

**SUB-SLAB DEPRESSURIZATION  
SYSTEM INSTALLATION  
AND INITIAL AIR  
SAMPLING REPORT**

**ECONOMIC DEVELOPMENT BUILDING  
912 SOUTH CHURCH AVENUE  
LOUISVILLE, MISSISSIPPI**

**PPM PROJECT NO. 30128309**

**MARCH 26, 2024**



**SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLATION AND INITIAL  
INDOOR AIR SAMPLING REPORT**

**AT**

**ECONOMIC DEVELOPMENT BUILDING  
912 SOUTH CHURCH AVENUE  
LOUISVILLE, MISSISSIPPI**

**PREPARED FOR:**

**WINSTON COUNTY ECONOMIC DEVELOPMENT DISTRICT PARTNERSHIP  
POST OFFICE BOX 551  
LOUISVILLE, MISSISSIPPI 39339**



**WINSTON PARTNERSHIP**

**PPM PROJECT NO. 30128309**

**MARCH 26, 2024**

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A handwritten signature in black ink, appearing to read 'Ben Lightsey', written over a horizontal line.

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A handwritten signature in blue ink, appearing to read 'Annie McIlwain', written over a horizontal line.

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## 1.0 INTRODUCTION

PPM Consultants, Inc. (PPM) was retained by the Winston County Economic Development District Partnership (Partnership) to oversee the installation of the approved sub-slab depressurization system (SSDS) detailed in the *Vapor Intrusion Mitigation Plan dated July 7, 2023*, and perform an initial indoor air sampling event for the Economic Development Building located at 912 South Church Avenue in Louisville, Winston County, Mississippi. The purpose of the SSDS is to reduce the volatile organic compound (VOC) concentrations directly beneath the slab-on-grade foundation and mitigate the vapor intrusion pathway of the site, thereby protecting human health and the environment at the site. Additionally, the purpose of the indoor air sampling event is to gather post-mitigation system data and compare indoor air sample results collected from the site to the United States Environmental Protection Agency (USEPA) - Vapor Intrusion Screening Levels (VISL). This report describes field methodology, presents analytical results, and provides conclusions from the installation of the SSDS in December 2023 and the initial indoor air sampling event conducted in January 2023 at the site.

### 1.1 VAPOR INTRUSION INVESTIGATION HISTORY

#### 1.1.1 Phase III Environmental Site Assessment (ESA) Report (May 15, 2020)

Based on the findings of a Phase II ESA performed in October 2018, a Phase III ESA was conducted in January 2020. Two soil borings were converted to temporary wells (TW-10 and TW-11). Soil and groundwater samples were collected from each of the soil borings/temporary wells and submitted for laboratory analysis. Surface water samples (SW-1 and SW-2) were collected from Hughes Creek. Two near-slab vapor samples and one ambient air sample were also collected. The surface water and vapor samples were submitted for laboratory analysis.

The following conclusions were based on or were reasonably ascertainable from, published information, field observations, and the results of specific laboratory analyses from the Phase III.

- Elevated concentrations of perchloroethylene (PCE) and its degradation products, TCE and vinyl chloride, are present in the groundwater at the temporary well TW-10 location on the eastern portion of the site and downgradient of the western portion of the site. PCE, trichloroethylene (TCE), and their degradation products are commonly related to the use of solvents and degreasers. The detected

concentration of VOCs from the Phase II ESA conducted in October 2018 on the western portion of the site appears to be related to past clock manufacturing operations by Spartus Clock Manufacturing Company, which was acquired by General Time Corporation. The Phase II ESA groundwater elevation data indicate groundwater beneath the site flows eastward toward Hughes Creek. The PCE and TCE concentrations detected in groundwater samples collected from temporary wells – upgradient of temporary monitoring well TW-10 location – installed during the October 2018 Phase II ESA were higher than the concentrations detected in groundwater samples collected from temporary well TW-10 during the Phase III ESA, indicating the TCE and PCE contamination plume is migrating with groundwater flow eastward towards Hughes Creek.

- The TCE concentrations detected in the surface water samples are below the TCE concentrations detected in the groundwater sample collected from temporary well TW-10 but are relatively similar. These similar concentrations, coupled with known groundwater flow direction, indicate that Hughes Creek is a receiving stream.
- The PCE concentration detected in the near slab vapor sample SV-1 that is above the applicable residential EPA Vapor Intrusion Screening Level (VISL) but below the applicable commercial EPA VISL is not a concern because the property is currently, and will likely continue to be, used as a commercial property.

### **1.1.2 Sub-Slab and Indoor Air Sampling Event (October 22, 2020)**

The sub-slab soil gas samples from SS-1 through SS-3 were collected on October 22, 2020, and submitted to the analytical laboratory for VOC analysis. VOCs were detected in all three of the sub-slab soil gas samples submitted.

VOCs detected in one or more of the soil gas samples collected from SS-1 through SS-3 include the following: benzene, 2-butanone (MEK), chloroform, chloromethane, dichlorodifluoromethane, ethanol, methylene chloride, propylene, PCE, and TCE. Chloroform concentrations detected in the sub-slab soil gas samples collected from SS-1 [78.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )] and SS-3 (18.5  $\mu\text{g}/\text{m}^3$ ) were above the applicable commercial EPA VISL value (17.8  $\mu\text{g}/\text{m}^3$ ). TCE concentrations detected in the sub-slab soil gas samples collected from SS-3 (274  $\mu\text{g}/\text{m}^3$ ) were above the applicable commercial EPA VISL value (29.2  $\mu\text{g}/\text{m}^3$ ).

A total of eight indoor air samples were collected on January 30, 2021, and submitted to the analytical laboratory for VOC analysis. VOCs were detected in five of the eight indoor samples submitted. VOCs were not detected in the ambient air sample (#13001 – Entrance), the indoor air samples #13008 – Shipping/Receiving, or #13009 – Super Grip.

The VOCs cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene were detected in one or more of the indoor air samples submitted for laboratory analysis.

Cis-1,2-dichloroethene was detected in indoor air samples #13002 – Back Side of Office ( $2.0 \mu\text{g}/\text{m}^3$ ) and #13004 – Transformer ( $2.0 \mu\text{g}/\text{m}^3$ ). There is not a commercial VISL value assigned to cis-1,2-dichloroethene for indoor air.

PCE was detected in indoor air samples #13002 – Back Side of Office ( $2.6 \mu\text{g}/\text{m}^3$ ) and #13004 – Transformer ( $3.5 \mu\text{g}/\text{m}^3$ ). A Brake Parts Cleaner manufactured by Berryman Products, Inc. containing approximately 5-15% by weight PCE was confirmed to be present and utilized within the facility by The Taylor Group. The detected tetrachloroethene concentrations were below the commercial VISL value of  $17.5 \mu\text{g}/\text{m}^3$ .

TCE was detected in indoor air samples #13002 – Back Side of Office ( $38.6 \mu\text{g}/\text{m}^3$ ), #13003 – SS-3 ( $6.3 \mu\text{g}/\text{m}^3$ ), #13004 – Transformer ( $23.8 \mu\text{g}/\text{m}^3$ ), #13005 – Planting Area East ( $1.2 \mu\text{g}/\text{m}^3$ ), and #13007 – Defense East ( $0.94 \mu\text{g}/\text{m}^3$ ). The detected trichloroethene concentrations in samples #13002 – Back Side of Office ( $38.6 \mu\text{g}/\text{m}^3$ ), #13003 – SS-3 ( $6.3 \mu\text{g}/\text{m}^3$ ), #13004 – Transformer ( $23.8 \mu\text{g}/\text{m}^3$ ) was above the commercial VISL value of  $2.99 \mu\text{g}/\text{m}^3$ .

