



- GEOTECHNICAL
- CONSTRUCTION MATERIALS
- ENVIRONMENTAL
- BUILDING TECHNOLOGY
- PETROGRAPHY/CHEMISTRY

August 16, 2021

## **SITE INVESTIGATION**

### **WORK PLAN per NR 716.09**

**Site Name and Location:** **Commercial Property Site**  
1021 South Broadway Street  
Menomonie, Dunn County, Wisconsin, 54751  
SW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub>, Sec. 26, T.28N., R.13W.  
X Coordinate (WTM91): 367549  
Y Coordinate (WTM91): 490663  
**WDNR BRRTS #02-17-587803**

**Responsible Party:** Quarters Unlimited  
N7487 State Highway 25  
Menomonie, WI 54751  
Contact: Wayne Moser, 715-308-3598  
wmwasherman@gmail.com

**Consultant:** American Engineering Testing, Inc.  
1837 County Highway OO  
Chippewa Falls, WI 54729  
Contact: Michael K. Neal, 715-861-5045  
mneal@amengtest.com  
AET Project No. P-0002702

### **Objective**

It is AET's intent to obtain acceptable site closure from the Wisconsin Department of Natural Resources (WDNR). The purpose of this remedial investigation is to assess the sub-surface environmental condition at the site, provide the client with information regarding the extent and degree of potential soil, groundwater, and vapor contamination at the site, and to identify if further investigation or remedial actions are necessary.

### **Figures**

Site location, site features, and proposed soil boring location maps are attached.

### **Site History, Potential Contamination, and Media Affected**

The Site is currently a commercial property with an approximately 2,000-square foot slab-on grade building with asphalt paved parking areas surround the west and south sides of the building. Most of the Site is covered by asphalt and concrete paved parking/driveway surfaces and the building.

A Phase I Environmental Site Assessment (ESA) of the property was completed by American Engineering Testing, Inc. (AET) in May 2021. This report identified historic use of the property as a dry cleaner and generation of hazardous solvent wastes. A Phase II ESA investigating the potential dry cleaner-related soil contamination was completed in June 2021. A soil sample collected from one of the soil borings found isolated low concentrations of tetrachloroethylene (PCE) in a soil sample at concentrations exceeding the WDNR soil to groundwater residual contamination level (RCL). Two soil gas and one sub-slab vapor samples were collected and analyzed for the Phase II ESA. Laboratory analyses detected various volatile organic compounds (VOCs), however, the measured results did not exceed the WDNR's calculated Vapor Risk Screening Levels (VRSLs) for small commercial buildings.

Based on the Phase II ESA results, AET recommended no additional investigation. On behalf of the property owner, AET submitted all investigation results to the WDNR and requested a review under a Technical Assistance, Environmental Liability Clarification Request. The purpose of this letter is to provide the property owner with clarifications as to environmental liabilities and current environmental conditions at the Site. The WDNR has determined that additional investigation or response actions are required. The WDNR was notified of the exceedance and a Bureau for Remediation and Redevelopment Tracking System (BRTTS) number (02-17-587803) was assigned to the site. In a July 29, 2021 letter, the WDNR also requested that a site investigation be completed to determine the degree and extent of the soil contamination.

### **Proximity to Other Sources of Contamination**

A previous site investigation was completed on the property to the south. In 1998 a site investigation was completed on the Cenex C Store/Vista U Pump #12 property (BRTTS #03-17-183724). Petroleum contamination was reported from the unleaded gasoline underground storage tank (UST) system. The site investigation included seven soil borings and six groundwater monitoring wells. Soil contamination was minimal and three years of groundwater monitoring determined groundwater contamination did not extend off-site and petroleum contaminant concentrations were decreasing. However, initial samples collected from an off-site groundwater monitoring well (MW-4) in November of 1998, detected PCE and trichloroethene (TCE) at concentrations exceeding their enforcement standards (ES) as outlined in Wisconsin Administrative Code (WAC) NR 140 Groundwater Quality Standards. Further analysis of PCE and TCE in the groundwater at MW-4 was not conducted and no attempt was made to determine the extent or source of this contamination. Monitoring well MW-4 was located approximately 90 feet west of the Commercial Property Site. During this investigation groundwater was measured as flowing to the northeast. This would suggest that PCE and TCE contamination was coming from an upgradient source. Based on the limited amount of soil and groundwater contamination and lack of off-site petroleum contamination, the WDCOM closed the site on November 26, 2001 with a groundwater use restriction due to the presence of residual soil and groundwater contamination. No other adjacent sources of contamination are known.

