\JUST\639-01 University Mini Mart	DATE 20 OCTOBER 2025
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**VOC CONTROL SYSTEM  
SYSTEM INSTALLATION**

UNIVERSITY MINI MART/ BIG CAT  
LANETT, ALABAMA



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FIGURE NO.	PROJECT NO.	DRAWN	CHECKED	SCALE	FILENAME	DATE
11	639-01	GLS	MAT	1" = 30'	S:\UST\639-01\UMM\CP-63 CAP\Drawings for CAP	20 OCTOBER 2025

**ATTACHMENT A**  
**ADEM PROGRAM FORMS**

# UST RELEASE FACT SHEET

## GENERAL INFORMATION:

SITE NAME: University Mini Mart/Big Cat

ADDRESS: 740 Opelika Road, Auburn, AL

FACILITY I.D. NO.: 22171-081-009103

UST INCIDENT NO.: UST06-02-10

## RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 ft. of site?	None
How many public water supply wells are located within 1 mile of the site?	None
Have any drinking water supply wells been impacted by contamination from this release?	None Known
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What is the type of surrounding population?	Light Industrial, Commercial

## CONTAMINATION DESCRIPTION:

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

Free product present in wells?  Yes    No   Maximum thickness: N/A

Maximum TPH concentrations measured in soil: 220 PPM in PI

Maximum BTEX or PAH concentrations measured in groundwater: BTEX 156.6 PPM (IW-3) 12/12/2019

ADEM GROUNDWATER BRANCH  
 UST SITE CLASSIFICATION SYSTEM  
 CHECKLIST

Please read all 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: University Mini Mart/Big Cat  
 SITE ADDRESS: 740 Opelika Road  
Auburn, Lee County, Alabama  
 FACILITY I.D. NO.: 22171-081-009103  
 UST INCIDENT NO.: UST06-02-10

OWNER NAME: Dr. Reddy Munagala  
 OWNER ADDRESS: P.O. Box 628  
Auburn, AL 36831

NAME & ADDRESS OF PERSON  
 COMPLETING THIS FORM: Collin Sharpe  
Harmon Engineering  
13376 C. L. Torbert Jr Parkway  
LaFayette, AL 36862

<i>CLASSIFICATION</i>	<i>DESCRIPTION</i>	<i>YES</i>	<i>NO</i>
<b>CLASS A</b>	<b>IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR</b>		
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"/>
<b>CLASS B</b>	<b>IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR</b>		
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"/>
<b>CLASS C</b>	<b>IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR</b>		
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"/>

<b>CLASSIFICATION</b>	<b>DESCRIPTION</b>	<b>YES</b>	<b>NO</b>
<b>CLASS D</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
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"/>
<b>CLASS E</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
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"/>
<b>CLASS F</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.	<input type="checkbox"/>	<input checked="" 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"/>
<b>CLASS G</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>CLASS H</b>	<b>SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
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"/>
<b>CLASS I</b>	<b>LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS</b>		
I.1.	Site has contaminated soils and/or groundwater but does not meet any of the above-mentioned criteria.	X	

***ADDITIONAL COMMENTS:***

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**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:	<b>I.1</b>
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ADEM GROUNDWATER BRANCH  
SITE CLASSIFICATION CHECKLIST  
(5/8/95)

