



**Corporate Headquarters**  
Lansing, Michigan  
3340 Ranger Road, Lansing, MI 48906  
f: 877.884.6775  
t: 517.321.3331

**Michigan Locations**  
Berkley      Oak Park  
Grand Rapids      Lansing

June 4, 2024

Ms. Janet Michaluk  
Michigan Department of Environment, Great Lakes, and Energy (Lansing)  
525 West Allegan P.O. Box 30242  
Lansing, Michigan 48909-7742

**Re: Phase II Environmental Site Assessment of the 108 Adams Street Site  
Located at 108 Adams Street, 101-109 North Jefferson Avenue  
and 501 Columbus Avenue (formerly 111 North Madison Avenue)  
Bay City, Michigan  
PM Project No. 01-14761-0-0002**

Dear Ms. Michaluk:

PM Environmental (PM), a Pinchin Company, completed a Phase II Environmental Site Assessment (ESA) of the 108 Adams Street Site located at 108 Adams Street, 101-109 North Jefferson Avenue, and 501 Columbus Avenue, Bay City, Bay County, Michigan (hereafter referred to as the "subject property"). This Phase II ESA was conducted to assess eight areas of concern (Area A through Area H) identified in the Sampling and Analysis Plan prepared for the subject property by PM in June 2023 (June 2023 SAP). This Phase II ESA Report summarizes the subsurface investigation activities conducted, the geology encountered, and the sample analytical results.

**THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY, MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY, AND BAY CITY HOUSING COMMISSION, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.**

### **SUBJECT PROPERTY INFORMATION AND BACKGROUND**

The subject property consists of six parcels (Parcel IDs: 160-028-178-001-00, 160-028-178-005-00, 160-028-178-004-00, 160-028-178-003-00, 160-028-178-002-00, and 160-028-251-003-00) totaling 3.77 acres and is bound to the north by 11<sup>th</sup> Street, to the east by North Madison Avenue, to the south by Columbus Avenue, and to the west by Adams Street, with North Jefferson Street bisecting the property into eastern and western portions in Bay City, Michigan (Figure 1). The eastern portion (currently 501 Columbus Avenue, formerly 111 North Madison Avenue) is developed with a 17,000-square foot building in the northern portion and a 1,728-square foot dwelling and 280-square foot garage in the southwestern portion. The western portion (108 Adams Street and 101-109 North Jefferson Street) is developed with an approximately 450-square foot warming shed in the northern portion, an 1,823-square foot restaurant in the central portion, an approximately 100-square foot shed in the eastern portion, and a 30,000-square foot open-air market space in the western portion (Figure 2). Groomed grass and landscaped areas are present surrounding the structures in the eastern portion, in the southeastern portion of the western portion, and in the rights-of-ways (ROWs), with asphalt and concrete pavement throughout the remainder of the property. The subject property is currently vacant with no current business operations.



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## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### **108 Adams Street Site**

108 Adams Street, 101-109 North Jefferson Avenue  
and 501 Columbus Avenue (formerly 111 North Madison Avenue)  
Bay City, Michigan  
PM Project Number 01-14761-0-0002

*Prepared for:*

**Michigan Department of Environment, Great Lakes, and Energy  
(Lansing)**

525 West Allegan P.O. 30242  
Lansing, Michigan 48909-7742

*Prepared by:*

**PM Environmental, a Pinchin Company**

4080 West Eleven Mile Road  
Berkley, Michigan 48072

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The historical use of the subject property is summarized below, and the provided Table summarizes each respective parcel and corresponding area of concern investigated by the Phase II ESA:

***Eastern Portion***

This property was developed prior to 1870 with the current dwelling in the southwestern portion, with a school building constructed in the northern portion and several dwellings and associated outbuildings in the eastern, southeastern, southern, and western portions by 1882. The school building was demolished between at least 1938 and 1955 when the current YMCA building was constructed. The eastern, southeastern, southern, and western dwellings and associated outbuildings were demolished at various times between 1970 and 1986. This property was occupied by residential and academic and/or community center operations from the late 1880s to 2015, has been vacant since that time.

***Western Portion***

This property was developed prior to 1886 with a light and power plant building and associated transformer substation in the northeastern portion, with several dwellings and associated outbuildings constructed in the southeastern, southwestern, and western-central portions and lumber sheds and a wood office in the western and northwestern portions, respectively, by 1912. The plant, wood office, and lumber sheds were demolished by 1925 when a portion of the current open air market structure was constructed, with an addition constructed by 1950. The current restaurant building was constructed in 1937, and the current warming shed was constructed between 1970 and 1973. The dwellings and associated outbuildings were demolished at various times between 1966 and 2012. The current storage shed was constructed between 2009 and 2012. This property was occupied by power plant/substation and small-scale lumber yard operations from the late 1880s to the 1920s, residential from the late 1880s to various times between 1966 and 2012, restaurant operations from 1937 to 2020, and open market and temporary ice-skating rink operations since 1925.

<b>Parcel ID</b>	<b>Address</b>	<b>Acreage</b>	<b>Portion of Subject Property</b>	<b>Area of Concern</b>
160-028-178-001-00	108 Adams Street	1.59 Acres	Western Portion	Area C and Area E
160-028-178-005-00	101 North Jefferson Street	0.07 Acres	Western Portion	None
160-028-178-004-00	105 North Jefferson Street	0.11 Acres	Western Portion	None
160-028-178-003-00	107 North Jefferson Street	0.05 Acres	Western Portion	None
160-028-178-002-00	109 North Jefferson Street	0.06 Acres	Western Portion	Area E

160-028-251-003-00	501 Columbus Avenue	1.81 Acres	Eastern Portion	Area A
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## **PREVIOUS SITE INVESTIGATIONS**

PM reviewed the following previous environmental reports for the subject property. Relevant figures and tables from the 2017 and 2020 site investigations are included in Appendix A.

Property Address	Name of Report	Date of Report	Company that Prepared Report
108 Adams Street	Phase I Environmental Site Assessment (ESA)	6-16-2020	PM
	Baseline Environmental Assessment (BEA)	8-13-2020	
111 North Madison Avenue and 501 Columbus Avenue (currently 501 Columbus Avenue)	Phase I ESA	4-18-2016	AKT Peerless (AKT)
	Phase II ESA	5-26-2016	
	Phase II ESA	10-26-2017	
	Phase I ESA	11-9-2017	
109 North Jefferson Avenue	Phase I ESA	8-10-2023	PM

### **108 Adams Street**

At the time of the 2020 Phase I ESA, this property was occupied by the current open-air market and vacant restaurant. Recognized Environmental Conditions (RECs) were identified associated with the following:

- Historical transformer substation operations and associated potential for contamination;
- Former dwellings that were demolished between 1912 and 1925 and associated potential for demolition fill to be present in the dwelling basements; and
- Former east adjoining dry cleaning operations.

To assess these RECs, PM completed subsurface investigation activities in July 2020 that included the advancement eight soil borings (SB-1 through SB-8), installation of one temporary in-boring soil gas sampling point (SB-8/SG-1), and collecting 13 soil samples and one soil gas sample for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), polychlorinated biphenyls (PCBs), and Michigan 10 metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), or some combination thereof.

Concentrations of phenanthrene, mercury, and/or selenium were detected in several soil samples exceeding the Part 201 Residential and Nonresidential Drinking Water Protection (DWP) and/or Groundwater Surface Water Interface Protection (GSIP) cleanup criteria and/or the EGLE Residential and Nonresidential Volatilization to Indoor Air Pathway (VIAP) screening levels. No other concentrations of target analytes were detected in any of the soil and soil gas samples exceeding laboratory method detection limits (MDLs), the Statewide Default Background Levels (SDBLs, applicable to metals in soil only), the most restrictive Part 201 Residential cleanup criteria, and/or the most restrictive EGLE Residential VIAP screening levels.



Based on these analytical results, a BEA was submitted to the EGLE on behalf of the Bay City Housing Commission on October 14, 2020 (BEA ID: 0900519-BEA-1).

### **501 Columbus Avenue and 111 North Madison Avenue**

At the time of the 2016 and 2017 Phase I ESAs, the eastern portion was occupied by the current vacant YMCA and dwelling. RECs were identified in 2016 associated with 1) a suspect pipe/potential orphan underground storage tank (UST); 2) potential for foundry fill to be present onsite; and 3) former east adjoining gas dispensing operations, and a REC was identified in 2017 associated with the documented metal contamination in soil (discussed below) exceeding the Part 201 Residential and Nonresidential cleanup criteria at 111 North Madison Avenue and associated 'facility' status.

Site investigation activities completed in May and October 2017 included the completion of a geophysical survey using ground penetrating radar (GPR), advancement of 13 soil borings (B-1 through B-13) and the collection of 13 soil samples for laboratory analysis of VOCs, PNAs, Michigan 10 Metals, or some combination thereof.

Concentrations of chromium, mercury, selenium, and/or lead were detected in several soil samples exceeding the Part 201 Residential and Nonresidential DWP and/or GSIP cleanup criteria and/or the EGLE Residential VIAP screening levels. No other concentrations of target analytes were detected in any of the soil and soil gas samples exceeding laboratory MDLs, the SDBLs, the most restrictive Part 201 Residential cleanup criteria, and/or the most restrictive EGLE Residential VIAP screening levels.

### **109 North Jefferson Avenue**

At the time of the August 2023 Phase I ESA, this property consisted of vacant land. One REC was identified associated with the contamination and associated facility status at 108 Adams Street and associated potential for vapor encroachment onto this property. No onsite RECs were identified.

## **SAMPLING AND ANALYSIS PLAN (SAP)**

At the request of the EGLE, PM prepared a Sampling and Analysis Plan (SAP) dated June 14, 2023 (addendums prepared on November 1 and December 18, 2023), which detailed objectives to further assess areas of known contamination identified in previous site investigations, evaluate environmental concerns not previously investigated, and determine appropriate response activities or due care measures needed to meet MSDHA requirements pertaining to the proposed redevelopment.

Eight areas of concern (Areas A through H) were identified where investigation was required, and the following SAP objectives were established:

**Area A:** Advance nine (9) soil borings and collect sixteen (16) soil samples, install and sample up to two (2) temporary monitoring wells to replicate and evaluate the original location where lead was identified above direct contact criteria (AKT B-8), evaluate the lateral extent of lead impact in soils surrounding this location, evaluate shallow fill that was not

sampled during previous investigations at AKT B-1, and determine the southern, southwestern, and southeastern extent of the shallow fill soils.

**Area B:** Advance three (3) soil borings and collect six (6) soil samples in effort to replicate the original location where mercury was identified above VIAP screening level at AKT B-11 and to evaluate the lateral extent of mercury impact in soils surrounding this location.

**Area C:** Advance six (6) soil borings and collect twelve (12) soil samples, install and sample up to two (2) temporary monitoring wells to evaluate for the presence of contamination associated with the former power plant.

The November and December 2023 SAP addendums summarized objectives to further assess Area C, which included the advancement of nine (9) soil borings and the collection of 13 soil samples for laboratory analysis of arsenic.

**Area D:** Conduct a Ground-Penetrating Radar (GPR) survey to determine whether orphan fuel oil USTs may be present. Advance two (2) soil borings and collect four (4) soil samples, install and sample up to two (2) temporary monitoring wells to evaluate a former (presumed hydraulic) scale, the potential for fuel oil contamination, and historical fill soils.

**Area E:** Advance eight (8) soil borings and collect fifteen (15) soil samples, install and sample one (1) temporary monitoring wells to evaluate for the presence of contamination in fill material within the former dwelling basement areas and in soils beneath and adjacent to the basement areas.

**Area F:** Advance three (3) soil borings and collect six (6) soil samples, install and sample up to three (3) temporary monitoring wells to evaluate for the presence of contamination in fill material within the former basement areas.

**Area G:** Advance six (6) soil borings and collect twelve (12) soil samples, install and sample up to two (2) temporary monitoring wells to evaluate groundwater conditions, and install and sample two in-boring soil gas points to evaluate for the presence of contamination associated with the former dry-cleaning operations.

**Area H:** Advance nine (9) soil borings and collect fourteen (14) soil samples, install and sample up to five temporary monitoring wells to evaluate for the presence of contamination in fill material, and to determine if asbestos (not previously sampled; soil only) may be present within fill soils in the former building/basement areas on the western portion of the property.

The June 2023 SAP was approved by the EGLE on June 16, 2023, and the subsequent addendums were approved on November 1 and December 20, 2023. These SAPs are on file with EGLE.

## **CURRENT SITE INVESTIGATIONS**

Prior to the commencement of field activities, MissDig, a utility locating service, was contacted to locate utilities on or adjacent to the subject property. Utilities were marked by the respective utility companies where they entered or were located adjacent to the subject property (Figures 2 and 3). Additionally, a geophysical survey investigation utilizing GPR was conducted to clear the proposed soil boring locations of private subsurface utilities.

### **Geophysical Survey**

On August 25, 2023, TerraProbe Environmental, Inc. (TP) was contracted by PM to complete a GPR survey on the subject property in an attempt to locate orphan USTs in and near the vacant restaurant building. Additionally, TP cleared all of the soil boring locations of private subsurface utilities prior to installation with TP. No limitations were encountered during the completion of the GPR survey. TP did not detect any anomalies indicative of the presence of orphan USTs.

The GPR survey area is depicted on Figure 2. TP's GPR Summary Report is included in Appendix B.

### **Subsurface Investigations**

On August 21-25, November 8, 2023, and January 23, 2024 PM completed subsurface investigation activities to assess eight areas of concern (Area A through Area H) identified in the June 2023 SAP, which consisted of the advancement of 55 soil borings (A-1 through A-9, B-1 through B-3, C-1 through C-14 and C-4R, D-1 and D-2, E-1 through E-8, F-1 through F-3, G-1 through G-6 and H-1 through H-9), installation of two temporary in-boring soil gas points (G-1/TSG-1 and G-2/TSG-2), and the collection of 91 soil samples and two soil gas samples for laboratory analysis of VOCs, PNAs, PCBs, diesel-range organics (DRO), Michigan 10 Metals, and asbestos, or some combination thereof.

The table below includes a summary of the soil borings advanced between August 2023 and January 2024.

**This Space Intentionally Left Blank**

**Phase II ESA for the 108 Adams Street Site**  
**Located at 108 Adams Street, 101-109 North Jefferson Avenue, and 501 Columbus Avenue**  
**Bay City, Bay County, Michigan**  
**PM Project No. 01-14761-0-0002; June 4, 2024**

Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Sample Section (justification)
Area A	A-1 (10.0)	5.0-6.0 and 9.0-10.0	Lead	Replicate and delineate previous lead exceedance	<b>Soil:</b> Samples collected from the interval of the previous exceedance and from a deeper interval for vertical delineation. <b>Groundwater:</b> Not encountered.
	A-2 (10.0)	0.5-1.5			<b>Soil:</b> Sample collected from the gravelly sand-sandy clay interface based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	A-3 (10.0)	5.0-6.0 and 9.0-10.0			<b>Soil:</b> Samples collected from the interval of the previous exceedance and from a deeper interval for vertical delineation. <b>Groundwater:</b> Not encountered.
	A-4 (10.0)	5.0-6.0 and 9.0-10.0			
	A-5 (10.0)	5.0-6.0 and 9.0-10.0			
	A-6 (10.0)	0.5-1.5 and 4.5-5.5	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Evaluate previously documented shallow fill material	<b>Soil:</b> Samples collected from geologic interfaces based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	A-7 (10.0)	1.0-2.0 and 5.0-6.0			
	A-8 (10.0)	1.5-2.5			
	A-9 (10.0)	0.5-1.5 and 4.5-5.5			
Area B	B-1 (5.0)	1.0-2.0	Mercury	Replicate and laterally delineate previous mercury exceedance	<b>Soil:</b> Samples collected from the interval of the previous exceedance. <b>Groundwater:</b> Not encountered.
	B-2 (5.0)				
	B-3 (5.0)				

**Phase II ESA for the 108 Adams Street Site**  
**Located at 108 Adams Street, 101-109 North Jefferson Avenue, and 501 Columbus Avenue**  
**Bay City, Bay County, Michigan**  
**PM Project No. 01-14761-0-0002; June 4, 2024**

Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Sample Section (justification)
Area C	C-1 (20.0)	4.0-5.0	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Assess the historical power plant and substation operations	<b>Soil:</b> Samples collected from geologic interfaces and/or from the bottom of the soil borings based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	C-2 (20.0)	0.5-1.5 and 4.0-5.0			
	C-3 (20.0)	0.5-1.5 and 4.5-5.5			
	C-4* (20.0)	0.5-1.5 and 3.5-4.5			
	C-5* (20.0)	1.0-2.0 and 14.0-15.0			
	C-6* (20.0)	0.5-1.5 7.0-8.0 and 14.0-15.0			<b>Soil:</b> Samples collected from the intervals with the highest PID readings beneath the surface (4.6 and 2.8 ppm) and from the bottom of the boring. <b>Groundwater:</b> Not encountered.
	C-4R (8.0)	0.5-1.5 and 4.5-5.5	Arsenic	Delineate arsenic exceedance at C-3	<b>Soil:</b> Samples collected from the shallow interval of previous exceedances and from a deeper interval for vertical delineation. <b>Groundwater:</b> Not encountered.
	C-7 (8.0)				
	C-8 (8.0)				
	C-9 (8.0)				
	C-10 (2.0)	1.0-1.5	Arsenic	Delineate arsenic exceedances at C-7 and C-9	<b>Soil:</b> Samples collected from the shallow interval for horizontal delineation. <b>Groundwater:</b> Not encountered.
	C-11 (2.0)				
	C-12 (2.0)				
	C-13 (2.0)				
	C-14 (2.0)				
Area D	D-1 (15.0)	3.5-4.5 and 11.0-12.0	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Assess potential former fuel oil use and potential fill material	<b>Soil:</b> Samples collected from geologic interfaces and/or from the bottom of the soil borings based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	D-2 (15.0)	1.5-2.5 and 11.5-12.5			

**Phase II ESA for the 108 Adams Street Site**  
**Located at 108 Adams Street, 101-109 North Jefferson Avenue, and 501 Columbus Avenue**  
**Bay City, Bay County, Michigan**  
**PM Project No. 01-14761-0-0002; June 4, 2024**

Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Sample Section (justification)
Area E	E-1 (15.0)	4.5-5.5 and 7.0-8.0	PNAs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	<b>Soil:</b> Samples collected from geologic interfaces based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	E-2 (15.0)	4.5-5.5 and 9.5-10.5			
	E-3 (15.0)	4.5-5.5 and 10.5-11.5			
	E-4 (15.0)	4.5-5.5 and 8.5-9.5			
	E-5 (15.0)	4.5-5.5 and 6.0-7.0			
	E-6 (15.0)	1.0-2.0 and 4.5-5.5			
	E-7 (15.0)	4.5-5.5			
	E-8 (15.0)	4.5-5.5 and 7.0-8.0			
Area F	F-1 (15.0)	3.5-4.5 and 14.0-15.0	VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	<b>Soil:</b> Samples collected from geologic interfaces and/or form the bottom of the soil borings based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	F-2 (15.0)	3.5-4.5 and 10.5-11.5			
	F-3 (15.0)	0.5-1.5 and 4.5-5.5			
Area G	G-1/TSG-1 (15.0)	<b>Soil:</b> 4.0-5.0 and 14.0-15.0	<b>Soil:</b> VOCs and PNAs	Assess former dry cleaner operations	<b>Soil:</b> Samples collected from geologic interfaces and/or from the bottom of the soil borings based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered. <b>Soil Gas:</b> Sampled.
		<b>Soil Gas:</b> 4.5			
	G-2/TSG-2 (15.0)	<b>Soil:</b> 0.5-1.5 and 9.0-10.0	<b>Soil Gas:</b> VOCs		
		<b>Soil Gas:</b> 5.0			
	G-3 (15.0)	1.5-2.5 and 9.5-10.5	VOCs and PNAs		<b>Soil:</b> Samples collected from geologic interfaces and/or form the bottom of the soil borings based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	G-4 (15.0)	1.5-2.5 and 10.0-11.0			
	G-5 (16.0)	3.5-4.5 and 10.0-11.0			
	G-6 (15.0)	1.5-2.5 and 14.0-15.0			

Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Sample Section (justification)
<b>Area H</b>	H-1 (15.0)	1.5-2.5 and 4.0-5.0	VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	<b>Soil:</b> Samples collected from geologic interfaces based on the lack of field evidence of contamination. <b>Groundwater:</b> Not encountered.
	H-2 (15.0)	1.5-2.5			
	H-3 (15.0)	4.5-5.5			
	H-4 (15.0)	1.0-2.0 and 4.5-5.5			
	H-5 (15.0)	1.5-2.5 and 7.5-8.5			
	H-6 (15.0)	1.5-2.5 and 4.5-5.5			
	H-7 (15.0)	0.5-1.5 and 4.0-5.0			
	H-8 (15.0)	0.5-1.5 and 4.5-5.5			
	H-9 (15.0)	0.5-1.5 and 4.5-5.5			

ppm: Parts Per Million

\*Due to a chain of custody error, samples collected from C-4 (0.5-1.5 and 3.5-4.5 feet bgs), C-5 (1.0-2.0 and 14.0-15.0 feet bgs), and C-6 (0.5-1.5 and 7.0-8.0 feet bgs) were discarded by the laboratory prior to analysis.

The soil boring/temporary soil gas sample locations are depicted on Figures 3A through 3H and 4.

### Subsurface Investigations Techniques and QA/QC Procedures

The soil borings were advanced to the desired depth using a Geoprobe® drill rig. Soil sampling was performed for soil classification, verification of subsurface geologic conditions, and for investigating the potential and/or extent of soil and/or groundwater contamination at the subject property. Soil samples were generally collected on a continuous basis using a 5-foot long macro-core sampler. Soil boring logs are included in Appendix C.

During drilling operations, the drilling equipment was cleaned to minimize the possibility of cross contamination. These procedures included cleaning equipment with a phosphate free solution (i.e., Alconox®) and rinsing with distilled water after each sample collection. Drilling and sampling equipment was also cleaned in this manner prior to initiating field activities.

Soil collected from 1-foot sample intervals was screened using a photoionization detector (PID) to determine if VOCs were present. Soil from specific depths was placed in plastic bags and allowed to volatilize. The headspace within each bag was then monitored with the PID, which can detect trace levels of organic compounds in the air space within the plastic bag. The soil sample was collected from the soil boring based upon the highest PID reading, visual/olfactory evidence, a change in geology, and/or source depth. The soil sample for VOC analysis was preserved with



methanol in accordance with United States Environmental Protection Agency (EPA) Method 5035 modified.

The soil samples were placed in appropriately labeled containers and/or sanitized glass jars provided by the laboratory, then placed in an ice-packed cooler and transported under chain of custody procedures for laboratory analysis within applicable holding times to the EGLE Environmental Laboratory in Lansing, Michigan.

The soil gas sampling was completed in general accordance with the guidelines established in the May 2013 EGLE Guidance Document for the Vapor Intrusion Pathway, which included the quality assurance/quality control (QA/QC) procedures outlined below.

The in-boring soil gas sampling points were installed per manufacturer specifications within the annulus of the borehole advanced with the Geoprobe® drill rig or hand auger equipped with a stainless-steel bucket. Approximately 6-inches of sand pack was installed at the bottom of the desired sample depth and a ceramic filter sample point attached to ¼" inert Teflon tubing was lowered into the borehole which was followed by the installation of an additional 6-inch layer of sand pack above the sample point. Bentonite was installed above the sand pack and hydrated to create a chemically resilient, low-permeability, flexible seal to prevent the exchange of atmospheric air with the soil gas and to maximize the representativeness of the sample. A minimum of 45 minutes was allowed to elapse after installation to allow equilibration of the subsurface soil vapor prior to sampling. Soil gas field logs are included in Appendix D.

The soil gas samples for VOC analysis were collected using 1-liter canisters regulated with a flow rate of 200 ml/minute and transported under chain of custody procedures for laboratory analysis within applicable holding times to the EGLE Environmental Laboratory.

Upon completion of the investigation, soil gas sampling materials were removed, and the soil borings were abandoned by placing the soil cuttings back into the borehole, filling the void with bentonite chips, hydrating the chips, resurfacing and returning the area to its pre-drilling condition.

### **Deviations from the SAP**

The site investigation activities proposed in the June 2023 SAP and associated addendums included 1) geophysical survey for potential orphan fuel oil USTs using GPR; 2) advancement of up to 55 soil borings; 3) installation of up to 17 temporary monitoring wells; 4) installation of two temporary in-boring soil gas points; and 5) the collection of up to 91 soil samples, 17 groundwater samples, and two soil gas samples for laboratory analysis of VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and/or asbestos.

However, no groundwater was encountered during drilling activities and therefore, no groundwater samples were collected for laboratory analysis. Additionally, and as noted above, samples collected from C-4 (0.5-1.5 and 3.5-4.5 feet bgs), C-5 (1.0-2.0 and 14.0-15.0 feet bgs), and C-6 (0.5-1.5 and 7.0-8.0 feet bgs) were discarded by the laboratory prior to analysis due to a chain of custody error.

These SAP deviations do not represent significant limitations that hindered PM's ability to assess Areas A through H.

## **GEOLOGY/HYDROGEOLOGY**

Based on a review of PM's soil boring logs, the soil stratigraphy generally consists of gravelly sand to depths between 0.5 and 4 feet bgs, followed by sand and sandy clay to depths between 4.0 and 5.0 feet bgs, and underlain by clay to a depth of at least 20.0 feet bgs, the maximum depth explored.

Concrete was encountered under the surface of asphalt in borings C-11 through C-14 at a depth of 1.0 foot bgs, underlain the concrete layer was a layer of peat from 1.0 to 2.0 feet bgs.

The soil boring from PM's August and November 2023 and January 2024 investigations are included in Appendix C and summarize the site-specific geology, sample depths and PID readings.

## **ANALYTICAL RESULTS**

PM compared the analytical results of the soil samples with the EGLE Generic Cleanup Criteria and Screening Levels as presented in Parts 201/213 Rules 299.1 through 299.50, dated December 21, 2020 entitled "Cleanup Criteria Requirements for Response Activity", in accordance with Section 20120a(1) using the Residential and Nonresidential cleanup criteria and Section 21323a(1)(b)(i) using the Residential and Nonresidential RBSLs.