### **Site Development Plans**

There are currently no plans to redevelop the Site.

### **Potential Impacts to Public and Private Receptors**

The site is in a mixed residential and commercially developed area in the City of Menomonie. The current surface consists of paved asphalt or concrete surfaces and the building. The area is served by a municipal water supply and sewer system. There are no water supply wells located within 1,200 feet of the Site and impacts to public or private receptors is not expected.

There does not appear to be a threat to state- or federal-listed endangered species, sensitive ecosystems, wetlands, outstanding or exceptional resource waters, or historical or archeological sites. No immediate or interim actions have been warranted at this site.

### **Physiographical and Geological Setting**

The Site is in the Central Plain Physiographic Province of central Wisconsin. Topography at the Site slopes slightly to the west. Fluvial and glacial processes have been an important geologic agent in determining the surface geology and physiography of the Site, and it is generally situated on alluvial deposits. Regionally, bedrock consists of Cambrian age sandstone at depths of 20 to 50 feet.

Soils encountered at the Site are primarily non-waste fill (sand with varying amounts of silt and gravel) from the surface to approximately five feet below ground surface (bgs). Below the fill is coarse alluvium consisting of silty sand with varying amounts of silt and gravel to about 13 feet bgs. Below the coarse alluvium is fine alluvium consisting of silty and lean clay. Bedrock was not encountered in the soil borings.

Based on groundwater elevation measured at the Cenex C Store cleanup, groundwater was encountered at depths of approximately 20 to 25 feet bgs. The measured direction of groundwater flow was to the northeast.

No potential migration pathways at this site have been identified.

### **Site Investigation Strategy**

The objective of this site investigation is to determine the extent of soil contamination and if previously detected soil contamination has affected groundwater quality. This section describes our proposed scope of services for this site investigation. Our scope of services is based on the information about the site and the requirements for site investigations listed in NR 716.11 and NR 716.13. Proposed sampling locations are shown in Figure 2.

#### *Soil Sampling Procedures*

Subsurface soil samples will be collected with a one-inch diameter, split-spoon sampler. All drilling tools and equipment will be cleaned prior to the start of sampling work. All sampling tools will also be washed with Alconox™ and water between sampling points to prevent cross contamination.

AET will select the boring locations based on the site layout, the suspected direction of groundwater flow, and any additional information obtained during this investigation. Locations may be modified based on the results of initial borings or if site conditions vary significantly from those anticipated prior to drilling. AET estimates the completion of three soil borings to efficiently delimit the lateral extent of contamination found in the previous soil boring. Each boring will be converted to a groundwater monitoring well. See enclosed figure for soil boring and monitoring well locations.

Borings will be advanced until groundwater is encountered. Soil samples will be collected from the zone of highest contamination as indicated by a field PID, the interval in which seasonal high groundwater is encountered, or from the deepest interval sampled. Two soil samples will be collected from each boring at depths of two to four feet bgs and from the deepest interval sampled. If contamination is encountered that extends beyond the proposed soil probe locations additional soil probes may need to be installed to identify contamination limits.

Soils will be sampled at 2-foot intervals. Soils will be described according to the Unified Soil Classification System. Soils will be field screened for volatile organic compounds (VOCs) with a PID using the headspace method described below. Soil samples collected will be analyzed for VOCs.

#### *Field Screening Procedures*

- We will field screen samples with a PID to determine which samples will be chemically analyzed and to assist in determining the contamination extent. The headspace procedure will be conducted as follows:
- Headspace samples will be collected in clean Nasco Whirl-Pak bags and filled half full with the sample material.
- The sample will be agitated to break soil clods and release headspace vapors.
- If ambient air temperature is below 70°F, the headspace samples will be placed in a warm environment out of direct sunlight and allowed to equilibrate to approximately 70°F. If ambient air temperature is above 70°F, samples will be placed in a cooler environment out of direct sunlight and allowed to equilibrate to approximately 70°F.
- Following equilibration, the sample headspace will be analyzed by inserting the PID probe into the bag to a position half-way between the seal and sample surface and then recording the highest instrument readings (benzene equivalent ppm).
- New headspace bags will be used for each sample. After use, the bags are discarded.