**ATTACHMENT B**

**MEME EQUIPMENT PRODUCT RECOVERY  
TABLE**

**Table 4****Mobile Enhanced Multi Phase Extraction**

<b>Event #</b>	<b>Date</b>	<b>Duration</b>	<b>Extraction Point</b>	<b>Equivalent F.P. Removed</b>
1	5/6/2009	8 Hours	MW-2,MW-3	1.8
2	2/26/2010	8 Hours	MW-2,MW-3	2
3	7/6/2010	8 Hours	EW-1, 3, 4	3.8
4	11/18/2010	8 Hours	MW-2,MW-3,EW-3	1.4
5	1/5/2011	8 Hours	MW-2,MW-3,EW-3	1.3
6	11/14/2011	8 Hours	MW-2,MW-3,EW-3	3.3
7	2/16/2012	8 Hours	MW-2,3,EW-3,4	5.7
8	11/8/2018	8 Hours	MW-2, EW-3, IW-3	6.4
9	12/12/2018	8 Hours	MW-2, EW-3, IW-3	4.1
10	2/9/2021	8 Hours	MW2, EW3, IW3, IW4, IW5	12
11	3/17/2021	8 Hours	MW2, EW3, IW3, IW4, IW5	11
12	7/22/2021	8 Hours	MW2, EW3, IW3, IW4, IW5	10
13	9/23/2021	8 Hours	MW2, EW3, IW3, IW4, IW5	10
14	1/6/2022	8 Hours	MW2, EW3, IW3, IW4, IW5	8.7
15	2/9/2022	8 Hours	MW2, EW3, IW3, IW4, IW5	8.7
16	3/16/2022	8 Hours	MW2, EW3, IW3, IW4, IW5	6.3
17	4/14/2022	8 Hours	MW2, EW3, IW3, IW4, IW5	6
18	5/5/2022	8 Hours	MW2, EW3, IW3, IW4, IW5	5
19	7/27/2022	8 Hours	EW3, IW3, IW4, IW5, MW2	4
20	9/21/2022	8 Hours	EW3, IW3, IW4, IW5, MW2	7.2
21	10/5/2022	8 Hours	EW3, IW3, IW4, IW5, MW2	5.1
22	2/22/2023	8 Hours	EW3, IW2, IW3, IW4, IW5, MW2	5.9
23	3/2/2023	8 Hours	EW3, IW2, IW3, IW4,IW5, MW2	5.5
24	3/15/2023	8 Hours	EW3, IW2, IW3, IW4, IW5, MW2	5.1
25	8/6/2024	8 Hours	EW5, EW6, EW7, EW8, EW9, EW10, EW11, EW12, EW13, EW14, EW15,EW16, IW2R, IW3, IW4, IW5	155
26	8/21-22/24	8 Hours	EW13, EW14, EW15, EW16, IW2R, IW3 IW4, IW5, EW5, EW6, EW7, EW8, EW9, EW10, EW11, EW12	174
27	3/26-27/25	8 Hours	EW13, EW14, EW15, EW16, IW2R, IW3 IW4, IW5, EW5, EW6, EW7, EW8, EW9, EW10, EW11, EW12	152
28	6/11-12/25	8 Hours	EW13, EW14, EW15, EW16, IW2R, IW3 IW4, IW5, MW-2R, MW-3, EW5, EW6, EW7, EW8, EW9, EW10, EW11, EW12	140
29	9/22-23/25	8 Hours	EW-13, EW-15, EW-16, IW-2R, MW-3	74

30	9/29-30/25	8 Hours	EW-5, EW-6, EW-7, EW-8, EW-9, EW-10, EW-11, EW-12, EW-14	181
<b>TOTAL</b>				1016.3

**ATTACHMENT C**

**SYSTEM SPECIFICATIONS & SCHEMATICS**

# MK ENVIRONMENTAL INC.

765 Springer Drive  
Lombard, IL. 60148-6412  
630-292-5472

[jgiltz@mkenv.com](mailto:jgiltz@mkenv.com)

# QUOTATION

Date 2/11/2026  
Quote No. 225085B  
Reference Mini Mart Auburn  
Page No. 1 of 2  
Freight Included  
Terms See Notes  
Ship Via FLATBED  
F.O.B. Factory

SOLD TO:	SHIP TO:
Allen Tucker Harmon Engineering 13376 CL Torbert Jr. Pkway LaFayette, LA. 36862 334-864-9135	University Mini Mart 740 Opelika Road Opelika, AL.