### **1.1.3 Indoor Air Sampling Event (January 2, 2022)**

A total of four indoor air samples and one ambient air sample were collected on January 2, 2022, and submitted to a laboratory for VOC analysis. VOCs were detected in three of the four indoor samples submitted. VOCs were not detected in the ambient air sample (AMB) or the indoor air sample IA-4. The indoor air samples were evaluated against the USEPA VISLs utilizing a commercial worker scenario, a Hazard Quotient of 1, and an acceptable Target Risk of  $10^{-6}$ .

The findings of this assessment are summarized as follows:

- Cis-1,2-dichloroethene was detected in indoor air samples IA-1 (2.19  $\mu\text{g}/\text{m}^3$ ), IA-2 (3.03  $\mu\text{g}/\text{m}^3$ ), and IA-3 (1.99  $\mu\text{g}/\text{m}^3$ ). There is not a commercial VISL screening value assigned to cis-1,2-dichloroethene for indoor air.
- PCE was detected in indoor air samples IA-1 (1.91  $\mu\text{g}/\text{m}^3$ ), IA-2 (2.83  $\mu\text{g}/\text{m}^3$ ), and IA-3 (2.84  $\mu\text{g}/\text{m}^3$ ). A brake parts cleaner manufactured by Berryman Products, Inc. containing PCE at approximately five to 15 percent by weight was confirmed to be present and currently utilized within the facility. The detected PCE concentrations were below the commercial VISL screening value of 47.2  $\mu\text{g}/\text{m}^3$  and the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 678,000  $\mu\text{g}/\text{m}^3$ .
- TCE was detected in indoor air samples IA-1 (37.6  $\mu\text{g}/\text{m}^3$ ), IA-2 (32.8  $\mu\text{g}/\text{m}^3$ ), and IA-3 (21.1  $\mu\text{g}/\text{m}^3$ ). ZEP Aerosolv II and Dry Graphite manufactured by Acuity Specialty Products Group, Inc., containing TCE at approximately 90 to 100 percent by weight, was confirmed to be present and currently utilized within the facility. The detected TCE concentrations were above the commercial VISL screening value of 2.99  $\mu\text{g}/\text{m}^3$  but significantly below the OSHA PEL of 537,000  $\mu\text{g}/\text{m}^3$ .

#### 1.1.4 Pilot Test and Sub-Slab Depressurization System Sizing

PPM mobilized to the site on August 11, 2022, to perform a sub-slab depressurization system sizing action within the northwest corner of the existing structure. PPM cored a 4-inch hole through the concrete slab near the reported former degreasing area. A radon-style blower was fashioned to the core hole, and exhaust piping routed any exhaust gases to the building exterior. Test points were installed through the concrete slab at distances of 10, 15, 20, 25, and 30 feet from the blower. Magnahelic® differential pressure gauges were installed in each test point to monitor changes from static pressure once the blower was activated. Once pressure readings from the gauges were recorded, the core-hole and test points were sealed with concrete cement repair.

PPM tested the sub-slab radius of influence of an RN-3 Radon fan within the former degreaser area of the structure. The RN-3 radon fan is capable of generating an airflow of over 350 cubic feet/minute with over 2.3 inches of water column. PPM observed pressure differential of over 2.5 inches of water column as far as 25 feet from the extraction point. The pressure differential decreased to approximately 0.1 inches of water 30 feet from the

extraction point. Footers were encountered during the sizing test and resulted in a barrier to the depressurization system's effective radius of influence. The footers were observed to be located approximately every 30 feet and oriented in an east-to-west fashion.

### **1.1.5 Vapor Intrusion Mitigation Plan**

Based on the Pilot Test and Sub-Slab Depressurization System Sizing actions, PPM developed a Vapor Intrusion Mitigation Plan dated July 7, 2023. The Vapor Intrusion Mitigation Plan proposed the use of 14 individual radon syles mitigation fans (type Fantech RN-3) in two separate arrays to depressurize the sub-slab environment of the northwestern portion of the on-site structure.

The Vapor Intrusion Mitigation Plan was approved by the Mississippi Department of Environmental Quality (MDEQ) via letter on September 5, 2023. This report details the installation oversight and initial indoor air sampling event, showing site response to mitigation efforts.

## **1.2 SCOPE OF WORK**

PPM provided construction oversight of the SSDS at the site during November 2023 and conducted the indoor air sampling event on January 8, 2024. The SSGS was installed by a Partnership selected contractor (Complete Environmental) over the course of 10 days from November 6-17, 2023. A total of four indoor air samples and one ambient air sample were collected at the site. Indoor air samples were collected and submitted for laboratory analysis based on conditions specific to that portion of the site. The following scope of work was completed for the SSDS installation oversight and initial indoor air sampling event of the Winston County Economic Development Building:

- Mobilized to the site a total of three times during November 2023 to provide installation oversight and inspect installation progress of the approved *Vapor Intrusion Mitigation Plan dated July 7, 2023*.
- Collected four indoor air samples and one ambient air sample on January 8, 2024.
- Analyzed the soil gas samples for the target VOC: chloroform, perchloroethylene, trichloroethene, cis 1,2-dichloroethene, and vinyl chloride; and
- Prepared this report presenting the scope of work, site background, investigative methodology, findings, and conclusions from the limited indoor air assessment field activities.



### **1.3 DEVIATIONS FROM THE APPROVED SCOPE OF WORK**

No deviations from the approved scope of work were encountered during the course of the investigation.

## **2.0 SITE DESCRIPTION**

### **2.1 SITE LOCATION AND SETTING**

The Teters Floral Property site is located at 912 South Church Avenue in Louisville, Winston County, Mississippi, 39339. The facility is located in Section 4, Township 14 North, Range 12 East of the Choctaw, Mississippi Meridian. More specifically, the site is located at 33° 06' 00.11" North latitude and 89° 03' 31.70" West longitude. Site location is depicted in **Figure 1, Site Location Map, Appendix A, Figures.**

The property is located south of downtown Louisville in a mixed-use area that includes industrial, commercial, and residential properties. The surrounding properties currently consist of commercial properties to the west, including an animal clinic, a storage facility, a construction material yard, and a small restaurant. An industrial plywood facility is located to the northeast beyond Hughes Creek, and multi-family residential property is located to the south. Historically, the surrounding land use consisted of residential and agricultural land until the early 1970s when developments in the vicinity of the subject property began to resemble what is present today.

Currently, the property is an approximately 400,000-square-foot brick and metal building that houses multiple businesses. Occupants include Taylor Defense, Taylor Machine Works, and Hardwire.

### **2.2 GEOLOGY AND HYDROGEOLOGY**

According to the *Geologic Map of Mississippi, 1985*, the site is located within the Wilcox Formation. The Mississippi Geological Survey describes the Wilcox Formation as irregularly bedded fine to coarse sand, more or less lignitic clay, and lignite, which includes bauxite bearing Fearn Springs Sand member at the base. The Wilcox Formation is underlain by the Naheola Formation, which is described as fine to coarse micaceous sand, kaolin, and bauxitic clay. The *Mississippi State Geological Survey, Bulletin 52, Choctaw County Mineral Resources, 1943*, describes the Wilcox series as being comprised

of two formations: the Holly Springs Formation, and the Ackerman Formation. The Holly Springs Formation is described as sand, sandstone, clay-shale, clay, silt, lignite, silty limonite, and siderite. The sand is normally coarse to fine, and commonly colored by iron oxide. The estimated maximum thickness of the Holly Springs Formation is 300 feet. The Ackerman Formation is described as sand, sandstone, clay-shale, clay, silt, lignite, and iron ore. The estimated maximum thickness of the Ackerman Formation is 300 feet.

