All Appropriate Inquiries Rule:
Reporting Requirements Checklist for Assessment Grant Recipients

WHAT IS "ALL APPROPRIATE INQUIRIES"?

"All appropriate inquiries," or AAI, is a process of evaluating a property's environmental conditions and assessing the likelihood of any contamination. Every Phase I assessment conducted with EPA Brownfields Assessment Grant funds ***must*** be conducted in compliance with the All Appropriate Inquiries Final Rule at 40 CFR Part 312. The All Appropriate Inquiries Final Rule provides that the ASTM E1527-05 standard is consistent with the requirements of the final rule and may be used to comply with the provisions of the rule. In addition, all appropriate inquiries must be conducted in compliance with the Final Rule or the ASTM standard to obtain certain protections from liability under the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, aka Superfund).

WHAT ARE THE DOCUMENTATION REQUIREMENTS FOR ALL APPROPRIATE INQUIRIES?

The final rule requires that the results of an AAI investigation be documented in a written report. The specific reporting requirements for all appropriate inquiries are provided in 40 CFR §312.21 (*Results of Inquiry by an Environmental Professional*) and §312.31 of the final rule and in §12 of ASTM E1527-05. All AAI final reports ***must***, at a minimum include the following:

1. An ***opinion*** as to whether the inquiry identified conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in, or to the subject property.

2. An identification of ***"significant" data gaps*** (as defined in §312.10 of AAI final rule and §12.7 of ASTM E1527-05), if any, in the information collected for the inquiry. Significant data gaps include missing or unattainable information that affects the ability of the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in, or to the subject property. The documentation of significant data gaps must include information regarding the significance of these data gaps.

3. ***Qualifications*** **and** ***signature*** of the environmental professional(s). The environmental professional must place the following statements in the document and sign the document:

   - *''[I, We] declare that, to the best of [my, our] professional knowledge and belief, [I, we] meet the definition of Environmental Professional as defined in §312.10 of this part.''*

   - *''[I, 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. [I, We] have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.''*

   Note: Please use either "I" or "We."

4. In compliance with §312.31(b) of the AAI final rule and §12.6.1 of ASTM E1527-05, the environmental professional must include in the final report an ***opinion regarding additional appropriate investigation***, if the environmental professional has such an opinion.

For each Phase I Environmental Site Assessment, or AAI, conducted using EPA Brownfields Grant monies, the grantee must complete, sign, date, and submit the following check list with any AAI reports submitted to EPA.

Also see U.S. EPA's website at www.epa.gov/brownfields for additional information.

Checklist for Phase I Site Assessments Conducted using EPA Brownfields Assessment Grant Funds

Contact Information

Grantee Name: Oakland County Michigan

Grant Number: BF00E02004

ACRES Property ID: 231201

Program Manager Name: (Point of Contact) Bradley Hansen

Contact Phone Number: 248-858-8073

Name / Address of Property Assessed: _____

Checklist

Please indicate that each of the following All Appropriate Inquiries documentation requirements were met for the Phase I assessment conducted at the above listed property:

- ☐ An ***opinion*** as to whether the inquiry has identified conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in, or to the subject property.

- ☐ An identification of ***"significant" data gaps*** (as defined in §312.10 of AAI final rule and §12.7 of ASTM E1527-05), if any, in the information collected for the inquiry, as well as comments regarding the significance of these data gaps. Significant data gaps including missing and unattainable information that affects the ability of the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances, and as applicable, pollutants and contaminants, petroleum or petroleum products, or controlled substances, on, at, in, or to the subject property.

- ☐ ***Qualifications*** **and** ***signature*** of the environmental professional(s). The environmental professional must place the following statements in the document and sign the document:
  - ☐ *''[I, We] declare that, to the best of [my, our] professional knowledge and belief, [I, we] meet the definition of Environmental Professional as defined in §312.10 of this part.''*
  - ☐ *''[I, 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. [I, We] have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.''*

  Note: Please use either "I" or "We."

- ☐ In compliance with §312.31(b) of the AAI final rule and §12.6.1 of ASTM E1527-05, the environmental professional must include in the final report an ***opinion regarding additional appropriate investigation***, if the environmental professional has such an opinion.

Signature of Grantee Program Manager	Date

Environmental & Engineering Services Nationwide

PHASE I ENVIRONMENTAL SITE ASSESSMENT

10400 Assembly Park Drive | Wixom, Michigan
PM Project Number 01-8217-0-0001

Prepared for:

Oakland County
2100 Pontiac Lake Road
Pontiac, Michigan 48328

Prepared by:

PM Environmental, Inc.
4080 West 11 Mile Road
Berkley, Michigan 48072

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March 24, 2017

Mr. Dan Hunter
Oakland County
2100 Pontiac Lake Road
Pontiac, Michigan 48328-2735

Re: Phase I Environmental Site Assessment of the Vacant Out Lot 'B' Property Located at 10400 Assembly Park Drive, Wixom, Michigan
PM Environmental, Inc. Project No. 01-8217-0-0001

Dear Mr. Hunter:

PM Environmental, Incorporated (PM) has completed the Phase I Environmental Site Assessment (ESA) of the above referenced property. This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

The Phase I ESA for the above referenced property represents the product of PM's professional expertise and judgment in the environmental consulting industry, and it is reasonable for **OAKLAND COUNTY AND BEZTAK LAND COMPANY** to rely on PM's Phase I ESA report.

If you have any questions related to this report please do not hesitate to contact our office at 248.336.9988.

Sincerely,
PM ENVIRONMENTAL, INC.

Lauren Babuska
Staff Consultant

Kevin M. Kruszewski, PG
V.P. - Environmental Risk Management

EXECUTIVE SUMMARY

PM Environmental, Inc., (PM) was retained to conduct a Phase I Environmental Site Assessment (ESA) of the Vacant Out Lot 'B' Property located at 10400 Assembly Park Drive, Wixom, Oakland County, Michigan (hereafter referred to as the "subject property"). This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF <u>OAKLAND COUNTY</u> AND <u>BEZTAK LAND COMPANY</u>, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

Item	Comments
Number of Parcels and Acreage	4.59 acres to be split from a larger 30.66 acre parent parcel
Number of Building(s) and Square Footage	The property is currently vacant land, no buildings are structures are present
Current Property Use	The property is currently vacant land, therefore, there are no current uses

Reasonably ascertainable records for the subject property extended back to approximately 1940. Data failure occurred prior to that date. However, PM did not identify any significant data gaps during the completion of this Phase I ESA.

Standard and other historical sources document that the subject property was utilized for agricultural purposes from prior to 1940 until the 1950s, and was vacant land until the 1960s, when the property was developed with a parking lot associated with the former Ford-Wixom assembly plant located west of the subject property. The subject property was utilized as a paved parking lot until approximately 2007, when the former Ford-Wixom assembly plant closed. The former parking lot was removed and the property cleared for redevelopment between 2010 and 2015.

The following table summarizes the conditions identified as part of this assessment.

Type of Condition	Identified During the Course of this Assessment
De Minimis Condition	No
Significant Data Gap	No
Historical Recognized Environmental Condition (HREC)	No
Controlled Recognized Environmental Condition (CREC)	No
Recognized Environmental Condition (REC)	No

Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Vacant Out Lot 'B' Property located at 10400 Assembly Park Drive, Wixom, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has

revealed no evidence of recognized environmental conditions connected with the property. No further investigation is recommended.

The summary presented above is general in nature and should not be considered apart from the entire text of the report, which contains the qualifications, considerations and subject property details mentioned herein. Details of findings and conclusions are elaborated upon in this report.

This report has been reviewed for its completeness and accuracy. Please feel free to contact our office at 248.336.9988 to discuss this report.

REPORT PREPARED BY:
PM Environmental, Inc.

Lauren Babuska
Staff Consultant

REPORT REVIEWED BY:
PM Environmental, Inc.

Kristin Gable
Regional Due Diligence Manager

Kevin M. Kruszewski, PG
V.P. - Environmental Risk Management

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APPENDICES

Appendix A: Property Photographs from Site Reconnaissance
Appendix B: Correspondence and Supporting Documentation
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Appendix E: Professional Resumes
Appendix F: Acronyms and Terminology, Scope of Work, ASTM Reference Document, and User's Continuing Obligations under CERCLA

1.0 INTRODUCTION

This Phase I ESA was conducted in accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} and (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13).

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF OAKLAND COUNTY AND BEZTAK LAND COMPANY, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

PM acknowledges that these parties may rely on the contents and conclusions presented in this report. Unless stated otherwise in writing, PM makes no other warranty, representation, or extension of reliance upon the findings of this report to any other entity or third party.

1.1: Property Overview

Subject Property Location/Address	Out Lot 'B' of 10400 Assembly Park Drive, Wixom, Oakland County, Michigan
Number of Parcels and Acreage	4.59 acres to be split from a larger 30.66 acre parent parcel
Number of Building(s) and Square Footage	The property is currently vacant land, no buildings are structures are present
Current Property Use	The property is currently vacant land, therefore, there are no current uses
Current Zoning	GPUD: Gateway Planned Unit Development

The subject property location is depicted on Figure 1, Site Location Map. A diagram of the subject property and adjoining properties is included as Figure 2, Generalized Diagram of the Subject Property and Surrounding Area. Photographs taken during the site reconnaissance are included in Appendix A.

1.2: Purpose and Scope of Services

The purpose of this Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify *recognized environmental conditions* (RECs), *controlled recognized environmental conditions (CRECs),* and *historical recognized environmental conditions* (HRECs) in connection with the subject property. This Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs, CRECs, and HRECs in connection with the subject property.

Acronyms and terms used in this report are described in Appendix F. Additionally, PM's scope of services is included in Appendix F.

1.3: Significant Assumptions

Pursuant to ASTM Standard Practice E 1527-13, PM assumes that the information provided by all sources and parties, including the User, is accurate and complete, except where obvious inconsistencies or inaccuracies were identified.

1.4: Limitations, Deviations, and Special Terms and Conditions

There are no deviations from the ASTM Standard. Non-ASTM Scope considerations are included in Section 11.0. Any physical limitations identified during the completion of this report are referenced in Section 7.0.

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this assessment, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days after the report's issuance date, per ASTM Standard Practice E 1527-13.

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E 1527-13.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

2.0 USER PROVIDED INFORMATION

The ASTM Standard defines a User as "the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager." The User has specific obligations for completing a successful application of this practice as outlined in Section 6 of the ASTM Standard Practice E 1527-13.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the User must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

The following responses were provided by the User. A copy of the completed User Questionnaire is included in Appendix B.