Quotation valid for 30 days

QUANTITY		UNIT PRICE	AMOUNT
	200 amp 3/60/230 volt 4 wire plus ground electrical service Brought to NEMA 3R control Panel Interior electrical will comply with NEC requirements for Class 1, Division 2, Group D Hazardous locations Motors will be TEFC construction  <b>MK Refurbished DPVE System Remediation Package Including:</b>		
1	40 HP single stage oil sealed liquid ring blower or equal ~490 ACFM @ 20"Hg. Capacity 3/60/230-460 volt, 40 HP TEFC motor Direct drive motor Oil Scavenge line Backpressure gauge Air/Oil Separator Temperature gauge Y strainer with clean out plug High temperature switch low and high oil level switches inlet filter inlet check valve (1) extra 5-gallon bucket of seal oil for top off	104,378.00	\$104,378.00
1	~200 gallon Air/water separator with conductivity probe level switches 10" diameter clean out ports with vacuum rated quick release lid Liquid filled vacuum gauge Vacuum assist hose tank drain valve Vacuum relief valve Dilution valve with filter/silencer Inlet screen		
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with bronze impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	MKE Model S15b Stripperator or equal 15 GPM capacity Oil/Water Separator and air stripper treatment system Coalescing separator with product skimming weir Polyethylene coalescing pack with reduced spacing for efficient oil removal Low profile air stripper with 2 hp AMCA Type B spark resistant aluminum blower Nylon tube aeration air stripper for high mass removal rates with low maintenance Low, high, and high-high sump conductivity probes 12" clean out hatch Low blower pressure alarm Blower silencer		
1	1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design manual "Pump ON" button inside building for sampling		
1	Groundwater flow totalizer with pulse output for remote totalization Flow calibration button		
1	Master Control Panel System, Including: NEMA 3R control panel with blank front cover Swing out sub panel for gauges, control operators, and switches IEC Magnetic motor starters, safety switches, H-O-A controls Control transformer (8) intrinsically safe relays, (8) alarm indicator LED's, (16) output channels Hard wired relay logic (1) exterior GFCI utility outlet		

**MK ENVIRONMENTAL INC.**

Harmon Engineering  
13376 CL Torbert Jr. Pkway

Date 2/11/2026  
Quote No. 225085B  
Reference Mini Mart Auburn  
Page No. 2 of 2

QUANTITY		UNIT PRICE	AMOUNT
1	System run time totalizing hour meter Blower low pressure alarm Anti-falsing alarm circuit to prevent nuisance tripping Auto-release restart timer for remote restarts via telemetry Three phase voltage and phase monitor Emergency E-stop LED red indicator light located on swing out sub panel Catox interlock controls  Fused Main Disconnect Includes: 200 amp disconnect box mounted to the system building (1) Weatherhead with extension pole and bracket support (1) 200 amp Electric meter socket base installed		
1	Wireless Telemetry Cellular connection Connection and monthly service fee to be billed separately Remote restart and shut down capabilities Data logging and alarm call out via text or email Wireless service will be supported and billed through MKE @ \$160+tax/mo. (subject to change)		
1	Vacuum transducer integrated into telemetry system for real time monitoring, 4-20mA		
1	System building 8.5'W x 12'L or 16'L x 9.5'H aluminum/steel enclosure, fully insulated with Removable sliding wall panels for ease of maintenance Exterior grade plywood floor, structural steel frame Includes 100 watt XP interior light, and removable center grate for ease of maintenance The breaker panel and control panel will be mounted on a vertical steel bracket attached to platform end. The bracket, panels and all conduits will allow for the removal of the enclosure panels by one person. 10" structural steel base with 4" steel cross members Steel corner posts and roof frame Continuous sheet aluminum roof for superior protection 12,000 BTU XP heater with XP thermostat. All components fully piped, wired and factory tested		
1	Equipment Electrical Installation Includes XP wiring, XP seal off connectors, liquid tight flexible conduit		
1	Equipment Mechanical Installation Includes mounting, piping and connectors		
	<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. Payment terms for the MK DPVE system package above will be pay when paid up to 180 days or two weeks after ADEM reimbursement which ever comes first.</li> <li>2. Telemetry remote connection and monitoring monthly service \$160.00/mo plus sales tax Billed monthly on the first of the month following successful factory wet testing. (subject to change)</li> <li>3. Refurbished equipment warranty is six (6) months after shipment from MK factory.</li> </ol> <p><b>MK Environmental Rental Option:</b></p> <ol style="list-style-type: none"> <li>1. MKE rental of the above DPVE system for a minimum of twelve (12) months at \$5,405.00 per/mo Month to month thereafter at the same rate until returned to MK factory.</li> <li>2. DPVE rental clock starts the day of shipment from MKE factory. Rental clock stops upon receipt of the DPVE rental back at MKE factory &amp; inspected.</li> <li>3. Full DPVE decon and cleaning (empty and flushing all tanks) prior to rental return to MK factory.</li> <li>4. MK rental return freight and on loading with supervision by others. MK can offer a return freight quote when known.</li> </ol>		

Does not include permits, fees, etc...  
Offloading & placement by others.

Jerry Giltz  
MK ENVIRONMENTAL, INC.