PM evaluated the potential presence of residual non-aqueous phase liquid (NAPL) in soils in accordance with the EGLE Non-Aqueous Phase Liquid – Petroleum Releases Characterization, Remediation, and Management Guidance document (June 2023) using Multiple Lines of Evidence (MLE) to determine if the Part 201 cleanup criteria (i.e., direct contact) are appropriate for comparison. Per the EGLE NAPL guidance document, five (5) lines of evidence from Table 3-1 within the guidance can be used to confirm the presence or absence of NAPL. Below is a list of lines of evidence that indicate the absence of residual NAPL on the subject property based on site characterization activities conducted between 2017 and 2024.

1. No historic presence of mobile NAPL, sheens, or visual NAPL in soil borings advanced at the property. Per Table 3-1, this indicates the absence of NAPL.
2. No observed or visible NAPL was documented in any of the soil or groundwater samples collected from the property. In addition, no observed or visible NAPL was identified in any of the soil borings and temporary monitoring wells installed on the property. Per Table 3-1, this indicates that absence of NAPL.
3. Benzene concentrations were not identified in any of the soil or groundwater samples collected from the property exceeding 10,000 micrograms per kilogram (µg/Kg). Per Table 3-1, this indicates the absence of NAPL.
4. PID readings were not detected at any of the soil borings exceeding 500 ppm, which per Table 3-1 indicates the absence of NAPL.
5. No concentrations of DRO were identified in any of the soil samples above laboratory MDLs during the site characterization activities conducted between

2017 and 2024, when analyzed. Those detection limits are below 250,000 µg/kg and per Table 3-1 indicates the absence of NAPL.

Considering the above lines of evidence, there is no residual NAPL present in any of the soil or groundwater samples collected from the property during the recent site investigations. The MLE Evaluation table which summarizes the information above is included in Appendix E.

PM evaluated the applicability of the Generic Volatilization to Indoor Air Inhalation Criteria (GVIIIC) using the “Checklist for Determining if the Generic Volatilization to Indoor Air Inhalation Criteria Apply” included in the May 2013 EGLE Guidance Document for the Vapor Intrusion Pathway. Based on the absence of groundwater within three meters of the ground surface, the GVIIIC are applicable. A copy of the C.1 checklist is included in Appendix F.

Based on the Residential use of the subject property (Section 1.2), site-specific geology (Section 1.6), and construction of future Residential structures with basement structures, and, elevator pits, the EGLE VIAP screening levels are applicable for the site to assess the vapor intrusion pathway. A copy of the EGLE C.7 VIAP Evaluation is included in Appendix F.

In accordance with Part 201, a background concentration of a hazardous substance that exists in the environment at or regionally proximate to a facility that is not attributable to any release at or regionally proximate to the facility may be substituted for a generic cleanup criterion when the background concentration is higher than a criterion. Therefore, when concentrations were higher than the Part 201 Cleanup Criteria, metals were also compared to regional background levels (RBLs) for the appropriate soil type (i.e., sand, clay) from the Saginaw Glacial Lobe (2019 Soil Background and Use of the 2005 Michigan Background Survey), and PM defaulted to whichever value is greater.

### **Summary of Analytical Results**

The soil and soil gas analytical results are summarized on Figures 3A, 3B, 3C, 3D, 3E, 3F, 3H, and 4 and in Tables 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10. The Figures 3A through 3H are separated by samples collected from each area of concern (A-H). The laboratory analytical reports and associated chain of custody documentation are included in Appendix G.

**Phase II ESA for the 108 Adams Street Site**  
**Located at 108 Adams Street, 101-109 North Jefferson Avenue, and 501 Columbus Avenue**  
**Bay City, Bay County, Michigan**  
**PM Project No. 01-14761-0-0002; June 4, 2024**

Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Part 201 Cleanup Criteria and/or Screening Level Exceedances
Area A	A-1 (10.0)	5.0-6.0 and 9.0-10.0	Lead	Replicate and delineate previous lead exceedance	None
	A-2 (10.0)	0.5-1.5			
	A-3 (10.0)	5.0-6.0 and 9.0-10.0			
	A-4 (10.0)	5.0-6.0 and 9.0-10.0			
	A-5 (10.0)	5.0-6.0 and 9.0-10.0			
	A-6 (10.0)	0.5-1.5 and 4.5-5.5	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Evaluate previously documented shallow fill material	
	A-7 (10.0)	1.0-2.0 and 5.0-6.0			
	A-8 (10.0)	1.5-2.5			
	A-9 (10.0)	0.5-1.5 and 4.5-5.5			
Area B	B-1 (5.0)	1.0-2.0	Mercury	Replicate and laterally delineate previous mercury exceedance	None
	B-2 (5.0)				
	B-3 (5.0)				
Area C	C-1 (20.0)	4.0-5.0	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Assess the historical power plant and substation operations	None
	C-2 (20.0)	0.5-1.5 and 4.0-5.0			None
	C-3 (20.0)	0.5-1.5			DC (R): arsenic
		4.5-5.5			None
	C-4* (20.0)	0.5-1.5 and 3.5-4.5			None
	C-5* (20.0)	1.0-2.0 and 14.0-15.0			None
	C-6* (20.0)	0.5-1.5 and 7.0-8.0 and 14.0-15.0			None
	C-4R (8.0)	0.5-1.5 and 4.5-5.5	Arsenic	Delineate arsenic exceedance at C-3	None
	C-7 (8.0)	0.5-1.5			DC (R/NR): arsenic
4.5-5.5		None			

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Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Part 201 Cleanup Criteria and/or Screening Level Exceedances
	C-8 (8.0)	0.5-1.5 and 4.5-5.5			None
	C-9 (8.0)	0.5-1.5 and 4.5-5.5			DC (R/NR): arsenic
					None
	C-10 (2.0)	1.0-1.5	Arsenic	Delineate arsenic exceedances at C-7 and C-9	None
	C-11 (2.0)	1.0-1.5			None
	C-12 (2.0)	1.0-1.5			DC (R): arsenic
	C-13 (2.0)	1.0-1.5			None
	C-14 (2.0)	1.0-1.5			None
Area D	D-1 (15.0)	3.5-4.5 and 11.0-12.0	VOCs, PNAs, PCBs, DRO, and Michigan 10 Metals	Assess potential former fuel oil use and potential fill material	None
	D-2 (15.0)	1.5-2.5 and 11.5-12.5			
Area E	E-1 (15.0)	4.5-5.5 and 7.0-8.0	PNAs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	None
	E-2 (15.0)	4.5-5.5 and 9.5-10.5			None
	E-3 (15.0)	4.5-5.5 and 10.5-11.5			None
	E-4 (15.0)	4.5-5.5 and 8.5-9.5			None
	E-5 (15.0)	4.5-5.5 and 6.0-7.0			None
	E-6 (15.0)	1.0-2.0 and 4.5-5.5			None
	E-7 (15.0)	4.5-5.5			None
	E-8 (15.0)	4.5-5.5 and 7.0-8.0			GSIP: zinc
Area F	F-1 (15.0)	3.5-4.5 and 14.0-15.0	VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	None
	F-2 (15.0)	3.5-4.5 and 10.5-11.5			
	F-3 (15.0)	0.5-1.5 and 4.5-5.5			

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Sampling Area	Soil Boring ID (total depth [feet bgs])	Sample Depth (feet bgs)	Analysis	Objective	Part 201 Cleanup Criteria and/or Screening Level Exceedances		
Area G	G-1/TSG-1 (15.0)	Soil: 4.0-5.0 and 14.0-15.0	Soil: VOCs and PNAs  Soil Gas: VOCs	Assess former dry cleaner operations	None		
		Soil Gas: 4.5					
	G-2/TSG-2 (15.0)	Soil: 0.5-1.5 and 9.0-10.0				VOCs and PNAs	None
		Soil Gas: 5.0					
	G-3 (15.0)	1.5-2.5 and 9.5-10.5	VOCs and PNAs		None		
	G-4 (15.0)	1.5-2.5 and 10.0-11.0					
	G-5 (16.0)	3.5-4.5 and 10.0-11.0					
	G-6 (15.0)	1.5-2.5 and 14.0-15.0					
Area H	H-1 (15.0)	1.5-2.5 and 4.0-5.0	VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and asbestos	Assess potential fill material	None		
	H-2 (15.0)	1.5-2.5					
	H-3 (15.0)	4.5-5.5					
	H-4 (15.0)	1.0-2.0 and 4.5-5.5					
	H-5 (15.0)	1.5-2.5 and 7.5-8.5					
	H-6 (15.0)	1.5-2.5 and 4.5-5.5					
	H-7 (15.0)	0.5-1.5 and 4.0-5.0					
	H-8 (15.0)	0.5-1.5 and 4.5-5.5					
	H-9 (15.0)	0.5-1.5 and 4.5-5.5					

R: Residential

NR: Nonresidential

Bold: Exceedance of Criteria Applicable to a Complete Exposure Pathway

No concentrations of VOCs and PNAs were detected in any of the soil samples exceeding laboratory MDLs, the most restrictive Part 201 Residential cleanup criteria, and/or the most restrictive EGLE Residential VIAP screening Levels.

No concentrations of PCBs were detected in any of the soil samples exceeding laboratory MDLs.

No other concentrations of metals were detected in any of the soil samples exceeding laboratory MDLs, the SDBLs and RBLs, the most restrictive Part 201 Residential cleanup criteria, and/or the most restrictive EGLE Residential VIAP screening Levels.

The presence of residual NAPL was assessed using the MLE in accordance with the EGLE Non-Aqueous Phase Liquid – Petroleum Releases Characterization, Remediation, and Management Guidance document (June 2023). In alignment with five (5) lines of evidence, there is no residual NAPL present on the site. See above for the five lines of evidence.

No concentrations of asbestos were detected in any of the soil samples exceeding laboratory MDLs.

No concentrations of VOCs were detected in any of the soil gas samples exceeding laboratory MDLs and/or the most restrictive EGLE Residential VIAP screening levels.

### **EXPOSURE PATHWAY EVALUATION**

The following exposure pathways were evaluated and determined to be complete/potentially complete. Exposure pathways are eliminated when they are determined not to be complete, or it is demonstrated that unacceptable exposures do not exist and that response activities are not required to prevent or mitigate unacceptable exposures.

The subject property is currently zoned C-2A: General Business, which is consistent with Residential property use in accordance with Part 201. Additionally, the Bay City Housing Commissions plans to redevelop the subject property for residential use. Municipal water and sewer, as well as natural gas, electrical, and telecommunications utilities are available to the subject property. No water supply wells exist on the subject property.

The following exposure pathway analysis is based on the currently known information collected during the current and previous site investigations. If evidence is discovered of additional impact, the exposure pathways will need to be re-evaluated.

<b>Complete and/or Potentially Complete Exposure Pathway?</b>		
<b>Pathway</b>	<b>Yes/No</b>	<b>Justification</b>
Groundwater Ingestion (DWP/DW)	No	<ul style="list-style-type: none"> <li>• Soil contamination has been identified exceeding the Part 201 Residential and Nonresidential DWP cleanup criteria.</li> <li>• However, municipal water is available to the subject property.</li> <li>• Additionally, no potable or other supply wells exist.</li> </ul>
Surface Water (GSIP/GSI)	No	<ul style="list-style-type: none"> <li>• Soil contamination has been identified exceeding the Part 201 Residential and Nonresidential GSIP cleanup criteria.</li> <li>• However, no surface water bodies are present onsite or within 1,800 feet downgradient relative to the subject property.</li> </ul>



Complete and/or Potentially Complete Exposure Pathway?		
Pathway	Yes/No	Justification
Indoor Air Inhalation (VIAP)	YES	<ul style="list-style-type: none"> <li>• Soil contamination has been identified in previous investigations exceeding the applicable EGLE Residential VIAP screening, adopted for use as criteria.</li> <li>• Based on the vacant status, no immediate threat to human health exists.</li> <li>• However, redevelopment is planned that will include construction of multiple Residential structures.</li> <li>• Excavation activities will occur to include the areas above Residential VIAP screening levels and Verification of Soils Remediation (VSR) samples will be collected to assess remaining nearby soils.</li> </ul>
Ambient Air Volatile Soil Inhalation (VSI)	No	<ul style="list-style-type: none"> <li>• Soils are present on the subject property that will be exposed during redevelopment such that potential vapors emitted from them may be encountered.</li> <li>• Soil contamination has not been identified exceeding the applicable Part 201 Residential VSI cleanup criteria.</li> </ul>
Ambient Air Particulate Soil Inhalation (PSI)	No	<ul style="list-style-type: none"> <li>• Soils are present on the subject property that could be exposed during redevelopment such that potential particulates emitted or dispersed from them may be encountered.</li> <li>• Soil contamination has not been identified exceeding the applicable Part 201 Residential PSI cleanup criteria.</li> </ul>
Direct Contact (DC)	YES	<ul style="list-style-type: none"> <li>• Soils are present on the subject property that could be exposed during redevelopment such that potential particulates emitted or dispersed from them may be encountered.</li> <li>• Soil contamination has been identified exceeding the Part 201 Residential and Nonresidential DC cleanup criteria.</li> <li>• Excavation activities will occur to include the areas exceeding Part 201 DC cleanup criteria, VSR samples will be collected to assess nearby soils. Additionally, a demarcation barrier will be installed underneath a clean soil cap, all of which will be inspected semi-annually to reduce exposure risk.</li> </ul>

## **PLAN FOR RESPONSE ACTIVITIES**

The following represents response activities that will prevent or mitigate unacceptable exposure and allow for the intended use of the subject property in a manner that protects the public's health and safety, based upon the current and intended use of the subject property.

### **Notice**

Due to the presence of soil contamination exceeding the Part 201 Residential and Nonresidential cleanup criteria and EGLE VIAP screening levels, written notices must be provided to easement holders of record, utility franchise holders of record, and the owners and/or operators of all public utilities that serve the subject property. A model notice is included in Appendix H.

### **Area E Vapor Intrusion Pathway**

Concentrations of mercury in soil sample SB-5 collected in Area E during the previous site investigations exceeding the EGLE VIAP screening levels. Therefore, a vapor encroachment condition exists. However, based on the lack of current occupants/operations present, no unacceptable exposure risks currently exist at the subject property.

Additionally, impacted soil at Area E will be excavated and disposed offsite in accordance with local, state, and federal regulations. Refer to the Construction Management summary below for additional information.

### **Area A Direct Contact Pathway**

Concentrations of lead were identified in soil samples collected from the subject property during previous site investigations above the Part 201 Residential and Nonresidential DC cleanup criteria. Therefore, a dermal exposure risk exists. The existing surface cover consisting of the existing asphalt pavement, groomed grass/landscaped areas in the rights-of-ways, and gravel cover will be maintained to prevent dermal contact with contaminated soils. An Operation and Maintenance Plan (O&M Plan) has been developed and will require visual inspections on a semi-annual basis (i.e., in June and December of each calendar year) and will include the following:

- Condition and integrity of the paved and non-paved surface covers, including general condition, and pitting or cracks greater than 0.5-inches in width, through which impacted subsurface soils could be readily accessed.

Damaged and/or deteriorated surface cover will be repaired and/or replaced with an equivalent surface cover within 14 days of discovery. If repair/replacement of the surface cover is not feasible within the specified timeframe, the areas will be temporarily covered with anchored plastic sheeting, anchored landscaping fabric, or anchored plywood, as appropriate until repair/replacement is complete. Records of the inspections and any associated repair activities, including temporary cover installation, will be maintained for the duration of the owner/operator status of the subject property. Surface cover at the subject property is presented on Figure 3. Surface cover OM&M will occur as recommended until completion of excavation activities described below.

A copy of the O&M Plan and Inspection Forms for the Exposure Barriers, including instructions for personnel conducting the inspection activities, are included in Appendix I.

### **Area C Direct Contact Pathway**

Concentrations of arsenic were identified in soil samples collected from the subject property during previous site investigations above the Part 201 Residential and Nonresidential DC cleanup criteria. Therefore, a dermal exposure risk exists. The existing surface cover consisting of the existing asphalt pavement, groomed grass/landscaped areas in the rights-of-ways, and gravel cover will be maintained to prevent dermal contact with contaminated soils. An Operation and Maintenance Plan (O&M Plan) has been developed and will require visual inspections on a semi-annual basis (i.e., in June and December of each calendar year) and will include the following:

- Condition and integrity of the paved and non-paved surface covers, including general condition, and pitting or cracks greater than 0.5-inches in width, through which impacted subsurface soils could be readily accessed.

Damaged and/or deteriorated surface cover will be repaired and/or replaced with an equivalent surface cover within 14 days of discovery. If repair/replacement of the surface cover is not feasible within the specified timeframe, the areas will be temporarily covered with anchored plastic sheeting, anchored landscaping fabric, or anchored plywood, as appropriate until

repair/replacement is complete. Records of the inspections and any associated repair activities, including temporary cover installation, will be maintained for the duration of the owner/operator status of the subject property. Surface cover at the subject property is presented on Figure 3.

A copy of the O&M Plan and Inspection Forms for the Exposure Barriers, including instructions for personnel conducting the inspection activities, are included in Appendix H.

Based on the planned redevelopment of the subject property, which includes installation of a parking lot that will extend to a depth of approximately 0.5 feet bgs, limited impacted soil will be excavated and disposed offsite in accordance with local, state, and federal regulations. Additionally, a demarcation barrier will be installed to a depth of approximately 2.0 feet bgs, with a clean soil cap above the barrier. Refer to the Construction Management summary below for additional information.

## **CONSTRUCTION MANAGEMENT**

### **Soil and Groundwater Management**

Since soils identified in Areas A, C and/or E, at the subject property are contaminated with chemicals of concern representing a vapor intrusion condition at concentrations exceeding the EGLE VIAP screening levels and/or the Part 201 DC cleanup criteria, targeted excavation and disposal of soils exceeding the EGLE VIAP screening levels and Part 201 DC cleanup criteria are proposed to address the volatilization to indoor air and dermal exposure pathways. Targeted excavation and disposal activities are summarized below by area:

<b>Applicable Part 201 DC and EGLE VIAP Soil Excavation</b>				
<b>Excavation Area</b>	<b>Estimated Excavation Area (square feet)</b>	<b>Excavation Depth (feet bgs)</b>	<b>Estimated Volume (cubic yards)</b>	<b>Volume (Tons)</b>
Area A	1,730	9	578	808
Area C*	7,660	5	1,419	1,986
Area E	2,310	6	514	719
<b>TOTAL</b>	<b>11,700</b>	<b>-</b>	<b>2,511</b>	<b>3,513</b>

\*= Area C currently has limited planned excavation; therefore, DC will continue to remain a complete pathway. A demarcation barrier and clean cap will be utilized to further prevent exposure concerns. Refer above to Area C Direct Contact Pathway.

### **Construction Dewatering/Groundwater Management**

If groundwater accumulates in the excavations during the contaminated soil removal activities that interferes with excavation or backfilling, it will be pumped, stored in frac tanks, sampled for characterization, and transported for proper disposal at a licensed disposal facility in accordance with Michigan Parts 111 and 115, as applicable.

### **Oversight, Sampling, and Reporting**

Following the remedial excavation activities, VSR samples will be collected from the excavation floor and sidewalls of Areas A and E to document that concentrations exceeding the Part 201 Residential DC, and EGLE Residential VIAP Screening Levels were removed, and document post excavation floor and sidewall concentrations in accordance with the EGLE guidance document

“Sampling Strategies and Statistics Training Materials” (S3TM) for Part 201 Cleanup Criteria, dated March 18, 2002. The actual area and extent of soil excavation is dependent upon actual field conditions and receipt of analytical results from VSR samples collected following excavation activities and may vary from what is estimated within this report. Excavation areas will not be backfilled with clean backfill until receipt of VSR analytical results to determine if additional excavation is or is not required. If analytical results from VSR sampling identifies contaminants above applicable cleanup criteria, additional excavation and VSR sampling and/or migration barriers will be required. Prior to backfilling, information outlining the fill source and documentation (i.e., fill is certified or tested to be clean material) will be provided to EGLE for review and approval.

Excavation VSR floor and sidewall samples will be collected at a frequency consistent with the sampling protocols outlined in the EGLE S3TM guidance document. Based on the size of the excavation floor areas (i.e., less than 10,890 square feet) and sidewalls (i.e., less than 4,000 square feet), PM utilized the excavation floor and sidewall sample population requirements as documented in Tables 1.1 and 1.2 within Section 1.3.1, Verification of Remediation, within the EGLE S3TM guidance document to determine the number of VSR samples needed for each excavation area (Areas A and E), summarized as follows:

<b>Excavation Floor Sample Grid and VSR Sample Summary (Areas A and E)</b>					
<b>Excavation Area</b>	<b>Perimeter (feet)</b>	<b>Depth (feet)</b>	<b>Floor Area (square feet)</b>	<b>Sidewall Area (square feet)</b>	<b>Total VSR samples</b>
Area A	168	9	1,730	1,512	10
Area E	197	6	2,310	1,182	10
<b>TOTAL</b>					<b>20</b>

VSR samples will be collected for laboratory analysis of lead and/or mercury, or some combination thereof.

Oversight, sampling and reporting associated with due care activities will also be required and will include 1) bid specifications; 2) implementation/oversight of engineering controls; and 3) oversight associated with contaminated soil and groundwater management. Oversight, sampling, and reporting is estimated to take 60 days during construction activities.

An environmental professional will also oversee all construction activities to ensure due care compliance. During onsite work activities, the environmental professional will:

- Prepare daily field logs
- Direct the earthwork contractor to remove impacted soil as appropriate and deemed necessary
- Document each truckload of excavated soil (time out, company name, vehicle number, estimated cubic yardage, destination)
- Document each truckload of imported clean fill material (time in, company name, vehicle number, estimated cubic yardage, reported source)
- Sign/track soil waste manifests
- Collect on-site photographs documenting work activities
- Note unusual subsurface conditions

The proposed oversight activities will be protective of public health, safety, and welfare and the environment because it will provide documentation that the activities described within are completed under the required stipulations for compliance with due care obligations.

### **Former Building Material, Slab, and Footing Removal**

As noted in the Geology/Hydrogeology section above, layers of concrete and organic peat were encountered in four soil borings in Areas C, at depths ranging between 1.0 and 2.0 feet bgs, with intervals of 1.0 foot in thickness. Based upon this information, the potential exists for additional buried building slabs/material to be encountered during planned limited excavation activities in this area. If materials are encountered in a non-contaminated area, the environmental professional will inspect for staining and surface coatings (i.e., paint) and if none present, the material can be recycled or disposed offsite. If materials are encountered in contaminated areas and are in contact with contaminated soil, the materials will be stockpiled and sampled for waste characterization to determine the most appropriate disposal method.

### **CONCLUSIONS**

On August 21-25, November 8, 2023, and January 23, 2024 PM completed subsurface investigation activities at the subject property to assess eight areas of concern (Area A through Area H) identified in the June 2023 SAP, which consisted of the advancement of 54 soil borings (A-1 through A-9, B-1 through B-3, C-1 through C-14 and C-4R, D-1 and D-2, E-1 through E-8, F-1 through F-3, G-1 through G-6 and H-1 through H-9), installation of two temporary in-boring soil gas points, and the collection of 91 soil samples and two soil gas samples for laboratory analysis of VOCs, PNAs, PCBs, DRO, Michigan 10 Metals, and asbestos, or some combination thereof.

Analytical results identified concentrations of arsenic in Area C in exceedance of the Part 201 DC cleanup criteria. The extent of shallow contamination is not fully delineated to the west; however, no Part 201 DC analytical exceedances of arsenic were identified in Area H (west of Area C). As such, the approximate delineation follows the known extent of shallow contamination in Area C (Figure 5).

No other concentrations of target analytes were identified in any of the soil samples analyzed from the subject property between August 2023 and January 2024 exceeding laboratory MDLs, the SDBLs and RBLs (applicable to metals only), the most restrictive Part 201 Residential cleanup criteria, and/or the most restrictive EGLE Residential VIAP screening levels. Based on these analytical results and those from the previous site investigations, no additional investigation is warranted for Areas B, D, F, G, H, and I.

Based on the identified contamination in areas A and E during previous site investigations, construction management activities are needed to properly manage the contaminated soils in these areas to remain compliant with due care obligations under Part 201. All contaminated soils removed from Areas A and E will be disposed at a licensed landfill. An estimated 2,652 tons (1,894 cubic yards) of contaminated soil will be required to be excavated to depths ranging from 5.0 to 9.0 feet bgs to remediate Areas A and E to unrestricted residential criteria to facilitate the proposed redevelopment and ensure due care obligations are met. Clean fill that is documented to be non-contaminated at the borrow source, will be imported, rough graded, and compacted to balance the site in areas where soil was removed and where excavations exceed the cut depth for the proposed redevelopment.

Following the remedial excavation activities, VSR samples will be collected from the excavation floor and sidewalls of Areas A and E to document that concentrations exceeding the Part 201 Residential DC and EGLE Residential VIAP were removed, and document post excavation floor and sidewall concentrations in accordance with the EGLE guidance document S3TM for Part 201 Cleanup Criteria, dated March 18, 2002. The actual area and extent of soil excavation is dependent upon actual field conditions and receipt of analytical results from VSR samples collected following excavation activities and may vary from what is estimated within this report. Excavation areas will not be backfilled with clean backfill until receipt of VSR analytical results document that concentrations exceeding the Part 201 DC and Residential VIAP are no longer present in the excavated area. If analytical results from VSR sampling identifies contaminants above those applicable criteria, additional excavation and VSR sampling and/or migration barriers will be required. Prior to backfilling, information outlining the fill source and documentation (i.e., fill is tested and documented to be non-contaminated) must be obtained from the borrow source.

Additional construction management considerations include the proper characterization and management and disposal of any groundwater that accumulates within contaminated soil excavations.

If you have any questions regarding the information in this report, please contact us at 800.313.2966.