Question	Response
Name of Preparer and User Entity	Mr. Jared Gell; Beztak Land Company
Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	No
Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	No

Question	Response
As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	No
Does the purchase price being paid for this property reasonably reflect the fair market value of the property?	Yes
If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	Not applicable
Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user:	
Do you know the past uses of the property?	Yes; automotive manufacturing *PM was provided with previous site assessments for the subject property and parent parcel. Refer to Section 4.9 for additional information.*
Do you know of specific chemicals that are present or once were present at the property?	No
Do you know of spills or other chemical releases that have taken place at the property?	No
Do you know of any environmental cleanups that have taken place at the property?	Yes
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	Yes; former automotive manufacturing *PM was provided with previous site assessments for the subject property and parent parcel. Refer to Section 4.9 for additional information.*

2.1: Recorded Land Title Records

PM requested reasonably ascertainable recorded land title records for the subject property from the User. However, PM did not receive any title records from the User within the time constraints of this report. Additionally, PM was not requested to complete a title search by the User. PM did review available environmental lien and activity and use limitations for the subject property, which are further discussed in Section 4.10. Based upon the information reviewed as part of this Phase I ESA, PM has not identified the lack of provided land title records as a data failure that represents a significant data gap.

2.2: Reason for Performing this Phase I ESA

According to the User, this Phase I ESA was conducted as part of environmental due diligence related to purchasing the subject property.

3.0 PHYSICAL SETTING

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		SOURCE
Topography: Refer to Figure 1 for an excerpt of the Topographic Map		
Site Elevation	950-960 feet above mean sea level (msl)	United States Geological Survey Division (U.S.G.S.) 7.5-Minute Topographic Map of the Milford, Michigan Quadrangle, 1973
Topographic Gradient	West-northwest	
Closest Surface Water	Unnamed tributary of Norton Creek, located approximately 600 feet south, at an elevation of 950 feet above msl.	
General Soil Characteristics: Refer to Appendix B for a copy of the soil survey map and soil type descriptions		
Soil Type	Urban land	United States Department of Agriculture, Custom Soil Resource Report of Oakland County, Michigan (area surveyed: February 13, 2017)
Description	This soil type consists of areas covered by commercial buildings, condominiums, and apartment buildings, parking lots, streets, sidewalks, driveways, railroad yards, industrial complexes and other structures. A typical soil profile is not defined. Permeability and the available water capacity vary.	
Area Specific Geology/Hydrogeology Characteristics:		
Geology	Generally consists of surficial fill to between 3.0 and 8.0 feet below ground surface (bgs), underlain by silty clay to a depth of at least 43.0 feet bgs, the maximum depth explored.	Previous site investigations completed on the subject property and parent parcel (2012-2013)
Hydrogeology	Groundwater was encountered at depths between 9.0 and 15.0 feet bgs. Groundwater flow was calculated to the northwest.	
Oil and Gas Wells:		
Current Oil and Gas Wells on Subject Property	None identified	MDEQ Geologic Survey Division (GSD) web site
Historical Oil and Gas Wells On Subject property	None identified	

4.0 RECORDS REVIEW

PM reviewed reasonably ascertainable records to identify obvious uses of the subject property from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. Reasonably ascertainable records reviewed as part of this Phase I ESA documented the use of the property back to 1940. Data failure occurred prior to that date. In PM's professional opinion, this data failure does not represent a significant data gap.

4.1: Aerial Photographs and Sanborn Maps

PM reviewed reasonably ascertainable aerial photographs for the subject property area. The sources and years reviewed are identified in the table below. Relevant aerial photographs are included in Appendix B.

PM attempted to review reasonably ascertainable Sanborn Fire Insurance Maps for the subject property. However, no Sanborn Fire Insurance Maps were available for the subject property.

The following table summarizes the sources reviewed and the information obtained about the subject property from these sources. Information obtained about the adjoining properties from these sources is summarized in Section 8.0.

Aerial Summary for the Subject Property

Year and Source	Summary of Information
1940 Aerial (Oakland County)	Appears to be agricultural land based on the well-defined crop rows.
1949 Aerial (WSU)	Similar to the previous aerial year.
1952 Aerial (WSU)	Similar to the previous aerial year.
1957 Aerial (WSU)	Agricultural activities have ceased. The property has been cleared, consistent with construction activities associated with the west adjoining property.
1963 Aerial (Oakland County)	Appears to be vacant land with an access drive visible along the western boundary.
1967 Aerial (WSU)	A paved parking lot covering the entire property is visible.
1970 Aerial (SEMCOG)	Similar to the previous aerial year.
1974 Aerial (Oakland County)	Similar to the previous aerial year.
1980 Aerial (Oakland County)	Similar to the previous aerial year.
1990 Aerial (Oakland County)	Similar to the previous aerial year.
1997 Aerial (Oakland County)	Similar to the previous aerial year.
2000 Aerial (Oakland County)	Similar to the previous aerial year.
2005 Aerial (Oakland County)	Similar to the previous aerial year.
2010 Aerial (Oakland County)	Similar to the previous aerial year.
2015 Aerial (Oakland County)	The parking lot is no longer visible and the property has been cleared consistent with construction activities and the current observations.

A summary of this information along with other historical sources is included in Section 6.0.

4.2: Local Street Directories

The subject property was historically agricultural and/or vacant land or utilized as a parking lot associated with the west adjoining property. Therefore, an address has not been assigned to the current subject property and city directories are not included for the subject property. Refer to Section 6.0 for a historical summary of the subject property.

PM reviewed listings for adjoining commercial properties. Information from the listings reviewed is included in Section 8.0.

4.3: Assessing Department

Reasonably ascertainable assessment information provided by the Oakland County Assessing Department was obtained and reviewed. Assessing records document that the subject property parent parcel contains 30.66 acres. Historical assessing record card notes indicate that all former buildings on the parent parcel were demolished in 2012 and that site work began on the current Menard's building (on the parent parcel and west adjoining property) and out lots in July 2014. Refer to Section 4.9 for additional information regarding the assessment of the parent parcel and west adjoining property. No additional relevant information was available for the subject property. Copies of available assessment records for the subject property and the current legal description are included in Appendix B.

4.4: Building Department

Reasonably ascertainable assessment information provided by the City of Wixom Building Department was obtained and reviewed. Building Department records document that the subject property parent parcel was formerly occupied by the Ford-Wixom Assembly Plant with the current subject property occupied by a paved parking lot. Permits dated between February and March 1970, document the installation of various storage tanks for diesel, Freon gas, and propane at the parent parcel; however, sketches did not identify any storage within the subject property boundaries. Permits dated between the 1980s and 1990s, document various additions, sewer taps, and well house construction on the parent parcel. No improvements were located within the subject property boundaries. Additionally, Building Department records documented permits to demolish all remaining buildings, plug abandoned wells, and remove tanks on the parent parcel between March 2012 and January 2013. Menard's, the current owner and west adjoining property occupant, requested zoning changes for the subject property and parent parcel from Manufacturing in November 2012, to Gateway Planned Unit Development. No additional relevant information for the subject property was included in Building Department records. Refer to Section 4.9 for additional information regarding the assessment of the parent parcel and west adjoining property.

4.5: Fire Department

PM submitted a Freedom of Information Act (FOIA) request to review City of Wixom Fire Department records for the subject property. PM received a written response indicating that no records of incidents of fires, chemical spills, dumping, or HAZMAT responses to the subject property were available. The response indicated that the parent parcel and west adjoining property, Menard's, stores 1,000-gallons of flammable liquid within in aboveground storage tanks

(ASTs). No additional relevant information as included. Refer to Section 4.9 for additional information regarding the assessment of the parent parcel and west adjoining property.

4.6: Health Department

PM submitted a FOIA request to the Oakland County Health Division to review records for the subject property. PM received a written response from a representative of the department indicating no files were available for the subject property.

4.7: Utilities

4.7.1: Municipal Water/Water Wells

Municipal water is currently available to the subject property. The subject property was historically agricultural and/or vacant land or utilized as a parking lot associated with the west adjoining property, and it is unlikely that a private water well existed at the property. However, if a private water well was historically utilized, based on the lack of current use the well would not represent a REC.

4.7.2: Sanitary Sewer/Septic System

Municipal sewer is currently available to the subject property. The subject property was historically agricultural and/or vacant land or utilized as a parking lot associated with the west adjoining property. Based on this information, it is unlikely that a private septic field existed at the subject property.

4.7.3: Heat Source

Natural gas, provided by Consumers Energy, is currently available to the subject property. Review of the Consumers Energy SIMS website indicates natural gas has been available to the subject property since at least 1956. The subject property was historically agricultural and/or vacant land or utilized as a parking lot associated with the west adjoining property. Based on this information, a historical heat source was not likely associated with the subject property.

4.8: Underground Storage Tank (UST) Systems

The subject property parent parcel historically contained various USTs and an aboveground gasoline pipeline, located approximately 350 feet west of the subject property. However, review of reasonably ascertainable standard and other historical sources, and site observations, have not identified the current and historical presence of USTs within the current subject property boundaries. Refer to Section 4.9 for additional information regarding the assessment of the parent parcel and west adjoining property.

4.9: Previous Environmental Reports

PM reviewed the following previous environmental reports for the subject property and parent parcel, including the south and west adjoining properties. Relevant portions of the reports are included in Appendix C.

Name of Report	Date of Report	Company that Prepared Report
Geotechnical Investigation Report	11-1-2012	Mannik and Smith Group, Inc. (MSG)
Phase I ESA Update	10-4-2013	MSG
Baseline Environmental Assessment (BEA) and Document of Due Care Compliance (DDCC)	10-4-2013	MSG
Closure Report	11-21-2013	Conestoga-Rovers and Associates (CRA)
Investigation and Remediation Report	12-13-2013	CRA

2012 Geotechnical Investigation Report (MSG)

The Geotechnical Investigation Report completed exploratory borings to define soil conditions for planned building development. No analytical testing was conducted. Soil conditions documented generally consisted of silty sand and silty clay.

2013 Phase I ESA Update (MSG)

At the time of the Phase I ESA, the subject property and parent parcel were occupied by a portion of the former Ford-Wixom assembly plant that was in the process of being demolished. Buildings associated with the parent parcel and located west of the subject property included the executive garage, offices, parking area and loading docks. The subject property was consisted of a paved parking lot adjacent to the former office building and executive garage. Former operations of the Ford-Wixom assembly plant included numerous vehicle production processes that involved metal working, sealing, welding, metal preparation (sanding, surface preparation, electro-coating, and phosphating), painting, assembly and quality assurance/quality control testing. Additional operations included wastewater treatment, power generation, vehicle storage, equipment maintenance, storage and handling of raw materials and waste management (on-site landfilling and hazardous/non-hazardous waste handling and off-site disposal). The Phase I ESA documented similar historical information as included in the current Phase I ESA. 16 RECs were identified across the parent parcel. RECs identified near the current subject property included the following: an open leaking underground storage tank (LUST) near the executive garage (REC 2) former east adjoining service station (across Wixom Road) (REC 8), former 10,000-gallon waste oil UST (REC 16), unknown size used oil UST (REC 34), 10,000-gallon gasoline UST (REC 41), former 6,000-gallon brake fluid UST (USTs located west of the former office building) (REC 20), and historic farmstead located north of the current subject property (REC 42). However, no RECs were identified on the current subject property.