*Soil Samples Submitted for Laboratory Analysis*

Soil samples will be collected from the sampling device using clean disposable latex gloves. A discrete sample will be collected and split into a laboratory sample and a field screening sample. The laboratory sample will be immediately transferred into the appropriate containers as follows:

<b>ANALYTE</b>	<b>CONTAINER TYPE</b>	<b>FIELD PRESERVATIVE</b>	<b>Method</b>
VOCs	1 oz. TLC jar	Methanol	EPA 8260B

TLC = Teflon lined cap

Quantitative results will be determined on dry-weight basis.

Samples will then be packed on ice in a cooler and transported to the laboratory. All samples will be identified by site name, sample number, sample location, date and time of collection, analysis requested, and initials of sampler.

*Groundwater Monitoring Wells Sampling Procedures*

We will collect groundwater samples from monitoring wells constructed and developed in compliance with NR 141. Following well development, groundwater samples will be collected with new disposable polyethylene bailers and immediately transferred into the appropriate laboratory container.

AET will install the monitoring wells at locations already describe for the soil borings. See enclosed figure for soil boring and monitoring well locations. Laboratory results of groundwater samples and the groundwater elevation data will be used to determine if additional wells are necessary at the site. Monitoring wells will typically be inspected and sampled quarterly until closure of this project.

Each groundwater sample will be analyzed for VOCs.

*Groundwater Measurement Procedures*

AET will measure and record static water level to the nearest 0.01-foot in each well prior to obtaining a groundwater sample. AET will survey and record to the nearest 0.01-foot the well casing and ground surface elevation at each monitoring well. Both measurements will be the top of the well casing and will be identified on the well. In addition, ground surface elevations will be also measured at each soil boring location for use in constructing cross-sections.

### *Groundwater Samples Submitted for Laboratory Analyses*

After proper development, groundwater samples will be collected by inserting a new disposable polyethylene bailer into the well and transferring the bailer contents to the appropriate containers as follows:

<b>ANALYTE</b>	<b>CONTAINER TYPE</b>	<b>FIELD PRESERVATIVE</b>	<b>Method</b>
VOC	40 ml vial	Hydrochloric acid	EPA 5030/8021

Groundwater samples will then be packed on ice in a cooler and transported to the laboratory. All samples will be identified with the site name, sample number, sample location, date and time of collection, analysis requested, and initials of sampler.

### *Quality Control and Quality Assurance*

The site investigation will be accurately documented by field notes and instrument logs.

All laboratory samples will be analyzed by a NR 149-certified laboratory. All laboratory samples will be logged on a WDNR-format chain of custody that will accompany the samples to the laboratory. When transferring sample custody, the individuals relinquishing and receiving the samples will sign, date, and note the time on the chain of custody record. A copy of the chain of custody record will be then retained by the laboratory until analyses are completed.

Soil and groundwater samples will be packed in a cooler, cooled to 4° C on ice, and transported to the laboratory. All samples will be labeled with the site name, sample number, sample location, date and time of collection, analysis requested, and name of sampler.

### *Investigative Wastes*

All soil cuttings producing PID readings in excess of one ppm will be stockpiled on-site either within impermeable plastic or labeled 55-gallon drums and kept on-site. Disposal methods will be determined after receipt of laboratory analysis and completion of the site investigation.

### *Evaluation of Results*

The field and laboratory results obtained in this investigation will be combined with other information to evaluate the degree and extent of soil contamination at the site. AET will prepare site maps and cross-sections to demonstrate the estimated contamination plumes. AET will use current technologies to best demonstrate and predict contaminant extent and migration. This information will be used to evaluate which remediation options would be most applicable for the site.

### **Site Management**

AET will use appropriate barriers and warnings to enhance safety while performing the site investigation. AET will also prepare and administer a site-specific safety plan. All soil borings will be abandoned according to NR141 by filling the holes with bentonite and patching as necessary.

**Schedule**

Fieldwork will be scheduled follow approval from the WDNR. Completion of laboratory analyses is anticipated three to four weeks after sample collection. The report will be submitted within 45 days after completion of field work. The report will contain soil boring logs, monitoring well construction reports, laboratory data sheets, site location and features maps, and estimated extent of soil and groundwater contamination maps.