**REPORT PREPARED BY:**  
**PM Environmental, a Pinchin Company**

**REPORT REVIEWED BY:**  
**PM Environmental, a Pinchin Company**



Trenton Singer  
Staff Geologist



Steven E. Price, CHMM  
Principal and Vice President

## **FIGURES**

Figure 1:	Property Vicinity Map
Figure 2:	Subject Property and Adjoining Properties with GPR Survey Area
Figure 3A:	Area A Soil Analytical Results
Figure 3B:	Area B Soil Analytical Results
Figure 3C:	Area C Soil Analytical Results
Figure 3D:	Area D Soil Analytical Results
Figure 3E:	Area E Soil Analytical Results
Figure 3F:	Area F Soil Analytical Results
Figure 3G:	Area G Soil Analytical Results
Figure 3H:	Area H Soil Analytical Results
Figure 4:	Area G Soil Gas Analytical Results
Figure 5:	Extent of Contamination
Figure 6:	Surface Cover Map

## **TABLES**

Table 1:	Summary of Area A Soil Analytical Results: VOCs, PNAs, PCBs, Michigan 10 Metals, and DRO
Table 2:	Summary of Area B Soil Analytical Results: Mercury
Table 3:	Summary of Area C Soil Analytical Results: VOCs, PNAs, PCBs, Michigan 10 Metals, and DRO
Table 4:	Summary of Area D Soil Analytical Results: VOCs, PNAs, PCBs, Michigan 10 Metals, and DRO
Table 5:	Summary of Area E Soil Analytical Results: PNAs, Michigan 10 Metals, and DRO
Table 6:	Summary of Area F Soil Analytical Results: VOCs, PNAs, PCBs, Michigan 10 Metals, and DRO
Table 7:	Summary of Area G Soil Analytical Results: VOCs and PNAs
Table 8:	Summary of Area H Soil Analytical Results: VOCs, PNAs, PCBs, Michigan 10 Metals, and DRO
Table 9:	Summary of Soil Analytical Results: Asbestos
Table 10:	Summary of Soil Gas Analytical Results: VOCs

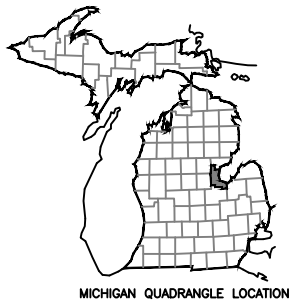
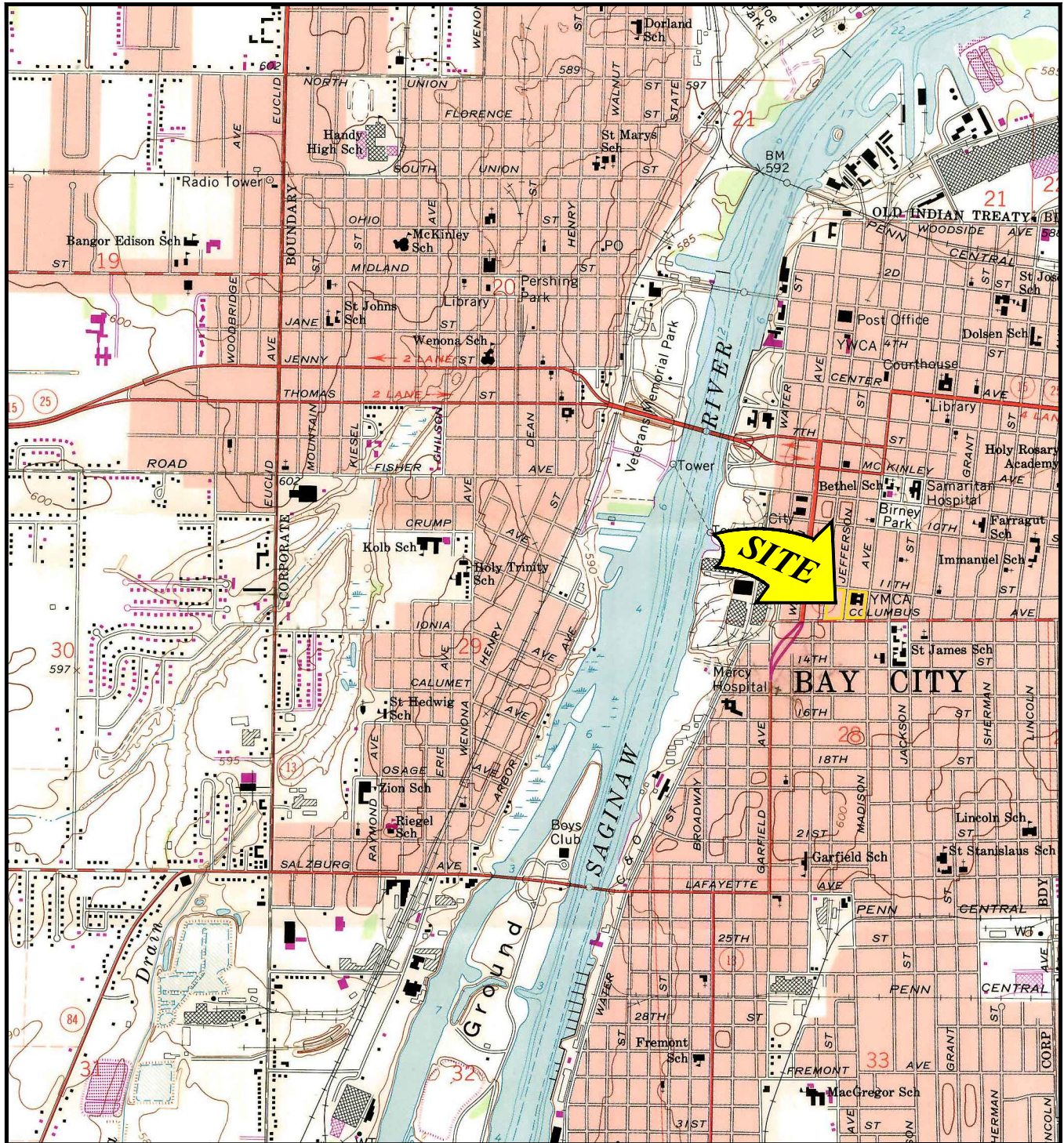
## **APPENDICES**

Appendix A:	Figure and Tables from Previous Site Investigations
Appendix B:	GPR Summary Report
Appendix C:	Soil Boring/Temporary Soil Gas Logs
Appendix D:	Soil Gas Field Logs
Appendix E:	MLE Evaluation
Appendix F:	EGLE C.1 GVIIC Checklist and C.7 VIAP Evaluation
Appendix G:	Laboratory Analytical Reports
Appendix H:	Surface Cover O&M Plan
Appendix I:	Model Notice



# Figures



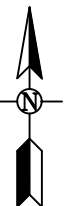


## BAY COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES  
BAY CITY, MI QUADRANGLE, 1967. PHOTO REVISED 1973.



**Environmental  
& Engineering  
Services**

PROJ:

108 ADAMS ST, 101-109 NORTH JEFFERSON AVE &  
501 COLUMBUS ST  
BAY CITY, MI

**THIS IS NOT A LEGAL  
SURVEY**

VERIFY SCALE

0 2000'

IF NOT 1" ON THIS SHEET,  
ADJUST SCALES ACCORDINGLY.

DRN BY:

ML

DATE: 8/15/2023

CHKD BY:

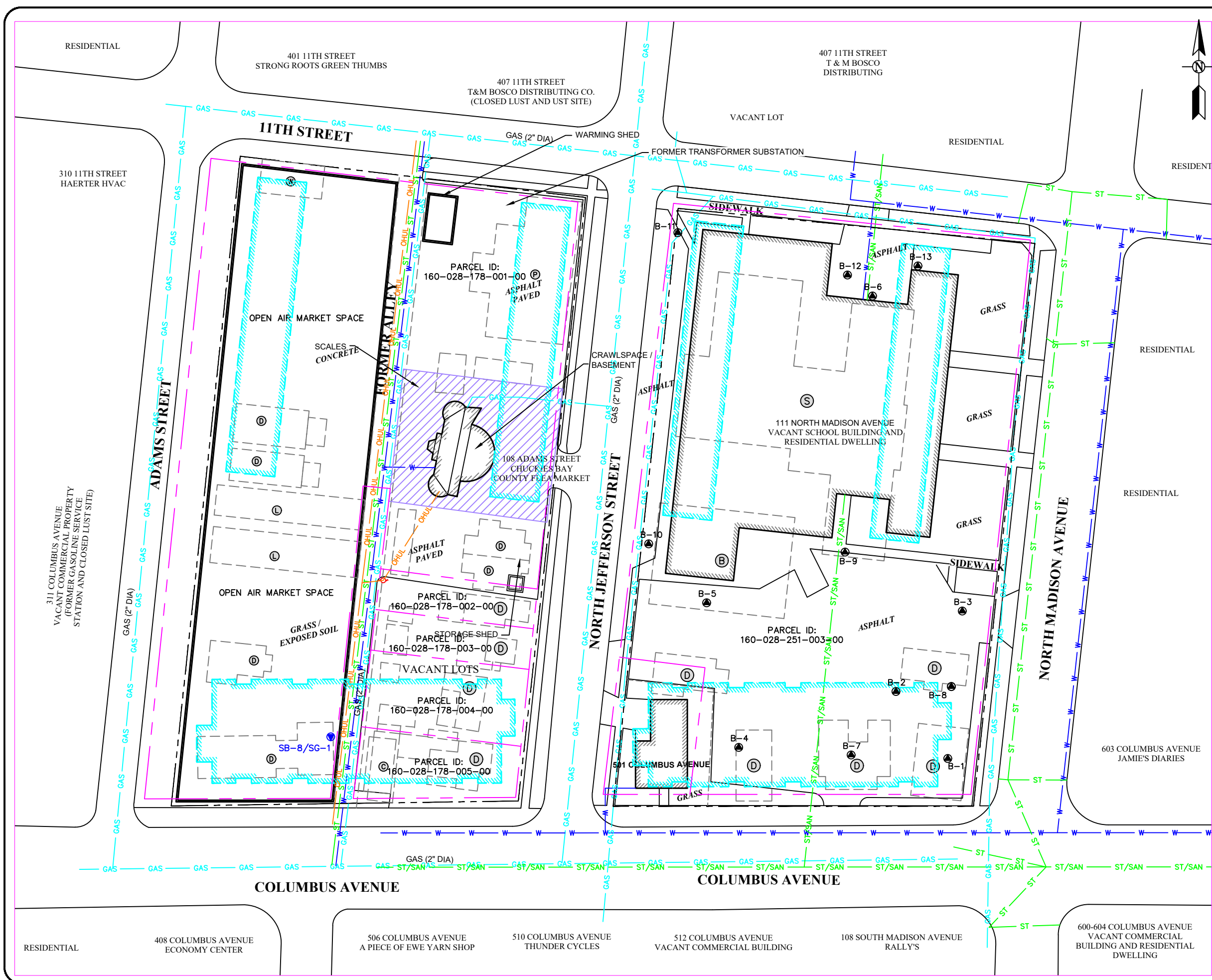
KH

SCALE: 1" = 2,000'

FILE NAME:

01-14761-0-002F00R01






**LEGEND:**

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL BOUNDARY
- PROPOSED BUILDING LAYOUT
- WATER
- GAS
- STORM SEWER
- COMBINATION SANITARY / STORM SEWER
- OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
- GPR SURVEY AREA
- UTILITY POLE
- FORMER DRY CLEANER
- FORMER DWELLING
- FORMER LUMBER SHEDS
- FORMER POWER PLANT BUILDING
- FORMER WOOD OFFICE



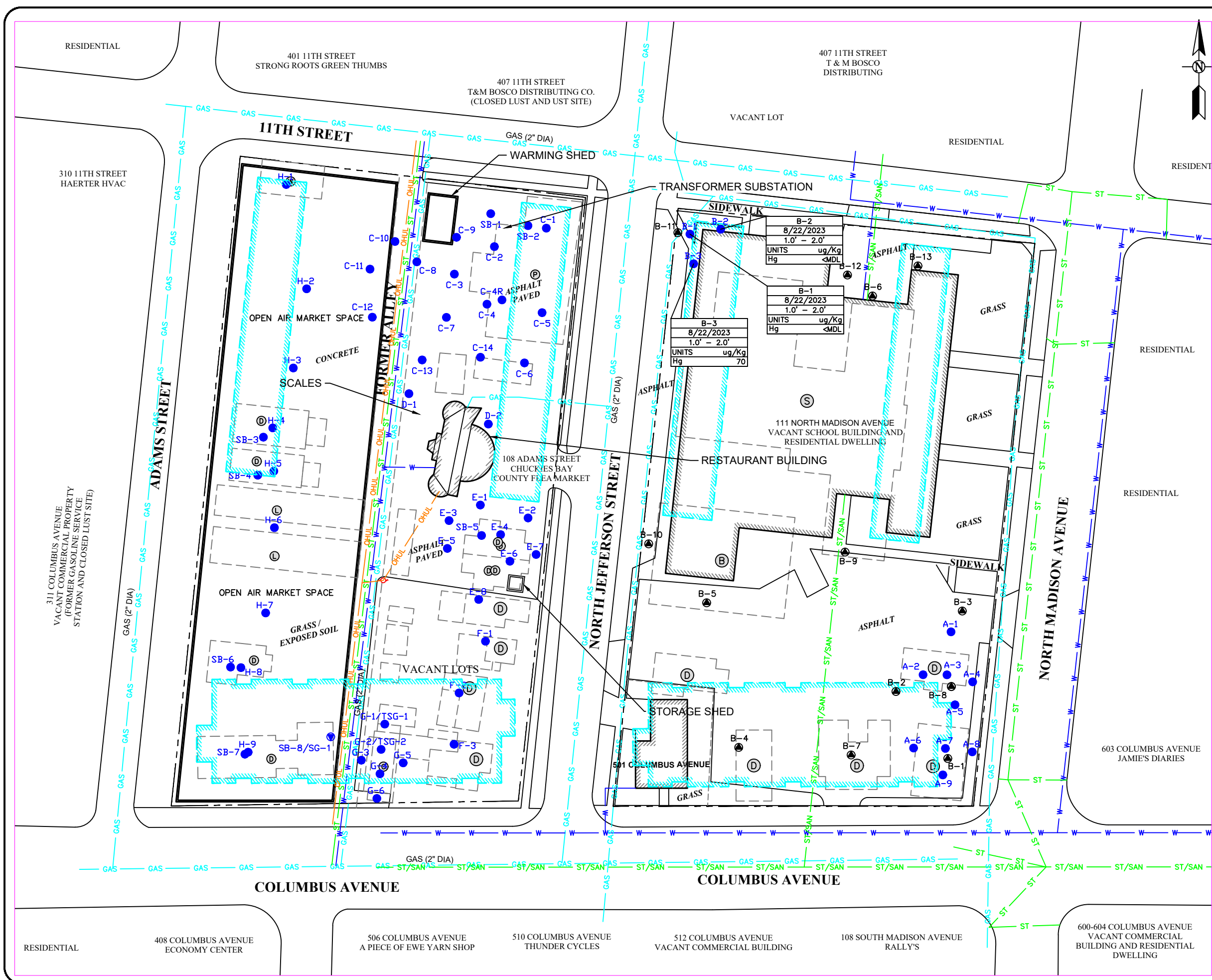
Environmental  
& Engineering  
Services

**FIGURE 2**  
SUBJECT PROPERTY AND ADJOINING PROPERTIES  
WITH GPR SURVEY AREA

PROJ:			
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI			
THIS IS NOT A LEGAL SURVEY		DRN BY:	DATE:
		ML/MM	12/19/2023
VERIFY SCALE		CHKD BY:	REVISED DATE:
0  60'		TH	3/22/2024
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			
FILE NAME:		01-14761-0-002F00R01	







**LEGEND:**

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PROPOSED BUILDING LAYOUT
- WATER
- GAS
- STORM SEWER
- COMBINATION SANITARY / STORM SEWER
- OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
- UTILITY POLE
- FORMER DRY CLEANER
- FORMER DWELLING
- FORMER LUMBER SHEDS
- FORMER POWER PLANT BUILDING
- FORMER WOOD OFFICE
- SOIL BORING
- THIRD PARTY BORING

**ANALYTES**

As ARSENIC  
Ba BARIUM  
Cr CHROMIUM  
Cu COPPER  
FL FLUORANTHENE  
Hg MERCURY  
Ph PHENANTHRENE  
Py PYRENE  
Se SELENIUM  
Zn ZINC

MDL METHOD DETECTION LIMIT  
PCBs POLYCHLORINATED BIPHENYLS  
PNAs POLYNUCLEAR AROMATIC COMPOUNDS  
UNITS  $\mu\text{g/Kg}$  (UNLESS NOTED)  
VOCs VOLATILE ORGANIC COMPOUNDS

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

Environmental & Engineering Services

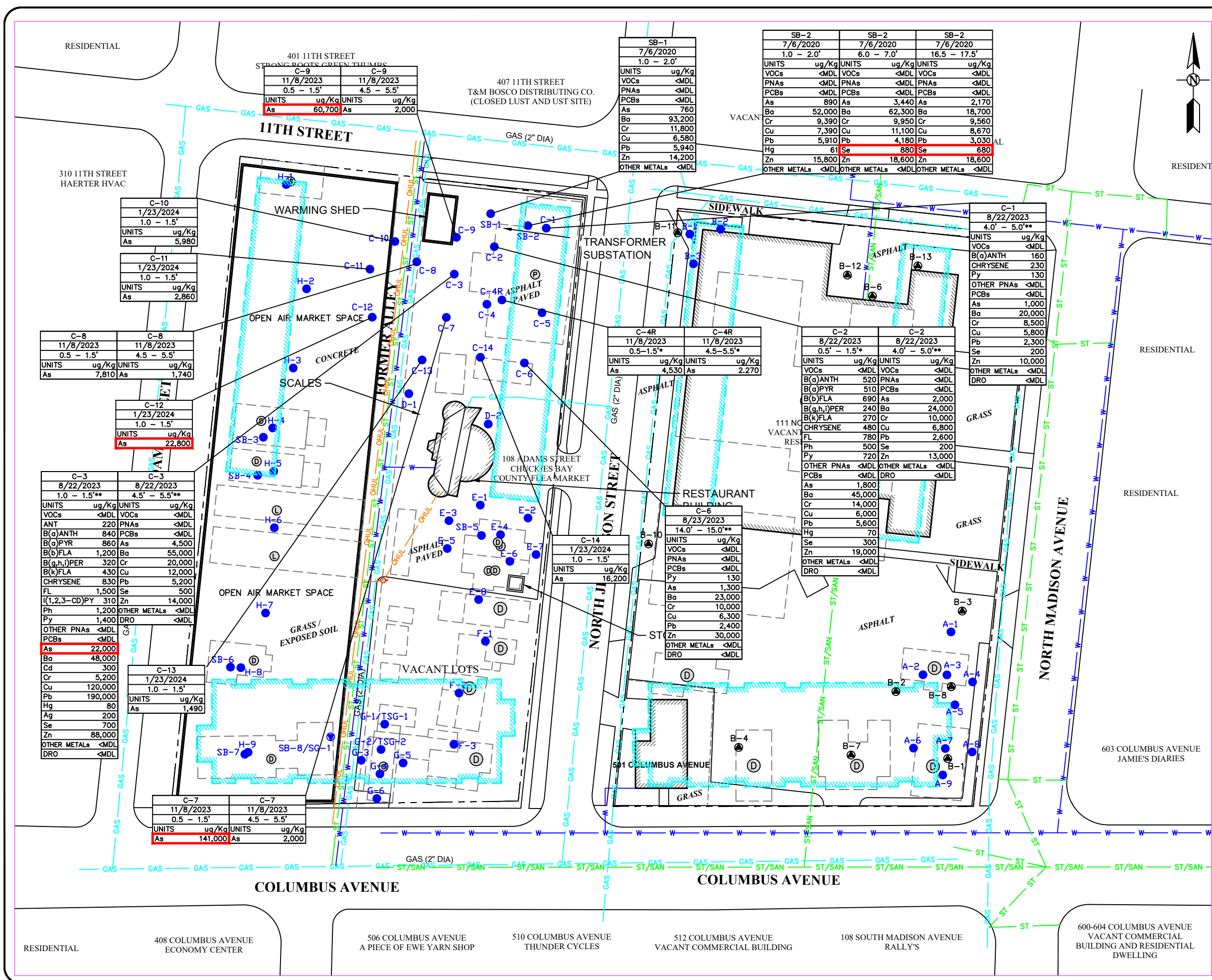
**FIGURE 3B**

AREA B SOIL ANALYTICAL RESULTS

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ML/MM	DATE: 12/4/2023
VERIFY SCALE	CHKD BY: TH	REVISED DATE: 3/22/2024
FILE NAME: 01-14761-0-002F00R01		

0 60' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.



**LEGEND:**

--- SUBJECT PROPERTY  
--- APPROXIMATE FORMER/HISTORICAL  
--- SITE FEATURES  
--- PROPOSED BUILDING LAYOUT  
--- WATER  
--- GAS  
--- STORM SEWER  
--- COMBINATION SANITARY / STORM SEWER  
--- OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)  
--- UTILITY POLE  
--- FORMER DRY CLEANER  
--- FORMER DWELLING  
--- FORMER LUMBER SHEDS  
--- FORMER POWER PLANT BUILDING  
--- FORMER WOOD OFFICE  
--- SOIL BORING  
--- THIRD PARTY BORING

ANT  
As  
B(a)ANTH  
B(o)PYR  
B(b)FLA  
B(g,h,i)PER  
B(k)FLA  
Ba  
Cr  
Cu  
FL  
Hg  
I(1,2,3-CD)PY  
Ph  
Py  
Se  
Zn  
DRO  
MDL  
PCBs  
PNAs  
UNITS  
VOCs

ANALYTES  
ANTHRACENE  
ARSENIC  
BENZO(a)ANTHRACENE  
BENZO(a)PYRENE  
BENZO(b)FLUORANTHENE  
BENZO(g,h,i)PERYLENE  
BENZO(k)FLUORANTHENE  
BARIUM  
CHROMIUM  
COPPER  
FLUORANTHENE  
MERCURY  
INDENO(1,2,3,CD)PYRENE  
PHENANTHRENE  
PYRENE  
SELENIUM  
ZINC

DIESEL RANGE ORGANICS  
METHOD DETECTION LIMIT  
POLYCHLORINATED BIPHENYLS  
POLYNUCLEAR AROMATIC COMPOUNDS  
µg/Kg (UNLESS NOTED)  
VOLATILE ORGANIC COMPOUNDS  
VALUE EXCEEDS APPLICABLE CRITERIA  
RESULTS COMPARED TO SAND HURON ERIE  
BACKGROUND LEVELS  
RESULTS COMPARED TO CLAY HURON ERIE  
BACKGROUND LEVELS

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

**Environmental & Engineering Services**

**FIGURE 3C**

AREA C SOIL ANALYTICAL RESULTS

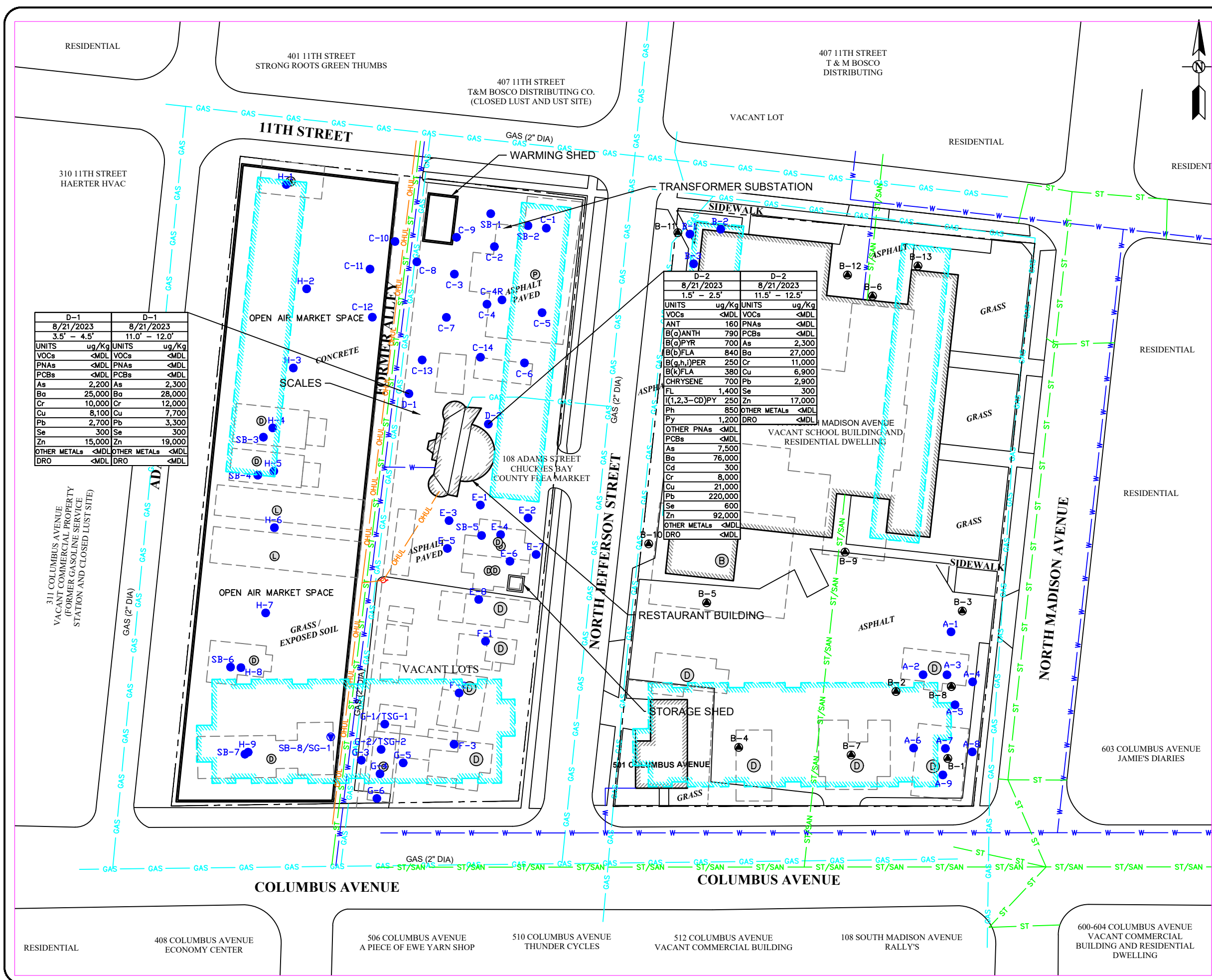
PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY  
VERIFY SCALE  
0 60'

DRN BY: ML/CS  
CHKD BY: TH  
FILE NAME: 01-14761-0-002F00R01

DATE: 12/4/2023  
DATE REVISED: 2/19/2024





**LEGEND:**

--- SUBJECT PROPERTY  
--- APPROXIMATE FORMER/HISTORICAL SITE FEATURES  
--- PROPOSED BUILDING LAYOUT

W WATER  
GAS GAS  
ST STORM SEWER  
ST/SAN COMBINATION SANITARY / STORM SEWER  
OHUL OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)

UTILITY POLE  
FORMER DRY CLEANER  
FORMER DWELLING  
FORMER LUMBER SHEDS  
FORMER POWER PLANT BUILDING  
FORMER WOOD OFFICE  
SOIL BORING  
THIRD PARTY BORING