2013 BEA/DDCC (MSG)

Investigations conducted to date for the former Ford-Wixom assembly plant have documented volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCB), metals, and chloride at concentrations greater than Part 201 generic residential cleanup criteria (GRCC) in soil and groundwater; therefore, the site was identified as a "facility" as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

Previous site investigations documented that contamination associated with leaking USTs and former service was detected west of the former office building adjoining the subject property,

located approximately 300 feet west. Metal contamination was detected north of the subject property, near a former farmstead and/or barn, located approximately 320 feet north.

The DDCC documents that Menard intended to enter an environmental cooperation agreement (ECA) with Ford in which responsibilities for remediating or mitigating existing and currently unknown chemical impacts will be specified.

2013 Closure Report (CRA)

This report was completed to assess the closure activities associated with the LUST and associated USTs identified near the executive garage (REC 2, 16, 34, and 41). The report documents that between December 2012 and April 2013, approximately 46,000 cubic yards of soil were excavated and 589,000 gallons of groundwater was pumped out and disposed of off-site. Monitoring and confirmation sampling conducted document that no measurable presence of light non-aqueous phase liquid (LNAPL) was detected. Therefore, no further remediation or monitoring activities are necessary.

Verification sampling documented that former impacted areas from the LUST and UST site were removed during excavation activities and that soil and dissolved phase impacts were delineated to the Part 213 most stringent criteria.

A Restrictive Covenant (RC), dated October 2013, restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes and requires that any new storm sewer utilities installed on the property be installed above the groundwater table and/or must be lined per industry standard.

As noted above, the UST/LUST area was located approximately 300 feet from the subject property. There was no indication of any contaminant migration to the subject property.

2013 Investigation and Remediation Report (CRA)

This report was completed to evaluate if releases of hazardous wastes, hazardous constituents, hazardous substances, or petroleum products occurred from any of the RECs identified in the Phase I ESA and within the parent parcel boundary. The 2013 report documents that impacts previously identified above the most restrictive Part 201 criteria were delineated.

Additional subsurface investigations were completed to assess the RECs identified near the current subject property area. Soil borings and temporary monitoring wells were installed in the areas near the subject property to assess the former off-site service station (REC 8) and impacts of a former 6,000-gallon brake fluid UST located outside the main assembly plant (REC 20). No constituents were detected above applicable Part 201 Non-Residential Cleanup Criteria.

Based on the documented delineation of contamination towards the subject property, distance of former USTs and documented releases from the subject property (approximately 300 feet west), removal of the source, documented groundwater flow towards the west-northwest, away from the subject property, low mobility of metals identified north of the property, PM has not identified the operations associated with the former Ford-Wixom assembly plant west of the subject property as a REC.

The current subject property will be split from the parent parcel and assigned a new parcel identification number (PID). Based on the planned split and lack of contamination identified on the subject property, the subject property does not meet the definition of a "facility", as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

4.10: Environmental Liens, Activity and Use Limitations, and Government Institutional and Engineering Controls

A Restrictive Covenant, dated October 2013, restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes and requires that any new storm sewer utilities installed on the property be installed above the groundwater table and/or must be lined per industry standard. Although no contamination was identified on-site and the subject property will be split from the parent parcel, this land use restriction will be a legacy land use restriction and applied to the new parcel. The land use restriction should be followed unless the process to rescind is completed.

PM has not identified any additional record of environmental liens, activity and use limitations, or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

5.0 INTERVIEWS

The objective of completing interviews with knowledgeable site contacts is to obtain information about the uses and physical characteristics of the property. In general, interviewees supported the information reviewed from other historical sources (i.e. aerial photos, city records, etc.).

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner	Yes	Mr. Tim Enyeart, representative of Menard's, the current owner	Two to three years	Mr. Enyeart confirmed the subject property was formerly associated with the Ford-Wixom assembly plant but could not comment on buildings or structures located within the current subject property boundaries. Menard's intends to sell the out lot 'as is' for future retail development. No additional information on environmental concerns was provided.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User
Key Site Manager	Yes	Mr. Tim Enyeart, representative of Menard's, the current owner	Two to three years	Refer to the Current Property Owner summary.

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Occupant(s)	No	Not applicable	Not applicable	The property is currently vacant land; therefore, there are no current occupants.
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA.

6.0 SUMMARY OF HISTORICAL USE

Standard and other historical sources document that the subject property was utilized for agricultural purposes from prior to 1940 until the 1950s, and was vacant land until the 1960s, when the property was developed with a parking lot associated with the former Ford-Wixom assembly plant located west of the subject property. The subject property was utilized as a paved parking lot until approximately 2007, when the former Ford-Wixom assembly plant closed. The former parking lot was removed and the property cleared for redevelopment between 2010 and 2015.

7.0 SUBJECT PROPERTY RECONNAISSANCE

Reconnaissance Information	
PM Field Personnel:	Ms. Rachel Bekowies
Site Reconnaissance Date:	March 15, 2017
Escort:	No escort
Limitations:	Observations limited by approximately one to two inches of snow cover. The snow cover has not been identified as a significant data gap.

7.1: Subject Property Observations

The subject property currently consists vacant land covered in low-lying vegetation. PM observed municipal water and sewer taps along the western boundary of the property, along South Wixom Road.

The following table summarizes the site observations.

Category	Feature	Observed
Interior Equipment	Elevators	No
	Air Compressors	No
	Incinerators	No
	Waste Treatment Systems	No
	Presses/Stamping Equipment	No
	Press Pits	No
	Hydraulic Lifts or In-ground hoists	No
	Paint Booth	No
	Plating Tanks	No

Category	Feature	Observed
	Lathes, Screw Machines, etc.	No
Aboveground Chemical or Other Waste Storage or Waste Streams	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Chip Hoppers	No
	Hazardous or Petroleum Waste Streams	No
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground Storage Tanks	No
	Fuel Dispensers	No
	Sumps or Cisterns	No
	Dry Wells	No
	Oil/Water Separators	No
	Floor Drains, Trench Drains, etc.	No
	Pipeline Markers	No
Exterior Observations	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Pad or Pole Mounted Transformers and/or Capacitors	No
	Soil Piles of Unknown Origin	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	No
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No

7.1.1: Current Operations

The subject property is currently unoccupied and therefore there are no current business operations.

8.0 ADJOINING PROPERTIES

The following paragraphs provide information about the adjoining properties obtained during the site reconnaissance and through review of reasonably ascertainable information.

North Adjoining Property

The north adjoining property, identified as 28971 South Wixom Road, is currently under construction. Review of historical records documents that the property was agricultural land from at least 1940 until between 1952 and 1957, when a paved parking lot associated with the former Ford-Wixom assembly plant was constructed on the property. The property was utilized as a paved parking lot until approximately 2007, when the former Ford-Wixom assembly plant closed. The former parking lot was removed and the property cleared for redevelopment between 2010 and 2015.

East Adjoining Properties, across South Wixom Road

The northeast adjoining property, identified as 28850-28870 South Wixom Road, is occupied by a Sherwin Williams and AT&T retail store. Review of historical sources documents that the

property was vacant land from at least 1940 until between 2015 and 2016, when the current building was constructed. Sherwin Williams and AT & T have occupied the property since construction.

The east adjoining property, identified as 28970 South Wixom Road, is currently occupied by Sunoco gasoline dispensing station. Review of historical sources documents that the property was residential and/or vacant land from at least 1940 until 2008, when the current gasoline dispensing station was constructed. This property is identified in the regulatory database. Refer to Section 9.2 for additional information.

The east adjoining property, identified as 49169 Alpha Drive, is currently occupied by Culver's, a restaurant. Review of historical sources documents that the property was agricultural land and/or residential from at least 1940 until between 1957 and 1963, when a building, occupied by a local union, was constructed on the property. The former building was demolished between 1990 and 1997. The property remained vacant until the construction of the current building between 2012 and 2014. The property has been occupied by a restaurant since construction.

The southeast adjoining property, identified as 49097 Alpha Drive, is currently vacant land. Review of historical sources documents that the property was agricultural and residential land from at least 1940 until between 1964 and 1967, when a bank building was constructed in the northwestern portion. The previously identified bank building was demolished between 1980 and 1990, and the property has remained vacant.

South Adjoining Property

The south adjoining property is occupied by an access road for future developments and has historically been vacant land and/or a paved parking lot.

The southwest adjoining property, identified as 28607 South Wixom Road, is currently vacant land. Review of historical records documents that the property was vacant in at least 1940 until between 1952 and 1957, when paved parking lots associated with the former Ford-Wixom assembly plant were constructed. The property remained a paved parking lot until regional construction activities began in 2013.

West Adjoining Property

The west adjoining property, identified as 10400 Assembly Park Drive, is occupied by Menard's, a home improvement store. Review of historical records documents that the property was agricultural land from at least 1940 until between 1952 and 1957, when a portion of the former Ford-Wixom assembly plant was constructed. The property was occupied by the Ford-Wixom assembly plant until 2007. The plant was demolished between 2010 and 2014, and the current building was constructed between 2014 and 2015. The property has been occupied by Menard's since 2015. This property is identified in the regulatory database. Refer to Sections 4.9 and 9.0 for additional information.

9.0 REGULATORY RECORDS REVIEW

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the complete database is included in Appendix D. The following information was obtained:

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) Sites	1 mile	0
Federal	Delisted National Priority List (DNPL) Sites	½ mile	0
Federal	Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Sites	½ mile	1
Federal	CERCLIS No Further Remediation Action Planned (NFRAP) Sites	½ mile	1
Federal	Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Sites	1 mile	0
Federal	RCRA non-CORRACTS Treatment, Storage or Disposal (TSD) Sites	½ mile	0
Federal	RCRA Large Quantity Generators (LQG) Sites	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG) Sites	subject property and adjoining properties	1
Federal	RCRA Conditionally Exempt Small Quantity Generators (CESQG) Sites	subject property and adjoining properties	0
Federal	RCRA Non-Generators (NON-GEN) Sites	subject property and adjoining properties	0
Federal	Institutional Control / Engineering Control Registries	subject property	1
Federal	Environmental Response and Notification System (ERNS)	subject property	0
State & Tribal	Hazardous Waste Sites (HWS) (equivalents to NPL and CERCLIS)	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill Sites (SWLF)	½ mile	0
State & Tribal	Leaking Underground Storage Tank (LUST) Sites	½ mile	9
State & Tribal	Registered Underground Storage Tank (UST) Sites	subject property and adjoining properties	2
State & Tribal	Institutional Control / Engineering Control Registries	subject property	1
State & Tribal	Brownfield Sites	½ mile	1
State & Tribal	Baseline Environmental Assessment (BEA) Sites	½ mile	4
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	0

9.1: Subject Property and Occupant Listings

The subject property or its known occupants are not identified in the referenced databases.

However, the subject property parent parcel (historically identified as 28801 Wixom Road) is listed in multiple databases are further discussed in 9.2. Additionally, the parent parcel is identified as an AUL site, which is discussed in Section 4.10.