Groundwater within the Wilcox Formation is abundant within the first 100 feet of the subsurface. Domestic water wells were routinely installed to shallow depths within the first 100 feet to utilize the water source. Municipal water supply wells were installed to greater depths in order to obtain groundwater from the Eutaw Formation, which is 1,600 to 1,800 feet below ground surface. In general, groundwater flow near the surface mimics the surface topography, and can vary in direction, as the region has numerous hills.

The Louisville South Quadrangle 7.5-Minute USGS topographic map (**Figure 1**) shows the property to have an approximate elevation of 500 feet above mean sea level (AMSL).

### **3.0 FIELD ACTIVITIES**

#### **3.1 SUB-SLAB DEPRESSURIZATION SYSTEM INSTALLATION OVERSIGHT**

On November 6, 2023, Partnership contractor, Complete Environmental mobilized to the site and began the installation of the approved SSDS within the northwest corner of the main structure. The SSDS consisted of 14 individual radon mitigation fans (type - Fantech RN-3) installed on two separate arrays. The array spacing was based on previously confirmed radius of influence testing discussed in the August 18, 2022, Sub-Slab Depressurization System – Sizing Test. Leak testing around the piping joints was completed by bubble test. A low-pressure alarm was installed on the negative pressure side of each radon fan and observed to operate when the fans lost pressure and when pressure was restored. In the event that a low-pressure alarm is activated, the entire affected array shall immediately be shut-down until troubleshooting/repairs are completed. Installation and testing of the SSDS was completed on November 17, 2023.

Also, exhaust sampling ports were added during installation activities in order to allow testing of exhaust gases. The exhaust sampling ports were not originally included in the approved Vapor Intrusion Mitigation Plan dated July 7, 2023. The location and orientation of the SSDS are depicted in **Figure 2, Sub-Slab Depressurization System**.

### 3.2 INDOOR AIR SAMPLING

This sampling event marks the first indoor air sampling event since the installation of the SSDS in November 2023. Prior to the indoor air sampling, a brief attempt was made to ensure that no obvious sources of background indoor air volatile chemicals had been placed in the immediate area of air sampling. On January 8, 2023, four canisters (IA-1 through IA-4) were placed in the area of the operating SSDS and the adjacent room, in areas previously identified in the years 2021 and 2022 as having elevated indoor air concentrations (IA-1 and IA-3). Also, one canister (AA-1) was placed at the plant exterior entrance as an ambient air sample. After the initial pressure of the canisters was recorded, the valves to the canisters were opened. The valves were opened, allowing the canisters to collect the sample, for approximately seven hours (approaching plant closing). After seven hours, the valves were closed, and the final canister pressure was recorded. The initial pressures of the canisters ranged from 28 inches of mercury (in. Hg) to 30 in. Hg. The final pressures in five of the canisters ranged from 3 inches of mercury to 14 inches of mercury. The sample locations of the indoor air and ambient air samples are depicted in **Figure 3, Site Map**.

### 3.3 LABORATORY ANALYSIS

The four indoor air samples were submitted to H and P Mobile Geochemistry, Inc., of Carlsbad, CA, and analyzed for site-specific target list (trichloroethylene, tetrachloroethylene, trans-1,2-dichloroethene, cis-1,2 dichloroethene, and vinyl chloride) of VOCs per EPA Method TO-15.

## 4.0 RESULTS

### 4.1 INDOOR AIR RESULTS

A total of four indoor air samples and one ambient air sample were collected on January 8, 2023, and submitted to a laboratory for VOC analysis per EPA Method TO-15. VOCs were detected in all four indoor samples submitted. VOCs were not detected in the ambient air sample (AMB). The indoor air samples were evaluated against the USEPA VISLs utilizing a commercial worker scenario, a Hazard Quotient of 1, and an acceptable Target Risk of  $10^{-6}$ .

The VOCs tetrachloroethylene and trichloroethylene were detected in one or more of the indoor air samples submitted for laboratory analysis.

Tetrachloroethylene was detected in indoor air samples IA-1 (2.3  $\mu\text{g}/\text{m}^3$ ), IA-2 (2.3  $\mu\text{g}/\text{m}^3$ ), IA-3 (2.2  $\mu\text{g}/\text{m}^3$ ), and IA-4 (2.3  $\mu\text{g}/\text{m}^3$ ). The detected tetrachloroethylene concentrations were below the commercial screening VISL value of 47.2  $\mu\text{g}/\text{m}^3$  and the OSHA PEL of 678,000  $\mu\text{g}/\text{m}^3$ .

Trichloroethylene was detected in indoor air samples IA-1 (4.6  $\mu\text{g}/\text{m}^3$ ), IA-2 (4.5  $\mu\text{g}/\text{m}^3$ ), IA-3 (4.5  $\mu\text{g}/\text{m}^3$ ), and IA-4 (3.8  $\mu\text{g}/\text{m}^3$ ). The detected trichloroethylene concentrations were above the commercial screening VISL value of 2.99  $\mu\text{g}/\text{m}^3$  but significantly below the OSHA PEL of 537,000  $\mu\text{g}/\text{m}^3$ .

Indoor air analytical results are summarized in **Table 1, Summary of Indoor Air Analytical Results – Detected Constituents**, and depicted in **Figure 4, Site Map with Concentrations (January 8, 2024)**. The laboratory analytical report is included in **Laboratory Analytical Report, Appendix A**.

## 5.0 FINDINGS AND CONCLUSIONS

The findings of this report are summarized as follows:

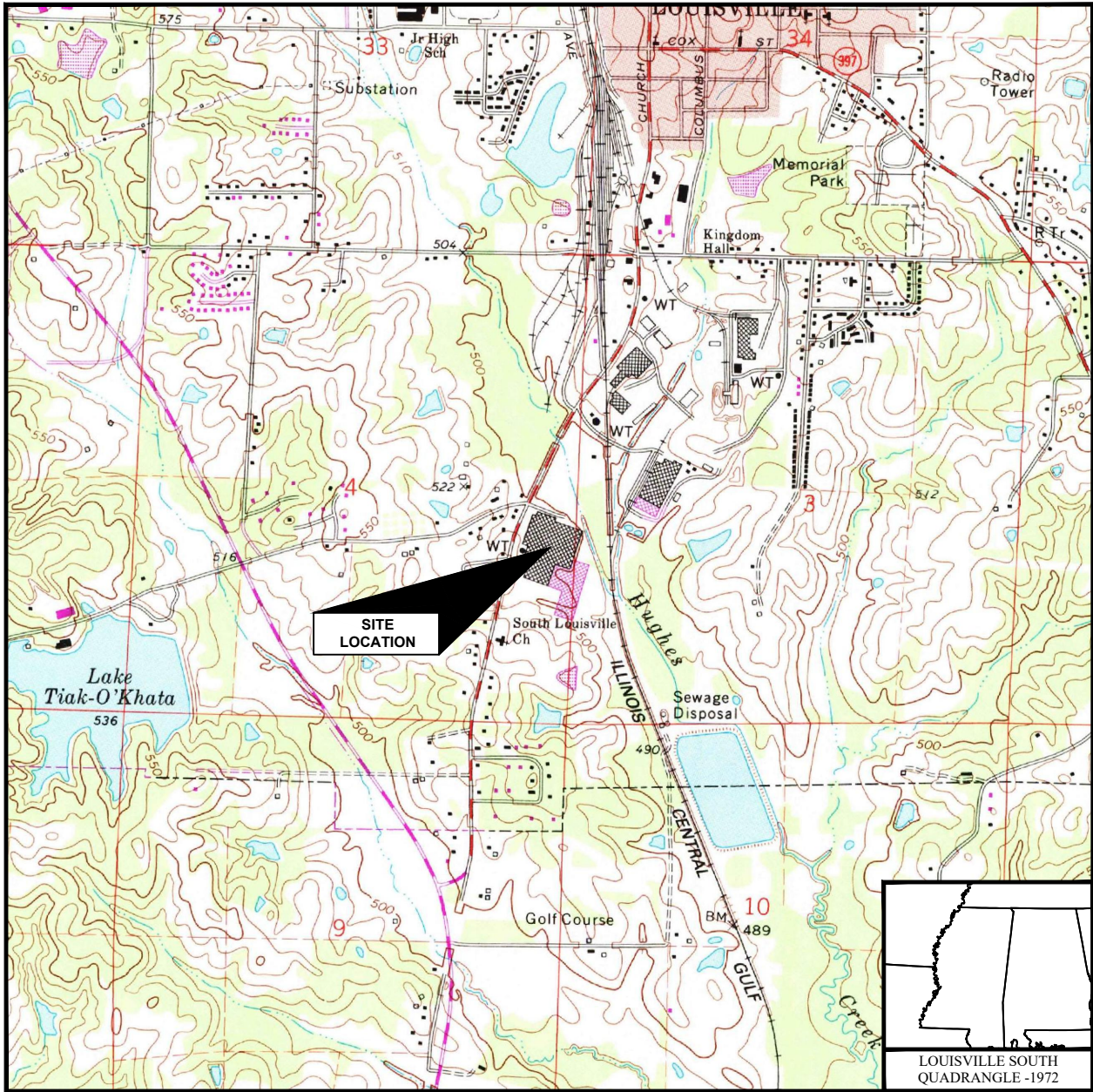
- The *Vapor Intrusion Mitigation Plan, dated July 7, 2023*, has been executed at the site without significant variances to the approved plan, as detailed in Section 3.1 of this report. The system is currently maintaining a vacuum of 2.5 inches of water column at each sub-slab extraction location.
- Cis-1,2-dichloroethene was not detected in indoor air for the first time since indoor air sampling began in 2021.
- Tetrachloroethylene was detected in indoor air samples IA-1 (2.3  $\mu\text{g}/\text{m}^3$ ), IA-2 (2.3  $\mu\text{g}/\text{m}^3$ ), IA-3 (2.2  $\mu\text{g}/\text{m}^3$ ), and IA-4 (2.3  $\mu\text{g}/\text{m}^3$ ). The detected tetrachloroethylene concentrations were below the commercial screening VISL value of 47.2  $\mu\text{g}/\text{m}^3$  and the OSHA PEL of 678,000  $\mu\text{g}/\text{m}^3$ .
- Trichloroethylene was detected in indoor air samples IA-1 (4.6  $\mu\text{g}/\text{m}^3$ ), IA-2 (4.5  $\mu\text{g}/\text{m}^3$ ), IA-3 (4.5  $\mu\text{g}/\text{m}^3$ ), and IA-4 (3.8  $\mu\text{g}/\text{m}^3$ ). The detected trichloroethylene concentrations were above the commercial screening VISL value

of 2.99  $\mu\text{g}/\text{m}^3$  but significantly below the OSHA Permissible Exposure Limit (PEL) of 537,000  $\mu\text{g}/\text{m}^3$ . All indoor sample locations remain slightly above the commercial VISL value for TCE; however, there is an order of magnitude decrease in indoor air concentrations since the vapor intrusion mitigation system start-up. It should also be noted that laboratory dilution was required due to the high remaining vacuum resulting in elevated reporting limits.

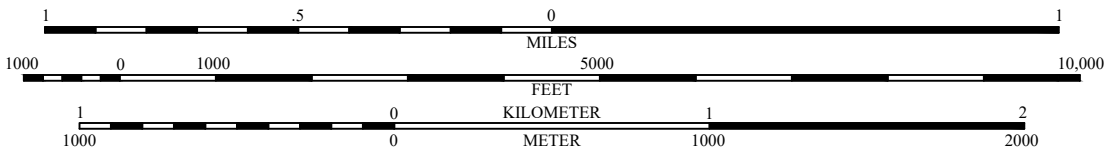
## **6.0 RECOMMENDATIONS**


Based on the finding and conclusions of this report, PPM recommends continuing the evaluation of SSDS as detailed in the Vapor Intrusion Mitigation Plan dated July 7, 2023, with an alteration to the Vapor Intrusion Mitigation Plan being that the site indoor air monitoring events occur on a quarterly basis as opposed to monthly basis. This alteration to the schedule will allow for seasonal evaluation of the vapor mitigation system. The next indoor air monitoring event is scheduled for the second quarter of 2024.

## FIGURES



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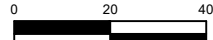
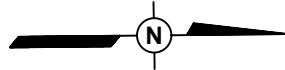
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DRAWN BY: <b>JCP</b>	DRAWN DATE: <b>03/22/24</b>
PROJECT NUMBER: <b>30128309</b>	PHASE: <b>MI</b>

**WINSTON COUNTY ECONOMIC  
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 WINSTON COUNTY ECONOMIC  
 DEVELOPMENT PROPERTY**  
 912 SOUTH CHURCH STREET  
 LOUISVILLE, MISSISSIPPI

**SITE LOCATION MAP**

FIGURE NUMBER

**1**



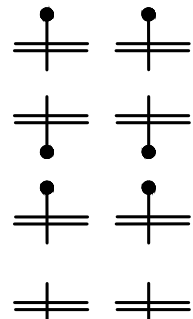
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HEWLETT MFG.