ANALYTES  
ANTH RACENE  
ARSENIC  
BENZO(a)ANTHRACENE  
BENZO(a)PYRENE  
BENZO(b)FLUORANTHENE  
BENZO(g,h,i)PERYLENE  
BENZO(k)FLUORANTHENE  
BARIUM  
CHROMIUM  
COPPER  
FLUORANTHENE  
MERCURY  
INDENO(1,2,3-CD)PYRENE  
PHENANTHRENE  
PYRENE  
SELENIUM  
ZINC

DRO DIESEL RANGE ORGANICS  
MDL METHOD DETECTION LIMIT  
PCBs POLYCHLORINATED BIPHENYLS  
PNAs POLYNUCLEAR AROMATIC COMPOUNDS  
UNITS ug/Kg (UNLESS NOTED)  
VOCs VOLATILE ORGANIC COMPOUNDS

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

**Environmental & Engineering Services**

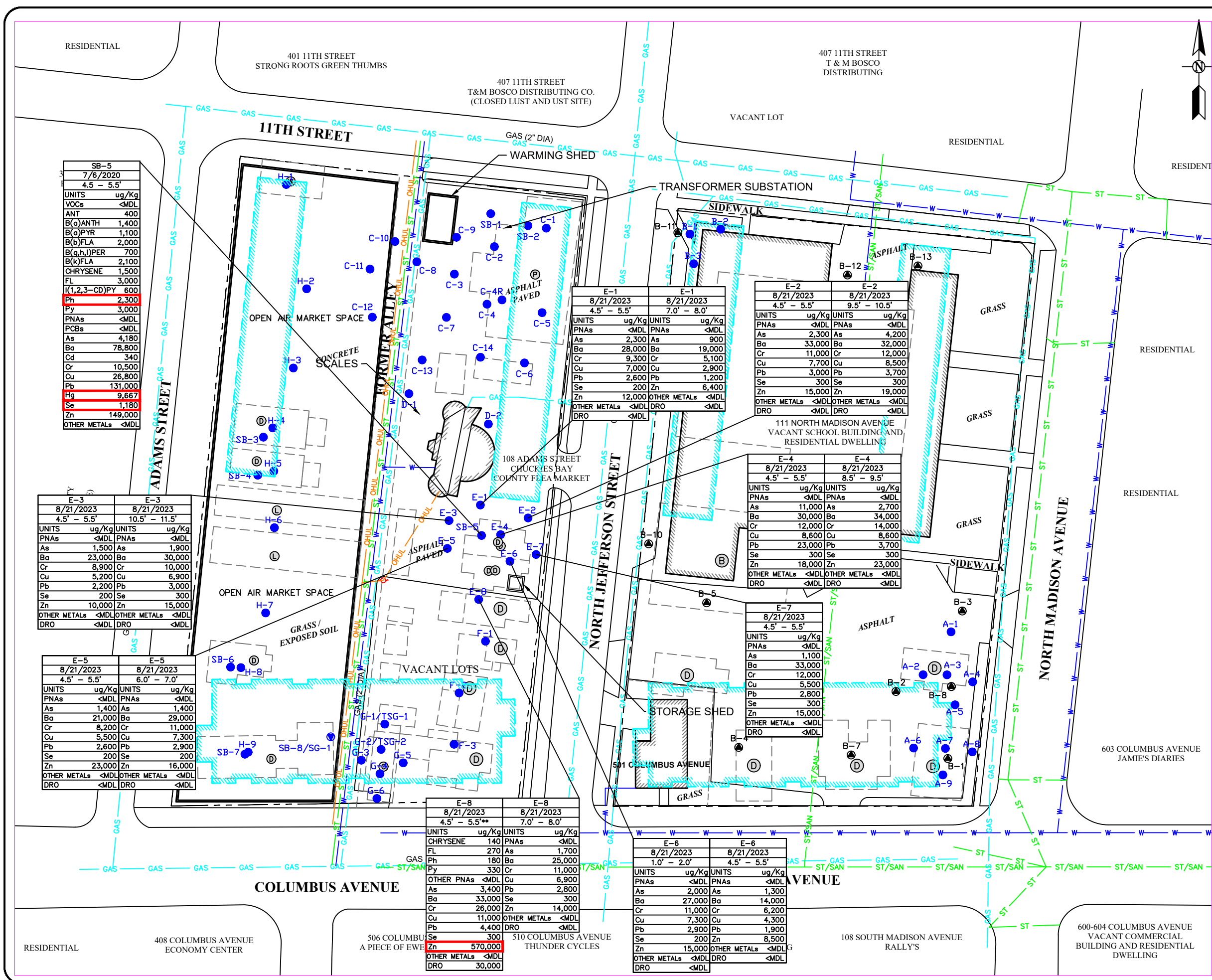
**FIGURE 3D**

AREA D SOIL ANALYTICAL RESULTS

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ML/MM	DATE: 12/14/2023
VERIFY SCALE	CHKD BY: TH	REVISED DATE: 3/22/2024
FILE NAME: 01-14761-0-002F00R01		





**LEGEND:**

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PROPOSED BUILDING LAYOUT
- WATER
- GAS
- STORM SEWER
- COMBINATION SANITARY / STORM SEWER
- OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
- UTILITY POLE
- FORMER DRY CLEANER
- FORMER DWELLING
- FORMER LUMBER SHEDS
- FORMER POWER PLANT BUILDING
- FORMER WOOD OFFICE
- SOIL BORING
- THIRD PARTY BORING

**ANALYTES**

ANT As  
B(a)ANTH BENZO(a)ANTHRACENE  
B(a)PYR BENZO(a)PYRENE  
B(b)FLA BENZO(b)FLUORANTHENE  
B(g,h,i)PER BENZO(g,h,i)PERYLENE  
B(k)FLA BENZO(k)FLUORANTHENE  
Ba BARIUM  
Cr CHROMIUM  
Cu COPPER  
FL FLUORANTHENE  
Hg MERCURY  
I(1,2,3-CD)PY INDENO(1,2,3-CD)PYRENE  
Ph PHENANTHRENE  
Py PYRENE  
Se SELENIUM  
Zn ZINC

DRO DIESEL RANGE ORGANICS  
MDL METHOD DETECTION LIMIT  
PCBs POLYCHLORINATED BIPHENYLS  
PNAs POLYNUCLEAR AROMATIC COMPOUNDS  
UNITS ug/Kg (UNLESS NOTED)  
VOCs VOLATILE ORGANIC COMPOUNDS  
VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

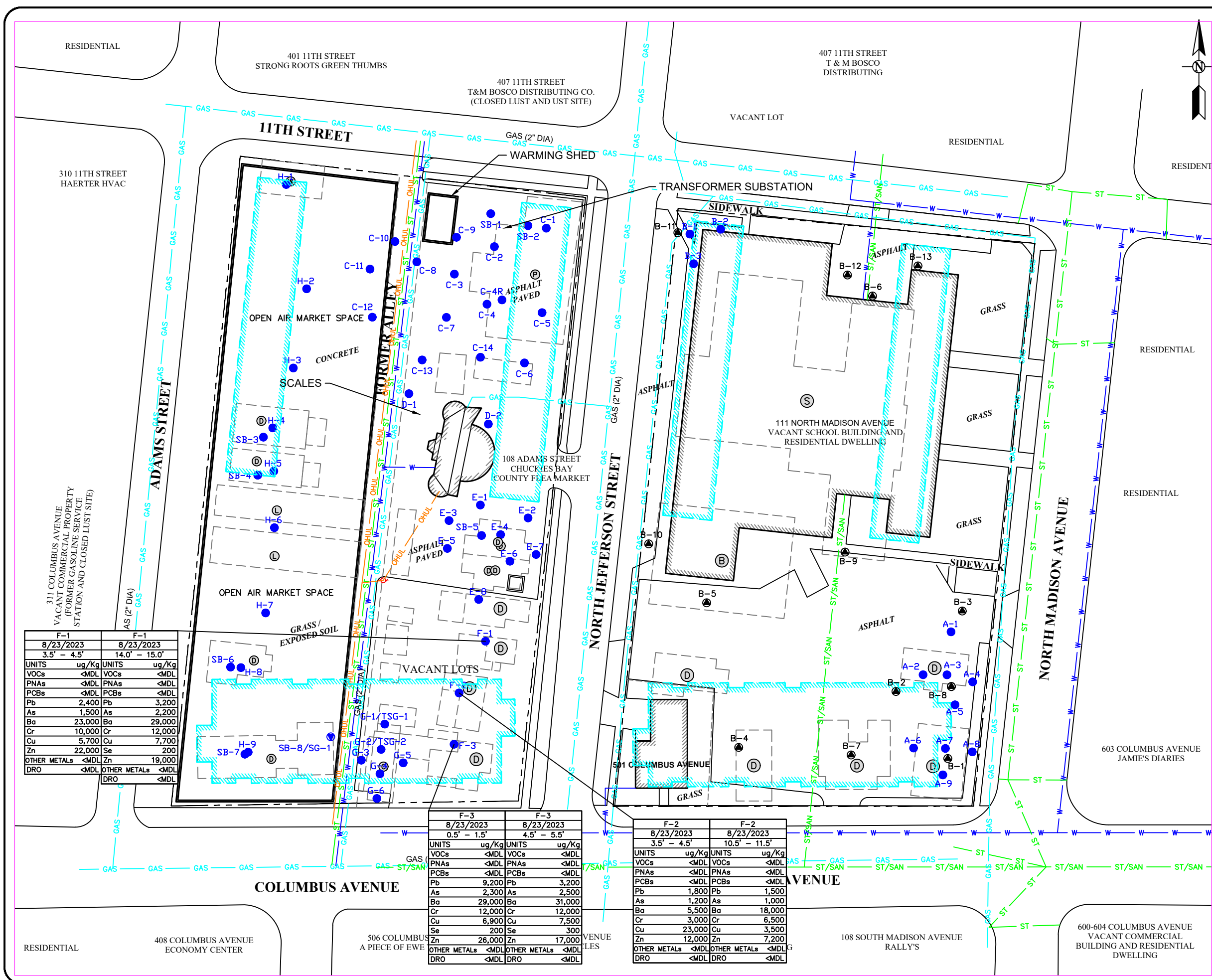
**Environmental & Engineering Services**

**FIGURE 3E**

AREA E SOIL ANALYTICAL RESULTS

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ML/MM	DATE: 12/14/2023
VERIFY SCALE	CHKD BY: TH	REVISED DATE: 3/22/2024
FILE NAME: 01-14761-0-002F00R01		



**LEGEND:**

--- SUBJECT PROPERTY  
--- APPROXIMATE FORMER/HISTORICAL SITE FEATURES  
--- PROPOSED BUILDING LAYOUT

W WATER  
GAS GAS  
ST STORM SEWER  
ST/SAN COMBINATION SANITARY / STORM SEWER  
OHUL OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)

○ UTILITY POLE  
⊙ FORMER DRY CLEANER  
⊙ FORMER DWELLING  
⊙ FORMER LUMBER SHEDS  
⊙ FORMER POWER PLANT BUILDING  
⊙ FORMER WOOD OFFICE  
● SOIL BORING  
● THIRD PARTY BORING

ANT ANTHRACENE  
As ARSENIC  
B(a)ANTH BENZO(a)ANTHRACENE  
B(a)PYR BENZO(a)PYRENE  
B(b)FLA BENZO(b)FLUORANTHENE  
B(g,h,i)PER BENZO(g,h,i)PERYLENE  
B(k)FLA BENZO(k)FLUORANTHENE  
Ba BARIUM  
Cr CHROMIUM  
Cu COPPER  
FL FLUORANTHENE  
Hg MERCURY  
I(1,2,3-CD)PY INDENO(1,2,3-CD)PYRENE  
Ph PHENANTHRENE  
Py PYRENE  
Se SELENIUM  
Zn ZINC

DRO DIESEL RANGE ORGANICS  
MDL METHOD DETECTION LIMIT  
PCBs POLYCHLORINATED BIPHENYLS  
PNAs POLYNUCLEAR AROMATIC COMPOUNDS  
UNITS μg/Kg (UNLESS NOTED)  
VOCs VOLATILE ORGANIC COMPOUNDS

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

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**FIGURE 3F**

AREA F SOIL ANALYTICAL RESULTS

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ML/MM	DATE: 12/19/2023
	CHKD BY: TH	REVISED DATE: 3/22/2024
FILE NAME: 01-14761-0-002F00R01		

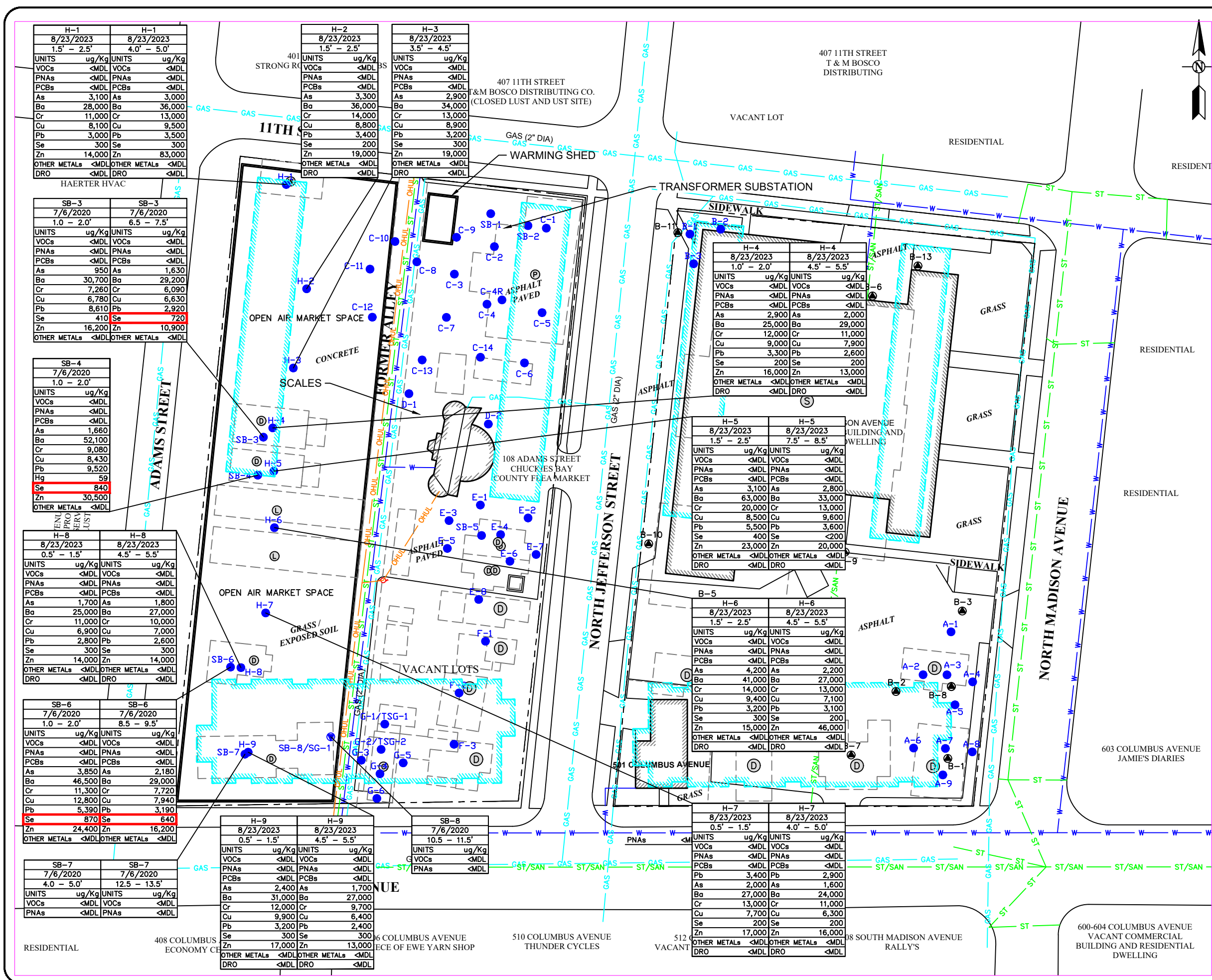
VERIFY SCALE

0 60'

IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.







**LEGEND:**

- SUBJECT PROPERTY
  - APPROXIMATE FORMER/HISTORICAL SITE FEATURES
  - PROPOSED BUILDING LAYOUT
  - WATER
  - GAS
  - STORM SEWER
  - COMBINATION SANITARY / STORM SEWER
  - OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
  - UTILITY POLE
  - FORMER DRY CLEANER
  - FORMER DWELLING
  - FORMER LUMBER SHEDS
  - FORMER POWER PLANT BUILDING
  - FORMER WOOD OFFICE
  - SOIL BORING
  - THIRD PARTY BORING
- ANALYTES**
- As ARSENIC
  - Ba BARIUM
  - Cr CHROMIUM
  - Cu COPPER
  - FL FLUORANTHENE
  - Hg MERCURY
  - Ph PHENANTHRENE
  - Py PYRENE
  - Se SELENIUM
  - Zn ZINC
- MDL METHOD DETECTION LIMIT  
PCBs POLYCHLORINATED BIPHENYLS  
PNAs POLYNUCLEAR AROMATIC COMPOUNDS  
UNITS ug/Kg (UNLESS NOTED)  
VOCs VOLATILE ORGANIC COMPOUNDS  
VALUE EXCEEDS APPLICABLE CRITERIA

NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED



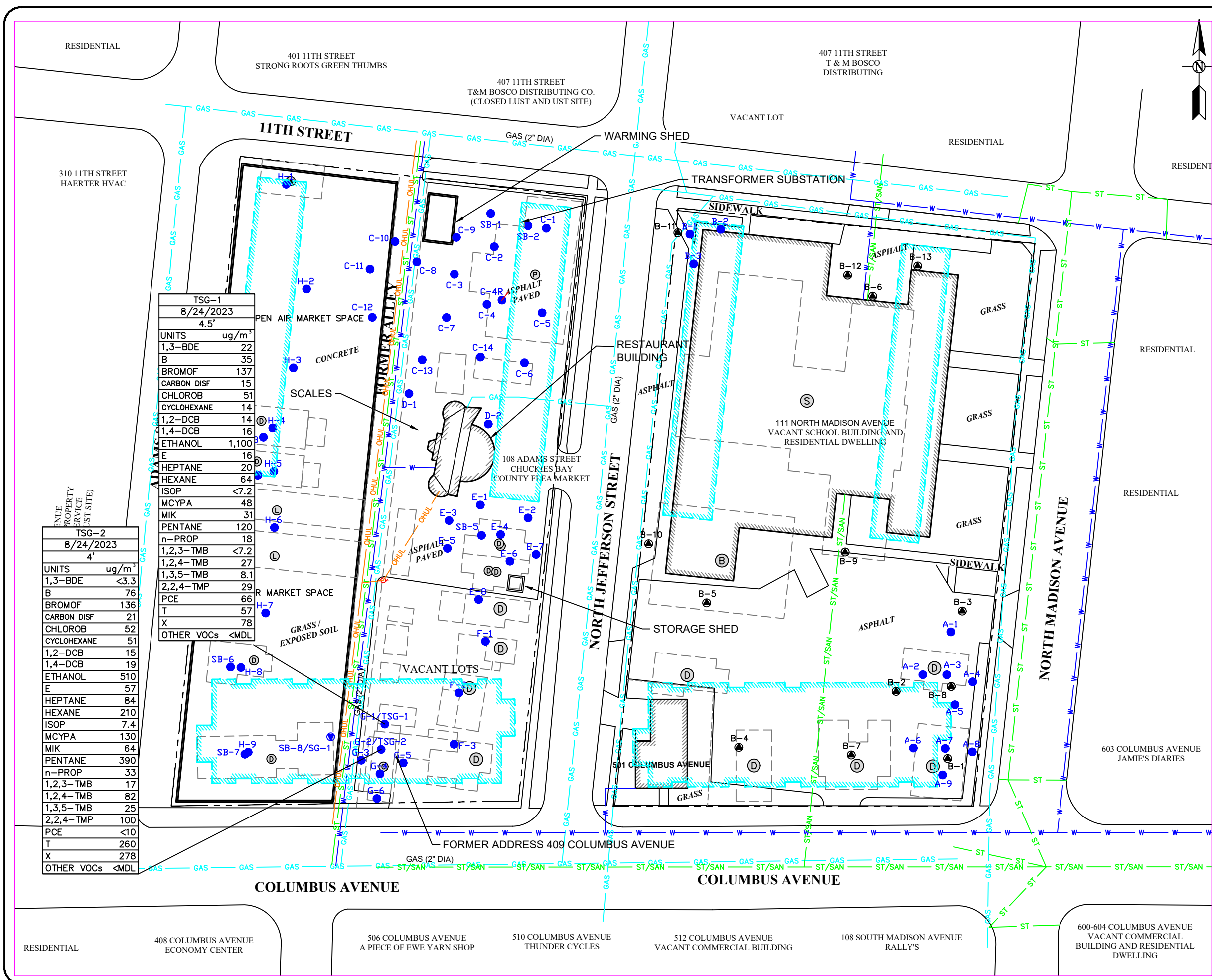
**FIGURE 3H**

AREA H SOIL ANALYTICAL RESULTS

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ML/MM	DATE: 12/19/2023
VERIFY SCALE	CHKD BY: TH	REVISED DATE: 3/22/2024
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FILE NAME: 01-14761-0-002F00R01	





NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED

**Environmental & Engineering Services**

**FIGURE 4**  
EXTENTS OF SOIL CONTAMINATION AND PROPOSED EXCAVATION MAP

PROJ: 108 ADAMS ST, 101-109 NORTH JEFFERSON AVE & 501 COLUMBUS ST BAY CITY, MI

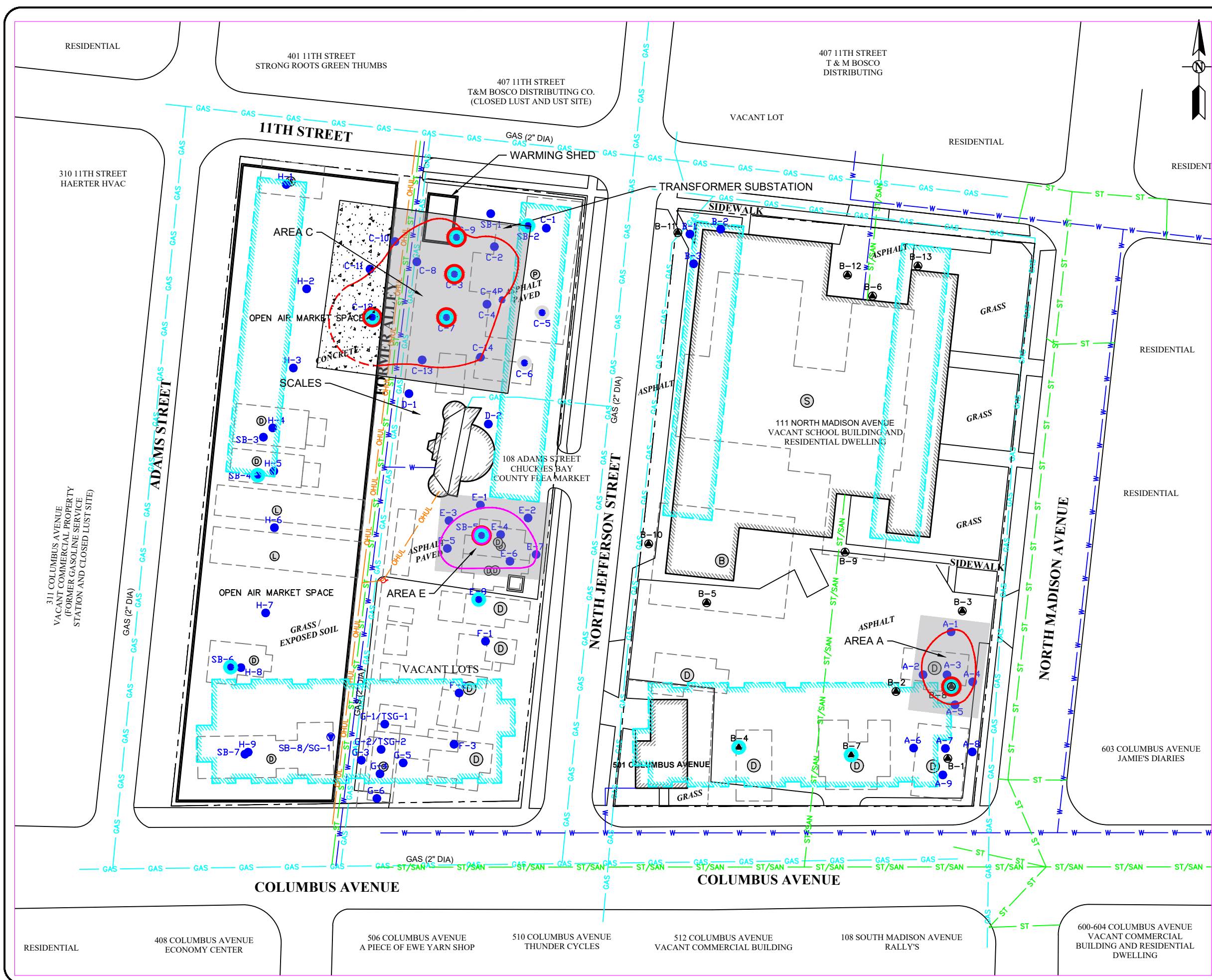
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VERIFY SCALE	CHKD BY: KH	REVISED DATE: 3/22/2024
FILE NAME: 01-14761-0-002F00R01		

0 60'

IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.







**LEGEND:**

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PROPOSED BUILDING LAYOUT
- WATER
- GAS
- STORM SEWER
- COMBINATION SANITARY / STORM SEWER
- OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
- UTILITY POLE
- FORMER DRY CLEANER
- FORMER DWELLING
- FORMER LUMBER SHEDS
- FORMER POWER PLANT BUILDING
- FORMER WOOD OFFICE
- SOIL BORING
- THIRD PARTY BORING
- PNAs AND/OR METALS IN SOIL >201 GCC
- PNAs AND/OR Hg IN SOIL >VIAP (R)
- PNAs AND/OR METALS IN SOIL >DC (R)
- 1 OR BOTH SAMPLES NOT RAN DUE TO COC ERROR
- KNOWN EXTENT OF VIAP EXCEEDANCES
- KNOWN/APPROXIMATE EXTENT OF DC EXCEEDANCES
- ASPHALT
- CONCRETE

**NOTE:**

1. LOCATION OF HISTORICAL SITE FEATURES ARE APPROXIMATE ONLY.

2. UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO PM ENVIRONMENTAL, INC. BY THE VARIOUS COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKS/STAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF. PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG.

