

**DUE CARE COMPLIANCE
DOCUMENTATION**

for
Pittsfield Charter Township

of the
**Undeveloped Parcel (3.98 acres)
Southwest Corner of West Waters Road and
Oak Valley Drive (Parcel: L-12-07-200-03)
Pittsfield Township, Michigan 48103**

October 26, 2018

ECT No. 180469-0300

Document Review

The dual signatory process is an integral part of Environmental Consulting & Technology, Inc.'s (ECT's) Document Review Policy No. 9.03. All ECT documents undergo technical/peer review prior to dispatching these documents to any outside entity.

The environmental assessment described herein was conducted by the undersigned employees of ECT. ECT's investigation consisted solely of the activities described in the Introduction of this report, and in accordance with the Terms and Conditions of the Standard Consulting Services Agreement signed prior to initiation of the assessment, as applicable.

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professionals as defined in §312.10 of 40 C.F.R. 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 C.F.R. Part 312.

This document has been authored and reviewed by the following employees:

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October 26, 2018

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List of Acronyms

| | |
|-------|--|
| AAI | All Appropriate Inquiry |
| ASTM | American Society for Testing and Materials |
| BEA | Baseline Environmental Assessment |
| bgs | Below ground surface |
| DC | Direct Contact |
| DWP | Drinking Water Protection |
| ECT | Environmental Consulting & Technology, Inc. |
| ESA | Environmental Site Assessment |
| GRCC | Generic Residential Cleanup Criteria |
| GSI | Groundwater Surface Water Interface |
| MBSS | Michigan Background Soil Survey |
| MDEQ | Michigan Department of Environmental Quality |
| NREPA | Natural Resources and Environmental Protection Act |
| RCRA | Resource Conservation and Recovery Act |
| REC | Recognized Environmental Condition |
| ug/kg | Micrograms per kilograms |

1.0 Introduction

Environmental Consulting & Technology, Inc. (ECT) has prepared this due care compliance documentation guidance for an undeveloped parcel located at the southwest corner of the intersection of West Waters Road and Oak Valley Drive, in Pittsfield Charter Township, Washtenaw County, Michigan (hereafter referred to as the Subject Property).

Appropriate due diligence and limited subsurface investigation activities have been conducted at the Subject Property as a prerequisite to property use activities and property transfer. In October 2018, ECT's Phase II Environmental Site Assessment (ESA) produced reliable data to show shallow soil at the Subject Property are affected with concentrations of contaminants originating from historic on-site land uses that qualify the Subject Property as a "Facility" pursuant Part 201 of the Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended. Accordingly, the Subject Property's current and prospective owners (referred to hereafter as the Submitters) hereby acknowledge due care obligations pursuant to Section 20107a of Part 201 of NREPA with respect to:

- Preventing exacerbation of the pre-existing contamination.
- Preventing unacceptable human exposure and mitigating fire and explosion hazards to allow for the intended use of the Subject Property in a manner that protects public health and safety.
- Taking reasonable precautions against the reasonably foreseeable acts or omissions of a third party.
- Providing reasonable cooperation, assistance, and access to persons authorized to conduct response activities at the Subject Property, including the cooperation and access necessary for the installation, operation, and maintenance of any response activity at the Subject Property.
- Complying with any land use or resource use restrictions established or relied on in connection with any response activity at the Subject Property.
- Not impeding the effectiveness or integrity of any land use engineering control or resource use restriction employed at the Subject Property in connection with any response activity.

This due care compliance documentation provides information, based on the results of the subsurface investigation activities completed by ECT, and describes the activities that shall be undertaken at the Subject Property to demonstrate compliance with Section 20107a of Part 201 of NREPA.

2.0 Background

The Subject Property is comprised of a single parcel (#L-12-07-200-003) containing approximately 3.98 acres of undeveloped land. The Subject Property is part of the Northwest $\frac{1}{4}$ of Section 7, Township 3 South, Range 6 East, in Washtenaw County, Michigan and is situated along the south side of West Waters Road and along the west side of Oak Valley Drive. Additionally, ECT extrapolated the latitude and longitude for the approximate center of the Subject Property, which are 42.2424710 and 83.7719150 degrees, respectively.