DRAINS

OFFICE  
BUILDING



**PPM** PPM CONSULTANTS, INC.  
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DRAWN BY: JCP      DRAWN DATE: 03/22/24

PROJECT NUMBER: 30128309      PHASE: MI

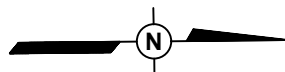
WINSTON COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP  
WINSTON COUNTY ECONOMIC DEVELOPMENT PROPERTY  
912 SOUTH CHURCH STREET  
LOUISVILLE, MISSISSIPPI

SITE MAP

FIGURE  
NUMBER

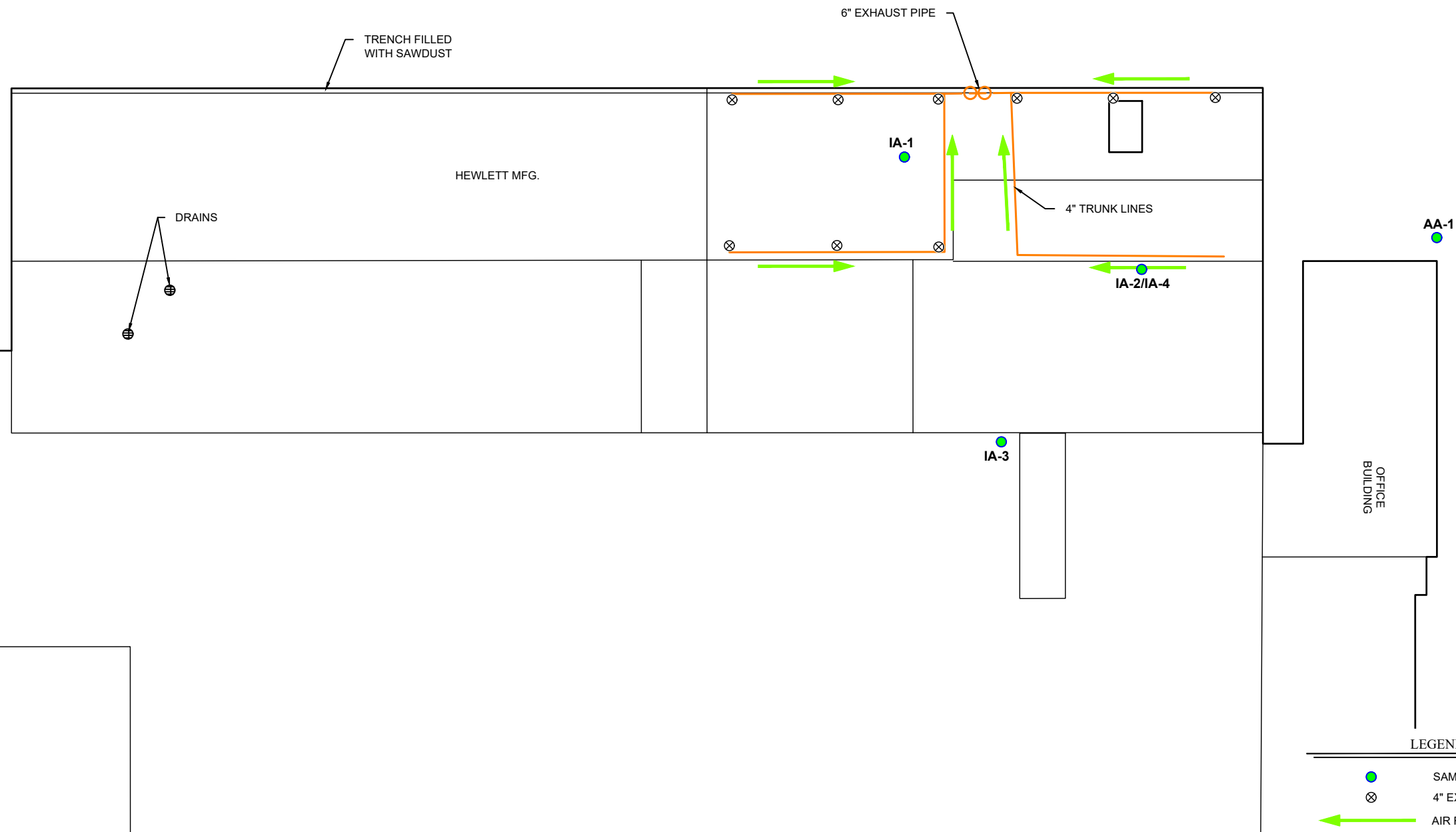
2








0 20 40

SCALE: 1"=40'  
(Approximate)



LEGEND:

-  SAMPLE LOCATION
-  4" EXTRACTION POINT LOCATION
-  AIR FLOW DIRECTION

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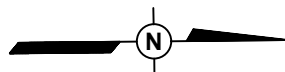
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SUB-SLAB DEPRESSURIZATION POINTS, PIPING,  
AND EXHAUST SYSTEM

FIGURE  
NUMBER

3



0 20 40  
 SCALE: 1"=40'  
 (Approximate)

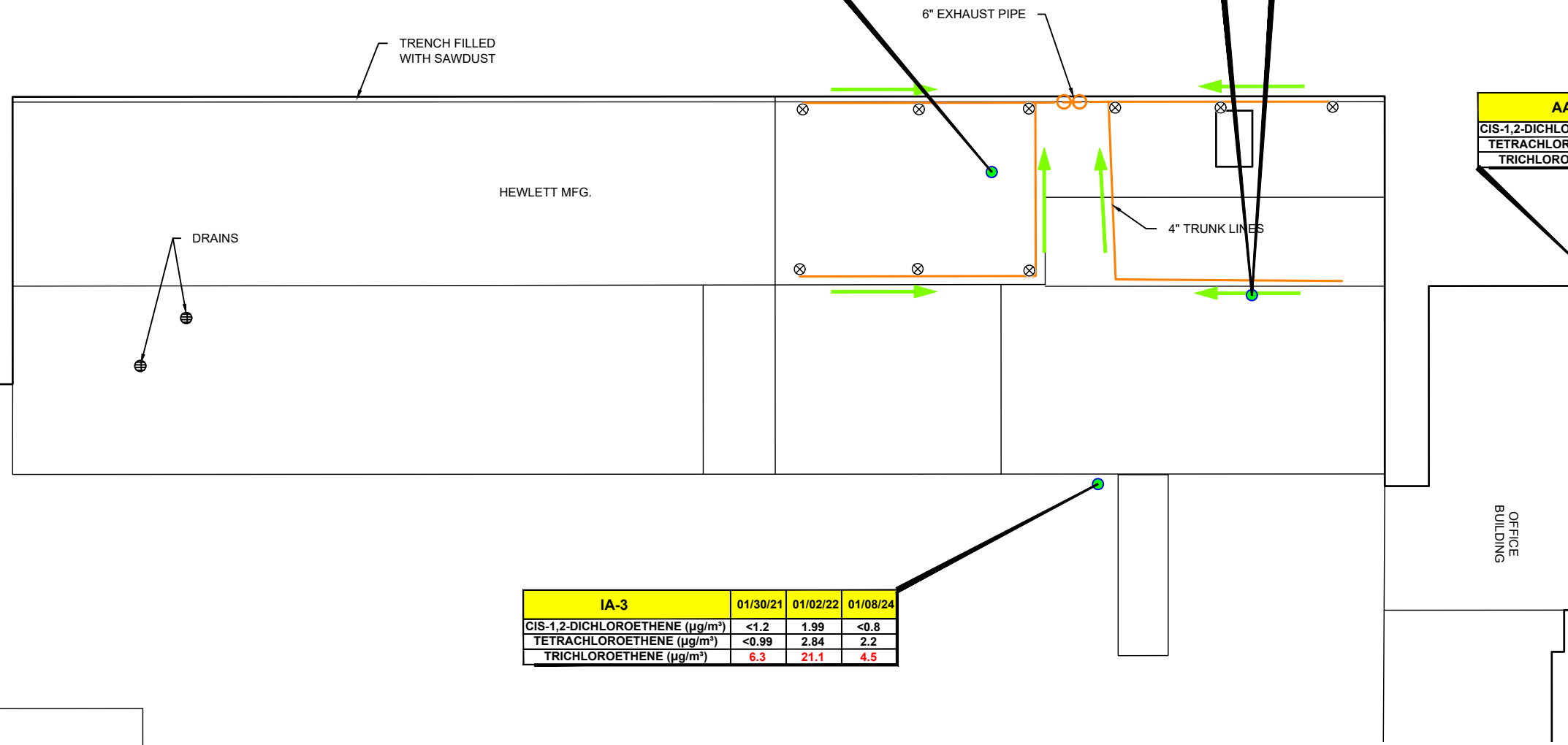
IA-1	01/30/21	01/02/22	01/08/24
CIS-1,2-DICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	2.00	2.19	<0.8
TETRACHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	2.60	1.91	2.30
TRICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	38.6	37.6	4.6