Environmental & Engineering Services

**FIGURE 6**  
SURFACE COVER MAP

**PROJ:**  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE &  
501 COLUMBUS ST  
BAY CITY, MI

<b>THIS IS NOT A LEGAL SURVEY</b>	DRN BY: ML/MM	DATE: 12/19/2023
VERIFY SCALE	CHKD BY: TH	REVISED DATE: 3/27/2024
FILE NAME: 01-14761-0-002F00R01		

IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

# Tables



**TABLE 1**  
**SUMMARY OF AREA A SOIL ANALYTICAL RESULTS**  
**VOCs, PNAs, PCBs, MI-10 METALS, AND DRO**  
**108 ADAMS STREET SITE**  
**108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN**  
**PM PROJECT #01-14761-0-0002**

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs), Michigan 10 Metals (MI-10), and Diesel Range Organics (DRO)  (µg/Kg)				VOCs	PNAs	PCBs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRO <sup>1</sup>	
Chemical Abstract Service Number (CAS#)				Various	Various	Various	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	NA	
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PNAs	PCBs	MI-10 Metals										DRO	
A-1	8/22/2023	Clay	5.0-6.0	NA	NA	NA	NA	NA	NA	NA	NA	3,900	NA	NA	NA	NA	NA	
		Clay	9.0-10.0	NA	NA	NA	NA	NA	NA	NA	NA	3,800	NA	NA	NA	NA	NA	
A-2		Gravelly Sand/Sandy Clay Interface	0.5-1.5	NA	NA	NA	NA	NA	NA	NA	NA	6,700	NA	NA	NA	NA	NA	
		A-3	Clay	5.0-6.0	NA	NA	NA	NA	NA	NA	NA	NA	3,600	NA	NA	NA	NA	NA
Clay			9.0-10.0	NA	NA	NA	NA	NA	NA	NA	NA	3,100	NA	NA	NA	NA	NA	
A-4		Clay	5.0-6.0	NA	NA	NA	NA	NA	NA	NA	NA	3,200	NA	NA	NA	NA	NA	
		Clay	9.0-10.0	NA	NA	NA	NA	NA	NA	NA	NA	2,900	NA	NA	NA	NA	NA	
A-5		Sandy Clay	5.0-6.0	NA	NA	NA	NA	NA	NA	NA	NA	4,400	NA	NA	NA	NA	NA	
		Sandy Clay	9.0-10.0	NA	NA	NA	NA	NA	NA	NA	NA	4,000	NA	NA	NA	NA	NA	
A-6		Gravelly Sand/Clay Interface	0.5-1.5	<MDL	<MDL	<MDL	1,800	53,000	<200	19,000	8,100	5,400	<60	400	<100	21,000	<29,000	
		Clay/Sandy Clay Interface	4.5-5.5	<MDL	<MDL	<MDL	1,500	17,000	<200	7,000	5,800	2,100	<60	<200	<100	8,800	<28,000	
A-7		Sand/Sandy Clay Interface	1.0-2.0	<MDL	<MDL	<MDL	1,800	46,000	<200	16,000	8,000	5,800	<60	500	<100	23,000	<30,000	
		Sandy Clay/Clay Interface	5.0-6.0	<MDL	<MDL	<MDL	2,000	25,000	<200	10,000	7,200	2,800	<60	300	<100	15,000	<28,000	
A-8		Clayey Sand/Sandy Clay Interface	1.5-2.5	<MDL	<MDL	<MDL	3,800	55,000	<200	13,000	12,000	48,000	80	600	<100	51,000	<30,000	
A-9		Gravelly Sand/Sandy Clay Interface	0.5-1.5	<MDL	<MDL	<MDL	1,100	45,000	<200	15,000	5,400	4,200	<60	400	<100	17,000	<29,000	
		Sandy Clay	4.5-5.5	<MDL	<MDL	<MDL	900	41,000	<200	14,000	6,100	4,300	<60	400	<100	18,000	<31,000	
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																		
Residential (µg/Kg)																		
Statewide Default Background Levels				NA	NA	NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000		47,000	
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				NA	NA	NA	17,100	172,000	2,000	43,500	32,200	38,900	500	1,100	1,000		91,900	
Drinking Water Protection (DWP)				Various	Various	NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500		2.40E+06	
Groundwater Surface Water Interface Protection (GSIP)				Various	Various	NLL	4,600	9.3E+05 (G)	6,100 (G,X)	3,300	1.3E+05 (G)	5.9E+06 (G,X)	50 (M); 1.2	400	100 (M); 27		3.0E+05 (G)	
Soil Volatilization to Indoor Air Inhalation (SVII)				Various	Various	3.0E+06	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV		NLV	
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)				Various	Various	2.40E+05	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV		NLV	
Ambient Air Finite VSI for 5 Meter Source Thickness				Various	Various	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV		NLV	
Ambient Air Finite VSI for 2 Meter Source Thickness				Various	Various	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV		NLV	
Ambient Air Particulate Soil Inhalation (PSI)				Various	Various	5.2E+06	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06		ID	
Direct Contact (DC)				Various	Various	(T)	7,600	3.70E+07	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06		1.70E+08	
Screening Levels (µg/Kg)																		
Soil Saturation Concentration Screening Levels (Csat)				Various	NL	NL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	ID	NA	NA	NA	NA	NA	NA	22 (M)	NA	NA	NA	NA	

  Criteria Exceeded  
**BOLD** Value Exceeds Criteria  
  Value Exceeds Screening Level  
underline Screening Level Exceeded  
µg/Kg Micrograms per Kilogram  
bgs Below Ground Surface (feet)  
<MDL Not detected at concentrations exceeding the laboratory method detection limit (MDL)  
1 DRO evaluated for carbon chain lengths C10 through C20  
NA Not Applicable / Not Analyzed  
NL Not Listed  
NLV Not Likely to Volatilize  
ID Insufficient Data  
(G,X) Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 301 mg/L CaCO<sup>3</sup> Hardness; Station ID 90032, Saginaw River at Lafayette Street Bridge, Bay City, MI  
{ } Other Alpha notation, please refer to EGLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020  
( ) Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020  
(T) Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards.  
Alternatives to compliance with the standards listed below are possible under Subpart D. New releases may be subject to the standards identified in Subpart G.  
Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA Subpart D	Part 201
Residential	1,000 µg/Kg, or	4,000 µg/Kg
Nonresidential	10,000 µg/Kg if capped	16,000 µg/Kg

TABLE 2  
SUMMARY OF AREA B SOIL ANALYTICAL RESULTS  
MERCURY  
108 ADAMS STREET SITE  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Mercury  (µg/Kg)				Mercury
Chemical Abstract Service Number (CAS#)				7439976
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	Mercury
B-1	8/22/23	Sandy Clay	1.0-2.0	<60
B-2		Sandy Clay	1.0-2.0	<60
B-3		Sandy Clay	1.0-2.0	70
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020				
Residential (µg/Kg)				
Statewide Default Background Levels				130
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				500
Drinking Water Protection (DWP)				1,700
Groundwater Surface Water Interface Protection (GSIP)				50 (M); 1.2
Soil Volatilization to Indoor Air Inhalation (SVII)				48,000
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)				52,000
Ambient Air Finite VSI for 5 Meter Source Thickness				52,000
Ambient Air Finite VSI for 2 Meter Source Thickness				52,000
Ambient Air Particulate Soil Inhalation (PSI)				2.00E+07
Direct Contact (DC)				1.60E+05
Screening Levels (µg/Kg)				
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				22 (M)



Criteria Exceeded

**BOLD**

Value Exceeds Criteria



Value Exceeds Screening Level

underline

Screening Level Exceeded

µg/Kg

Micrograms per Kilogram

bgs

Below Ground Surface (feet)

{ }

Other Alpha notation, please refer to EGLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020

( )

Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020

TABLE 3  
SUMMARY OF AREA C SOIL ANALYTICAL RESULTS  
VOCs, PHAs, PCBs, MHLs, AND DRD EVALUATION  
101 ADAMS STREET SITE  
101 ADAMS ST., 101-109 NORTH JEFFERSON AVE. AND 801 COLUMBUS AVE., BAY CITY, MICHIGAN  
PW PROJECT #01-141614-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PHAs), Polychlorinated Biphenyls (PCBs), Michigan 15 Metals (M-15), and Other Range Organics (ERO) (µg/Kg)				VOCs	Arsine	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Benzo(b)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Other PHAs	PCBs	Arsenic	Barium	Calcium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRD <sup>1</sup>	
Chemical Abstract Service Number (CAS#)				Vertex	120127	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440566	NA	
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PCBs													M-10										DRD	
C-1	8/22/2023	Sandy Clay/Clay Interface	4.5-5.0"	<MDL	<110	160	<220	<220	<220	<220	230	<110	<220	<110	130	<MDL	<MDL	1,000	20,000	<200	8,500	5,800	2,300	<50	200	<100	10,000	<27,000	
C-2		Gravelly Sand/Silt/Sand Interface	0.5-1.5'	<MDL	<120	520	510	690	240	270	480	780	<230	500	720	<MDL	<MDL	1,800	45,000	<200	14,000	6,000	5,800	70	300	<100	19,000	<29,000	
C-3		Sandy Clay/Clay Interface	4.5-5.0"	<MDL	<110	<110	<220	<220	<220	<220	<110	<110	<220	<110	<110	<MDL	<MDL	2,000	24,000	<200	10,000	6,800	2,600	<60	200	<100	13,000	<28,000	
		Gravelly Sand/Sandy Clay Interface	0.5-1.5"	<MDL	220	840	860	1,200	320	430	830	1,500	310	1,200	1,400	<MDL	<MDL	22,000	48,000	300	5,200	120,000	190,000	80	700	200	88,000	<39,000	
		Sandy Clay/Clay Interface	4.5-5.5"	<MDL	<120	<120	<220	<220	<220	<220	<120	<120	<220	<120	<120	<MDL	<MDL	4,500	55,000	<200	20,000	12,000	5,200	<60	500	<100	14,000	<30,000	
C-4R	11/8/2023	Gravelly Sand/Sand Interface	0.5-1.5'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,530	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
C-6	8/23/2023	Clay	4.5-5.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Clay Interface	14.0-15.0"	<MDL	<110	<110	<220	<220	<220	<220	<110	<110	<220	<110	130	<MDL	<MDL	1,300	23,000	<200	10,000	6,300	2,400	<50	<200	<100	30,000	<38,000	
C-7	11/8/2023	Gravelly Sand/Gravelly Sand Interface	0.5-1.5'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	141,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Clay	4.5-5.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-8	11/8/2023	Gravelly Sand	0.5-1.5'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7,810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Clay Interface	4.5-5.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Gravelly Sand/Clay/Sand Interface	0.5-1.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60,700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-9	1/23/2024	Clay	4.5-5.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Peat		1.0-1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,980	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
C-11		Peat	1.0-1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,860	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-12		Sandy Clay	1.0-1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-13	1/23/2024	Sand/Peat Interface	1.0-1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-14		Peat	1.0-1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020  
EGLE Volatilization to Indoor Air Pathway (VAP) Screening Levels, September 4, 2020

Residential (µg/Kg)				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA
Nonresidential (µg/Kg)				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA
Screening Levels (µg/Kg)				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA
Soil Saturation Concentration Screening Levels (C <sub>sat</sub> )				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA
Residential Volatilization to Indoor Air Pathway Screening Level (VAP)				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VAP)				VOCs	120137	56553	50328	205992	191242	207089	218019	208440	193395	89018	129000	Vertex	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439876	7782492	7440224	7440566	NA

LAND USE CATEGORY	TSCA Subpart D	Part 201
Residential	1,000 µg/kg, or 10,000 µg/kg if capped	4,000 µg/kg
Nonresidential		16,000 µg/kg

TABLE 4  
SUMMARY OF AREA 5 SOIL ANALYTICAL RESULTS  
VOCs, PNA, PCBs, M-10, AND DRO EVALUATION  
108 ADAMS STREET SITE  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNA)s, Polychlorinated Biphenyls (PCBs), Michigan 10 Metals (M-10), and Diesel Range Organics (DRO) Evaluation (µg/Kg)				VOCs	Aroclor	Benzofluorene	Benzofluorene	Benzofluorene	Benzofluorene	Benzofluorene	Chrysene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Other PNA	PCBs	Aroclor	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRO		
Chemical Abstract Service Number (CAS#)				Various	120127	96553	50328	205992	191242	207089	218019	206440	193395	85018	129000	Various	1336363	7440382	7440393	7440439	10065931	7440508	7439921	7439976	7782492	7440224	7440666	NA		
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PNA										PCBs										M-10					DRO
D-1	8/21/2023	Sandy Clay/Clay Interface	3.5-4.5	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	2,200	25,000	<200	10,000	8,100	2,700	<50	300	<100	15,000	<27,000	
		Sandy Clay/Clay Interface	11.0-12.0	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	2,300	28,000	<200	12,000	7,700	3,300	<60	300	<100	19,000	<28,000
D-2	8/21/2023	Sandy Clay/Clay Interface	1.5-2.5	<MDL	160	730	700	840	250	380	700	1,400	250	850	1,200	<MDL	<MDL	<MDL	<MDL	7,500	76,000	300	8,000	21,000	220,000	<60	600	<100	92,000	<29,000
		Sandy Clay/Clay Interface	11.5-12.5	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	2,300	27,000	<200	11,000	6,900	2,900	<50	300	<100	17,000	<27,000

Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50)  
Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020  
EGL Volatilization to Indoor Air Pathway (VIAIP) Screening Levels, September 4, 2020

Residential (µg/Kg)																													
Statewide Default Background Levels																													
Sand Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)																													
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)																													
Drinking Water Protection (DWP)																													
Groundwater Surface Water Interface Protection (GSIP)																													
Soil Volatilization to Indoor Air Inhalation (SVI)																													
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)																													
Ambient Air Finite VSI for 5 Meter Source Thickness																													
Ambient Air Finite VSI for 2 Meter Source Thickness																													
Ambient Air Particulate Soil Inhalation (PSI)																													
Direct Contact (DC)																													
Nonresidential (µg/Kg)																													
Drinking Water Protection (Nonres DWP)																													
Soil Volatilization to Indoor Air Inhalation (Nonres SVI)																													
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)																													
Ambient Air Finite VSI for 5 Meter Source Thickness																													
Ambient Air Finite VSI for 2 Meter Source Thickness																													
Ambient Air Particulate Soil Inhalation (Nonres PSI)																													
Direct Contact (Nonres DC)																													
Screening Levels (µg/Kg)																													
Soil Saturation Concentration Screening Levels (Csat)																													
Residential Volatilization to Indoor Air Pathway Screening Level (VIAIP)																													
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAIP)																													

Criteria Exceeded	
Value Exceeds Criteria	
Value Exceeds Screening Level	
Screening Level Exceeded	
µg/Kg	Micrograms per Kilogram
Bgs	Below Ground Surface (Bgs)
+	Results compared to Sand Hutton Erie Background Levels
---	Results compared to Clay Hutton Erie Background Levels
<MDL	Not detected at concentrations exceeding the laboratory method detection level (MDL)
NA	Not Applicable / Not Analyzed
NL	Not Listed
NLV	Not Likely to Volatilize
ID	Insufficient Data
(D-X)	Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 301 mg/L CaCO <sub>3</sub> Hardness Station ID 90032, Saginaw River at Lafayette Street Bridge, Bay City, MI
(1)	Other Alpha notation, please refer to EDLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020
(1)	Other Alpha notation, please refer to EDLE Footnotes for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020
(7)	Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards.
Alternatives to compliance with the standards listed below are possible under Subpart D. New releases may be subject to the standards identified in Subpart G.	
Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.	

LAND USE CATEGORY	TSCA Subpart D	Part 201
Residential	1,000 µg/Kg or 10,000 µg/Kg if capped	4,000 µg/Kg
Nonresidential		16,000 µg/Kg

TABLE 5  
SUMMARY OF AREA E SOIL ANALYTICAL RESULTS  
PNAs, MI-10, AND DRO EVALUATION  
108 ADAMS STREET SITE  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Polynuclear Aromatic Hydrocarbons (PNAs), Michigan 10 Metals (MI-10), and Diesel Range Organics (DRO) Evaluation  (µg/Kg)				Chrysene	Fluoranthene	Phenanthrene	Pyrene	Other PNAs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRO <sup>1</sup>
Chemical Abstract Service Number (CAS#)				218019	206440	85018	129000	Various	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	NA
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	PNAs					MI-10										DRO
E-1	8/21/23	Clay	4.5-5.5	<110	<110	<110	<110	<MDL	2,300	28,000	<200	9,300	7,000	2,600	<50	200	<100	12,000	<27,000
		Sand/Clay Interface	7.0-8.0	<110	<110	<110	<110	<MDL	900	19,000	<200	5,100	2,900	1,200	<50	<MDL	<100	6,400	<27,000
E-2	8/21/23	Clay	4.5-5.5	<110	<110	<110	<110	<MDL	2,300	33,000	<200	11,000	7,700	3,000	<50	300	<100	15,000	<28,000
		Sandy Clay/Clay Interface	9.5-10.5	<110	<110	<110	<110	<MDL	4,200	32,000	<200	12,000	8,500	3,700	<60	300	<100	19,000	<28,000
E-3	8/21/23	Clay	4.5-5.5	<110	<110	<110	<110	<MDL	1,500	23,000	<200	8,900	5,200	2,200	<60	200	<100	10,000	<27,000
		Sandy Clay/Clay Interface	10.5-11.5	<110	<110	<110	<110	<MDL	1,900	30,000	<200	10,000	6,900	3,000	<60	300	<100	15,000	<28,000
E-4	8/21/23	Clay	4.5-5.5	<110	<110	<110	<110	<MDL	11,000	30,000	<200	12,000	8,600	23,000	<50	300	<100	18,000	<28,000
		Clay Interface	8.5-9.5	<110	<110	<110	<110	<MDL	2,700	34,000	<200	14,000	8,600	3,700	<60	300	<100	23,000	<28,000
E-5	8/21/23	Sandy Clay	4.5-5.5	<110	<110	<110	<110	<MDL	1,400	21,000	<200	8,200	5,500	2,600	<60	200	<100	23,000	<28,000
		Sandy Clay/Clay Interface	6.0-7.0	<110	<110	<110	<110	<MDL	1,400	29,000	<200	11,000	7,300	2,900	<60	200	<100	16,000	<27,000
E-6	8/21/23	Sandy Clay	1.0-2.0	<110	<110	<110	<110	<MDL	2,000	27,000	<200	11,000	7,300	2,900	<60	200	<100	15,000	<28,000
		Sandy Clay	4.5-5.5	<110	<110	<110	<110	<MDL	1,300	14,000	<200	6,200	4,300	1,900	<60	<MDL	<100	8,500	<28,000
E-7	8/21/23	Clay	4.5-5.5	<110	<110	<110	<110	<MDL	1,100	33,000	<200	12,000	5,500	2,800	<60	300	<100	15,000	<28,000
E-8	8/21/23	Clay	4.5-5.5**	140	270	180	330	<MDL	3,400	33,000	<200	26,000	11,000	4,400	<60	300	<100	570,000	30,000
		Clay	7.0-8.0	<110	<110	<110	<110	<MDL	1,700	25,000	<200	11,000	6,900	2,800	<50	300	<100	14,000	<27,000
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																			
Residential (µg/Kg)																			
Statewide Default Background Levels	NA	NA	NA	NA	NA	NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000	47,000			
Sand Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)	NA	NA	NA	NA	NA	NA	17,000	66,200	2,000	19,700	20,200	18,000	230	1,100	1,400	73,600			
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)	NA	NA	NA	NA	NA	NA	17,100	172,000	2,000	43,500	32,200	38,900	500	1,100	1,000	91,900			
Drinking Water Protection (DWP)	NLL	7.30E+05	56,000	4.80E+05	Various	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2.40E+06				
Groundwater Surface Water Interface Protection (GSIP)	NLL	5,500	2,100	ID	Various	4,600	9.3E+05 (G)	6,100 (G,X)	3,300	1.3E+05 (G)	5.9E+06 (G,X)	50 (M); 1.2	400	100 (M); 27	3.0E+05 (G)				
Soil Volatilization to Indoor Air Inhalation (SVII)	ID	1.0E+9 (D)	2.8E+06	1.0E+9 (D)	Various	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV				
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)	ID	7.40E+08	1.60E+05	6.5E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV				
Ambient Air Finite VSI for 5 Meter Source Thickness	ID	7.4E+08	1.60E+05	6.5E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV				
Ambient Air Finite VSI for 2 Meter Source Thickness	ID	7.4E+08	1.60E+05	6.5E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV				
Ambient Air Particulate Soil Inhalation (PSI)	ID	9.3E+09	6.7E+06	6.7E+09	Various	7.20E+05	3.30E+08	1.70E+06	2.80E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06	ID				
Direct Contact (DC)	2.0E+06	4.6E+07	1.6E+06	2.9E+07	Various	7,600	3.70E+07	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	1.70E+08				
Nonresidential (µg/Kg)																			
Drinking Water Protection (Nonres DWP)	NLL	7.30E+05	1.60E+05	4.80E+05	Various	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	5.00E+06				
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)	ID	1.0E+9 (D)	5.1E+06	1.0E+9 (D)	Various	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV				
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)	ID	8.9E+08	1.90E+05	7.8E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV				
Ambient Air Finite VSI for 5 Meter Source Thickness	ID	8.8E+08	1.90E+05	7.8E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV				
Ambient Air Finite VSI for 2 Meter Source Thickness	ID	8.8E+08	1.90E+05	7.8E+08	Various	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV				
Ambient Air Particulate Soil Inhalation (Nonres PSI)	ID	4.1E+09	2.9E+06	2.9E+09	Various	9.10E+05	1.50E+08	2.20E+06	2.40E+05	5.90E+07	4.40E+07	8.80E+06	5.90E+07	2.90E+06	ID				
Direct Contact (Nonres DC)	8.0E+06	1.3E+08	5.2E+06	8.4E+07	Various	37,000	1.30E+08	2.10E+06	9.20E+06	7.30E+07	9.0E+5 (DD)	5.80E+05	9.60E+06	9.00E+06	6.30E+08				
Screening Levels (µg/Kg)																			
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)	NA	NA	1,700	2.50E+07	Various	NA	NA	NA	NA	NA	NA	22 (M)	NA	NA	NA				
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)	NA	NA	29,000	4.40E+08	Various	NA	NA	NA	NA	NA	NA	390	NA	NA	NA				

	Criteria Exceeded
<b>BOLD</b>	Value Exceeds Criteria
	Value Exceeds Screening Level
<u>underline</u>	Screening Level Exceeded
µg/Kg	Micrograms per Kilogram
bgs	Below Ground Surface (feet)
*	Results compared to Sand Huron Erie Background Levels
**	Results compared to Clay Huron Erie Background Levels
<MDL	Not detected at concentrations exceeding the laboratory method detection limit (MDL)
NA	Not Applicable / Not Analyzed
NL	Not Listed
NLV	Not Likely to Volatilize
ID	Insufficient Data
(G,X)	Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 301 mg/L CaCO <sup>3</sup> Hardness: Station ID 90032, Saginaw River at Lafayette Street Bridge, Bay City, MI
{ }	Other Alpha notation, please refer to EGLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020
{ }	Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020

**TABLE 6**  
**SUMMARY OF AREA F SOIL ANALYTICAL RESULTS**  
**VOCs, PNAs, PCBs, MI-10, AND DRO EVALUATION**  
**108 ADAMS STREET SITE**  
**108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN**  
**PM PROJECT #01-14761-0-0002**

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs), Michigan 10 Metals (MI-10), and Diesel Range Organics (DRO) Evaluation  (µg/Kg)				VOCs	PNAs	PCBs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRO <sup>1</sup>
Chemical Abstract Service Number (CAS#)				Various	Various	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	NA
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PNAs	PCBs	MI-10										DRO
F-1	8/23/2023	Sandy Clay/Clay Interface	3.5-4.5	<MDL	<MDL	<MDL	1,500	23,000	<200	10,000	5,700	2,400	<50	<200	<100	22,000	<27,000
		Clay	14.0-15.0	<MDL	<MDL	<MDL	2,200	29,000	<200	12,000	7,700	3,200	<60	200	<100	19,000	<28,000
F-2		Gravelly Sand/Clay Interface	3.5-4.5	<MDL	<MDL	<MDL	1,200	5,500	<200	3,000	23,000	1,800	<50	<200	<100	12,000	<26,000
		Clay Interface	10.5-11.5	<MDL	<MDL	<MDL	1,000	18,000	<200	6,500	3,500	1,500	<50	<200	<100	7,200	<27,000
F-3		Sandy Clay	0.5-1.5	<MDL	<MDL	<MDL	2,300	29,000	<200	12,000	6,900	9,200	<60	200	<100	26,000	<28,000
		Sandy Clay/Clay Interface	4.5-5.5	<MDL	<MDL	<MDL	2,500	31,000	<200	12,000	7,500	3,200	<60	300	<100	17,000	<28,000
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																	
Residential (µg/Kg)																	
Statewide Default Background Levels				NA	NA	NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000	47,000	
Sand Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				NA	NA	NA	17,000	66,200	2,000	19,700	20,200	18,000	230	1,100	1,400	73,600	
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				NA	NA	NA	17,100	172,000	2,000	43,500	32,200	38,900	500	1,100	1,000	91,900	
Drinking Water Protection (DWP)				3.00E+05	3.00E+05	NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2.40E+06	
Groundwater Surface Water Interface Protection (GSIP)				8,700	8,700	NLL	4,600	9.3E+05 (G)	6,100 (G,X)	3,300	1.3E+05 (G)	5.9E+06 (G,X)	50 (M); 1.2	400	100 (M); 27	3.0E+05 (G)	
Soil Volatilization to Indoor Air Inhalation (SVII)				1.9E+08	1.9E+08	3.0E+06	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)				8.1E+07	8.1E+07	2.40E+05	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 5 Meter Source Thickness				8.1E+07	8.1E+07	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 2 Meter Source Thickness				8.1E+07	8.1E+07	7.9E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Particulate Soil Inhalation (PSI)				1.4E+10	1.4E+10	5.2E+06	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06	ID	
Direct Contact (DC)				4.1E+07	4.1E+07	(T)	7,600	3.70E+07	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	1.70E+08	
Nonresidential (µg/Kg)																	
Drinking Water Protection (Nonres DWP)				8.80E+05	8.80E+05	NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.90E+05	1,700	4,000	4,500	5.00E+06	
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)				3.5E+08	3.5E+08	1.6E+07	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV	
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)				9.7E+07	9.7E+07	8.10E+05	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 5 Meter Source Thickness				9.7E+07	9.7E+07	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 2 Meter Source Thickness				9.7E+07	9.7E+07	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Particulate Soil Inhalation (Nonres PSI)				6.2E+09	6.2E+09	6.5E+06	9.10E+05	1.50E+08	2.20E+06	2.40E+05	5.90E+07	4.40E+07	8.80E+06	5.90E+07	2.90E+06	ID	
Direct Contact (Nonres DC)				1.3E+08	1.3E+08	(T)	37,000	1.30E+08	2.10E+06	9.20E+06	7.30E+07	9.0E+5 (DD)	5.80E+05	9.60E+06	9.00E+06	6.30E+08	
Screening Levels (µg/Kg)																	
Soil Saturation Concentration Screening Levels (Csat)				Various	Various	NL	NA	NA	NA	NA	NA	NL	NA	NA	NA	NA	
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				2.00E+05	2.00E+05	2.00E+05	NA	NA	NA	NA	NA	NA	22 (M)	NA	NA	NA	
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				3.60E+06	3.60E+06	3.60E+06	NA	NA	NA	NA	NA	NA	390	NA	NA	NA	