9.2: Adjoining and Nearby Sites

PM's review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (e.g., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (e.g., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

Ford Motor Company and Ford-Motor Wixom Assembly – The subject property parent parcel (28601 and 28801 South Wixom Road) and west adjoining property (10400 Assembly Park Drive) is identified as a LUST, closed former UST, a CERCLIS-NFRAP, RCRA-SQG of hazardous waste, Part 201 site, a historic landfill, and BEA site. Refer to Section 4.9 for a summary of the previous site investigations.

Sunoco Gas Station – This site is identified as 28790 South Wixom Road and is the east adjoining property. Review of the regulatory database indicates this site is identified as an active UST site with one 25,000-gallon gasoline UST and one 25,000-gallon gasoline/diesel UST installed at the property in 2008. PM reviewed available MDEQ records documenting the approved UST operating status as recent as 2014. Based on the lack of releases reported, short timeframe of operations (less than 10 years), and distance from the subject property (approximately 140 feet across South Wixom Road), PM has not identified this property as a REC.

10.0 FINDINGS, OPINIONS AND CONCLUSIONS

10.1: De Minimis Condition

A de minimis condition, as defined in the ASTM Standard, is a condition that generally does not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs. No de minimis conditions were identified during this assessment.

10.2: Significant Data Gaps

A data gap, as defined in the ASTM Standard, is a lack of or inability to obtain information required by the ASTM Standard despite good faith efforts by the environmental professional to gather such information. The environmental professional must then determine whether these gaps are significant. PM did not identify or encounter any instances of significant data gaps during the course of this ESA.

10.3: Historical Recognized Environmental Conditions (HRECs)

An HREC, as defined in the ASTM Standard, is a past release of hazardous substances or petroleum products that has occurred in connection with the subject property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the subject property to any required controls. PM has not identified any HRECs in association with the subject property.

10.4: Controlled Recognized Environmental Conditions (CRECs)

A CREC, as defined in the ASTM Standard, is a recognized environmental condition (REC) resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. PM has not identified any CRECs in association with the subject property.

10.5: Recognized Environmental Conditions (RECs)

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Vacant Out Lot 'B' Property located at 10400 Assembly Park, Wixom, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property.

10.6: Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Vacant Out Lot 'B' Property located at 10400 Assembly Park, Wixom, Oakland County, Michigan, the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property. Therefore, no further investigation is recommended at this time.

11.0 NON-ASTM SCOPE CONSIDERATIONS/BUSINESS ENVIRONMENTAL RISKS

PM has included a discussion of Non-ASTM Scope Considerations based upon industry standards and lender requirements. A Business Environmental Risk is defined as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice.

Non-ASTM Item	Observations or Information
Potential Asbestos Containing Building Materials (ACBM)	The subject property is currently vacant land and does not contain any structures therefore, asbestos, lead based paint, and mold were not addressed.
Lead Based Paint	
Visual Mold or Significant Moisture Damage	

12.0 SIGNATURE(S) OF ENVIRONMENTAL PROFESSIONAL(S)

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and 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 inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

Kristin Gable
Regional Due Diligence Manager

Kevin M. Kruszewski, PG
V.P. – Environmental Risk Management

13.0 REFERENCES

The following published sources were utilized during completion of this Phase I ESA:

- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,* ASTM, ASTM Designation E 1527-13, Published November 2013.

- Bresser's Cross-Index City Directories, Bresser's in Detroit, Michigan. City: Wixom. Years: 1957-2014.

- Bresser's Cross-Index City Directories, obtained from Historical Information Gatherers, Inc. (HIG), Hopkins, Minnesota. City: Wixom. Years: 1967-2002.

- United States Geological Survey Division (U.S.G.S.) 7.5 Minute Topographic Map Milford, Michigan Quadrangle, 1973.

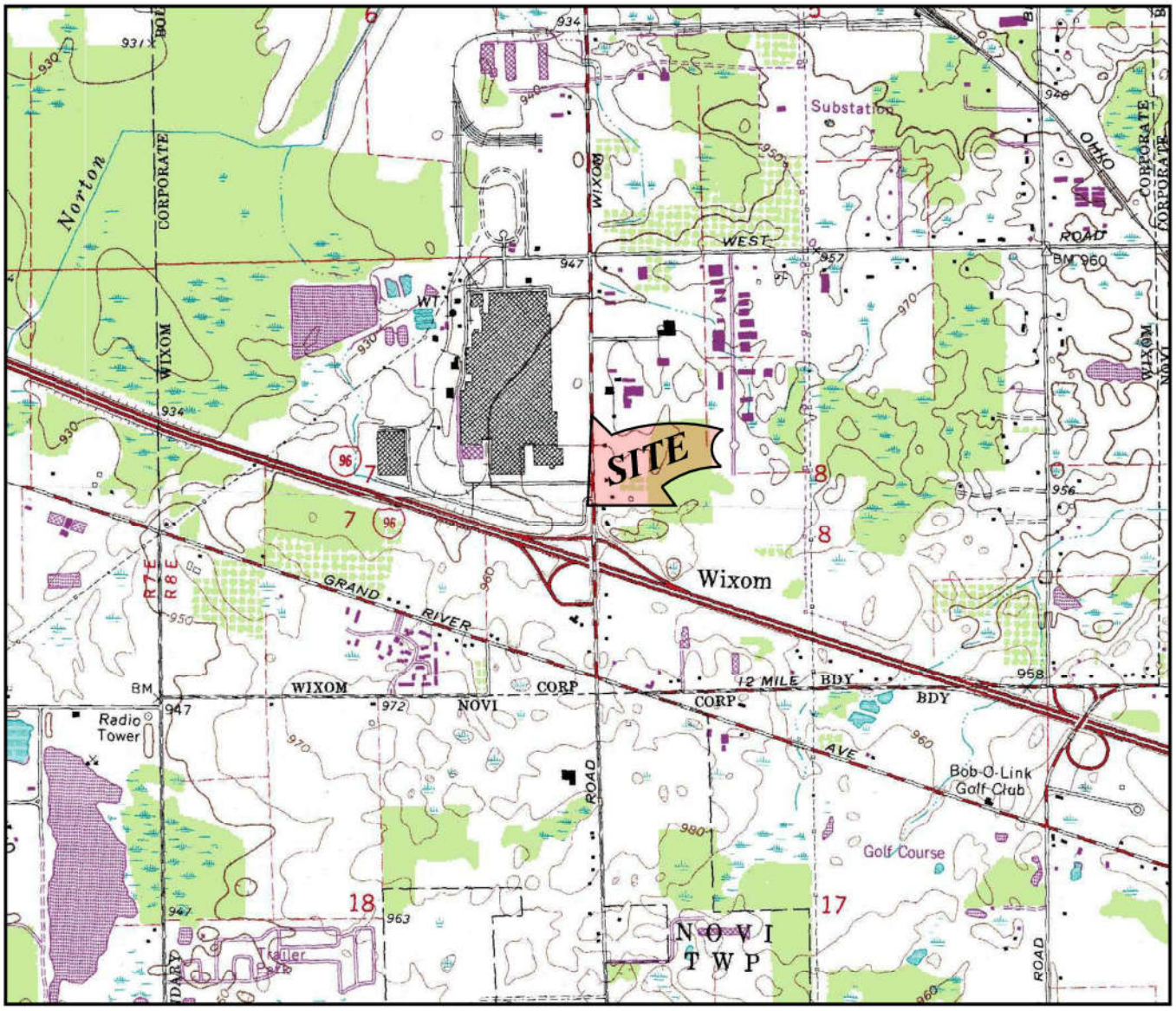
- *Custom Soil Resource Report of Oakland County, Michigan*, U.S. Department of Agriculture, area surveyed February 13, 2017.

In addition, PM reviewed the following previous site investigations, some of which are available from public sources.

Name of Report	Date of Report	Company that Prepared Report
Geotechnical Investigation Report	11-1-2012	Mannik and Smith Group, Inc. (MS)
Phase I ESA Update	10-4-2013	MSG
Baseline Environmental Assessment (BEA) and Due Care Plan	10-4-2013	MSG
Closure Report	11-21-2013	Conestoga-Rovers and Associates (CRA)
Investigation and Remediation Report	12-13-2013	CRA

Figures

PM ENVIRONMENTAL Environmental & Engineering Services



OAKLAND COUNTY

SCALE 1:24,000

1 MILE 1/2 MILE 0 1 MILE

FIGURE 1

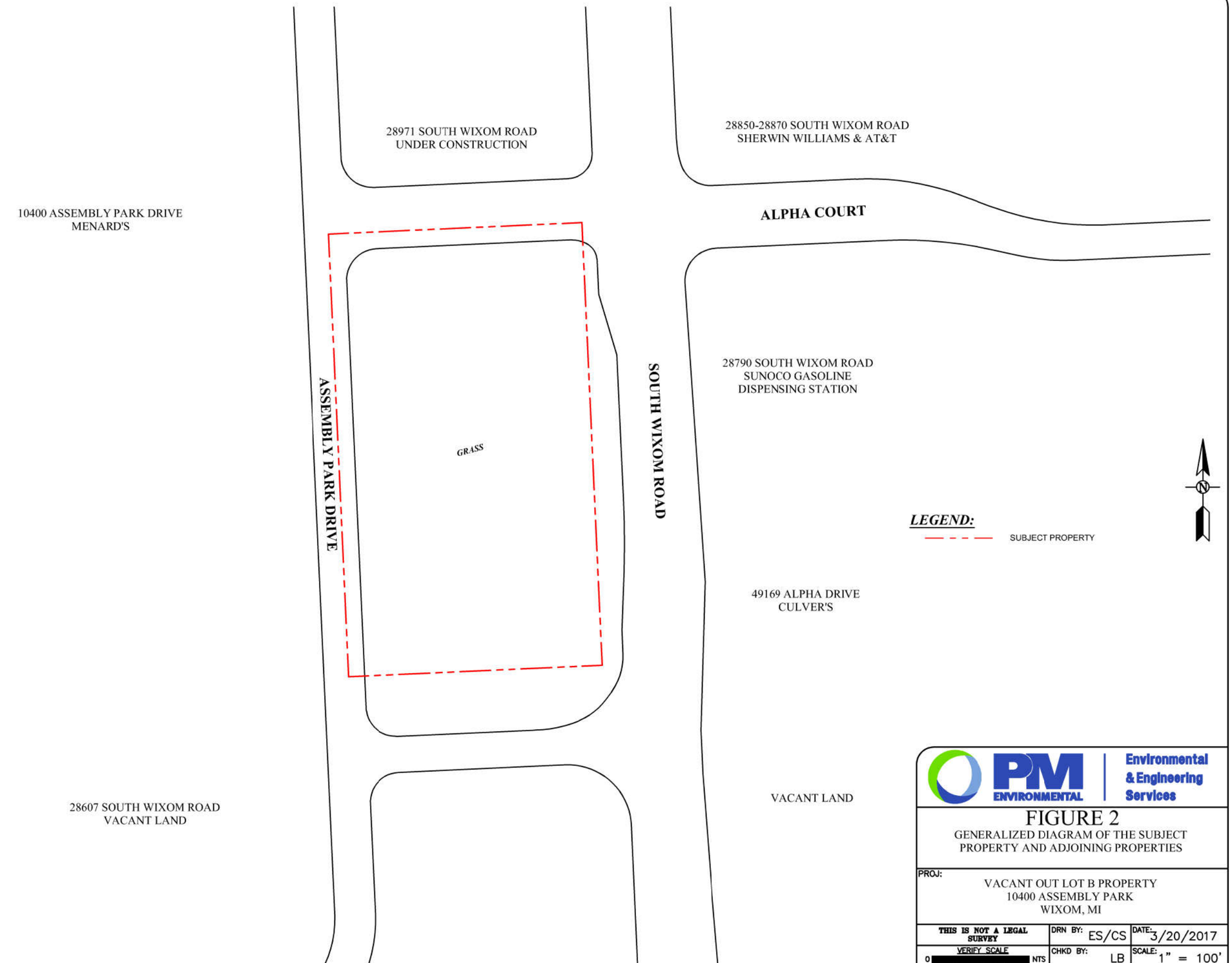
PROPERTY VICINITY MAP

USGS, 7.5 MINUTE SERIES

MILFORD, MI QUADRANGLE, 1969. PHOTO REVISED 1983.