**NR 712.09 Submittal Certification**

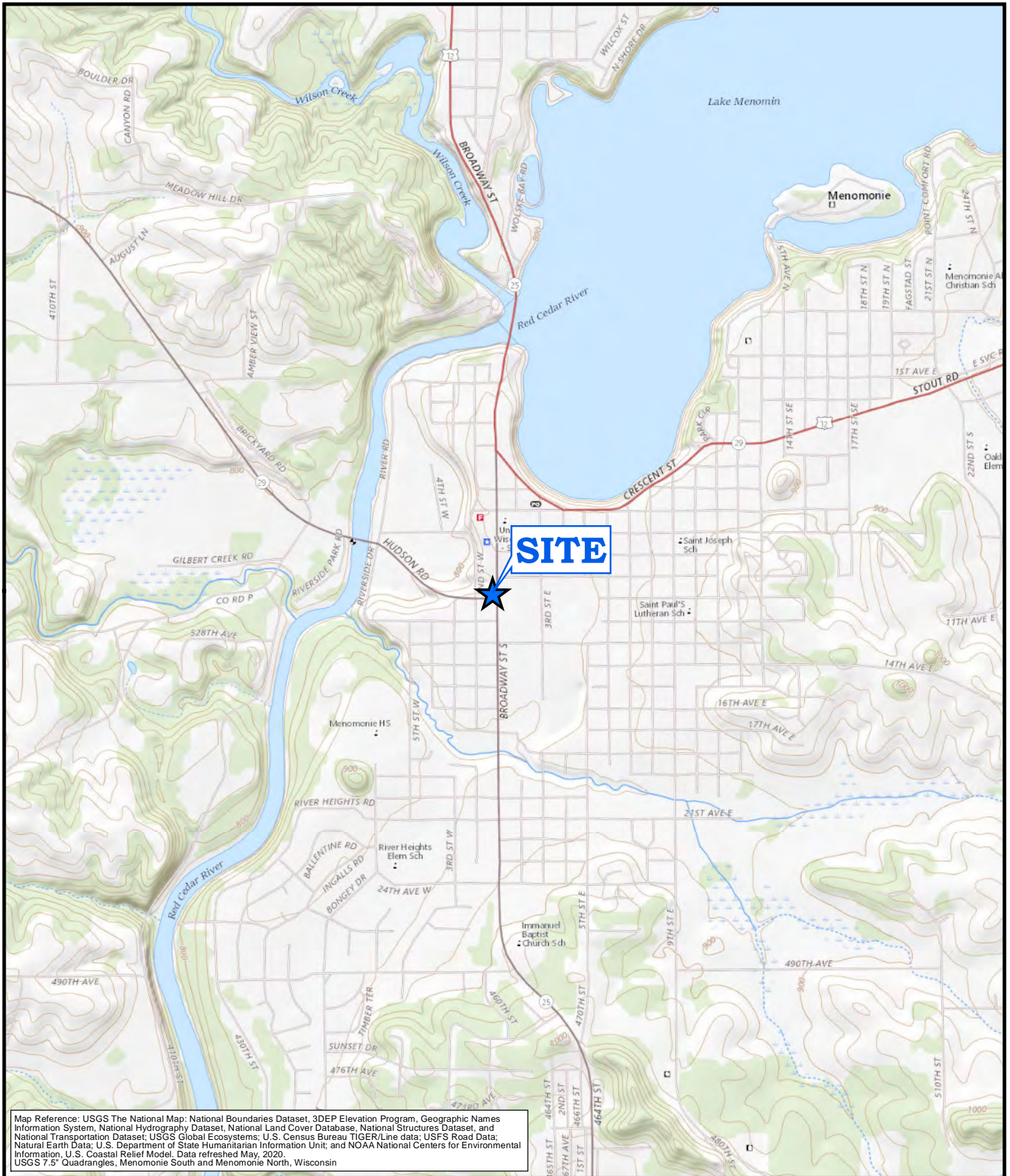
“I, Michael K. Neal, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.”