EQUIP. SUB TOTAL	\$104,378.00
START UP/TRAINING	\$2,500.00
FREIGHT	\$2,500.00
<b>NET TOTAL</b>	<b>\$109,378.00</b>

**ATTACHMENT D**

**AIR DIVISION PERMIT/APPROVAL  
APPLICATIONS**

## REMEDIALATION APPROVAL

This form should be submitted to the Department to obtain Air Division approval prior to operating any type of remediation system. Depending on the type of remediation system being proposed, some of the following questions may not apply:

**TYPE REMEDIATION SYSTEM: (Check One)**

- Soil-Vapor Extraction (SVE) – soil only remediation  
 Pump & Treat (PT) – groundwater only remediation  
 Multi-Phase Vapor Extraction (MPVE) – soil & groundwater remediation  
    \_\_\_ SVE (w/PT)    \_\_\_ SVE (w/Air Sparging)     Dual-Phase  
 Mobile Enhanced Multi-Phase Extraction (MEME) – a short term remediation of soils and/or groundwater.

Is Free Product Present?  Yes  No                      Is This a Pilot Study?  Yes  No

OWNER: Name Dr. Reddy Munagala Phone No.: (334 ) 559-1971  
Mailing Address PO Box 628  
City Auburn State AL Zip 36831

SITE: Facility Name: University Mini-Mart, LLC  
Facility Address: 740 Opelika Road  
Location: (City) Auburn (County) Lee  
Facility ID No.: 22171 \_081 \_009103 UST Incident No.: 06 \_02 \_10

**CONTAMINANTS:** On a separate page please list all contaminants along with the most recent sample data from all wells: groundwater and/or soil.

**CALCULATIONS:** Utilize the highest, most recent concentrations (not historical highs or averages) for each contaminant, the highest anticipated flow rate and it should be expressed in lbs/hr.

**Groundwater Calculations:**

Concentration (mg/L) X flow (gal/min) X Conversion (5.01 X 10<sup>-4</sup>) = emissions (lbs/hr)

**\*Soil Calculations:**

Concentration (mg/m<sup>3</sup>) X flow (m<sup>3</sup>/min) X Conversion (1.32 X 10<sup>-4</sup>) = emissions (lbs/hr)

*\*Please note that most soil sample concentrations are expressed in mg/kg and must be converted to mg/m<sup>3</sup> prior to using the above formula.*

**REMEDICATION SYSTEM:** Please provide a brief description along with a flow diagram of the remediation system. The information should include but not be limited to the following: maximum blower speed (ft<sup>3</sup>/min) and maximum groundwater recovery rate (gal/min) of the liquid ring pump(s).

Proposed date of implementation: Feb 2, 2026

Anticipated groundwater recovery rate: 3.2 gal/min

Anticipated soil vapor extraction rate: 150 ft<sup>3</sup>/min

Dry soil bulk density: 1.34 g/cm<sup>3</sup>

Proposed Air Pollution Control Device (APCD) if system does not pass modeling:

Catlyic oxidizer

Please include the following information for all sites (excluding MEME events):

Distances (ft) from emission point to fence: N: 15 S: 25 E: 10 W: 10  
(Note: distance should reflect accessibility by the public, not necessarily property lines)

*Emission Points- Should reflect the stack parameters without a APCD*

From the Blower

Stack 1: Height above ground 14 ft Inside diameter 0.33 ft  
Exit Velocity 28.7 ft/s Exit Temperature 150 °F

From the Air Stripper

Stack 2: Height above ground 14 ft Inside diameter 0.833 ft  
Exit Velocity 24.4 ft/s Exit Temperature 68 °F

ADEM Project Manager: Joe Pearson

Subcontractor: Harmon Engineering

Consultant Project Manager: Allen Tucker

Consulting Firm: Harmon Engineering

Mailing Address: 13376 CL Torbert Jr. Parkway

City LaFayette State AL Zip 36862

Consultant E-mail address (optional): allen@he-inc.co

Consultant Phone No.: (334) 864-9135

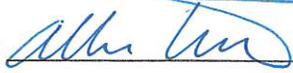
Consultant Signature:  Date: 11/11/2025

TABLE 2  
 SOIL ANALYTICAL SUMMARY  
 University Mini Mart/Big Cat  
 740 Opelika Road  
 Auburn, Lee County, Alabama