SALEM, MI QUADRANGLE, 1969. PHOTO REVISED 1973 AND 1980.

PM ENVIRONMENTAL — Environmental & Engineering Services	PROJ: VACANT OUT LOT B PROPERTY 10400 ASSEMBLY PARK WIXOM, MI	THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS	DATE: 3/24/2017
		VERIFY SCALE 0 2,000' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: LB	SCALE: 1" = 2,000'
			FILE NAME: 01-8217-0-001F01R00	



PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJ:

VACANT OUT LOT B PROPERTY
10400 ASSEMBLY PARK
WIXOM, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: ES/CS	DATE: 3/20/2017
VERIFY SCALE 0 NTS IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: LB	SCALE: 1" = 100'
	FILE NAME: 01-8217-0-001F00R00	

Appendix A

PM ENVIRONMENTAL Environmental & Engineering Services

SITE PHOTOGRAPHS

Photographs From Site Reconnaissance
PM Project No. 01-8217-0-0001
Location: 10400 Assembly Park, Wixom, Michigan

Photograph 1

View of the subject property, facing southwest, from Wixom Road.

Photograph 2

View of the subject property facing north.

Photographs From Site Reconnaissance
PM Project No. 01-8217-0-0001
Location: 10400 Assembly Park, Wixom, Michigan

Photograph 3

View of the subject property facing east.

Photograph 4

View of the subject property facing south.

Photographs From Site Reconnaissance
PM Project No. 01-8217-0-0001
Location: 10400 Assembly Park, Wixom, Michigan

Photograph 5

View of the subject property facing west.

Photograph 6

The north adjoining property; 28971 South Wixom Road

Photographs From Site Reconnaissance
PM Project No. 01-8217-0-0001
Location: 10400 Assembly Park, Wixom, Michigan

Photograph 7

The northeast and east adjoining properties; 28790-28870 South Wixom Road

Photograph 8

The east and southeast adjoining properties; 49097-49169 Alpha Drive

Photographs From Site Reconnaissance
PM Project No. 01-8217-0-0001
Location: 10400 Assembly Park, Wixom, Michigan

Photograph 9

The south adjoining property; 28607 South Wixom Road.

Photograph 10

The west adjoining property; 10400 Assembly Park Drive.

Appendix B

PM ENVIRONMENTAL Environmental & Engineering Services

USER QUESTIONNAIRE

Phase I ESA - ASTM User Questionnaire

Project Address:	10400 Assembly Park, Wixom, Michigan

The ASTM Standard defines a User as "the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") the **User** must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

Please answer the following questions to the best of your knowledge and return to PM Environmental, Inc. (PM) with the signed copy of your proposal.

1. Environmental Clean-up liens that are filed or recorded against the site (40 CFR 312.25)

Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? **Yes** **(No)**

If so, please describe the type of liens: _____

_____

2. Activity and land use limitations that are in place on the site or that have been filed in a registry (40 CFR 312.26)

Are you aware of any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions, or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law? **Yes** **(No)**

If yes, what type of AULs are you aware of? _____

_____

3. Specialized knowledge or experience of the person seeking to qualify for a LLP (40 CFR 312.28)

As the user of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and the processes used by this type of business? **Yes** **(No)**

If yes, what type of business are you associated with? _____

What types of chemicals are used in your business? _____

_____

Phase I ESA - ASTM User Questionnaire

Project Address:	10400 Assembly Park, Wixom, Michigan

4. Relationship to the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29)

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? **Yes** **No**

~~If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?~~ ~~**Yes**~~ ~~**No**~~

5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30)

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example as a user:

a. Do you know of the past uses of the property? **Yes** **No**

If yes, please list what past uses you are aware of? Automotive Manufacturing

b. Do you know of specific chemicals that are present or once were present at the property? **Yes** **No**

If yes, please list what chemicals you are aware of?

c. Do you know of spills or other chemical releases that have taken place on the property? **Yes** **No**

d. Do you know of any environmental cleanups which have taken place on the property? **Yes** **No**

If yes, do you have copies of any of the reports documenting the work? **Yes** **No**

If you have any documentation of the previous environmental clean-up please provide copies to PM when you return this questionnaire.

Phase I ESA - ASTM User Questionnaire

Project Address:	10400 Assembly Park, Wixom, Michigan

6. The degree of the obviousness of the presence or likely presence of contamination at the property and the ability to detect the contamination by appropriate investigation (40CFR 312.31)

As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination on the property? **Yes** **No**

If yes, please comment on what those indicators are (i.e. lower purchase price, areas of staining, poor housekeeping, etc.): Former automotive manufacturing

User Name: Jared Gell

Company Name property is being purchased under: Beztak Land Company

Street Address: 38500 Woodward Ave, Ste 100

City, State, Zip code: Bloomfield Hills, MI 48304

User Phone Number: 248-855-6300

Signature of the User:

Date Questionnaire was completed on: 3/13/17

SOIL SURVEY INFORMATION

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

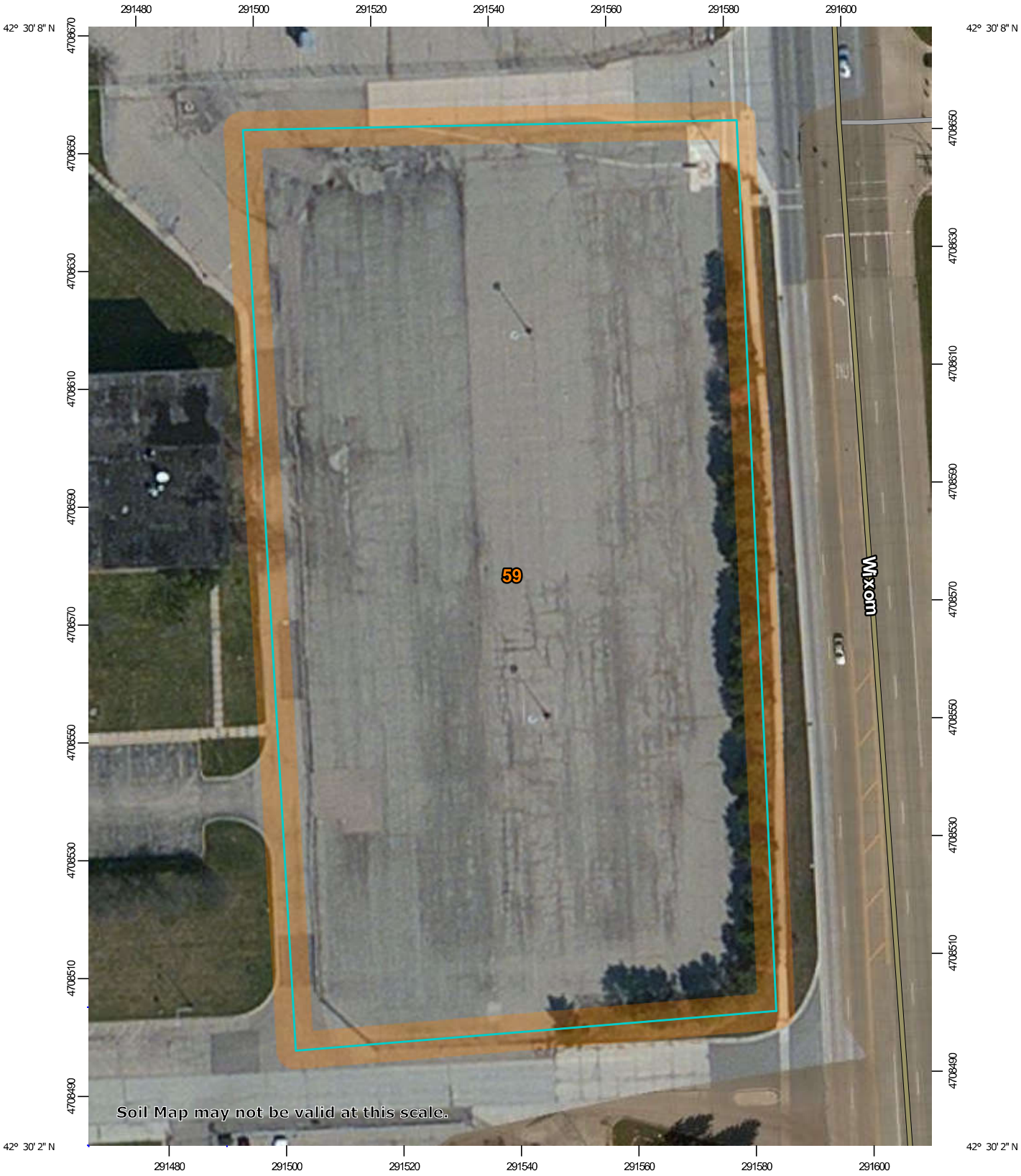
Custom Soil Resource Report for Oakland County, Michigan

March 7, 2017

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:925 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Oakland County, Michigan
Survey Area Data: Version 15, Feb 13, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2012—Sep 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Oakland County, Michigan (MI125)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
59	Urban land	3.2	100.0%
Totals for Area of Interest		**3.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Oakland County, Michigan