	Criteria Exceeded
<b>BOLD</b>	Value Exceeds Criteria
	Value Exceeds Screening Level
<u>underline</u>	Screening Level Exceeded
µg/Kg	Micrograms per Kilogram
bgs	Below Ground Surface (feet)
*	Results compared to Sand Huron Erie Background Levels
**	Results compared to Clay Huron Erie Background Levels
<MDL	Not detected at concentrations exceeding the laboratory method detection limit (MDL)
NA	Not Applicable / Not Analyzed
NL	Not Listed
NLV	Not Likely to Volatilize
ID	Insufficient Data
(G,X)	Metal GSP Criteria for Surface Water Not Protected for Drinking Water Use based on 301 mg/L CaCO <sub>3</sub> Hardness: Station ID 90032, Saginaw River at Lafayette Street Bridge, Bay City, MI
{ }	Other Alpha notation, please refer to EGLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020
()	Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020
(T)	Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards.
	Alternatives to compliance with the standards listed below are possible under Subpart D. New releases may be subject to the standards identified in Subpart G.
	Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA Subpart D	Part 201
Residential	1,000 µg/kg, or	4,000 µg/Kg
Nonresidential	10,000 µg/kg if capped	16,000 µg/Kg

TABLE 7  
SUMMARY OF AREA G SOIL ANALYTICAL RESULTS  
VOCs AND PNAs  
108 ADAMS STREET SITE  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Volatile Organic Compounds (VOCs) and Polynuclear Aromatic Hydrocarbons (PNAs)  (µg/Kg)				VOCs	PNAs
Chemical Abstract Service Number (CAS#)				Various	Various
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PNAs
G-1	8/24/23	Silty Sand/Clay Interface	4.0-5.0	<MDL	<MDL
		Clay	14.0-15.0	<MDL	<MDL
G-2		Silty Sand/Clay Interface	0.5-1.5	<MDL	<MDL
		Sandy Clay/Clay Interface	9.0-10.0	<MDL	<MDL
G-3		Sandy Clay/Clay Interface	1.5-2.5	<MDL	<MDL
		Sandy Clay/Clay Interface	9.5-10.5	<MDL	<MDL
G-4		Sandy Clay	1.5-2.5	<MDL	<MDL
		Sandy Clay/Clay Interface	10.0-11.0	<MDL	<MDL
G-5		Sandy Clay/Clay Interface	3.5-4.5	<MDL	<MDL
		Clay Interface	10.0-11.0	<MDL	<MDL
G-6		Sandy Clay/Clay Interface	1.5-2.5	<MDL	<MDL
		Clay	14.0-15.0	<MDL	<MDL
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020					
Residential (µg/Kg)					
Drinking Water Protection (Res DWP)				Various	Various
Groundwater Surface Water Interface Protection (GSIP)				Various	Various
Soil Volatilization to Indoor Air Inhalation (Res SVII)				Various	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)				Various	Various
Ambient Air Finite VSI for 5 Meter Source Thickness				Various	Various
Ambient Air Finite VSI for 2 Meter Source Thickness				Various	Various
Ambient Air Particulate Soil Inhalation (Res PSI)				Various	Various
Direct Contact (Res DC)				Various	Various
Nonresidential (µg/Kg)					
Drinking Water Protection (Nonres DWP)				Various	Various
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)				Various	Various
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)				Various	Various
Ambient Air Finite VSI for 5 Meter Source Thickness				Various	Various
Ambient Air Finite VSI for 2 Meter Source Thickness				Various	Various
Ambient Air Particulate Soil Inhalation (Nonres PSI)				Various	Various
Direct Contact (Nonres DC)				Various	Various
Screening Levels (µg/Kg)					
Soil Saturation Concentration Screening Levels (Csat)				Various	NL
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various

	Criteria Exceeded
<b>BOLD</b>	Value Exceeds Criteria
	Value Exceeds Screening Level
<u>underline</u>	Screening Level Exceeded
µg/Kg	Micrograms per Kilogram
bgs	Below Ground Surface (feet)
*	Results compared to Sand Huron Erie Background Levels
**	Results compared to Clay Huron Erie Background Levels
<MDL	Not detected at concentrations exceeding the laboratory method detection limit (MDL)
NL	Not Listed

TABLE 1  
SUMMARY OF AREA 11 SOIL ANALYTICAL RESULTS  
VOCs, PNA's, PCBs, M-10, AND DRO EVALUATION  
108 ADAMS STREET SITE  
108 ADAMS STREET  
JEFFERSON AVE. AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PNAs), Polychlorinated Biphenyls (PCBs), Michigan 10 Metals (M-10), and Diesel Range Organics (DRO) Evaluation (µg/Kg)				VOCs	PNAs	PCBs	Arsenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc	DRO <sup>1</sup>	
Chemical Abstract Service Number (CAS#)				Various	Various	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666	NA	
Sample ID	Sample Date	Soil Type	Sample Depth (feet bgs)	VOCs	PNAs	PCBs	M-10										DRO	
H-1	8/23/2023	Silty Sand/Clay Interface	1.5-2.5**	<MDL	<MDL	<MDL	3,100	28,000	<200	11,000	8,100	3,000	<50	300	<100	14,000	<27,000	
		Clay Interface	4.0-5.0**	<MDL	<MDL	<MDL	3,000	36,000	<200	13,000	9,500	3,500	<60	300	<100	83,000	<28,000	
H-2		Sand/Sandy Clay Interfae	1.5-2.5**	<MDL	<MDL	<MDL	3,300	36,000	<200	14,000	8,800	3,400	<60	200	<100	19,000	<28,000	
H-3		Sandy Clay/Clay Interface	3.5-4.5**	<MDL	<MDL	<MDL	2,900	34,000	<200	13,000	8,900	3,200	<60	300	<100	19,000	<28,000	
H-4		Silty Sand/Clay Interface	1.0-2.0**	<MDL	<MDL	<MDL	2,900	25,000	<200	12,000	9,000	3,300	<60	200	<100	16,000	<28,000	
		Clay Interface	4.5-5.5**	<MDL	<MDL	<MDL	2,000	29,000	<200	11,000	7,900	2,600	<60	200	<100	13,000	<28,000	
H-5		Silty Sand/Sandy Clay Interface	1.5-2.5**	<MDL	<MDL	<MDL	3,100	63,000	<200	20,000	8,500	5,500	<60	400	<100	23,000	<30,000	
		Sandy Clay/Clay Interface	7.5-8.5**	<MDL	<MDL	<MDL	2,800	33,000	<200	13,000	9,600	3,600	<60	<200	<100	20,000	<28,000	
H-6		Silty Sand/Sandy Clay Interface	1.5-2.5**	<MDL	<MDL	<MDL	4,200	41,000	<200	14,000	9,400	3,200	<60	300	<100	15,000	<29,000	
		Clay	7.5-8.5**	<MDL	<MDL	<MDL	2,200	27,000	<200	13,000	7,100	3,100	<60	200	<100	46,000	<30,000	
H-7	8/24/2023	Asphalt/Sandy Clay/Silty Sand Interface	0.5-1.5**	<MDL	<MDL	<MDL	2,000	27,000	<200	13,000	7,700	3,400	<60	200	<100	17,000	<28,000	
		Silty Sand/Sandy Clay Interface	4.0-5.0**	<MDL	<MDL	<MDL	1,600	24,000	<200	11,000	6,300	2,900	<60	200	<100	16,000	<28,000	
H-8		Sandy Clay	0.5-1.5**	<MDL	<MDL	<MDL	1,700	25,000	<200	11,000	6,900	2,800	<50	300	<100	14,000	<27,000	
		Clay	4-5**	<MDL	<MDL	<MDL	1,800	27,000	<200	10,000	7,000	2,600	<50	300	<100	14,000	<27,000	
H-9		Silty Sand	0.5-1.5*	<MDL	<MDL	<MDL	2,400	31,000	<200	12,000	9,900	3,200	<50	300	<100	17,000	<27,000	
	Clay	4-5**	<MDL	<MDL	<MDL	1,700	27,000	<200	9,700	6,400	2,400	<50	300	<100	13,000	<27,000		
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 21, 2020 EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																		
Residential (µg/Kg)																		
Statewide Default Background Levels				NA	NA	NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000	47,000		
Sand Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				NA	NA	NA	17,000	66,200	2,000	19,700	20,200	18,000	230	1,100	1,400	75,600		
Clay Saginaw Background Levels (2019 Soil Background and Use of the 2005 Michigan Background Survey)				NA	NA	NA	17,100	172,000	2,000	43,500	32,200	38,900	500	1,100	1,000	91,900		
Drinking Water Protection (DWP)				Various	Various	N.LL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2.40E+06		
Groundwater Surface Water Interface Protection (GSIP)				Various	Various	N.LL	4,600	9.3E+05 (G)	6,100 (G,X)	3,300	1.3E+06 (G)	5.9E+06 (G,X)	80 (M)	1.2	400	100 (M)	27	3.0E+06 (G)
Soil Volatilization to Indoor Air Inhalation (SVI)				Various	Various	3.0E+06	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	48,000	N.LV	N.LV	N.LV		
Ambient Air Infinite Source Volatile Soil Inhalation (VSI)				Various	Various	2.40E+05	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	52,000	N.LV	N.LV	N.LV		
Ambient Air Finite VSI for 5 Meter Source Thickness				Various	Various	7.0E+06	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	52,000	N.LV	N.LV	N.LV		
Ambient Air Finite VSI for 2 Meter Source Thickness				Various	Various	7.0E+06	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	52,000	N.LV	N.LV	N.LV		
Ambient Air Particulate Soil Inhalation (PSI)				Various	Various	5.2E+06	7.20E+05	3.30E+06	1.70E+06	2.60E+05	1.30E+06	1.00E+06	2.00E+07	1.30E+06	6.70E+06	ID		
Direct Contact (DC)				Various	Various	(T)	7,600	3.70E+07	5.50E+05	2.55E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	1.70E+06		
Nonresidential (µg/Kg)																		
Drinking Water Protection (Nonres DWP)				Various	Various	N.LL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	5.00E+06		
Soil Volatilization to Indoor Air Inhalation (Nonres SVI)				Various	Various	1.6E+07	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	89,000	N.LV	N.LV	N.LV		
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)				Various	Various	8.10E+05	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	62,000	N.LV	N.LV	N.LV		
Ambient Air Finite VSI for 5 Meter Source Thickness				Various	Various	2.8E+07	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	62,000	N.LV	N.LV	N.LV		
Ambient Air Finite VSI for 2 Meter Source Thickness				Various	Various	2.8E+07	N.LV	N.LV	N.LV	N.LV	N.LV	N.LV	62,000	N.LV	N.LV	N.LV		
Ambient Air Particulate Soil Inhalation (Nonres PSI)				Various	Various	6.5E+06	9.10E+05	1.80E+06	2.20E+06	2.40E+05	9.90E+07	4.40E+07	8.80E+06	5.90E+07	2.90E+06	ID		
Direct Contact (Nonres DC)				Various	Various	(T)	37,000	1.30E+08	2.10E+06	9.20E+06	7.30E+07	9.0E+05 (DC)	5.80E+05	9.60E+06	9.00E+06	6.30E+06		
Screening Levels (µg/Kg)																		
Soil Saturation Concentration Screening Levels (Csat)				Various	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	ID	NA	NA	NA	NA	NA	NA	22 (M)	NA	NA	NA	NA	
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)				Various	Various	ID	NA	NA	NA	NA	NA	NA	390	NA	NA	NA	NA	

Criteria Exceeded  
**BOLD** Value Exceeds Criteria  
 Value Exceeds Screening Level  
underline Screening Level Exceeded  
 µg/Kg Micrograms per Kilogram  
 bgs Below Ground Surface (feet)  
 \* Results compared to Sand Huron Erie Background Levels  
 \*\* Results compared to Clay Huron Erie Background Levels  
 <MDL Not detected at concentrations exceeding the laboratory method detection limit (MDL)  
 NA Not Applicable / Not Analyzed  
 N.L. Not Listed  
 N.L.V. Not Likely to Volatilize  
 ID Insufficient Data  
 (G,X) Metal GSIP Criteria for Surface Water Not Protected for Drinking Water Use based on 301 mg/L CaCO<sub>3</sub> Hardness: Station ID 90032, Saginaw River at Lafayette Street Bridge, Bay City, MI  
 ( ) Other Alpha notation, please refer to EGLE Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 21, 2020  
 ( ) Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020  
 (T) Refer to the Toxic Substance Control Act (TSCA), 40 CFR 761, Subparts D and G, as amended, to determine the applicability of TSCA cleanup standards.  
 Alternatives to compliance with the standards listed below are possible under Subpart D. New releases may be subject to the standards identified in Subpart G.  
 Use Part 201 soil direct contact criteria in the table below where TSCA standards are not applicable.

LAND USE CATEGORY	TSCA Subpart D	Part 201
Residential	1,000 µg/kg, or	4,000 µg/Kg
Nonresidential	10,000 µg/kg if capped	16,000 µg/Kg



TABLE 9  
SUMMARY OF SOIL ANALYTICAL RESULTS  
BULK SAMPLE CONTENT AND ASBESTOS EVALUATION  
108 ADAMS SITE  
108 ADAMS STREET, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Bulk Sample Content and Asbestos Evaluation (Percentage)			Fibrous Cellulose	Other Non-Fibrous	Quartz	Asbestos	Asbestos Present?
							Yes / No
Sample ID	Sample Date	Sample Depth (feet bgs)	Bulk Sample Content				Asbestos Evaluation
E-1	8/21/23	4.5-5.5	<1%	93%	7%	0%	No
		7.0-8.0	<1%	94%	6%	0%	No
E-2		4.5-5.5	<1%	93%	7%	0%	No
		9.5-10.5	<1%	94%	6%	0%	No
E-4		4.5-5.5	<1%	95%	5%	0%	No
		8.5-9.5	<1%	94%	6%	0%	No
E-5		4.5-5.5	<1%	95%	5%	0%	No
		6.0-7.0	<1%	95%	5%	0%	No
E-6		1.0-2.0	<1%	94%	6%	0%	No
		4.5-5.5	<1%	95%	5%	0%	No
E-7		4.5-5.5	<1%	95%	5%	0%	No
E-8		4.5-5.5	<1%	94%	6%	0%	No
		7.0-8.0	<1%	95%	5%	0%	No
F-1		3.5-4.5	<1%	95%	5%	0%	No
		14.0-15.0	<1%	94%	6%	0%	No
F-2		3.5-4.5	<1%	94%	6%	0%	No
		10.5-11.5	<1%	93%	7%	0%	No
F-3		0.5-1.5	<1%	94%	6%	0%	No
		4.5-5.5	<1%	95%	5%	0%	No
H-1	8/23/23	1.5-2.5	<1%	94%	6%	0%	No
		4.0-5.0	<1%	94%	6%	0%	No
H-2		1.5-2.5	<1%	94%	6%	0%	No
H-3		4.5-5.5	<1%	95%	5%	0%	No
H-4		1.0-2.0	<1%	95%	5%	0%	No
		4.5-5.5	<1%	95%	5%	0%	No
H-5		1.5-2.5	<1%	94%	6%	0%	No
		7.5-8.5	<1%	94%	6%	0%	No
H-6		1.5-2.5	<1%	94%	6%	0%	No
		4.5-5.5	<1%	93%	7%	0%	No
H-8	8/24/23	0.5-1.5	<1%	95%	5%	0%	No
		4.5-5.5	<1%	94%	6%	0%	No
H-9		0.5-1.5	<1%	94%	6%	0%	No
		4.5-5.5	<1%	95%	5%	0%	No

bgs      Below Ground Surface (feet)

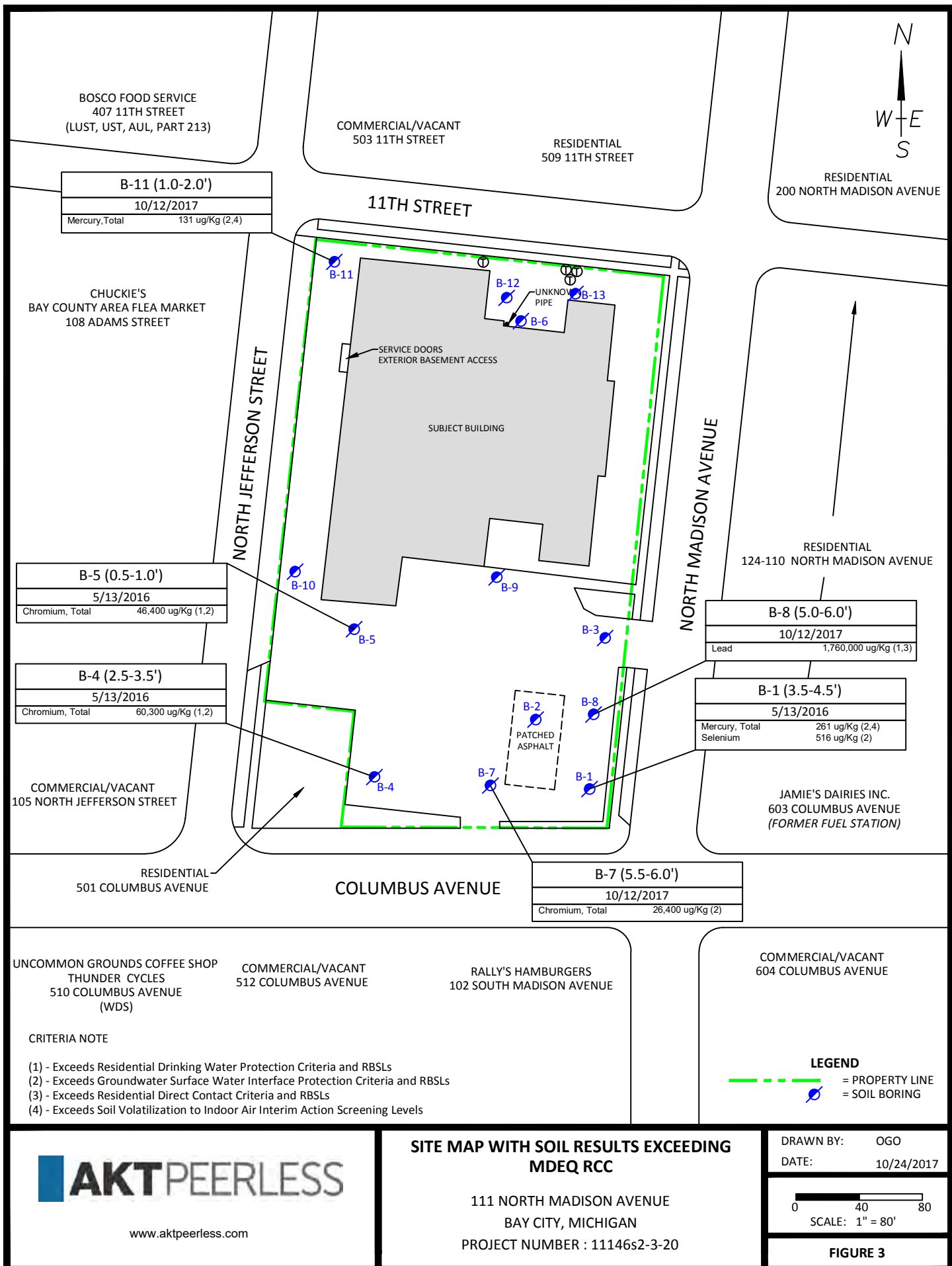
TABLE 10  
SUMMARY OF SOIL GAS ANALYTICAL RESULTS  
VOCs  
108 ADAMS STREET SITE  
108 ADAMS ST, 101-109 NORTH JEFFERSON AVE, AND 501 COLUMBUS AVE, BAY CITY, MICHIGAN  
PM PROJECT #01-14761-0-0002

Volatile Organic Compounds (VOCs) (µg/m³)			1,3-Butadiene	Benzene	Bromofluorobenzene	Carbon disulfide	Chlorobenzene	Cyclohexane	1,2-Dichlorobenzene	1,4-Dichlorobenzene	Ethanol	Ethylbenzene	Heptane	Hexane	Isopropyl Benzene	Methylcyclopentane	Methyl Isobutyl Ketone	Pentane	n-Propylbenzene	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2,2,4-Trimethylpentane	Tetrachloroethylene	Toluene	Xylenes (total)	Other VOCs
Chemical Abstract Service Number (CAS#)			106990	71432	460004	75150	108907	110827	95501	106467	64175	100414	142825	110543	98828	96377	108101	109660	103651	526738	95636	108678	540841	127184	108883	1330207	Various
Sample ID	Sample Date	Sample Depth (feet bgs)																									
TSG-1	8/24/2023	4.5	22	35	137	15	51	14	14	16	1,100	16	20	64	<7.2	48	31	120	18	<7.2	27	8.1	29	66	57	78	<MDL
TSG-2		4.0	<3.3	76	136	21	52	51	15	19	510	57	84	210	7.4	130	64	390	33	17	82	25	100	<10	260	278	<MDL
EGLE Volatilization to Indoor Air Pathway (VIAP) Screening Levels, September 4, 2020																											
EGLE Residential/Nonresidential VIAP Screening Levels (µg/m³)																											
Residential VIAP		NL	110	NL	24,000	1,700	2.10E+05	10,000	220	6.3E+05 (EE)	340	1.20E+05	24,000	81	24,000	27,000	NL	33,000 (DD)	2,100 (JT)	2,100 (JT)	2,100 (JT)	1.20E+05	1,400 (EE)	1.70E+05	7,600 (J)	Various	
Nonresidential VIAP		NL	260	NL	36,000	2,600	3.10E+05	15,000	510	6.3E+05 (EE)	800	1.80E+05	36,000	190	36,000	27,000	NL	33,000 (DD)	3,100 (JT)	3,100 (JT)	3,100 (JT)	1.80E+05	1,400 (EE)	2.50E+05 (EE)	11,000 (J)	Various	

Value Exceeds Screening Level  
underline Screening Level Exceeded  
 µg/m<sup>3</sup> Micrograms per cubic meter  
 bgs Below Ground Surface  
 <MDL Not detected at levels above the laboratory Method Detection Limit (MDL)  
 NL Not Listed  
 ( ) Other Alpha notation, please refer to EGLE Guidance for the Vapor Intrusion Pathway Appendix D.1 Footnotes, September 4, 2020

# Appendix A





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## SITE MAP WITH SOIL RESULTS EXCEEDING MDEQ RCC

111 NORTH MADISON AVENUE  
BAY CITY, MICHIGAN  
PROJECT NUMBER : 11146s2-3-20

DRAWN BY: OGO  
DATE: 10/24/2017

0 40 80  
SCALE: 1" = 80'