IA-2	01/08/24
CIS-1,2-DICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<0.8
TETRACHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	2.3
TRICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	4.5

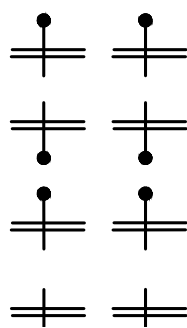
IA-4	01/30/21
CIS-1,2-DICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<0.8
TETRACHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	2.3
TRICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	3.8

AA-1	01/08/24
CIS-1,2-DICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<0.8
TETRACHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<1.1
TRICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<1.4

IA-3	01/30/21	01/02/22	01/08/24
CIS-1,2-DICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<1.2	1.99	<0.8
TETRACHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	<0.99	2.84	2.2
TRICHLOROETHENE ( $\mu\text{g}/\text{m}^3$ )	6.3	21.1	4.5



- LEGEND:
- SAMPLE LOCATION
  - X 4" EXTRACTION POINT LOCATION
  - AIR FLOW DIRECTION
  - $(\mu\text{g}/\text{m}^3)$  MICROGRAMS PER CUBIC METER
  - 38.6 VALUES IN RED TEXT ARE ABOVE THE USEPA VISLs (COMMERCIAL)



<b>PPM</b> PPM CONSULTANTS, INC. www.ppmco.com	
DRAWN BY: JCP	DRAWN DATE: 03/22/24
PROJECT NUMBER: 30128309	PHASE: MI

WINSTON COUNTY ECONOMIC DEVELOPMENT PARTNERSHIP  
 WINSTON COUNTY ECONOMIC DEVELOPMENT PROPERTY  
 912 SOUTH CHURCH STREET  
 LOUISVILLE, MISSISSIPPI

SITE LOCATION MAP WITH CONCENTRATIONS

FIGURE NUMBER  
 4

## **TABLES**

**TABLE 1**  
**SUMMARY OF INDOOR AIR ANALYTICAL RESULTS - DETECTED CONSTITUENTS**  
**WINSTON COUNTY ECONOMIC DEVELOPMENT BUILDING**  
**912 SOUTH CHURCH AVENUE**  
**LOUISVILLE, MISSISSIPPI**

SAMPLE I.D.	DATE	VOCs ( $\mu\text{g}/\text{m}^3$ )		
		CIS-1,2-DICHLOROETHENE	TETRACHLOROETHENE	TRICHLOROETHENE
IA-1	1/30/2021	2.00	2.60	<b>38.6</b>
	1/2/2022	2.19	1.91	<b>37.6</b>
	1/8/2024	<0.8	2.30	<b>4.6</b>
IA-2	1/8/2024	<0.8	2.3	<b>4.5</b>
IA-3	1/30/2021	<1.2	<0.99	<b>6.3</b>
	1/2/2022	1.99	2.84	<b>21.1</b>
	1/8/2024	<0.8	2.2	<b>4.5</b>
IA-4	1/30/2021	<0.8	2.3	<b>3.8</b>
AA-1	1/8/2024	<0.8	<1.1	<1.4
<b>USEPA VISLs</b>		NA	<b>47.2</b>	<b>2.99</b>

Notes:  $\mu\text{g}/\text{m}^3$  - micrograms per cubic meter PPM Consultants, Inc.

Volatile Organic Compounds analyzed per EPA Method TO-15

Values in **Bold** font are above the USEPA VISLs (COMMERCIAL), HQ-1 and TR-10

-6

Sample IA-4 was collected as a duplicate sample of IA-2.

Source(s): PPM Consultants, Inc.

## **APPENDICES**

**APPENDIX A – LABORATORY ANALYTICAL REPORT**

25 January 2024

Ben Lightsey  
PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

H&P Project: MC011624-10  
Client Project: Louisville, MS

Dear Ben Lightsey:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 16-Jan-24 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

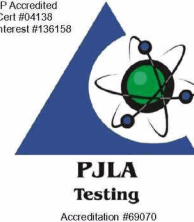


Lisa Eminhizer  
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the National Environmental Laboratory Accreditation Conference (NELAC) for the fields of proficiency and analytes listed on those certificates. H&P is approved as an Environmental Testing Laboratory in accordance with the DoD -ELAP Program and ISO/IEC 17025:2005 programs for the fields of proficiency and analytes included in the certification process and to the extent offered by the accreditation agency. Unless otherwise noted, accreditation certificate numbers, expiration of certificates, and scope of accreditation can be found at: [www.handpmg.com/about/certifications](http://www.handpmg.com/about/certifications). Fields of services and analytes contained in this report that are not listed on the certificates should be considered uncertified or unavailable for certification.



NELAP Accredited  
TNI Cert #04138  
Agency Interest #136158



PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IA-1	E401064-01	Air	08-Jan-24	16-Jan-24
IA-2	E401064-02	Air	08-Jan-24	16-Jan-24
IA-3	E401064-03	Air	08-Jan-24	16-Jan-24
IA-4	E401064-04	Air	08-Jan-24	16-Jan-24
AA-1	E401064-05	Air	08-Jan-24	16-Jan-24



PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

**DETECTIONS SUMMARY**

Sample ID: IA-1

Laboratory ID: E401064-01

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
Trichloroethene	4.6	1.1	ug/m3	EPA TO-15	
Tetrachloroethene	2.3	1.4	ug/m3	EPA TO-15	

Sample ID: IA-2

Laboratory ID: E401064-02

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
Trichloroethene	4.5	1.1	ug/m3	EPA TO-15	
Tetrachloroethene	2.3	1.4	ug/m3	EPA TO-15	

Sample ID: IA-3

Laboratory ID: E401064-03

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
Trichloroethene	4.5	1.1	ug/m3	EPA TO-15	
Tetrachloroethene	2.2	1.4	ug/m3	EPA TO-15	

Sample ID: IA-4

Laboratory ID: E401064-04

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
Trichloroethene	3.8	1.1	ug/m3	EPA TO-15	
Tetrachloroethene	2.3	1.4	ug/m3	EPA TO-15	

Sample ID: AA-1

Laboratory ID: E401064-05

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
No Detections Reported					

PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>IA-1 (E401064-01) Air    Sampled: 08-Jan-24    Received: 16-Jan-24</b>									
<b>R-02</b>									
Vinyl chloride	ND	0.26	ug/m3	2	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>4.6</b>	<b>1.1</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>2.3</b>	<b>1.4</b>	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		88.0 %		77-127	"	"	"	"	

<b>IA-2 (E401064-02) Air    Sampled: 08-Jan-24    Received: 16-Jan-24</b>									
<b>R-02</b>									
Vinyl chloride	ND	0.26	ug/m3	2	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>4.5</b>	<b>1.1</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>2.3</b>	<b>1.4</b>	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.8 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		90.3 %		77-127	"	"	"	"	