The Subject Property is undeveloped and currently covered by grass and dense woodland. Overhead utility lines transect through the south central portion of the Subject Property, and a drain is located within the vegetated area throughout the southern portion of the Subject Property. The elevation of the Subject Property is approximately three (3) feet higher than the sidewalk bordering to the north. The surrounding area is a mixture of residential and commercial properties. The location of the Subject Property is indicated on **Figure 1**, Site Location Map. The general layout of the property is presented on **Figure 2**, Site and Surrounding Properties Map.

3.0 Detailed Characteristics of Proposed Property Use

The Submitters intend to hold the Subject Property and maintain it in a manner consistent with local zoning and land-use ordinances. (Operations will not involve the use of hazardous substances in a manner that would be considered a significant hazardous substance use as defined in Rule 901[o].) Key considerations that are pertinent to this type of Subject Property activity with respect to its due care compliance documentation are:

- The Submitters will not use or store significant quantities of hazardous substances or petroleum products at or on the Subject Property other than those quantities typically associated with routine Subject Property maintenance.
- If any excavation activities are conducted on the Subject Property, appropriate health and safety procedures will be followed. Health and safety procedures will apply to the Submitters, contractors and subcontractors, utility companies and their subcontractors, and public entities and their contractors. The Submitters will inform utility companies or public entities, whose contractors and subcontractors are not hired by the Submitters, of the presence of hazardous substances in the shallow soil.

4.0 Hazardous Substance Information

4.1 Location of Hazardous Substances

In evaluating the sample locations and analytical testing parameters described herein, the Submitters relied upon their consultants' best judgment of the hazardous substances most likely to be present as contaminants at the Subject Property based upon a variety of factors, including the results of a historical property use review and physical site reconnaissance performed in general conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-13.

ECT's Phase I ESA, dated August 10, 2018, revealed evidence of one current Recognized Environmental Condition (REC):

- A geotechnical survey conducted on the Subject Property indicated that the site has been filled with compacted sand and occasional broken brick and concrete. There were no records available that provided information as to when the site was filled, the origin of the fill material, or if the fill material has been characterized for potential contaminants.

Site investigation activities were performed in September 2017 and the results are described in ECT's Phase II ESA, dated October 15, 2018. The investigation included the collection of four shallow soil samples by hand auger methods. The Boring Location Map is provided as **Figure 3**, which is a scaled site map depicting sample locations, depths, and contaminant concentrations.

The Soil Analytical Summary is provided as **Table 1** and compares the soil results to applicable Michigan Department of Environmental Quality (MDEQ) Part 201 Generic Residential Cleanup Criteria (GRCC). Although several results exceed the GRCC, the MDEQ allows comparison of these concentrations to a regionally based criteria that is more reflective of naturally occurring metals based on the local glacial geology. As such, these results are compared to the Michigan Background Soil Survey (MBSS) for topsoil within the Huron-Erie Glacial Lobe Area. A summary of the analytical soil results is presented below:

- Arsenic was detected in all soil samples at concentrations ranging between 6,300 to 9,700 micrograms per kilograms (ug/kg). Although these concentrations exceed the GRCC for drinking water protection (DWP) (4,600 ug/kg), groundwater surface water interface (GSI) (4,600 ug/kg) criteria, and direct contact (DC) (7,600 ug/kg) criteria at locations HA-1 and HA-2, they do not exceed the MBSS background criteria (11,000 ug/kg).
- Chromium (total) was detected in all soil samples at concentrations ranging between 17,800 to 21,900 ug/kg. Although the concentrations of chromium (total) in the soil samples collected from boring HA-2, HA-3, and HA-4 exceed the GSI (3,300 ug/kg) criteria, they do not exceed the MBSS background criteria (37,000 ug/kg).
- Selenium was detected in all soil samples at concentrations ranging between 6,000 to 7,700 ug/kg. The concentrations of selenium in all soil samples exceed the DWP (4,000 ug/kg) and GSI (400 ug/kg) criteria of the GRCC, as well as the MBSS background criteria (3,900 – 4,700 ug/kg).

- Other metals were detected in the soil samples; however, the concentrations were below their respective GRCC.
- PCBs were not detected in the soil samples.