FIGURE 3

**Table 1: Summary of Soil Analytical Data**

111 North Madison Avenue  
Bay City, Michigan  
AKT Peerless Project No. 11146s2

Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria & RBSLs	Groundwater Surface Water Interface Protection Criteria & RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIIC) & RBSLs	Residential Particulate Soil Inhalation Criteria & RBSLs	Residential Direct Contact Criteria & RBSLs	Maximum Concentration Detected	Sample ID	B-1	B-2	B-3	B-4	B-5	B-6
*(Refer to detailed laboratory report for method reference data)										Collection Date	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016
										Depth	3.5-4.5'	0.5-1.5'	2.0-3.0'	2.5-3.5'	0.5-1.0'	7.0-8.0'
<b>Metals, ug/Kg</b>																
Arsenic (B)	7440-38-2	5,800	4,600	4,600	NLV	NLV	7.20E+05	7,600	5,700		4,400	NS	NS	2,570	1,640	NS
Barium (B)	7440-39-3	75,000	1.30E+06	(G)	NLV	NLV	3.30E+08	3.70E+07	469,000		93,100	NS	NS	148,000	92,200	NS
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	NLV	NLV	1.70E+06	5.50E+05	2,270		<200	NS	NS	<200	<200	NS
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	NLV	NLV	2.60E+05	2.50E+06	60,300		8,330	NS	NS	60,300	46,400	NS
Copper (B)	7440-50-8	32,000	5.80E+06	(G)	NLV	NLV	1.30E+08	2.00E+07	23,000		6,220	NS	NS	10,300	23,000	NS
Lead (B)	7439-92-1	21,000	7.00E+05	(G,X)	NLV	NLV	1.00E+08	4.00E+05	1,760,000		2,890	NS	NS	8,130	72,100	NS
Mercury, Total (B, Z)	Varies	130	1,700	50 (M); 1.2	48,000	52,000	2.00E+07	1.60E+05	261		261	NS	NS	<50	<50	NS
Selenium (B)	7782-49-2	410	4,000	400	NLV	NLV	1.30E+08	2.60E+06	516		516	NS	NS	<200	<200	NS
Silver (B)	7440-22-4	1,000	4,500	100 (M); 27	NLV	NLV	6.70E+06	2.50E+06	<100		<100	NS	NS	<100	<100	NS
Zinc (B)	7440-66-6	47,000	2.40E+06	(G)	NLV	NLV	ID	1.70E+08	1,510,000		15,600	NS	NS	15,600	47,200	NS
<b>Semivolatiles, PNAs, ug/Kg</b>																
Acenaphthene	83-32-9	NA	3.00E+05	8,700	1.90E+08	8.10E+07	1.40E+10	4.10E+07	<330		<330	NS	<330	<330	<330	NS
Acenaphthylene	208-96-8	NA	5,900	ID	1.60E+06	2.20E+06	2.30E+09	1.60E+06	<330		<330	NS	<330	<330	<330	NS
Anthracene	120-12-7	NA	41,000	ID	1.0E+9 (D)	1.40E+09	6.70E+10	2.30E+08	<330		<330	NS	<330	<330	<330	NS
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLV	NLV	ID	20,000	467		<330	NS	<330	<330	<330	NS
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	ID	ID	ID	20,000	344		<330	NS	<330	<330	<330	NS
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLV	NLV	ID	2.00E+05	326		<330	NS	<330	<330	<330	NS
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLV	NLV	8.00E+08	2.50E+06	848		<330	NS	<330	<330	<330	NS
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLV	NLV	1.50E+06	2,000	509		<330	NS	<330	<330	<330	NS
Chrysene (Q)	218-01-9	NA	NLL	NLL	ID	ID	ID	2.00E+06	523		<330	NS	<330	<330	<330	NS
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLV	NLV	ID	2,000	386		<330	NS	<330	<330	<330	NS
Fluoranthene	206-44-0	NA	7.30E+05	5,500	1.0E+9 (D)	7.40E+08	9.30E+09	4.60E+07	691		<330	NS	<330	<330	<330	NS
Fluorene	86-73-7	NA	3.90E+05	5,300	5.80E+08	1.30E+08	9.30E+09	2.70E+07	<330		<330	NS	<330	<330	<330	NS
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLV	NLV	ID	20,000	479		<330	NS	<330	<330	<330	NS
2-Methylnaphthalene	91-57-6	NA	57,000	4,200	2.70E+06	1.50E+06	6.70E+08	8.10E+06	<330		<330	NS	<330	<330	<330	NS
Naphthalene	91-20-3	NA	35,000	730	2.50E+05	3.00E+05	2.00E+08	1.60E+07	<330		<330	NS	<330	<330	<330	NS
Phenanthrene	85-01-8	NA	56,000	2,100	2.80E+06	1.60E+05	6.70E+06	1.60E+06	351		<330	NS	<330	<330	<330	NS
Pyrene	129-00-0	NA	4.80E+05	ID	1.0E+9 (D)	6.50E+08	6.70E+09	2.90E+07	554		<330	NS	<330	<330	<330	NS
<b>Volatiles, VOCs, ug/Kg</b>																
Acetone (I)	67-64-1	NA	15,000	34,000	2.9E+8 (C)	1.30E+08	3.90E+11	2.30E+07	<1000		<1000	<1000	<1000	<1000	<1000	<1000
Benzene (I)	71-43-2	NA	100	4,000 (X)	1,600	13,000	3.80E+08	1.80E+05	<50		<50	<50	<50	<50	<50	<50
Bromobenzene (I)	108-86-1	NA	550	NA	3.10E+05	4.50E+05	5.30E+08	5.40E+05	<100		<100	<100	<100	<100	<100	<100
Bromochloromethane	74-97-5	NA	NC	NC	NC	NC	NC	NC	<100		<100	<100	<100	<100	<100	<100
Bromodichloromethane	75-27-4	NA	1,600 (W)	ID	1,200	9,100	8.40E+07	1.10E+05	<100		<100	<100	<100	<100	<100	<100
Bromoform	75-25-2	NA	1,600 (W)	ID	1.50E+05	9.00E+05	2.80E+09	8.20E+05	<100		<100	<100	<100	<100	<100	<100
Bromomethane	74-83-9	NA	200	700	860	11,000	3.30E+08	3.20E+05	<200		<200	<200	<200	<200	<200	<200
2-Butanone (MEK) (I)	78-93-3	NA	2.60E+05	44,000	5.4E+7 (C)	2.90E+07	6.70E+10	1.2E+8 (C, DD)	<750		<750	<750	<750	<750	<750	<750

**Table 1: Summary of Soil Analytical Data**

111 North Madison Avenue  
Bay City, Michigan  
AKT Peerless Project No. 11146s2

Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria & RBSLs	Groundwater Surface Water Interface Protection Criteria & RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSI) & RBSLs	Residential Particulate Soil Inhalation Criteria & RBSLs	Residential Direct Contact Criteria & RBSLs	Maximum Concentration Detected	Sample ID	B-1	B-2	B-3	B-4	B-5	B-6
*(Refer to detailed laboratory report for method reference data)										Collection Date	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016
										Depth	3.5-4.5'	0.5-1.5'	2.0-3.0'	2.5-3.5'	0.5-1.0'	7.0-8.0'
n-Butylbenzene	104-51-8	NA	1,600	ID	ID	ID	2.00E+09	2.50E+06	<50		<50	<50	<50	<50	<50	<50
sec-Butylbenzene	135-98-8	NA	1,600	ID	ID	ID	4.00E+08	2.50E+06	<50		<50	<50	<50	<50	<50	<50
tert-Butylbenzene (I)	98-06-6	NA	1,600	ID	ID	ID	6.70E+08	2.50E+06	<50		<50	<50	<50	<50	<50	<50
Carbon disulfide (I,R)	75-15-0	NA	16,000	ID	76,000	1.30E+06	4.70E+10	7.2E+6 (C, DD)	<250		<250	<250	<250	<250	<250	<250
Carbon tetrachloride	56-23-5	NA	100	900 (X)	190	3,500	1.30E+08	96,000	<50		<50	<50	<50	<50	<50	<50
Chlorobenzene (I)	108-90-7	NA	2,000	500	1.20E+05	7.70E+05	4.70E+09	4.3E+6 (C)	<50		<50	<50	<50	<50	<50	<50
Chloroethane	75-00-3	NA	8,600	22,000 (X)	2.9E+6 (C)	3.00E+07	6.70E+11	2.6E+6 (C)	<250		<250	<250	<250	<250	<250	<250
Chloroform	67-66-3	NA	1,600 (W)	7,000	7,200	45,000	1.30E+09	1.20E+06	<50		<50	<50	<50	<50	<50	<50
Chloromethane (I)	74-87-3	NA	5,200	ID	2,300	40,000	4.90E+09	1.6E+6 (C)	<250		<250	<250	<250	<250	<250	<250
2-Chlorotoluene (I)	95-49-8	NA	3,300	ID	2.70E+05	1.20E+06	4.70E+09	4.5E+6 (C)	<50		<50	<50	<50	<50	<50	<50
4-Chlorotoluene (I)	106-43-4	NA	NC	NC	NC	NC	NC	NC	<50		<50	<50	<50	<50	<50	<50
Dibromochloromethane	124-48-1	NA	1,600 (W)	ID	3,900	24,000	1.30E+08	1.10E+05	<100		<100	<100	<100	<100	<100	<100
1,2-Dibromo-3-Chloropropane	96-12-8	NA	10 (M); 4.0	ID	220	260	5.6E+5	4,400 (C)	<10		<10	<10	<10	<10	<10	<10
Dibromomethane	74-95-3	NA	1,600	NA	ID	ID	ID	2.5E+6 (C)	<250		<250	<250	<250	<250	<250	<250
1,2-Dichlorobenzene	95-50-1	NA	14,000	280	1.1E+7 (C)	3.90E+07	1.00E+11	1.9E+7 (C)	<100		<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	541-73-1	NA	170	680	26,000	79,000	2.00E+08	2.0E+5 (C)	<100		<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	106-46-7	NA	1,700	360	19,000	77,000	4.50E+08	4.00E+05	<100		<100	<100	<100	<100	<100	<100
Dichlorodifluoromethane	75-71-8	NA	95,000	ID	9.00E+05	5.30E+07	3.30E+12	5.2E+7 (C)	<250		<250	<250	<250	<250	<250	<250
1,1-Dichloroethane	75-34-3	NA	18,000	15,000	2.30E+05	2.10E+06	3.30E+10	2.7E+7 (C)	<50		<50	<50	<50	<50	<50	<50
1,2-Dichloroethane (I)	107-06-2	NA	100	7,200 (X)	2,100	6,200	1.20E+08	91,000	<50		<50	<50	<50	<50	<50	<50
1,1-Dichloroethylene (I)	75-35-4	NA	140	2,600	62	1,100	6.20E+07	2.00E+05	<50		<50	<50	<50	<50	<50	<50
cis-1,2-Dichloroethylene	156-59-2	NA	1,400	12,000	22,000	1.80E+05	2.30E+09	2.5E+6 (C)	<50		<50	<50	<50	<50	<50	<50
trans-1,2-Dichloroethylene	156-60-5	NA	2,000	30,000 (X)	23,000	2.80E+05	4.70E+09	3.8E+6 (C)	<50		<50	<50	<50	<50	<50	<50
1,2-Dichloropropane (I)	78-87-5	NA	100	4,600 (X)	4,000	25,000	2.70E+08	1.40E+05	<50		<50	<50	<50	<50	<50	<50
1,3-Dichloropropane	142-28-9	NA	NC	NC	NC	NC	NC	NC	<50		<50	<50	<50	<50	<50	<50
2,2-Dichloropropane	594-20-7	NA	NC	NC	NC	NC	NC	NC	<50		<50	<50	<50	<50	<50	<50
1,3-Dichloropropene	542-75-6	NA	170	180 (X)	1,000	18,000	7.80E+08	10,000	<50		<50	<50	<50	<50	<50	<50
1,1-Dichloropropene	563-58-6	NA	NC	NC	NC	NC	NC	NC	<50		<50	<50	<50	<50	<50	<50
Ethylbenzene (I)	100-41-4	NA	1,500	360	87,000	7.20E+05	1.00E+10	2.2E+7 (C)	<50		<50	<50	<50	<50	<50	<50
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	NA	20 (M); 1.0	110 (X)	670	1,700	1.40E+07	92	<20		<20	<20	<20	<20	<20	<20
Hexachlorobutadiene	87-68-3	NA	26,000	91	1.30E+05	1.30E+05	1.40E+08	1.00E+05	<50		<50	<50	<50	<50	<50	<50
2-Hexanone	591-78-6	NA	20,000	ID	9.90E+05	1.10E+06	2.70E+09	3.2E+7 (C)	<2500		<2500	<2500	<2500	<2500	<2500	<2500
Isopropyl benzene	98-82-8	NA	91,000	3,200	4.0E+5 (C)	1.70E+06	5.80E+09	2.5E+7 (C)	<250		<250	<250	<250	<250	<250	<250
4-Methyl-2-pentanone (MIBK) (I)	108-10-1	NA	36,000	ID	3.7E+7 (C)	4.50E+07	1.40E+11	5.6E+7 (C)	<2500		<2500	<2500	<2500	<2500	<2500	<2500
Methyl-tert-butyl ether (MTBE)	1634-04-4	NA	800	1.4E+5 (X)	9.9E+6 (C)	2.50E+07	2.00E+11	1.50E+06	<250		<250	<250	<250	<250	<250	<250
Methylene chloride	75-09-2	NA	100	30,000 (X)	45,000	2.10E+05	6.60E+09	1.30E+06	<250		<250	<250	<250	<250	<250	<250
2-Methylnaphthalene	91-57-6	NA	57,000	4,200	2.70E+06	1.50E+06	6.70E+08	8.10E+06	<250		<250	<250	<250	<250	<250	<250
Naphthalene	91-20-3	NA	35,000	730	2.50E+05	3.00E+05	2.00E+08	1.60E+07	<250		<250	<250	<250	<250	<250	<250

**Table 1: Summary of Soil Analytical Data**

111 North Madison Avenue  
 Bay City, Michigan  
 AKT Peerless Project No. 11146s2

Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria & RBSLs	Groundwater Surface Water Interface Protection Criteria & RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIIC) & RBSLs	Residential Particulate Soil Inhalation Criteria & RBSLs	Residential Direct Contact Criteria & RBSLs	Maximum Concentration Detected	Sample ID	B-1	B-2	B-3	B-4	B-5	B-6
*(Refer to detailed laboratory report for method reference data)										Collection Date	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016	5/13/2016
										Depth	3.5-4.5'	0.5-1.5'	2.0-3.0'	2.5-3.5'	0.5-1.0'	7.0-8.0'
n-Propylbenzene (I)	103-65-1	NA	1,600	ID	ID	ID	1.30E+09	2.50E+06	<100		<100	<100	<100	<100	<100	<100
Styrene	100-42-5	NA	2,700	2,100 (X)	2.50E+05	9.70E+05	5.50E+09	4.00E+05	<50		<50	<50	<50	<50	<50	<50
1,1,1,2-Tetrachloroethane	630-20-6	NA	1,500	ID	6,200	36,000	4.20E+08	4.8E+5 (C)	<100		<100	<100	<100	<100	<100	<100
1,1,2,2-Tetrachloroethane	79-34-5	NA	170	1,600 (X)	4,300	10,000	5.40E+07	53,000	<50		<50	<50	<50	<50	<50	<50
Tetrachloroethylene	127-18-4	NA	100	1,200 (X)	11,000	1.7E+5	2.7E+9	2.0E+5 (C)	<50		<50	<50	<50	<50	<50	<50
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	1.30E+06	1.3E+7	3.9E+11	2.90E+06	<1000		<1000	<1000	<1000	<1000	<1000	<1000
Toluene (I)	108-88-3	NA	16,000	5,400	3.3E+5 (C)	2.80E+06	2.70E+10	5.0E+7 (C)	<100		<100	<100	<100	<100	<100	<100
1,2,3-Trichlorobenzene	87-61-6	NA	NC	NC	NC	NC	NC	NC	<250		<250	<250	<250	<250	<250	<250
1,2,4-Trichlorobenzene	120-82-1	NA	4,200	5,900 (X)	9.6E+6 (C)	2.80E+07	2.50E+10	9.9E+5 (DD)	<250		<250	<250	<250	<250	<250	<250
1,1,1-Trichloroethane	71-55-6	NA	4,000	1,800	2.50E+05	3.80E+06	6.70E+10	5.0E+8 (C)	<50		<50	<50	<50	<50	<50	<50
1,1,2-Trichloroethane	79-00-5	NA	100	6,600 (X)	4,600	17,000	1.90E+08	1.80E+05	<50		<50	<50	<50	<50	<50	<50
Trichloroethylene	79-01-6	NA	100	4,000 (X)	1,000	11,000	1.3E+8	1.1E+5 (DD)	<50		<50	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	NA	52,000	NA	2.8E+6 (C)	9.20E+07	3.80E+12	7.9E+7 (C)	<100		<100	<100	<100	<100	<100	<100
1,2,3-Trichloropropane	96-18-4	NA	840	NA	4,000	9,200	2.00E+07	1.3E+6 (C)	<100		<100	<100	<100	<100	<100	<100
1,2,4-Trimethylbenzene (I)	95-63-6	NA	2,100	570	4.3E+6 (C)	2.10E+07	8.20E+10	3.2E+7 (C)	<100		<100	<100	<100	<100	<100	<100
1,3,5-Trimethylbenzene (I)	108-67-8	NA	1,800	1,100	2.6E+6 (C)	1.60E+07	8.20E+10	3.2E+7 (C)	<100		<100	<100	<100	<100	<100	<100
Vinyl acetate (I)	108-05-4	NA	13,000	NA	7.90E+05	1.70E+06	1.30E+10	5.8E+6 (C,DD)	<5000		<5000	<5000	<5000	<5000	<5000	<5000
Vinyl chloride	75-01-4	NA	40	260 (X)	270	4,200	3.50E+08	3,800	<40		<40	<40	<40	<40	<40	<40
Xylenes (I)	1330-20-7	NA	5,600	820	6.3E+6 (C)	4.60E+07	2.90E+11	4.1E+8 (C)	<150		<150	<150	<150	<150	<150	<150

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111 North Madison Avenue  
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Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria & RBSLs	Groundwater Surface Water Interface Protection Criteria & RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSI) & RBSLs	Residential Particulate Soil Inhalation Criteria & RBSLs	Residential Direct Contact Criteria & RBSLs	Maximum Concentration Detected	Sample ID	B-7	B-8	B-9	B-10	B-11	B-12	B-13
* (Refer to detailed laboratory report for method reference data)										Collection Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
										Depth	5.5-6.0'	5.0-6.0'	1.5-2.0'	0.5-1.5'	1.0-2.0'	2.0-3.0'	2.0-3.0'
<b>Metals, ug/Kg</b>																	
Arsenic (B)	7440-38-2	5,800	4,600	4,600	NLV	NLV	7.20E+05	7,600	5,700		5,700	4,240	112	412	2,530	880	924
Barium (B)	7440-39-3	75,000	1.30E+06	(G)	NLV	NLV	3.30E+08	3.70E+07	469,000		162,000	469,000	67,100	74,600	87,800	66,400	79,300
Cadmium (B)	7440-43-9	1,200	6,000	(G,X)	NLV	NLV	1.70E+06	5.50E+05	2,270		< 200	2,270	< 200	< 200	223	< 200	< 200
Chromium, Total	7440-47-3	18,000 (total)	30,000	3,300	NLV	NLV	2.60E+05	2.50E+06	60,300		26,400	8,000	9,010	6,410	6,140	8,740	9,130
Copper (B)	7440-50-8	32,000	5.80E+06	(G)	NLV	NLV	1.30E+08	2.00E+07	23,000		13,000	10,600	5,360	5,840	16,300	6,970	9,680
Lead (B)	7439-92-1	21,000	7.00E+05	(G,X)	NLV	NLV	1.00E+08	4.00E+05	1,760,000		69,600	1,760,000	3,820	17,100	59,400	27,900	30,000
Mercury, Total (B, Z)	Varies	130	1,700	50 (M); 1.2	48,000	52,000	2.00E+07	1.60E+05	261		< 50	< 50	64	50	131	78	80
Selenium (B)	7782-49-2	410	4,000	400	NLV	NLV	1.30E+08	2.60E+06	516		< 200	< 200	< 200	< 200	< 200	< 200	< 200
Silver (B)	7440-22-4	1,000	4,500	100 (M); 27	NLV	NLV	6.70E+06	2.50E+06	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Zinc (B)	7440-66-6	47,000	2.40E+06	(G)	NLV	NLV	ID	1.70E+08	1,510,000		39,400	1,510,000	10,600	56,600	45,800	29,200	36,000
<b>Semivolatiles, PNAS, ug/Kg</b>																	
Acenaphthene	83-32-9	NA	3.00E+05	8,700	1.90E+08	8.10E+07	1.40E+10	4.10E+07	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Acenaphthylene	208-96-8	NA	5,900	ID	1.60E+06	2.20E+06	2.30E+09	1.60E+06	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Anthracene	120-12-7	NA	41,000	ID	1.0E+9 (D)	1.40E+09	6.70E+10	2.30E+08	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Benzo(a)anthracene (Q)	56-55-3	NA	NLL	NLL	NLV	NLV	ID	20,000	467		< 330	467	< 330	< 330	380	< 330	< 330
Benzo(b)fluoranthene (Q)	205-99-2	NA	NLL	NLL	ID	ID	ID	20,000	344		< 330	344	< 330	< 330	< 330	< 330	< 330
Benzo(k)fluoranthene (Q)	207-08-9	NA	NLL	NLL	NLV	NLV	ID	2.00E+05	326		< 330	< 330	< 330	< 330	326	< 330	< 330
Benzo(g,h,i)perylene	191-24-2	NA	NLL	NLL	NLV	NLV	8.00E+08	2.50E+06	848		< 330	848	< 330	< 330	< 330	< 330	< 330
Benzo(a)pyrene (Q)	50-32-8	NA	NLL	NLL	NLV	NLV	1.50E+06	2,000	509		< 330	509	< 330	< 330	< 330	< 330	< 330
Chrysene (Q)	218-01-9	NA	NLL	NLL	ID	ID	ID	2.00E+06	523		< 330	523	< 330	< 330	372	< 330	< 330
Dibenzo(a,h)anthracene (Q)	53-70-3	NA	NLL	NLL	NLV	NLV	ID	2,000	386		< 330	386	< 330	< 330	< 330	< 330	< 330
Fluoranthene	206-44-0	NA	7.30E+05	5,500	1.0E+9 (D)	7.40E+08	9.30E+09	4.60E+07	691		< 330	348	< 330	< 330	691	< 330	< 330
Fluorene	86-73-7	NA	3.90E+05	5,300	5.80E+08	1.30E+08	9.30E+09	2.70E+07	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Indeno(1,2,3-cd)pyrene (Q)	193-39-5	NA	NLL	NLL	NLV	NLV	ID	20,000	479		< 330	479	< 330	< 330	< 330	< 330	< 330
2-Methylnaphthalene	91-57-6	NA	57,000	4,200	2.70E+06	1.50E+06	6.70E+08	8.10E+06	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Naphthalene	91-20-3	NA	35,000	730	2.50E+05	3.00E+05	2.00E+08	1.60E+07	<330		< 330	< 330	< 330	< 330	< 330	< 330	< 330
Phenanthrene	85-01-8	NA	56,000	2,100	2.80E+06	1.60E+05	6.70E+06	1.60E+06	351		< 330	351	< 330	< 330	< 330	< 330	< 330
Pyrene	129-00-0	NA	4.80E+05	ID	1.0E+9 (D)	6.50E+08	6.70E+09	2.90E+07	554		< 330	< 330	< 330	< 330	554	< 330	< 330
<b>Volatiles, VOCs, ug/Kg</b>																	
Acetone (I)	67-64-1	NA	15,000	34,000	2.9E+8 (C)	1.30E+08	3.90E+11	2.30E+07	<1000		< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
Benzene (I)	71-43-2	NA	100	4,000 (X)	1,600	13,000	3.80E+08	1.80E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Bromobenzene (I)	108-86-1	NA	550	NA	3.10E+05	4.50E+05	5.30E+08	5.40E+05	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Bromochloromethane	74-97-5	NA	NC	NC	NC	NC	NC	NC	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Bromodichloromethane	75-27-4	NA	1,600 (W)	ID	1,200	9,100	8.40E+07	1.10E+05	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Bromoform	75-25-2	NA	1,600 (W)	ID	1.50E+05	9.00E+05	2.80E+09	8.20E+05	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Bromomethane	74-83-9	NA	200	700	860	11,000	3.30E+08	3.20E+05	<200		< 200	< 200	< 200	< 200	< 200	< 200	< 200
2-Butanone (MEK) (I)	78-93-3	NA	2.60E+05	44,000	5.4E+7 (C)	2.90E+07	6.70E+10	1.2E+8 (C, DD)	<750		< 750	< 750	< 750	< 750	< 750	< 750	< 750



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*(Refer to detailed laboratory report for method reference data)										Collection Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
										Depth	5.5-6.0'	5.0-6.0'	1.5-2.0'	0.5-1.5'	1.0-2.0'	2.0-3.0'	2.0-3.0'
n-Butylbenzene	104-51-8	NA	1,600	ID	ID	ID	2.00E+09	2.50E+06	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
sec-Butylbenzene	135-98-8	NA	1,600	ID	ID	ID	4.00E+08	2.50E+06	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
tert-Butylbenzene (I)	98-06-6	NA	1,600	ID	ID	ID	6.70E+08	2.50E+06	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Carbon disulfide (I,R)	75-15-0	NA	16,000	ID	76,000	1.30E+06	4.70E+10	7.2E+6 (C, DD)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
Carbon tetrachloride	56-23-5	NA	100	900 (X)	190	3,500	1.30E+08	96,000	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chlorobenzene (I)	108-90-7	NA	2,000	500	1.20E+05	7.70E+05	4.70E+09	4.3E+6 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloroethane	75-00-3	NA	8,600	22,000 (X)	2.9E+6 (C)	3.00E+07	6.70E+11	2.6E+6 (C)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
Chloroform	67-66-3	NA	1,600 (W)	7,000	7,200	45,000	1.30E+09	1.20E+06	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Chloromethane (I)	74-87-3	NA	5,200	ID	2,300	40,000	4.90E+09	1.6E+6 (C)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
2-Chlorotoluene (I)	95-49-8	NA	3,300	ID	2.70E+05	1.20E+06	4.70E+09	4.5E+6 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
4-Chlorotoluene (I)	106-43-4	NA	NC	NC	NC	NC	NC	NC	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Dibromochloromethane	124-48-1	NA	1,600 (W)	ID	3,900	24,000	1.30E+08	1.10E+05	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,2-Dibromo-3-Chloropropane	96-12-8	NA	10 (M); 4.0	ID	220	260	5.6E+5	4,400 (C)	<10		< 10	< 10	< 100	< 10	< 10	< 10	< 10
Dibromomethane	74-95-3	NA	1,600	NA	ID	ID	ID	2.5E+6 (C)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
1,2-Dichlorobenzene	95-50-1	NA	14,000	280	1.1E+7 (C)	3.90E+07	1.00E+11	1.9E+7 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,3-Dichlorobenzene	541-73-1	NA	170	680	26,000	79,000	2.00E+08	2.0E+5 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,4-Dichlorobenzene	106-46-7	NA	1,700	360	19,000	77,000	4.50E+08	4.00E+05	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Dichlorodifluoromethane	75-71-8	NA	95,000	ID	9.00E+05	5.30E+07	3.30E+12	5.2E+7 (C)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
1,1-Dichloroethane	75-34-3	NA	18,000	15,000	2.30E+05	2.10E+06	3.30E+10	2.7E+7 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,2-Dichloroethane (I)	107-06-2	NA	100	7,200 (X)	2,100	6,200	1.20E+08	91,000	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloroethylene (I)	75-35-4	NA	140	2,600	62	1,100	6.20E+07	2.00E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
cis-1,2-Dichloroethylene	156-59-2	NA	1,400	12,000	22,000	1.80E+05	2.30E+09	2.5E+6 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
trans-1,2-Dichloroethylene	156-60-5	NA	2,000	30,000 (X)	23,000	2.80E+05	4.70E+09	3.8E+6 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,2-Dichloropropane (I)	78-87-5	NA	100	4,600 (X)	4,000	25,000	2.70E+08	1.40E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,3-Dichloropropane	142-28-9	NA	NC	NC	NC	NC	NC	NC	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
2,2-Dichloropropane	594-20-7	NA	NC	NC	NC	NC	NC	NC	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,3-Dichloropropene	542-75-6	NA	170	180 (X)	1,000	18,000	7.80E+08	10,000	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1-Dichloropropene	563-58-6	NA	NC	NC	NC	NC	NC	NC	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Ethylbenzene (I)	100-41-4	NA	1,500	360	87,000	7.20E+05	1.00E+10	2.2E+7 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	NA	20 (M); 1.0	110 (X)	670	1,700	1.40E+07	92	<20		< 20	< 20	< 20	< 20	< 20	< 20	< 20
Hexachlorobutadiene	87-68-3	NA	26,000	91	1.30E+05	1.30E+05	1.40E+08	1.00E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
2-Hexanone	591-78-6	NA	20,000	ID	9.90E+05	1.10E+06	2.70E+09	3.2E+7 (C)	<2500		< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500
Isopropyl benzene	98-82-8	NA	91,000	3,200	4.0E+5 (C)	1.70E+06	5.80E+09	2.5E+7 (C)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
4-Methyl-2-pentanone (MIBK) (I)	108-10-1	NA	36,000	ID	3.7E+7 (C)	4.50E+07	1.40E+11	5.6E+7 (C)	<2500		< 2500	< 2500	< 2500	< 2500	< 2500	< 2500	< 2500
Methyl-tert-butyl ether (MTBE)	1634-04-4	NA	800	1.4E+5 (X)	9.9E+6 (C)	2.50E+07	2.00E+11	1.50E+06	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
Methylene chloride	75-09-2	NA	100	30,000 (X)	45,000	2.10E+05	6.60E+09	1.30E+06	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
2-Methylnaphthalene	91-57-6	NA	57,000	4,200	2.70E+06	1.50E+06	6.70E+08	8.10E+06	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
Naphthalene	91-20-3	NA	35,000	730	2.50E+05	3.00E+05	2.00E+08	1.60E+07	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250