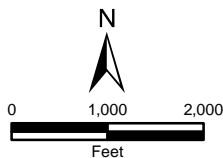
Michael K. Neal, Professional  
Hydrologist/Geomorphologist







**AMERICAN  
ENGINEERING  
TESTING, INC.**



**Figure 1**  
Site Location Map

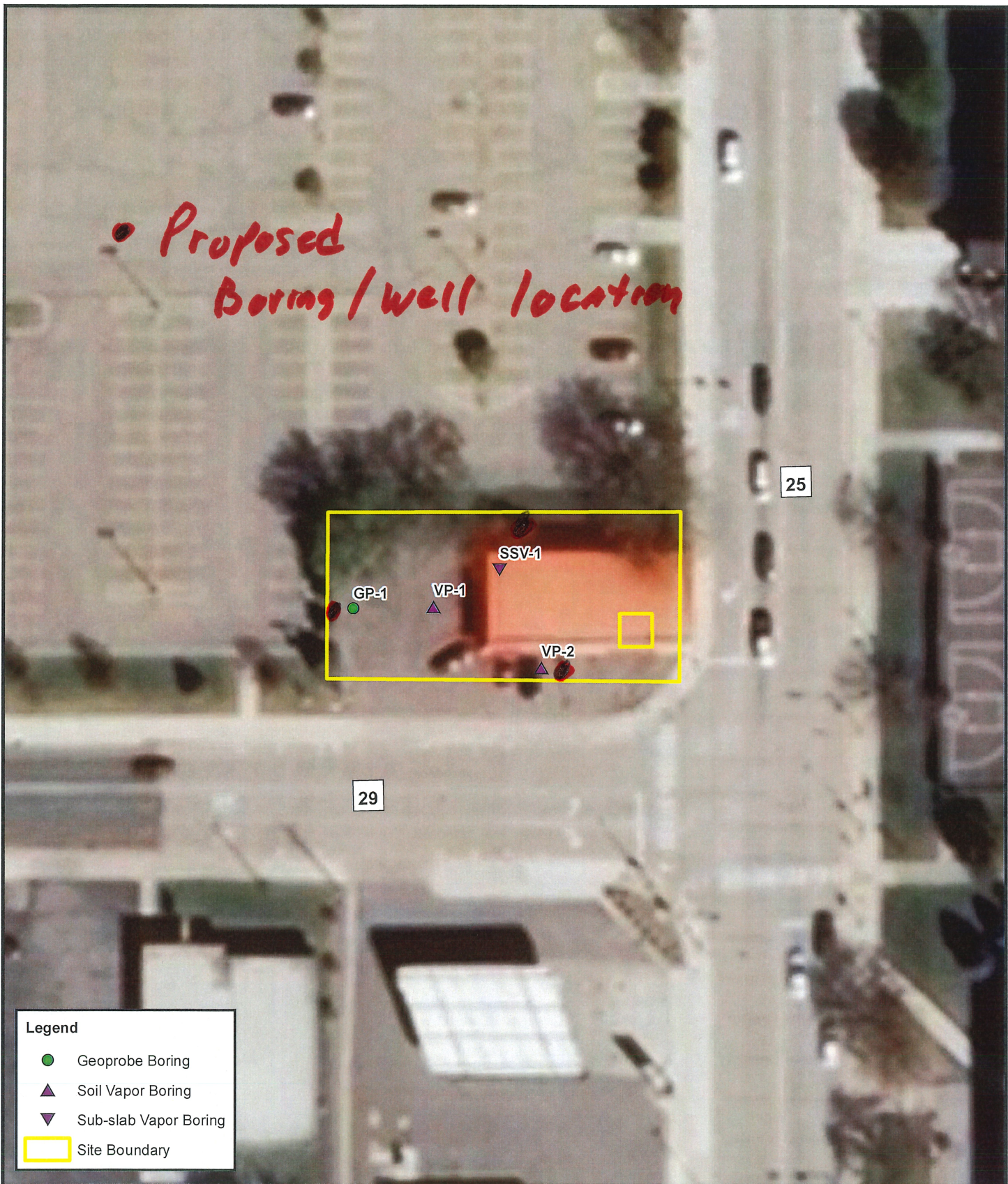
Phase II Environmental Site Assessment  
 Commercial Property site  
 1021 South Broadway Street  
 Menomonie, Wisconsin

Date: 06/03/2021

AET Project No. P-0002702



• Proposed Boring/Well location

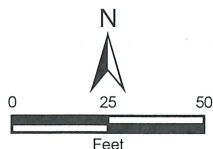


Legend

- Geoprobe Boring
- ▲ Soil Vapor Boring
- ▼ Sub-slab Vapor Boring
- Site Boundary



Map Reference: Wisconsin DNR 2015 Digital Orthophotography



**Figure 2**  
Sample Location Map

Phase II Environmental Site Assessment

Commercial Property site  
1021 South Broadway Street  
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