59—Urban land

Map Unit Setting

National map unit symbol: 6bjh
Elevation: 660 to 980 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 155 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected

initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

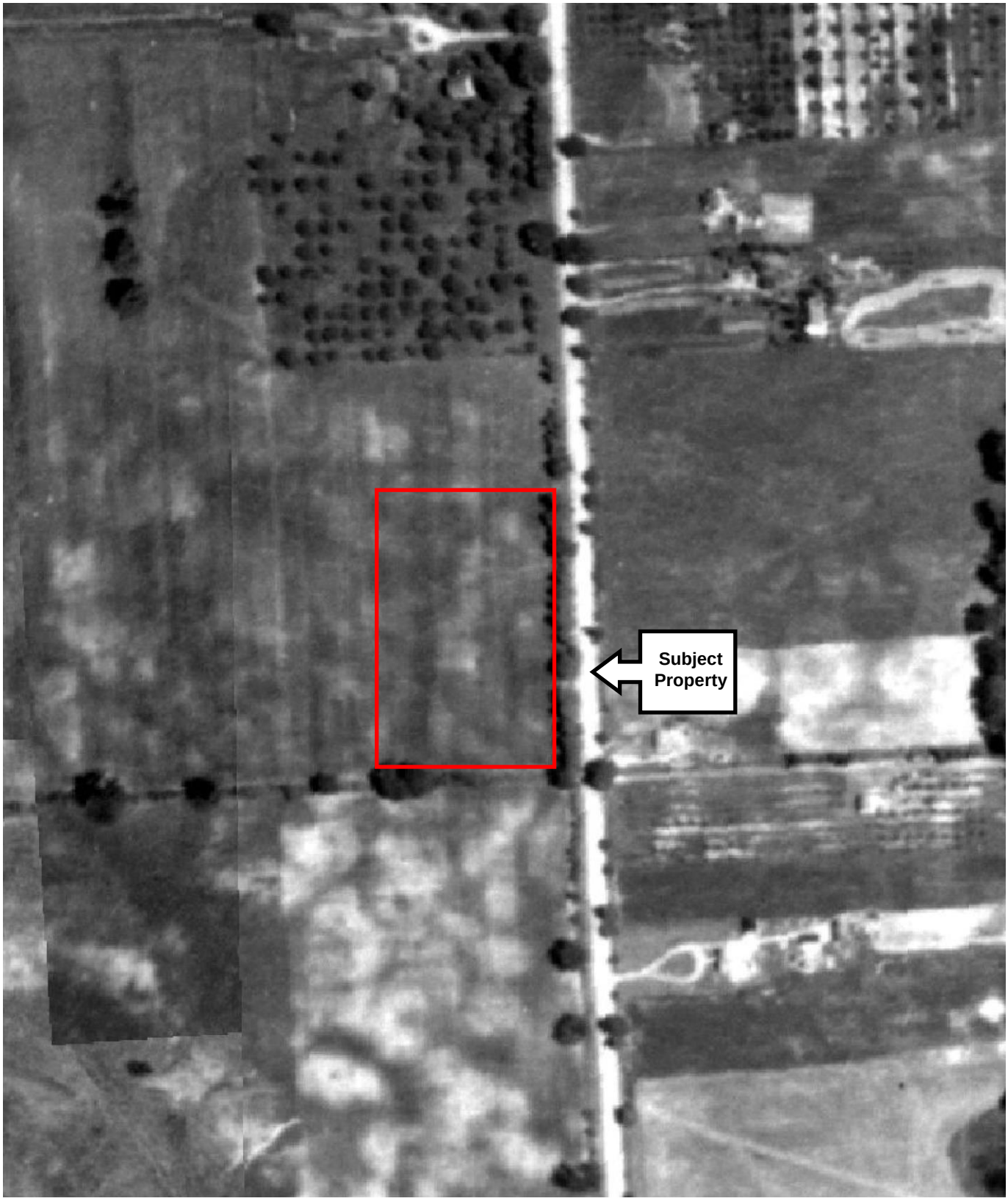
Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Soil Features–Oakland County, Michigan									
Map symbol and soil name	**Restrictive Layer**				**Subsidence**		**Potential for frost action**	**Risk of corrosion**	
	Kind	**Depth to top**	**Thickness**	**Hardness**	**Initial**	**Total**		**Uncoated steel**	**Concrete**
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
59—Urban land									
Urban land		—	—		—	—			

AERIAL PHOTOGRAPHS



Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 1940	
Source: Oakland County	

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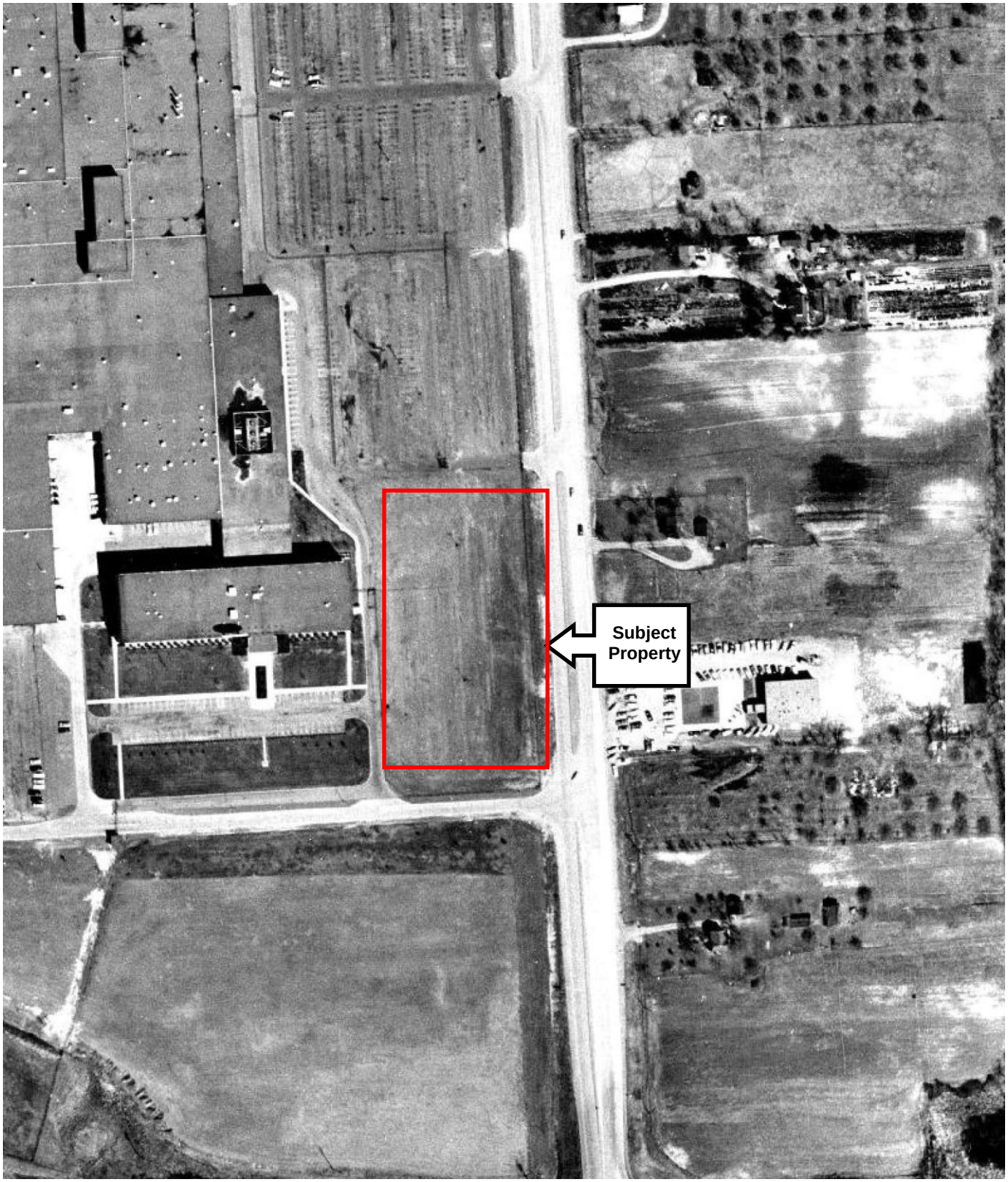

Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 1963	
Source: Oakland County	

PM ENVIRONMENTAL

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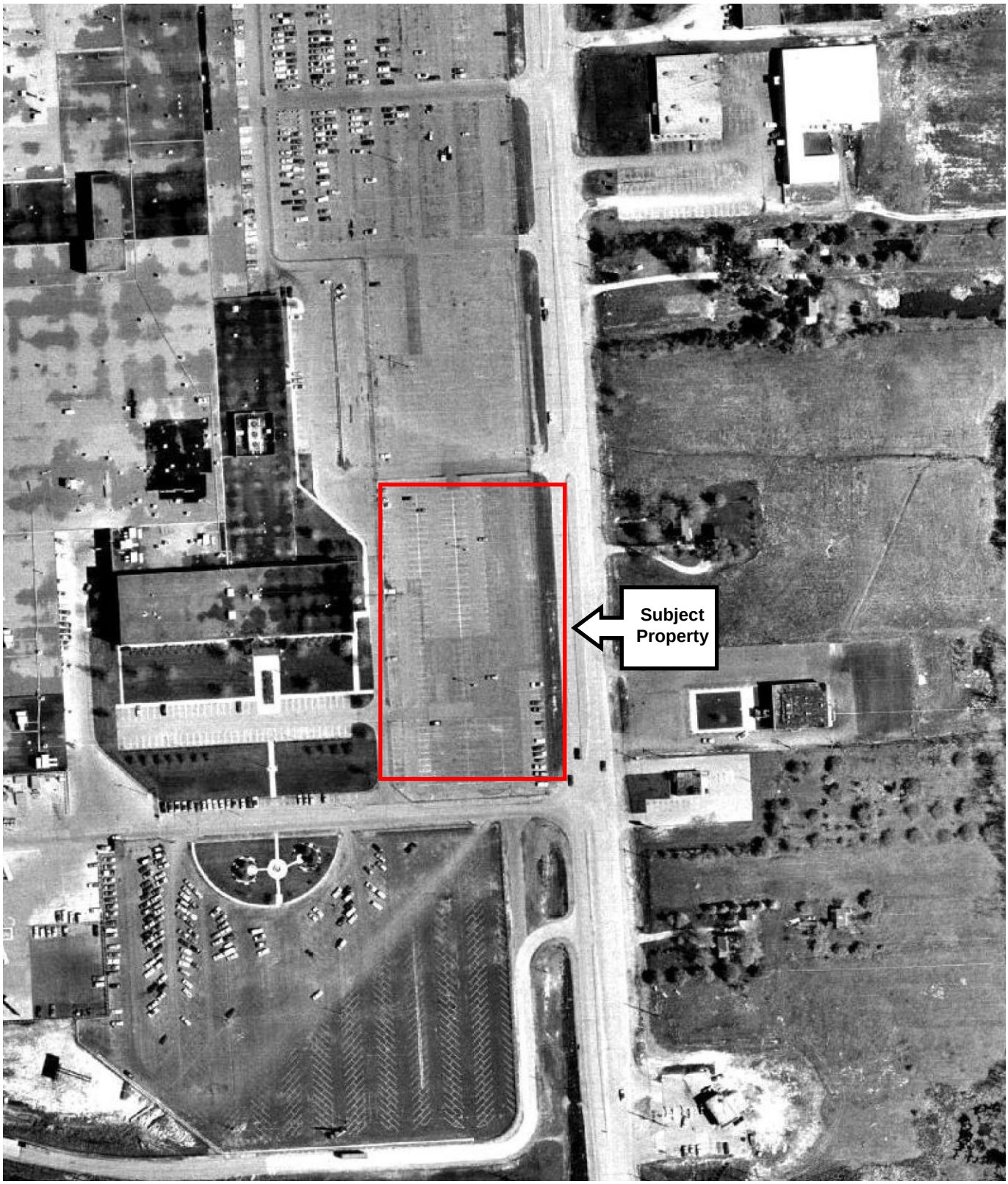

Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 1974	
Source: Oakland County	

PM ENVIRONMENTAL

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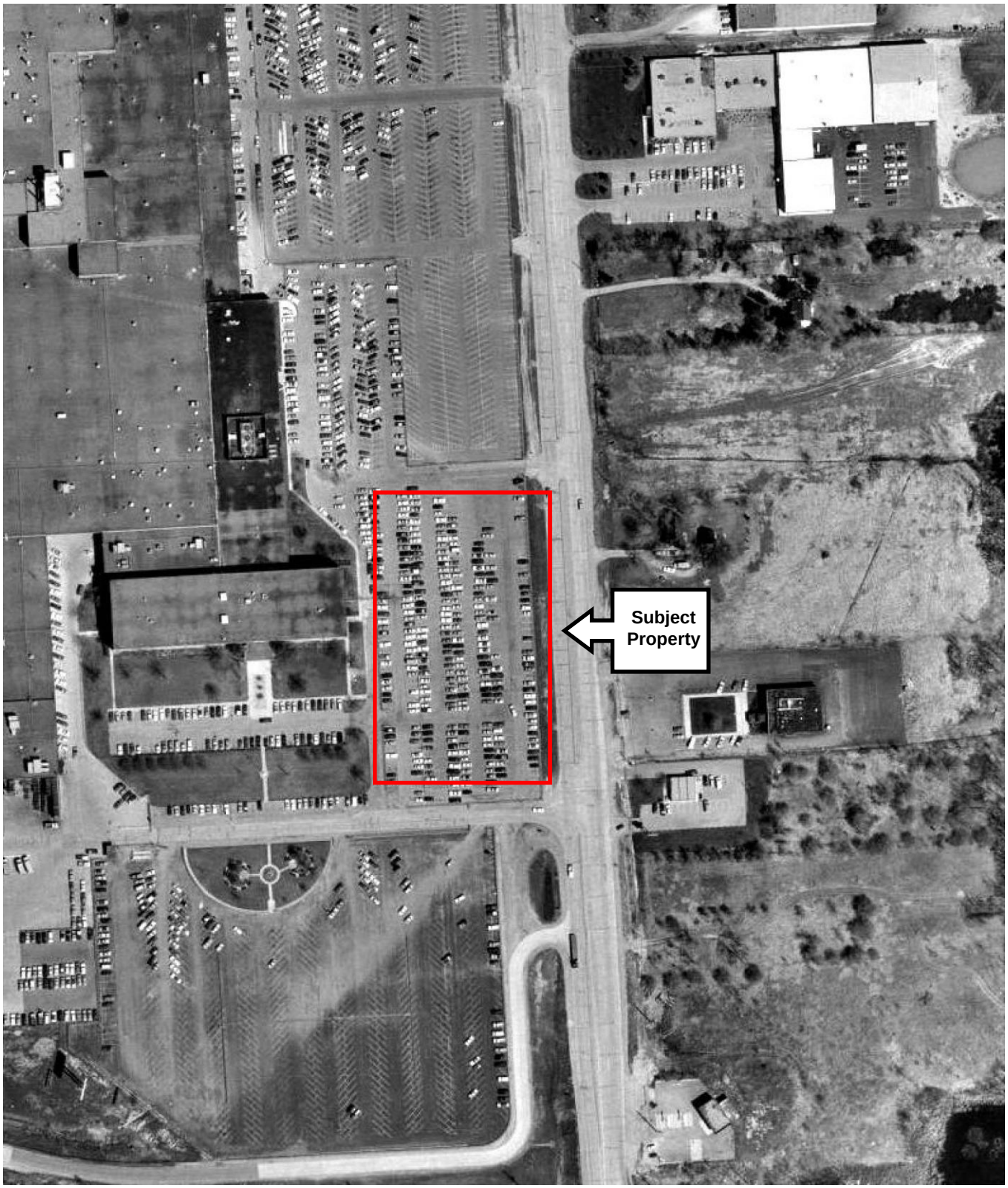

Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 1980	
Source: Oakland County	

PM ENVIRONMENTAL

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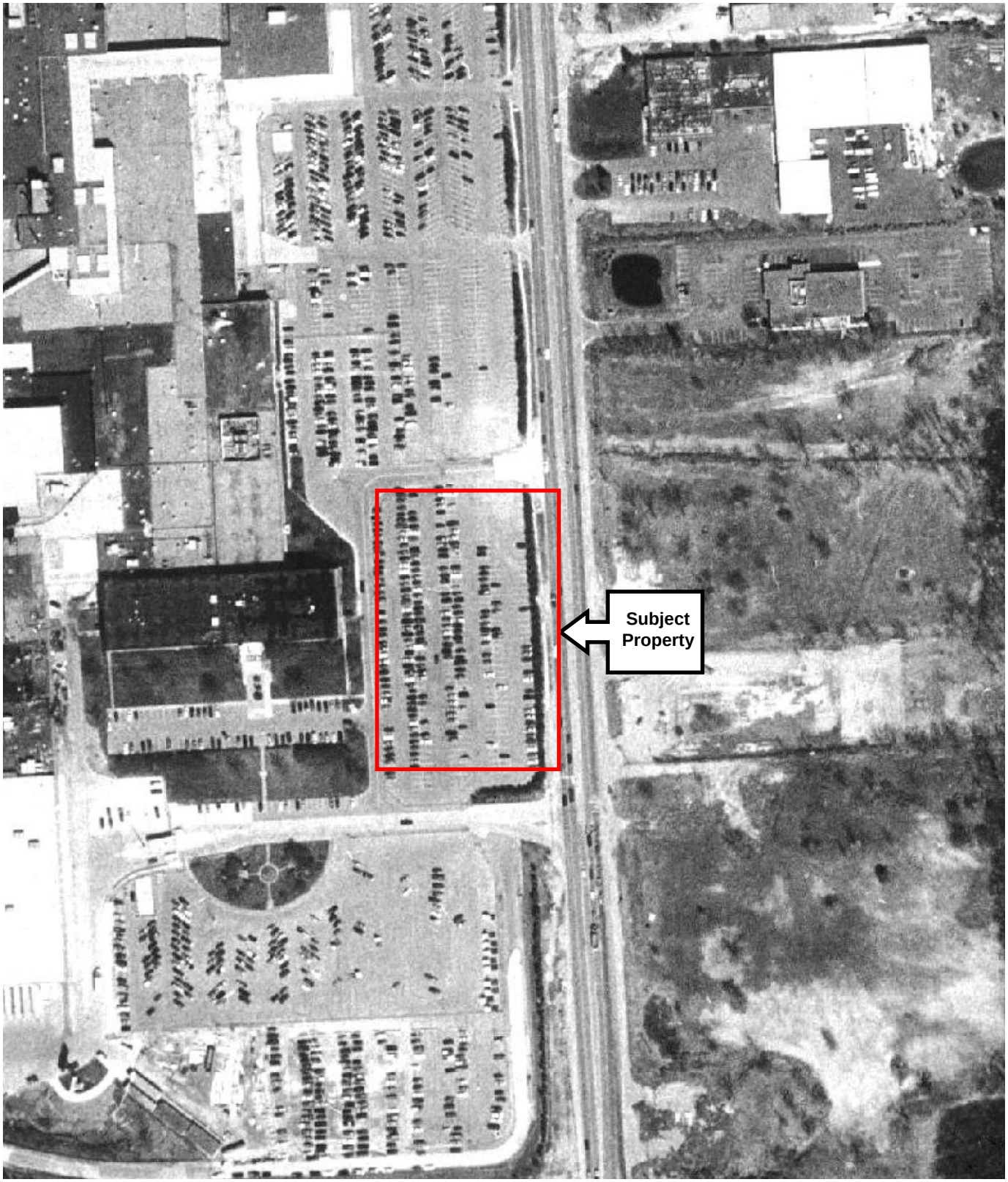

Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 1997	
Source: Oakland County	

PM ENVIRONMENTAL

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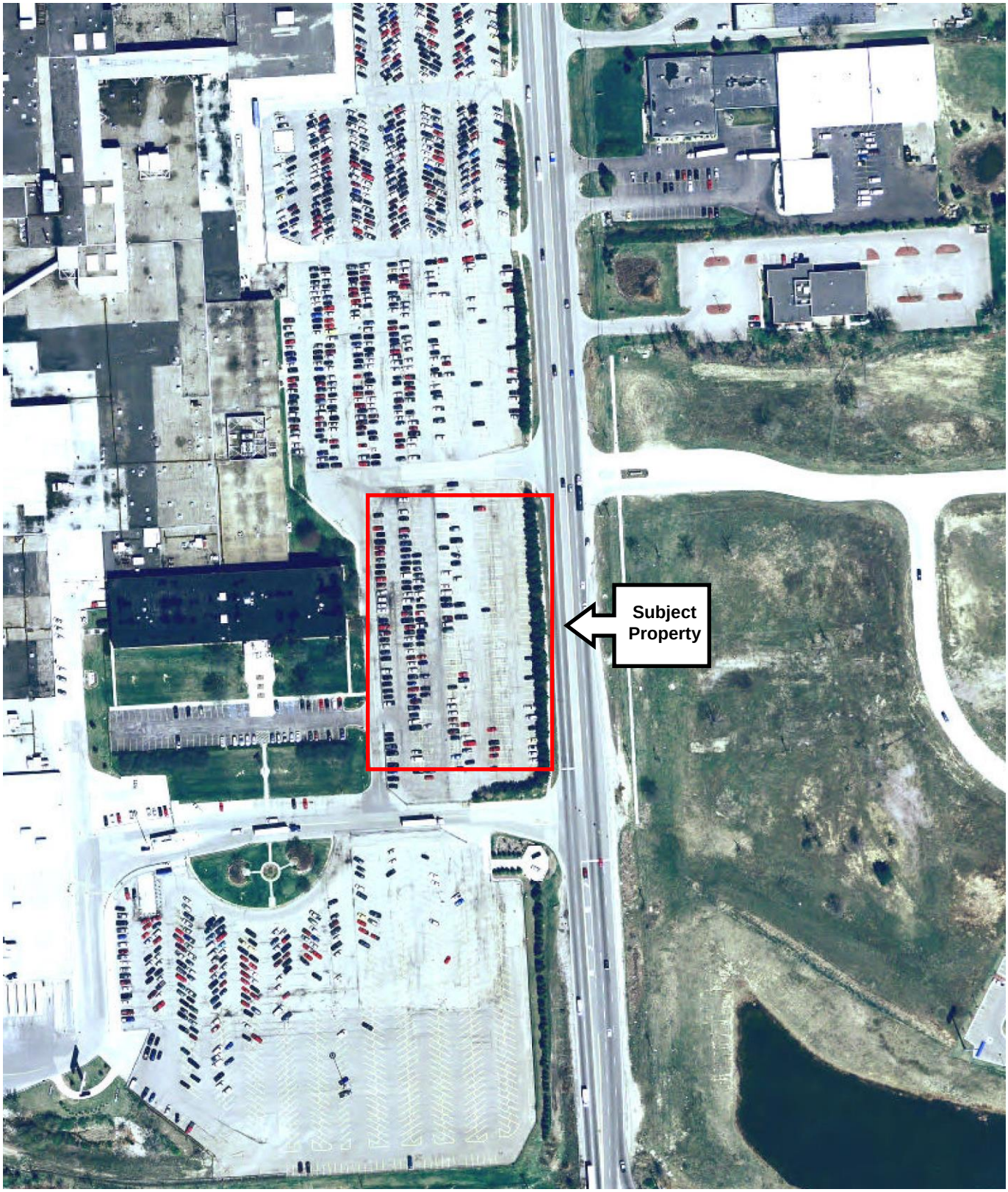