**Table 1: Summary of Soil Analytical Data**  
111 North Madison Avenue  
Bay City, Michigan  
AKT Peerless Project No. 11146s2

Parameters*	Chemical Abstract Service Number	Statewide Default Background Levels	Residential Drinking Water Protection Criteria & RBSLs	Groundwater Surface Water Interface Protection Criteria & RBSLs	Residential Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs	Residential Infinite Source Volatile Soil Inhalation Criteria (VSIC) & RBSLs	Residential Particulate Soil Inhalation Criteria & RBSLs	Residential Direct Contact Criteria & RBSLs	Maximum Concentration Detected	Sample ID	B-7	B-8	B-9	B-10	B-11	B-12	B-13
(*Refer to detailed laboratory report for method reference data)										Collection Date	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017
										Depth	5.5-6.0'	5.0-6.0'	1.5-2.0'	0.5-1.5'	1.0-2.0'	2.0-3.0'	2.0-3.0'
n-Propylbenzene (I)	103-65-1	NA	1,600	ID	ID	ID	1.30E+09	2.50E+06	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Styrene	100-42-5	NA	2,700	2,100 (X)	2.50E+05	9.70E+05	5.50E+09	4.00E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,1,2-Tetrachloroethane	630-20-6	NA	1,500	ID	6,200	36,000	4.20E+08	4.8E+5 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,1,1,2,2-Tetrachloroethane	79-34-5	NA	170	1,600 (X)	4,300	10,000	5.40E+07	53,000	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Tetrachloroethylene	127-18-4	NA	100	1,200 (X)	11,000	1.7E+5	2.7E+9	2.0E+5 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Tetrahydrofuran	109-99-9	NA	1,900	2.2E+5 (X)	1.30E+06	1.3E+7	3.9E+11	2.90E+06	<1000		< 1000	< 1000	< 1000	< 1000	< 1000	< 1000	< 1000
Toluene (I)	108-88-3	NA	16,000	5,400	3.3E+5 (C)	2.80E+06	2.70E+10	5.0E+7 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,2,3-Trichlorobenzene	87-61-6	NA	NC	NC	NC	NC	NC	NC	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
1,2,4-Trichlorobenzene	120-82-1	NA	4,200	5,900 (X)	9.6E+6 (C)	2.80E+07	2.50E+10	9.9E+5 (DD)	<250		< 250	< 250	< 250	< 250	< 250	< 250	< 250
1,1,1-Trichloroethane	71-55-6	NA	4,000	1,800	2.50E+05	3.80E+06	6.70E+10	5.0E+8 (C)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,1,2-Trichloroethane	79-00-5	NA	100	6,600 (X)	4,600	17,000	1.90E+08	1.80E+05	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichloroethylene	79-01-6	NA	100	4,000 (X)	1,000	11,000	1.3E+8	1.1E+5 (DD)	<50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
Trichlorofluoromethane	75-69-4	NA	52,000	NA	2.8E+6 (C)	9.20E+07	3.80E+12	7.9E+7 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,2,3-Trichloropropane	96-18-4	NA	840	NA	4,000	9,200	2.00E+07	1.3E+6 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,2,4-Trimethylbenzene (I)	95-63-6	NA	2,100	570	4.3E+6 (C)	2.10E+07	8.20E+10	3.2E+7 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
1,3,5-Trimethylbenzene (I)	108-67-8	NA	1,800	1,100	2.6E+6 (C)	1.60E+07	8.20E+10	3.2E+7 (C)	<100		< 100	< 100	< 100	< 100	< 100	< 100	< 100
Vinyl acetate (I)	108-05-4	NA	13,000	NA	7.90E+05	1.70E+06	1.30E+10	5.8E+6 (C,DD)	<5000		< 5000	< 5000	< 5000	< 5000	< 5000	< 5000	< 5000
Vinyl chloride	75-01-4	NA	40	260 (X)	270	4,200	3.50E+08	3,800	<40		< 40	< 40	< 40	< 40	< 40	< 40	< 40
Xylenes (I)	1330-20-7	NA	5,600	820	6.3E+6 (C)	4.60E+07	2.90E+11	4.1E+8 (C)	<150		< 150	< 150	< 150	< 150	< 150	< 150	< 150

SB-4	
7/6/2020	
1.0 - 2.0'	
UNITS	ug/Kg
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	1,660
Ba	52,100
Cr	9,080
Cu	8,430
Pb	9,520
Hg	59
Se	840
Zn	30,500
OTHER METALS	<MDL

SB-3		SB-3	
7/6/2020		7/6/2020	
1.0 - 2.0'		6.5 - 7.5'	
UNITS	ug/Kg	UNITS	ug/Kg
VOCs	<MDL	VOCs	<MDL
PNAs	<MDL	PNAs	<MDL
PCBs	<MDL	PCBs	<MDL
As	950	As	1,630
Ba	30,700	Ba	29,200
Cr	7,260	Cr	6,090
Cu	6,780	Cu	6,630
Pb	8,610	Pb	2,920
Se	410	Se	720
Zn	16,200	Zn	10,900
OTHER METALS	<MDL	OTHER METALS	<MDL

SB-6		SB-6	
7/6/2020		7/6/2020	
1.0 - 2.0'		8.5 - 9.5'	
UNITS	ug/Kg	UNITS	ug/Kg
VOCs	<MDL	VOCs	<MDL
PNAs	<MDL	PNAs	<MDL
PCBs	<MDL	PCBs	<MDL
As	3,850	As	2,180
Ba	46,500	Ba	29,000
Cr	11,300	Cr	7,720
Cu	12,800	Cu	7,940
Pb	5,390	Pb	3,190
Se	870	Se	640
Zn	24,400	Zn	16,200
OTHER METALS	<MDL	OTHER METALS	<MDL

311 COLUMBUS AVENUE  
VACANT COMMERCIAL PROPERTY  
(FORMER GASOLINE SERVICE STATION  
AND CLOSED LUST SITE)

SB-8	
7/6/2020	
10.5 - 11.5'	
UNITS	ug/Kg
VOCs	<MDL
PNAs	<MDL

SB-7		SB-7	
7/6/2020		7/6/2020	
4.0 - 5.0'		12.5 - 13.5'	
UNITS	ug/Kg	UNITS	ug/Kg
VOCs	<MDL	VOCs	<MDL
PNAs	<MDL	PNAs	<MDL

SB-1	
7/6/2020	
1.0 - 2.0'	
UNITS	ug/Kg
VOCs	<MDL
PNAs	<MDL
PCBs	<MDL
As	760
Ba	93,200
Cr	11,800
Cu	6,580
Pb	5,940
Zn	14,200
OTHER METALS	<MDL

SB-2		SB-2		SB-2	
7/6/2020		7/6/2020		7/6/2020	
1.0 - 2.0'		6.0 - 7.0'		16.5 - 17.5'	
UNITS	ug/Kg	UNITS	ug/Kg	UNITS	ug/Kg
VOCs	<MDL	VOCs	<MDL	VOCs	<MDL
PNAs	<MDL	PNAs	<MDL	PNAs	<MDL
PCBs	<MDL	PCBs	<MDL	PCBs	<MDL
As	890	As	3,440	As	2,170
Ba	52,000	Ba	62,300	Ba	18,700
Cr	9,390	Cr	9,950	Cr	9,560
Cu	7,390	Cu	11,100	Cu	8,670
Pb	5,910	Pb	4,180	Pb	3,030
Hg	61	Se	880	Se	680
Zn	15,800	Zn	18,600	Zn	18,600
OTHER METALS	<MDL	OTHER METALS	<MDL	OTHER METALS	<MDL

111 NORTH MADISON AVENUE  
VACANT SCHOOL BUILDING AND  
RESIDENTIAL DWELLING

SB-5	
7/6/2020	
4.5 - 5.5'	
UNITS	ug/Kg
VOCs	<MDL
ANT	400
B(a)ANTH	1,400
B(a)PYR	1,100
B(b)FLA	2,000
B(g,h,i)PER	700
B(k)FLA	2,100
CHRYSENE	1,500
FL	3,000
I(1,2,3-CD)PY	600
Ph	2,300
Py	3,000
PNAs	<MDL
PCBs	<MDL
As	4,180
Ba	78,800
Cd	340
Cr	10,500
Cu	26,800
Pb	131,000
Hg	9,667
Se	1,180
Zn	149,000
OTHER METALS	<MDL

## LEGEND:

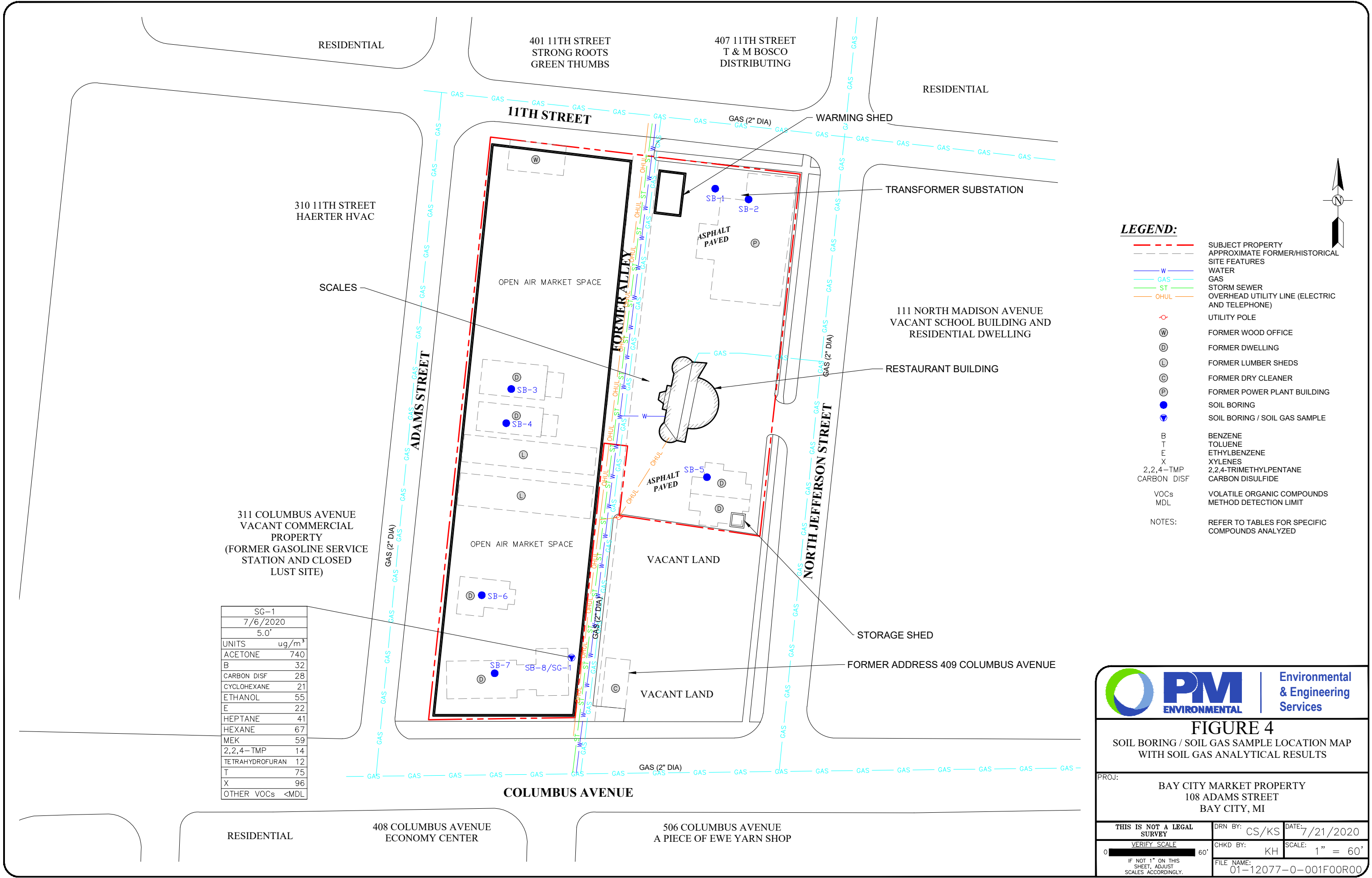
---	SUBJECT PROPERTY
---	APPROXIMATE FORMER/HISTORICAL
---	SITE FEATURES
---	WATER
---	GAS
---	STORM SEWER
---	OVERHEAD UTILITY LINE (ELECTRIC AND TELEPHONE)
---	UTILITY POLE
---	FORMER WOOD OFFICE
---	FORMER DWELLING
---	FORMER LUMBER SHEDS
---	FORMER DRY CLEANER
---	FORMER POWER PLANT BUILDING
---	SOIL BORING
---	SOIL BORING / SOIL GAS SAMPLE
As	ARSENIC
Ba	BARIUM
Cd	CADMIUM
Cr	CHROMIUM
Pb	LEAD
Cu	COPPER
Hg	MERCURY
Se	SELENIUM
Zn	ZINC
ANT	ANTHRACENE
B(a)ANTH	BENZO(a)ANTHRACENE
B(a)PYR	BENZO(a)PYRENE
B(b)FLA	BENZO(b)FLUORANTHENE
B(g,h,i)PER	BENZO(g,h,i)PERYLENE
B(k)FLA	BENZO(k)FLUORANTHENE
FL	FLUORANTHENE
I(1,2,3-CD)PY	INDENO(1,2,3,CD)PYRENE
Ph	PHENANTHRENE
Py	PYRENE
VOCs	VOLATILE ORGANIC COMPOUNDS
PNAs	POLYNUCLEAR AROMATIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS
MDL	METHOD DETECTION LIMIT
---	VALUE EXCEEDS APPLICABLE CRITERIA


NOTES: REFER TO TABLES FOR SPECIFIC COMPOUNDS ANALYZED



**FIGURE 3**  
SOIL BORING / SOIL GAS SAMPLE LOCATION MAP  
WITH SOIL ANALYTICAL RESULTS

PROJ: BAY CITY MARKET PROPERTY 108 ADAMS STREET BAY CITY, MI			
THIS IS NOT A LEGAL SURVEY	DRN BY: CS/KS	DATE: 7/21/2020	
VERIFY SCALE	CHKD BY: KH	SCALE: 1" = 60'	
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			
FILE NAME: 01-12077-0-001F00R00			





Environmental  
& Engineering  
Services

**FIGURE 4**  
SOIL BORING / SOIL GAS SAMPLE LOCATION MAP  
WITH SOIL GAS ANALYTICAL RESULTS

PROJ: BAY CITY MARKET PROPERTY  
108 ADAMS STREET  
BAY CITY, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS/KS	DATE: 7/21/2020
VERIFY SCALE	CHKD BY: KH	SCALE: 1" = 60'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		
FILE NAME: 01-12077-0-001F00R00		

TABLE 1  
SUMMARY OF SOIL ANALYTICAL RESULTS  
VOCs, PNAs, PCBs, AND MICHIGAN 10 METALS  
108 ADAMS STREET, BAY CITY, MICHIGAN  
PM PROJECT #01-12077-0-0003

Volatile Organic Compounds (VOCs), Polynuclear Aromatic Compounds (PNAs), Polychlorinated Biphenyls (PCBs), and Michigan 10 Metals (µg/Kg)			VOCs	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Other PNAs	PCBs	Asenic	Barium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc		
Chemical Abstract Service Number (CAS#)			Various	120127	56553	50328	205992	191242	207089	218019	206440	193395	85018	129000	Various	1336363	7440382	7440393	7440439	16065831	7440508	7439921	7439976	7782492	7440224	7440666		
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs	PNAs											PCBs										Michigan 10 Metals			
SB-1	07/06/2020	1.0-2.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	760	93,200	<200	11,800	6,580	5,940	<50	<400	<200	14,200		
SB-2	07/06/2020	1.0-2.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	890	52,000	<200	9,390	7,390	5,910	61	<400	<200	15,800		
SB-2	07/06/2020	6.0-7.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	3,440	62,300	<200	9,950	11,100	4,180	<50	880	<200	18,600		
SB-2	07/06/2020	16.5-17.5	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	2,170	18,700	<200	9,560	8,670	3,030	<50	680	<200	18,600		
SB-3	07/06/2020	1.0-2.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	950	30,700	<200	7,260	6,780	8,610	<50	410	<200	16,200		
SB-3	07/06/2020	6.5-7.5	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	1,630	29,200	<200	6,090	6,630	2,920	<50	720	<200	10,900		
SB-4	07/06/2020	1.0-2.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	1,660	52,100	<200	9,080	8,430	9,520	59	840	<200	30,500		
SB-5	07/06/2020	4.5-5.5	<MDL	400	1,400	1,100	2,000	700	2,100	1,500	3,000	600	2,300	3,000	<MDL	<330	4,180	78,800	340	10,500	26,800	131,000	9,667	1,180	<200	149,000		
SB-5 (Replicate 1)	07/06/2020	4.5-5.5	NA	400	1,100	800	1,400	500	1,500	1,300	2,300	400	2,000	2,200	<MDL	NA	2,480	75,900	450	7,900	31,400	185,000	3,143	740	280	152,000		
SB-5 (Replicate 2)	07/06/2020	4.5-5.5	NA	<300	<300	<300	300	<300	300	<300	400	<300	300	400	<MDL	NA	1,560	60,600	230	6,190	21,900	81,700	3,130	<400	<200	104,000		
SB-6	07/06/2020	1.0-2.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	3,850	46,500	<200	11,300	12,800	5,390	<50	870	<200	24,400		
SB-6	07/06/2020	8.5-9.5	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	<330	2,180	29,000	<200	7,720	7,940	3,190	<50	640	<200	16,200		
SB-7	07/06/2020	4.0-5.0	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
SB-7	07/06/2020	12.5-13.5	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
SB-8	07/06/2020	10.5-11.5	<MDL	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<MDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cleanup Criteria Requirements for Response Activity (R 299.1 - R 299.50) Generic Soil Cleanup Criteria Tables 2 and 3: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, December 30, 2013 Draft EGLE Volatilization to Indoor Air Pathway Screening Levels																												
Residential (µg/Kg)																												
Statewide Default Background Levels			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,800	75,000	1,200	18,000	32,000	21,000	130	410	1,000	47,000		
Drinking Water Protection (Res DWP)			Various	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	NLL	56,000	4.80E+05	Various	NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	2.40E+06	
Groundwater Surface Water Interface Protection (GSIP)			Various	ID	NLL	NLL	NLL	NLL	NLL	NLL	NLL	5,000	NLL	2,100	ID	Various	NLL	4,600	2.0E+05(G)	3.6E+05(X,G)	3,300	1.7E+06(G)	5.3E+07(X,G)	50 (M); 1.2	400	100 (M); 27	3.0E+05(G)	
Soil Volatilization to Indoor Air Inhalation (Res SVII)			Various	1.0E+9 (D)	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 (D)	NLV	2.8E+06	1.0E+9 (D)	Various	1.2E+03	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NLV	NLV	NLV	
Ambient Air Infinite Source Volatile Soil Inhalation (Res VSI)			Various	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.40E+08	NLV	1.60E+05	6.5E+08	Various	2.40E+05	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 5 Meter Source Thickness			Various	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.4E+08	NLV	1.60E+05	6.5E+08	Various	7.8E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 2 Meter Source Thickness			Various	1.4E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	7.4E+08	NLV	1.60E+05	6.5E+08	Various	7.8E+06	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NLV	NLV	
Ambient Air Particulate Soil Inhalation (Res PSI)			Various	6.7E+10	ID	1.5E+06	ID	8.0E+08	ID	ID	9.3E+09	ID	6.7E+06	6.7E+09	Various	5.2E+06	7.20E+05	3.30E+08	1.70E+06	2.60E+05	1.30E+08	1.00E+08	2.00E+07	1.30E+08	6.70E+06	ID		
Direct Contact (Res DC)			Various	2.3E+08	20,000	2,000	20,000	2.5E+06	2.00E+05	2.0E+06	4.6E+07	20,000	1.6E+06	2.9E+07	Various	(T)	7,600	3.70E+07	5.50E+05	2.50E+06	2.00E+07	4.00E+05	1.60E+05	2.60E+06	2.50E+06	1.70E+08		
Nonresidential (µg/Kg)																												
Drinking Water Protection (Nonres DWP)			Various	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	7.30E+05	NLL	1,60E+05	4.90E+05	Various	NLL	4,600	1.30E+06	6,000	30,000	5.80E+06	7.00E+05	1,700	4,000	4,500	5.00E+06	
Soil Volatilization to Indoor Air Inhalation (Nonres SVII)			Various	1.0E+9 (D)	NLV	NLV	ID	NLV	NLV	ID	NLV	1.0E+9 (D)	NLV	5.1E+06	1.0E+9 (D)	Various	1.6E+07	NLV	NLV	NLV	NLV	NLV	NLV	89,000	NLV	NLV	NLV	
Ambient Air Infinite Source Volatile Soil Inhalation (Nonres VSI)			Various	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.9E+08	NLV	1.90E+05	7.8E+08	Various	8.10E+05	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 5 Meter Source Thickness			Various	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.9E+08	NLV	1.90E+05	7.8E+08	Various	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Finite VSI for 2 Meter Source Thickness			Various	1.6E+09	NLV	NLV	ID	NLV	NLV	ID	NLV	8.9E+08	NLV	1.90E+05	7.8E+08	Various	2.8E+07	NLV	NLV	NLV	NLV	NLV	NLV	62,000	NLV	NLV	NLV	
Ambient Air Particulate Soil Inhalation (Nonres PSI)			Various	2.9E+10	ID	1.9E+06	ID	3.5E+08	ID	ID	4.1E+09	ID	2.9E+06	2.9E+09	Various	6.5E+06	9.10E+05	1.50E+08	2.20E+06	2.40E+05	5.90E+07	4.40E+07	8.80E+06	5.90E+07	2.90E+06	ID		
Direct Contact (Nonres DC)			Various	7.3E+08	80,000	8,000	80,000	7.0E+06	8.00E+05	8.0E+06	1.3E+08	80,000	5.2E+06	8.4E+07	Various	(T)	37,000	1.30E+08	2.10E+06	9.20E+06	7.30E+07	9.0E+5 (DD)	5,80E+05	9.60E+06	9.00E+06	6.30E+08		
Screening Levels (µg/Kg)																												
Soil Saturation Concentration Screening Levels (Csat)			Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)			Various	1.3E+07	1.6E+05 (MM)	NA	NA	NA	NA	NA	NA	NA	1.7E+03	2.5E+07	Various	ID	NA	NA	NA	NA	NA	NA	NA	22	NA	NA	NA	
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)			Various	2.2E+08	1.1E+07	NA	NA	NA	NA	NA	NA	NA	NA	2.9E+04	4.4E+08	Various	ID	NA	NA	NA	NA	NA	NA	NA	200	NA	NA	NA

Applicable Criterion/RBSL Exceeded  
**BOLD** Value Exceeds Applicable Criterion/RBSL  
 Value Exceeds Applicable Screening Level  
 underline Applicable Screening Level Exceeded  
 bgs Below Ground Surface (feet)  
 µg/Kg Micrograms Per Kilogram  
 100 (M) Other Alpha notation, please refer to MDEQ Footnotes R 299.49 Footnotes for Generic Cleanup Criteria Tables, December 30, 2013  
 NA Not Applicable  
 NL Not Listed  
 NLL Not Likely to Leach  
 NLV Not Likely to Volatilize  
 ID Insufficient Data

TABLE 2  
SUMMARY OF SOIL GAS ANALYTICAL RESULTS  
VOCs  
108 ADAMS STREET, BAY CITY, MICHIGAN  
PM PROJECT #01-12077-1-0003

Volatile Organic Compounds (VOCs) (µg/m <sup>3</sup> )			Acetone	Benzene	Carbon disulfide	Cyclohexane	Ethanol	Ethylbenzene	Heptane	Hexane	Methyl ethyl ketone	2,2,4-Trimethylpentane	Tetrahydrofuran	Toluene	Xylenes (total)	Other VOCs
Chemical Abstract Service Number (CAS#)			67641	71432	75150	110827	64175	100414	142825	110543	78933	540841	109999	108883	1330207	Various
Sample ID	Sample Date	Sample Depth (feet bgs)	VOCs													
SG-1	07/06/2020	5.0	740	32	28	21	55	22	41	67	59	14	12	75	96	<MDL
Draft EGLE Volatilization to Indoor Air Pathway Screening Levels																
MDEQ Residential Volatilization to Indoor Air Interim Action Screening Levels (August 2017) (µg/m <sup>3</sup> )																
Residential Volatilization to Indoor Air Pathway Screening Level (VIAP)			1.0E+06 (EE)	110	24,000	210,000	6.3E+05 (EE)	340	120,000	24,000	NL	ID	70,000	170,000	7,600 (J)	Various
Nonresidential Volatilization to Indoor Air Pathway Screening Level (VIAP)			1.0E+06 (EE)	260	36,000	310,000	6.3E+05 (EE)	800	180,000	36,000	NL	ID	100,000	2.5E+05 (EE)	11,000 (J)	Various

- Screening Level Exceeded
- BOLD**

Value Exceeds Applicable Screening Level
- <MDL

Not detected at or above laboratory reporting or detection limits
- NA

Not Available/Not Applicable
- bgs

Below Ground Surface
- NL

Not Listed
- µg/m<sup>3</sup>

micrograms per cubic meter