4.2 Exposure Pathways and Exceeding Criteria

Concentrations of selenium collected from the fill material on the Subject Property in September 2018 exceed the MDEQ Part 201 GRCC and MBSS, which present possible exposure pathways via migration to drinking water receptors and leaching to groundwater and migration to a GSI receptor. The Subject Property and surrounding properties are provided with potable water from Ypsilanti Community Utilities Authority; therefore, the groundwater migration to a drinking water receptor is not a significant exposure pathway. The fill material is reported to lie on the upper three feet of the Subject Property. Below the fill, ECT observed mostly brown clay with some sand. Based on the shallowness of the fill, hazardous substances will not migrate deeper into the groundwater aquifer; therefore, the leaching to groundwater and migration to a GSI receptor is not a significant exposure pathway.

Possible exposure pathways for impacted soil are as follows:

- Soil leaching to groundwater and migration to a drinking water receptor
- Soil leaching to a groundwater and migration to a GSI receptor
- Soil volatilization to an indoor air inhalation receptor
- Soil volatilization to an ambient air inhalation receptor
- Soil direct contact

Summary of Hazardous Substance Exceeding Generic Criteria and MBSS

| Hazardous Substance | CAS # | Concentration | Sample Location | Criteria Exceeded |
|---------------------|-----------|---------------------|-------------------|--|
| Selenium | 7782-49-2 | 6,000 - 7,700 ug/kg | HA-1, 2, 3, and 4 | DWP (4,000 ug/kg) GSI (400 ug/kg) MBSS (4,700 ug/kg) |

5.0 Plan for Response Activities

The Submitters will implement response activities to prevent and mitigate unacceptable contaminant exposure to employees, consultants and contractors, the local public and environment.

The fill material with exceeding concentrations of selenium is covered by vegetation, which makes exacerbation through relocation of contaminated materials unlikely. Because shallow impacted soils are known to be present, due care activities with respect to the removal, relocation, and handling of soils will be necessary.

6.0 Evaluation and Demonstration of Compliance with Section 7A Obligations

The due care obligations of the Submitters are described in Section 1.0, above. This section describes how the Submitters will comply with these obligations.

6.1 Exacerbation

Exacerbation occurs when an activity causes existing contamination to migrate beyond the original area of impact or the boundary of the Subject Property; accordingly, the proposed Subject Property use must not exacerbate existing contamination. The source of hazardous substances at the Subject Property has been covered by grass, and that makes exacerbation through relocation of contaminated materials unlikely.

6.2 Preventing Unacceptable Human Risk

An evaluation of existing site conditions has been completed; this evaluation has demonstrated that minimal potential exists for exposure to shallow soil contaminants based on known contaminant concentrations and their respective exposure pathways relevant to the intended use of the Subject Property.

6.3 Taking Reasonable Precautions

Precautions will be taken against the reasonably foreseeable acts or omissions of a third party. Personnel who may work at the Subject Property in the future will be notified by the Submitters of the presence and nature of existing contamination and will be provided access to this due care compliance documentation guidance.

Hazardous substances are not present at concentrations that present a fire or explosive hazard.

If excavation activities are conducted on the Subject Property, appropriate health and safety procedures will be followed. Health and safety procedures will apply to the Submitters, contractors and subcontractors, utility companies and their subcontractors, and public entities and their contractors. The Submitters will inform utility companies or public entities, whose contractors and subcontractors are not hired by the Submitters, of the presence of hazardous substances in the fill material.

6.4 Reasonable Cooperation with Response Activities

In the event additional response activities are required at the Subject Property in the future, the Submitters will provide reasonable cooperation, assistance, and access to authorized and qualified professionals to conduct these activities, including the cooperation and access necessary for the installation, operation, and maintenance of any remedial action components.

6.5 Use Restriction Compliance

Restrictions on land or resource use have not been established or required in connection with the planned property use and response activities. If any land use or resource restrictions are placed on the Subject Property as a result of future investigations or findings, the Submitters will ensure compliance as appropriate.