Sample ID	Date	Location	Depth	TPH	Benzene	Toluene	Ethylbenzene	Xylenes, o,m,p	Total BTEX	MTBE	
											Units:
Extraction Well Installation											
EW-3/B14	3/16/10	Well Boring B-14	14'-16'	NA	BDL	0.006	BDL	0.015	0.021	0.101	
EW-5	4/22/24	Well Boring B-20	10'-15'	NA	BDL	0.009	BDL	BDL	0.009	0.053	
EW-6	4/22/24	Well Boring B-21	15'-20'	NA	BDL	BDL	BDL	BDL	0.000	0.185	
EW-7	4/23/24	Well Boring B-22	10'-15'	NA	0.065	0.491	1.060	7.280	8.896	0.190	
EW-8	4/23/24	Well Boring B-23	10'-15'	NA	0.005	0.028	0.006	0.053	0.092	0.193	
EW-9	4/24/24	Well Boring B-24	10'-15'	NA	BDL	0.017	BDL	0.042	0.059	0.096	
EW-10	4/24/24	Well Boring B-25	0'-5'	NA	0.251	6.540	12.300	73.800	92.891	0.046	
EW-11	4/25/24	Well Boring B-26	10'-15'	NA	0.128	6.160	6.170	34.800	47.258	0.289	
EW-12	4/25/24	Well Boring B-27	15'-20'	NA	0.171	8.450	6.140	30.900	45.661	0.257	
EW-13	4/26/24	Well Boring B-28	20'-25'	NA	0.124	0.219	0.038	0.264	0.645	0.525	
EW-14	4/29/24	Well Boring B-29	20'-25'	NA	0.112	0.358	0.041	0.242	0.753	0.880	
EW-15	4/30/24	Well Boring B-30	0'-5'	NA	0.101	0.550	24.000	123.000	147.651	BDL	
EW-16	4/30/24	Well Boring B-31	0'-5'	NA	0.126	9.900	18.600	91.600	120.226	BDL	
Highest	mg/kg				0.251	9.900	24.000	123.000		0.880	
Highest	mg/m <sup>3</sup>				0.336	13.266	32.160	164.820		1.179	
Emissions Calc.	lb/hr				0.188	7.433	18.021	92.355		0.661	
(mg/m <sup>3</sup> )x(m <sup>3</sup> /min)x0.000132											
Soil Density (g/cm)	1.34										
Flow rate (ft <sup>3</sup> /min)	150										
Flow rate (m <sup>3</sup> /min)	4.25										
PPB - Parts Per Billion (Micrograms Per liter)											
PPM - Parts Per Million (Milligrams Per liter)											
BDL - Below Detection Limits											

**TABLE 3  
GROUNDWATER and SURFACE-WATER ANALYTICAL SUMMARY  
University Mini Mart**

Sample ID	Sample Date	Units:									
		Benzene PPM	Toluene PPM	Ethylbenzene PPM	Xylenes, o,m,p PPM	Total BTEX PPM	MTBE PPM	Naphthalene PPM			
EW-3	9/19/25	5.480	0.118	1.400	7.160	14.158	9.600	0.532			
EW-7	10/10/25	0.600	0.117	0.015	0.375	1.107	0.502	0.019			
EW-10	10/10/25	0.315	0.032	0.011	0.266	0.624	0.145	0.018			
EW-11	10/10/25	2.130	3.260	0.705	3.200	9.295	2.490	0.159			
EW-12	10/10/25	1.460	2.370	0.735	3.430	7.995	1.590	0.189			
EW-13	9/26/25	2.820	0.936	0.428	2.220	6.404	4.520	0.107			
EW-14	10/10/25	2.090	1.060	0.444	1.210	4.804	2.550	0.065			
IW-2R	9/26/25	2.500	0.033	0.216	0.950	3.699	3.380	0.089			
Highest		5.48	3.260	1.400	7.160		9.600	0.532			
Emissions Calc. (mg/L)x(gpm)*0.000501	lb/hr	0.00879	0.005226	0.002244	0.0115		0.0154	0.0009			
Flow rate (gpm)	3.2										

PPB-Parts Per Billion (Micrograms Per Liter)  
 PPM-Parts Per Million (Miliegrams Per Liter)  
 BDL-Below Detection Limits  
 MW-Monitoring Well  
 SW-Surface Water