<b>IA-3 (E401064-03) Air    Sampled: 08-Jan-24    Received: 16-Jan-24</b>									
<b>R-02</b>									
Vinyl chloride	ND	0.26	ug/m3	2	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>4.5</b>	<b>1.1</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>2.2</b>	<b>1.4</b>	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.7 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		91.0 %		77-127	"	"	"	"	

PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>IA-4 (E401064-04) Air Sampled: 08-Jan-24 Received: 16-Jan-24</b>									
Vinyl chloride	ND	0.26	ug/m3	2	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>3.8</b>	<b>1.1</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>2.3</b>	<b>1.4</b>	"	"	"	"	"	"	

**R-02**

<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	76-134	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	78-125	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		90.4 %	77-127	"	"	"	"	"	

**AA-1 (E401064-05) Air Sampled: 08-Jan-24 Received: 16-Jan-24**

**R-02**

Vinyl chloride	ND	0.26	ug/m3	2	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.80	"	"	"	"	"	"	
Trichloroethene	ND	1.1	"	"	"	"	"	"	
Tetrachloroethene	ND	1.4	"	"	"	"	"	"	

<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	76-134	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		107 %	78-125	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.1 %	77-127	"	"	"	"	"	

PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch EA41907 - TO-15**

**Blank (EA41907-BLK1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	ND	0.13	ug/m3							
trans-1,2-Dichloroethene	ND	0.40	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Trichloroethene	ND	0.55	"							
Tetrachloroethene	ND	0.69	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	206		"	214		96.6	76-134			
<i>Surrogate: Toluene-d8</i>	216		"	208		104	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	343		"	363		94.4	77-127			

**LCS (EA41907-BS1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	50.2	0.13	ug/m3	52.0		96.5	64-127			
trans-1,2-Dichloroethene	80.3	0.40	"	80.8		99.4	67-124			
cis-1,2-Dichloroethene	82.0	0.40	"	80.0		102	70-121			
Trichloroethene	113	0.55	"	110		103	71-123			
Tetrachloroethene	146	0.69	"	138		106	66-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	223		"	214		105	76-134			
<i>Surrogate: Toluene-d8</i>	203		"	208		97.8	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	346		"	363		95.2	77-127			

**LCS Dup (EA41907-BS1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	52.4	0.13	ug/m3	52.0		101	64-127	4.40	25	
trans-1,2-Dichloroethene	82.9	0.40	"	80.8		103	67-124	3.20	25	
cis-1,2-Dichloroethene	82.7	0.40	"	80.0		103	70-121	0.879	25	
Trichloroethene	118	0.55	"	110		108	71-123	3.96	25	
Tetrachloroethene	147	0.69	"	138		107	66-124	0.703	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	222		"	214		104	76-134			
<i>Surrogate: Toluene-d8</i>	203		"	208		97.7	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	353		"	363		97.4	77-127			

PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
25-Jan-24 10:49

### Notes and Definitions

R-02      This sample was diluted due to limited sample volume, resulting in elevated reporting limits.

LCC      Leak Check Compound

ND      Analyte NOT DETECTED at or above the reporting limit

MDL      Method Detection Limit

%REC      Percent Recovery

RPD      Relative Percent Difference

### Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15 and H&P 8260SV.

H&P is approved by the State of Louisiana Department of Environmental Quality under the National Environmental Laboratory Accreditation Conference (NELAC) certification number 04138

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at [www.handpmg.com/about/certifications](http://www.handpmg.com/about/certifications).

Lab Client and Project Information		Turnaround Time	Sampler Information
Lab Client/Consultant: <i>PPM Consu. Plants</i>	Project Name / #: <i>Teters Floral</i>	<input checked="" type="checkbox"/> Standard (7 days for preliminary report, 10 days for final report) <input type="checkbox"/> Rush (specify): _____	Sampler(s): _____
Lab Client Project Manager: <i>Ben Lightkey</i>	Project Location: <i>Louisville, MS</i>		Signature: _____
Lab Client Address: <i>289 Commerce Park Drive, Satec</i>	Report E-Mail(s): <i>ben.lightkey@ppmco.com</i>	Date: _____	
Lab Client City, State, Zip: <i>Ridgeland, MS 39157</i>			
Phone Number: <i>601 556 8233</i>			

Sample Receipt (Lab Use Only)	
Date Rec'd: <i>1/16/24</i>	Control #: <i>240042.01</i>
H&P Project #: <i>MC011624-10</i>	
Lab Work Order #: <i>F401064</i>	
Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below	
Receipt Gauge ID: <i>60206</i>	Temp: <i>RT</i>
Outside Lab:	
Receipt Notes/Tracking #: <i>1293TT6190 51312547</i> <i>1293TT6190 5153 5753</i>	Lab PM Initials: <i>SM</i>

**Additional Instructions to Laboratory:**  
*A PCE, TCE, VC, trans - 1,2 DCE  
& cis - 1,2 DCE*

\* Preferred VOC units (please choose one):  
 µg/L  µg/m<sup>3</sup>  ppbv  ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc	CONTAINER ID (#)	Lab use only: Receipt Vac	VOCs Standard Full List <input type="checkbox"/> TO-15 <input type="checkbox"/> TO-15	VOCs Short List / Project List <input checked="" type="checkbox"/> TO-15 <input checked="" type="checkbox"/> TO-15	Oxygens <input type="checkbox"/> TO-15 <input type="checkbox"/> TO-15	Naphthalene <input type="checkbox"/> TO-15 <input type="checkbox"/> TO-15	TPHv as Gas <input type="checkbox"/> TO-15m <input type="checkbox"/> TO-15m	Aromatic/Aliphatic Fractions <input type="checkbox"/> TO-15m <input type="checkbox"/> TO-15m	Leak Check Compound <input type="checkbox"/> DFA <input type="checkbox"/> IPA <input type="checkbox"/> He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 <input type="checkbox"/> CO2 <input type="checkbox"/> O2 <input type="checkbox"/> N2
<i>IA-1</i>		<i>01/08/24</i>	<i>1711</i>	<i>IA</i>	<i>66L</i>	<i>908</i>	<i>-10</i>		<input checked="" type="checkbox"/>							
<i>IA-2</i>		<i>01/08/24</i>	<i>1712</i>	<i>IA</i>	<i>6L</i>	<i>911</i>	<i>-9</i>		<input checked="" type="checkbox"/>							
<i>IA-3</i>		<i>01/08/24</i>	<i>1710</i>	<i>IA</i>	<i>6L</i>	<i>910</i>	<i>-10</i>		<input checked="" type="checkbox"/>							
<i>IA-4</i>		<i>01/08/24</i>	<i>1714</i>	<i>IA</i>	<i>6L</i>	<i>912</i>	<i>-9</i>		<input checked="" type="checkbox"/>							
<i>AA-1</i>		<i>01/08/24</i>	<i>1635</i>	<i>AA</i>	<i>6L</i>	<i>914</i>	<i>-10</i>		<input checked="" type="checkbox"/>							

Approved/Relinquished by: <i>Ben</i>	Company: <i>PPM</i>	Date: <i>01/09/24</i>	Time: <i>1730</i>	Received by: <i>Ben Blum</i>	Company: <i>H&amp;P</i>	Date: <i>1/16/24</i>	Time: <i>1250</i>
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:



22 January 2024

Ben Lightsey  
PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

## DRAFT REPORT

H&P Project: MC011624-10  
Client Project: Louisville, MS

Dear Ben Lightsey:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 16-Jan-24 which were analyzed in accordance with the attached Chain of Custody record(s).