6.6 Effectiveness or Integrity of Use Restrictions

Restrictions on land use or resource use have not been established or required in connection with the planned property use or response activities. If any land use or resource use restrictions are placed on the Subject Property as a result of future investigations or findings, the effectiveness and integrity of these restrictions will not be impeded.

7.0 Notification Requirements

The Submitters will maintain this documentation that due care obligations have been evaluated and response actions beyond those described in Section 5.0 are not warranted based on the planned use of the Subject Property. If requested, this documentation will be provided to the MDEQ.

The following provides a discussion of the notification requirements pertaining to utilities, easement holders, abandoned containers, migrating contamination, fire and explosion hazards, and soil movement.

7.1 Rule 1013 Notice - Utility/Easement Holders

Appropriate health and safety procedures will be followed during any future excavation activities that may be conducted at the Subject Property. Health and safety procedures will apply to the Submitters, contractors and subcontractors, utility companies and their subcontractors, and public entities and their contractors. The Submitters will inform utility companies or public entities, whose contractors and subcontractors are not hired by the Submitters, of the presence of shallow soil contamination at the Subject Property. Copies of this due care compliance documentation guidance will be provided to any construction contractors prior to performing subsurface activities at the Subject Property in order to inform these parties of due care precautions.

7.2 Rule 1015 Notice -Abandoned Containers

Based on the all appropriate inquiry and additional investigation conducted by the Submitters, there are no known abandoned containers on the Subject Property.

7.3 Rule 1017 Notice - Migrating Contamination

A geotechnical survey conducted on the Subject Property indicated that the site has been filled with compacted sand and occasional broken brick and concrete. The fill, identified with exceeding concentrations of selenium, is reported to lie on the upper three feet of the Subject Property. Below the fill, ECT observed mostly brown clay with some sand. Based on the shallowness of the fill, hazardous substances will not migrate deeper into the groundwater aquifer.

7.4 Rule 1019 Notice -Fire/Explosion Hazards

No known fire or explosion hazards are associated with the residual hazardous substances; therefore, a Rule 1019 notice is not required.

7.5 Soil Movement Notice

Any relocation of contaminated soil at the Subject Property will be consistent with Part 201 Rule 299.5542 (Relocation of Soil; notification of department under Section 20120c of NREPA). All soil removed from areas that have been shown to be impacted will be properly characterized and properly disposed.

8.0 Compliance with Land Use Restrictions and Institutional Controls

The Submitters will comply with any established land use restrictions and/or institutional controls and will not impede the effectiveness or integrity of any institutional control employed in connection with a response action.

8.1 Cooperation, Assistance, and Access

The Submitters will provide full cooperation, assistance, and access to persons who are authorized to conduct response actions at the Subject Property.

8.2 Compliance with Information Requests and Administrative Subpoenas

The Submitters will comply with any request for information issued by government agencies or authorities having jurisdiction.

The Submitters will maintain up-to-date documentation (such as photographs) of compliance with applicable due care responsibilities and continuing obligations, as applicable, and will make such documentation available to the MDEQ upon request.

9.0 Limitations

This due care compliance documentation guidance has been prepared based on the results of sampling and analytical testing performed in September 2018, together with an understanding of the Submitters' planned use of the Subject Property. In the event that the planned use of the Subject Property changes significantly, this due care compliance documentation guidance should be revised to reflect the changes. Regardless of the intended use of the Subject Property, this due care compliance documentation guidance is not intended for use as a site-specific health and safety plan.

10.0 References

Phase I Environmental Site Assessment, Undeveloped Parcel (3.98 acres), West Waters Road and Oak Valley Drive, Ann Arbor, Michigan, prepared by Environmental Consulting & Technology, Inc., August 10, 2018.

Phase II Environmental Site Assessment, Undeveloped Parcel (3.98 acres), West Waters Road and Oak Valley Drive, Ann Arbor, Michigan, prepared by Environmental Consulting & Technology, Inc., October 15, 2018.

Soils Investigation: Condominium Development, Waters Road and Oak Valley Drive, prepared by McDowell and Associates, December 30, 1998.

**Table 1. Soil Analytical Summary
West Waters Road and Oak Valley Drive**

Matrix: Soil
Cleanup Criteria: Residential
Page 1 of 1

| | Chemical Abstract Service # | MBSS (2015) | | | Part 201 Cleanup Criteria (December 2013) | | | | | | | Sample Location | | | |
|------------------------------------|-----------------------------|-----------------|--------------|--------------|---|---------------------------|-------------------------------------|-----------------------------------|--|----------------|--|---------------------|-----------------------|---------------------|---------------------|
| | | Huron-Erie Lobe | | | Residential Criteria | | | | | | | HA-1 (1-3') 9/12/18 | HA-2 (1-2.5') 9/12/18 | HA-3 (1-3') 9/12/18 | HA-4 (1-2') 9/12/18 |
| | | Topsoil (2 SD) | Sand (2 SD) | Clay (2 SD) | Statewide Default Background | Drinking Water Protection | Groundwater Surface Water Interface | Soil Volatilization to Indoor Air | Infinite Source Volatile Soil Inhalation | Direct Contact | Soil Saturation Concentration Screening Levels | | | | |
| Metals, ug/kg - Method 6020 | | | | | | | | | | | | | | | |
| Arsenic | 7440382 | 14,900 | 26,300 | 31,400 | 5,800 | 4,600 | 4,600 | NLV | NLV | 7,600 | NA | 9,700 | 7,700 | 6,300 | 7,500 |
| Barium | 7440393 | 261,000 | 199,000 | 227,000 | 75,000 | 1,300,000 | 440,000 | NLV | NLV | 37,000,000 | NA | 60,000 | 79,200 | 69,800 | 91,300 |
| Cadmium | 7440439 | 2,000 | 2,000 | 3,100 | 1,200 | 6,000 | 3,000 | NLV | NLV | 550,000 | NA | 270 | 400 | 310 | 350 |
| Chromium (Total) | Varies | 37,000 | 30,400 | 77,000 | 18,000 | 30,000 | 3,300 | NLV | NLV | 2,500,000 | NA | 17,800 | 21,900 | 20,400 | 21,600 |
| Copper | 7440508 | 52,500 | 23,500 | 46,900 | 32,000 | 5,800,000 | 75,000 | NLV | NLV | 20,000,000 | NA | 18,100 | 15,800 | 12,700 | 17,500 |
| Lead | 7439921 | 43,900 | 24,100 | 26,200 | 21,000 | 700,000 | 2,500,000 | NLV | NLV | 400,000 | NA | 10,600 | 16,700 | 15,600 | 8,700 |
| Mercury | Varies | 160 | 120 | 580 | 130 | 1,700 | 50 | 48,000 | 52,000 | 160,000 | NA | nd | nd | nd | nd |
| Selenium | 7782492 | 4,700 | 3,900 | 1,200 | 410 | 4,000 | 400 | NLV | NLV | 2,600,000 | NA | 6,500 | 7,100 | 6,000 | 7,700 |
| Silver | 7440224 | 1,600 | 1,200 | 6,000 | 1,000 | 4,500 | 100 | NLV | NLV | 2,500,000 | NA | nd | nd | nd | nd |
| Zinc | 7440666 | 122,000 | 85,800 | 102,000 | 47,000 | 2,400,000 | 170,000 | NLV | NLV | 170,000,000 | NA | 65,800 | 63,600 | 64,500 | 56,700 |
| PCBs, ug/kg - Method 6020 | | | | | | | | | | | | | | | |
| Polychlorinated biphenyls (PCBs) | 1336363 | | | | | NLL | NLL | 3,000,000 | 240,000 | 4,000 | NA | nd | nd | nd | nd |