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- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Lisa Eminhizer  
Laboratory Director

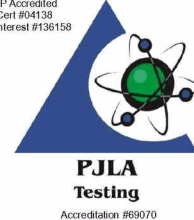
H&P Mobile Geochemistry, Inc. is certified under the National Environmental Laboratory Accreditation Conference (NELAC) for the fields of proficiency and analytes listed on those certificates. H&P is approved as an Environmental Testing Laboratory in accordance with the DoD -ELAP Program and ISO/IEC 17025:2005 programs for the fields of proficiency and analytes included in the certification process and to the extent offered by the accreditation agency. Unless otherwise noted, accreditation certificate numbers, expiration of certificates, and scope of accreditation can be found at: [www.handpmg.com/about/certifications](http://www.handpmg.com/about/certifications). Fields of services and analytes contained in this report that are not listed on the certificates should be considered uncertified or unavailable for certification.

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**DRAFT  
REPORT**

PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
Project Number: Louisville, MS  
Project Manager: Ben Lightsey

Reported:  
22-Jan-24 11:42

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IA-1	E401064-01	Air	08-Jan-24	16-Jan-24
IA-2	E401064-02	Air	08-Jan-24	16-Jan-24
IA-3	E401064-03	Air	08-Jan-24	16-Jan-24
IA-4	E401064-04	Air	08-Jan-24	16-Jan-24
AA-1	E401064-05	Air	08-Jan-24	16-Jan-24

DRAFT

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PPM Consultants - MS  
289 Commerce Park Dr.  
Ridgeland, MS 39157

Project: MC011624-10  
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22-Jan-24 11:42

**DETECTIONS SUMMARY**

Sample ID: **IA-1**

Laboratory ID: **E401064-01**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Trichloroethene	2.3	0.55		ug/m3	EPA TO-15	
Tetrachloroethene	1.2	0.69		ug/m3	EPA TO-15	

Sample ID: **IA-2**

Laboratory ID: **E401064-02**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Trichloroethene	2.2	0.55		ug/m3	EPA TO-15	
Tetrachloroethene	1.2	0.69		ug/m3	EPA TO-15	

Sample ID: **IA-3**

Laboratory ID: **E401064-03**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Trichloroethene	2.2	0.55		ug/m3	EPA TO-15	
Tetrachloroethene	1.1	0.69		ug/m3	EPA TO-15	

Sample ID: **IA-4**

Laboratory ID: **E401064-04**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
Trichloroethene	1.9	0.55		ug/m3	EPA TO-15	
Tetrachloroethene	1.2	0.69		ug/m3	EPA TO-15	

Sample ID: **AA-1**

Laboratory ID: **E401064-05**

Analyte	Result	Reporting		Units	Method	Notes
		Limit				
No Detections Reported						

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**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>IA-1 (E401064-01) Air Sampled: 08-Jan-24 Received: 16-Jan-24</b>									
Vinyl chloride	ND	0.13	ug/m3	1	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>2.3</b>	<b>0.55</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>1.2</b>	<b>0.69</b>	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		104 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		100 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		88.0 %		77-127	"	"	"	"	
<b>IA-2 (E401064-02) Air Sampled: 08-Jan-24 Received: 16-Jan-24</b>									
Vinyl chloride	ND	0.13	ug/m3	1	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>2.2</b>	<b>0.55</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>1.2</b>	<b>0.69</b>	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		105 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		99.8 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		90.3 %		77-127	"	"	"	"	
<b>IA-3 (E401064-03) Air Sampled: 08-Jan-24 Received: 16-Jan-24</b>									
Vinyl chloride	ND	0.13	ug/m3	1	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>2.2</b>	<b>0.55</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>1.1</b>	<b>0.69</b>	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>									
		100 %		76-134	"	"	"	"	
<i>Surrogate: Toluene-d8</i>									
		99.7 %		78-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		91.0 %		77-127	"	"	"	"	

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**Volatile Organic Compounds by EPA TO-15**

**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
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**IA-4 (E401064-04) Air Sampled: 08-Jan-24 Received: 16-Jan-24**

Vinyl chloride	ND	0.13	ug/m3	1	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>1.9</b>	<b>0.55</b>	"	"	"	"	"	"	
<b>Tetrachloroethene</b>	<b>1.2</b>	<b>0.69</b>	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4

104 % 76-134

"

"

"

"

Surrogate: Toluene-d8

101 % 78-125

"

"

"

"

Surrogate: 4-Bromofluorobenzene

90.4 % 77-127

"

"

"

"

**AA-1 (E401064-05) Air Sampled: 08-Jan-24 Received: 16-Jan-24**

Vinyl chloride	ND	0.13	ug/m3	1	EA41907	19-Jan-24	19-Jan-24	EPA TO-15	
trans-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.40	"	"	"	"	"	"	
Trichloroethene	ND	0.55	"	"	"	"	"	"	
Tetrachloroethene	ND	0.69	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4

97.9 % 76-134

"

"

"

"

Surrogate: Toluene-d8

107 % 78-125

"

"

"

"

Surrogate: 4-Bromofluorobenzene

95.1 % 77-127

"

"

"

"

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**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EA41907 - TO-15**

**Blank (EA41907-BLK1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	ND	0.13	ug/m3							
trans-1,2-Dichloroethene	ND	0.40	"							
cis-1,2-Dichloroethene	ND	0.40	"							
Trichloroethene	ND	0.55	"							
Tetrachloroethene	ND	0.69	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	206		"	214		96.6	76-134			
<i>Surrogate: Toluene-d8</i>	216		"	208		104	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	343		"	363		94.4	77-127			

**LCS (EA41907-BS1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	50.2	0.13	ug/m3	52.0		96.5	64-127			
trans-1,2-Dichloroethene	80.3	0.40	"	80.8		99.4	67-124			
cis-1,2-Dichloroethene	82.0	0.40	"	80.0		102	70-121			
Trichloroethene	113	0.55	"	110		103	71-123			
Tetrachloroethene	146	0.69	"	138		106	66-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	223		"	214		105	76-134			
<i>Surrogate: Toluene-d8</i>	203		"	208		97.8	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	346		"	363		95.2	77-127			

**LCS Dup (EA41907-BSD1)**

Prepared & Analyzed: 19-Jan-24

Vinyl chloride	52.4	0.13	ug/m3	52.0		101	64-127	4.40	25	
trans-1,2-Dichloroethene	82.9	0.40	"	80.8		103	67-124	3.20	25	
cis-1,2-Dichloroethene	82.7	0.40	"	80.0		103	70-121	0.879	25	
Trichloroethene	118	0.55	"	110		108	71-123	3.96	25	
Tetrachloroethene	147	0.69	"	138		107	66-124	0.703	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	222		"	214		104	76-134			
<i>Surrogate: Toluene-d8</i>	203		"	208		97.7	78-125			
<i>Surrogate: 4-Bromofluorobenzene</i>	353		"	363		97.4	77-127			

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### Notes and Definitions

LCC      Leak Check Compound  
ND      Analyte NOT DETECTED at or above the reporting limit  
MDL      Method Detection Limit  
%REC      Percent Recovery  
RPD      Relative Percent Difference

### Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15 and H&P 8260SV.

H&P is approved by the State of Louisiana Department of Environmental Quality under the National Environmental Laboratory Accreditation Conference (NELAC) certification number 04138

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at [www.handpimg.com/about/certifications](http://www.handpimg.com/about/certifications).

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