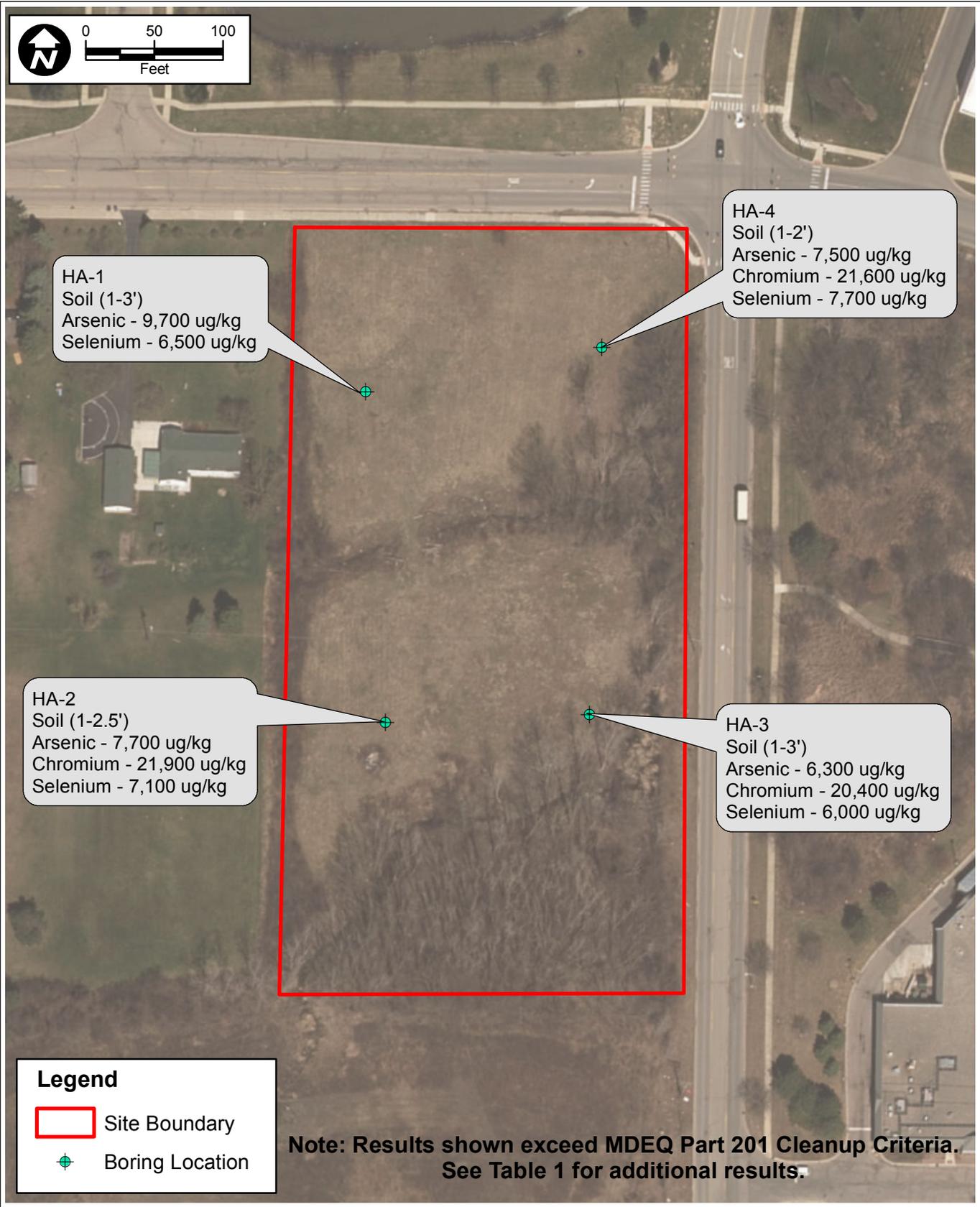
Note:
 MBSS = Michigan Background Soil Survey
 NA = insufficient data to develop criterion
 nd = not detected
 NLV = not likely to volatilize
 SD = arithmetic or geometric standard deviation, not applicable for nonparametric
 shaded background or criterion indicates that a sample of higher concentration was detected
 shaded result indicates that the sample exceeds BOTH the MBSS background AND at least one criterion

Assumptions:
 hardness estimate for receiving waters = 150 mg/L
 protective for surface water that is used as a drinking water source



FIGURE 2.
SITE AND SURROUNDING PROPERTIES MAP
WATERS ROAD/OAK VALLEY DRIVE PROPERTY
PITTSFIELD TOWNSHIP, MI. 48108

Sources: ECT, 2018.



**FIGURE 3.
BORING LOCATION MAP
WATERS ROAD/OAK VALLEY DRIVE PROPERTY
PITTSFIELD TOWNSHIP, MI. 48108**

Sources: ECT, 2018.