PM ENVIRONMENTAL	**Location: 10400 Assembly Park, Wixom, Michigan**
	PM Project No. 01-8217-0-0001
	Aerial Year: 2005
	Source: Oakland County

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PM ENVIRONMENTAL	**Location: 10400 Assembly Park, Wixom, Michigan**
	PM Project No. 01-8217-0-0001
	Aerial Year: 2010
	Source: Oakland County

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Location: 10400 Assembly Park, Wixom, Michigan	
PM Project No. 01-8217-0-0001	
Aerial Year: 2015	
Source: Oakland County	

PM ENVIRONMENTAL

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ASSESSING DEPARTMENT RECORDS

Parcel Number: 96-22-07-200-014 Jurisdiction: City of Wixom County: OAKLAND Printed on 03/17/2017

Grantor	Grantee	Sale Price	Sale Date	Inst. Type	Terms of Sale	Liber & Page	Verified By	Prcnt. Trans.

Property Address	Class: 201 Bus Imp	Zoning: B-1	Building Permit(s)	Date	Number	Status
10400 ASSEMBLY PARK DR	School: 270 Walled Lk Cnsldtd Sch		NewBuilding	05/12/2014	9614B-0011-A	Closed
	P.R.E. 0%					
Owner's Name/Address	ITOnly:					
MENARD INC 5101 MENARD DR EAU CLAIRE WI 54703-9604	2017 Est TCV 12,138,178 TCV/TFA: 52.06					

X Improved Vacant

Land Value Estimates for Land Table COM.Land Table COM COM"L LAND

Description	Frontage	Depth	* Factors * Front	Depth	Rate	%Adj.	Reason	Value
sq ft land C 1.94			1208790 SqFt		1.94000	100		2,345,053
			27.75 Total Acres		Total Est. Land Value =			2,345,053

Land Improvement Cost Estimates

Description	Rate	CountyMult.	Size	%Good	Cash Value
Commercial/Industrial Local Cost Land Improvements					
Description	Rate	CountyMult.	Size	%Good	%Arch.Mult	Cash Value
PA1-AsphaltPaving	1.34	1.00	268715.0	72	100	259,256
PC1-ConcretePaving	2.53	1.00	14520.0	72	100	26,450
Total Estimated Land Improvements True Cash Value =						285,706

Tax Description

T1N, R8E, SEC 7 PART OF NE 1/4 BEG AT PT DIST S 03-11-10 E 1695.81 FT & S 86-48-50 W 60 FT FROM NE SEC COR, TH S 86-48-50 W 260.50 FT, TH S 03-11-10 E 485.49 FT, TH N 86-48-50 E 260.50 FT, TH S 03-11-10 E 453.76 FT, TH S 87-07-58 W 1100.02 FT, TH N 03-11-10 W 1211.46 FT, TH N 86-48-50 E 1100 FT, TH S 03-11-10 E 278.33 FT TO BEG 27.77 A 10-25-16 FR 009

Comments/Influences

9/27/15 MEAS/APP MENARD'S & 2ND BLDG - LUMBERYARD OUTGLDG. TOO PICS CLOSE BP

	Public Improvements
	Dirt Road
	Gravel Road
X	Paved Road
	Storm Sewer
X	Sidewalk
X	Water
X	Sewer
X	Electric
X	Gas
X	Curb
	Street Lights
	Standard Utilities
	Underground Utils.
	Topography of Site
X	Level
	Rolling
	Low
	High
	Landscaped
	Swamp
	Wooded
	Pond
	Waterfront
	Ravine
	Wetland
	Flood Plain

Who	When	What
921	05/07/2015	BuildingPe
921	11/26/2014	BuildingPe
021	09/11/2014	BuildingPe

Year	Land Value	Building Value	Assessed Value	Board of Review	Tribunal/ Other	Taxable Value
2017	1,172,530	4,896,560	6,069,090			5,182,600C
2016	0	0	0			0
2015	0	0	0			0
2014	0	0	0			0

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*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: BLDG 1 SEC 1
Calculator Occupancy: Store, Warehouse Discount

Class: C
Floor Area: 165,720
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 28
Bsmnt Wall Hght

Depr. Table : 2
Effective Age : 3
Physical %Good: 94
Func. %Good : 100
Economic %Good: 100

2014 Year Built Remodeled

28 Overall Bldg Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: %+0 $/SqFt:0.00
Heat#1: Package Heating & Cooling 100
Heat#2: Package Heating & Cooling 0%
Ave. SqFt/Story: 165720
Ave. Perimeter: 1750
Has Elevators:

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 165720
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: C Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 37.85

(10) Heating system: Package Heating & Cooling Cost/SqFt: 3.30 100%
Adjusted Square Foot Cost for Upper Floors = 41.15

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 28 Height per Story Multiplier: 1.160
Ave. Floor Area: 165,720 Perimeter: 1750 Perim. Multiplier: 0.792
Refined Square Foot Cost for Upper Floors: 37.81

County Multiplier: 1.58, Final Square Foot Cost for Upper Floors = 59.732

Total Floor Area: 165,720 Base Cost New of Upper Floors = 9,898,856

165,720 Sq.Ft. of Sprinklers @ 1.60, County Mult.:1.58 Cost New = 418,940

Reproduction/Replacement Cost = 10,317,797
Eff.Age:3 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 94 /100/100/100/94.0
Total Depreciated Cost = 9,698,729

Unit in Place Items	Rate	Quantity	Cnty	Arch	%Good	Depr.Cost
LOADING WELL	10.50	3850	1.58	1.00	94	60,039
ADL	6200.00	3	1.58	1.00	94	27,625

<<<<< Calculations too long. See Valuation printout for complete pricing. >>>>>

(1) Excavation/Site Prep:

(2) Foundation: Footings

X Poured Conc	Brick/Stone	Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

Many Above Ave.	Average Typical	Few None

Total Fixtures	Urinals
3-Piece Baths	Wash Bowls
2-Piece Baths	Water Heaters
Shower Stalls	Wash Fountains
Toilets	Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

Gas Oil	Coal Stoker	Hand Fired Boiler

(11) Electric and Lighting:

Outlets:	Fixtures:
Few	Few
Average	Average
Many	Many
Unfinished	Unfinished
Typical	Typical
Flex Conduit	Incandescent
Rigid Conduit	Fluorescent
Armored Cable	Mercury
Non-Metalic	Sodium Vapor
Bus Duct	Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

(40) Exterior Wall:

Thickness	Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: BLDG 1 SEC 2
Calculator Occupancy: Shed, Equipment, 4 Wall

Class: S
Floor Area: 29,488
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 28
Bsmnt Wall Hght

Depr. Table : 2%
Effective Age : 3
Physical %Good: 94
Func. %Good : 100
Economic %Good: 100

2014 Year Built
Remodeled

Overall Bldg
Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: +0 $/SqFt:0.00
Heat#1: Space Heaters, Gas with Fan 28%
Heat#2: No Heating or Cooling 72%
Ave. SqFt/Story: 29488
Ave. Perimeter: 687
Has Elevators:

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 29488
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: S Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 16.00

(10) Heating system: Space Heaters, Gas with Fan Cost/SqFt: 0.00 28%
(10) Heating system: No Heating or Cooling Cost/SqFt: -1.60 72%
Combined Heating System adjustment: -1.15 100%
Adjusted Square Foot Cost for Upper Floors = 14.85

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 28 Height per Story Multiplier: 1.190
Ave. Floor Area: 29,488 Perimeter: 687 Perim. Multiplier: 0.839
Refined Square Foot Cost for Upper Floors: 14.82

County Multiplier: 1.51, Final Square Foot Cost for Upper Floors = 22.385

Total Floor Area: 29,488 Base Cost New of Upper Floors = 660,084

29,488 Sq.Ft. of Sprinklers @ 2.28, County Mult.:1.51 Cost New = 101,521

Reproduction/Replacement Cost = 761,605
Eff.Age:3 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 94 /100/100/100/94.0
Total Depreciated Cost = 715,909

ECF (ECF DIS Discount) 0.820 => TCV of Bldg: 2 = 587,045
Replacement Cost/Floor Area= 25.83 Est. TCV/Floor Area= 19.91

(1) Excavation/Site Prep:

(2) Foundation: Footings

X Poured Conc	Brick/Stone	Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

Many	Average	Few
Above Ave.	Typical	None

Total Fixtures	Urinals
3-Piece Baths	Wash Bowls
2-Piece Baths	Water Heaters
Shower Stalls	Wash Fountains
Toilets	Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

Gas	Coal	Hand Fired
Oil	Stoker	Boiler

(11) Electric and Lighting:

Outlets:	Fixtures:
Few	Few
Average	Average
Many	Many
Unfinished	Unfinished
Typical	Typical
Flex Conduit	Incandescent
Rigid Conduit	Fluorescent
Armored Cable	Mercury
Non-Metalic	Sodium Vapor
Bus Duct	Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

(40) Exterior Wall:

Thickness	Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: BLDG 2 SEC 1
Calculator Occupancy: Shed, Lumber Yard, Vertical

Class: D
Floor Area: 37,950
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 24
Bsmnt Wall Hght

Depr. Table : 2%
Effective Age : 3
Physical %Good: 94
Func. %Good : 100
Economic %Good: 100

2014 Year Built
Remodeled

24 Overall Bldg Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: %+0 $/SqFt:0.00
Heat#1: No Heating or Cooling 100
Heat#2: No Heating or Cooling 0%
Ave. SqFt/Story: 37950
Ave. Perimeter: 890
Has Elevators:

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 37950
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: D Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 16.40

(10) Heating system: No Heating or Cooling Cost/SqFt: 0.00 100%
Adjusted Square Foot Cost for Upper Floors = 16.40

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 24 Height per Story Multiplier: 1.270
Ave. Floor Area: 37,950 Perimeter: 890 Perim. Multiplier: 0.839
Refined Square Foot Cost for Upper Floors: 17.47

County Multiplier: 1.56, Final Square Foot Cost for Upper Floors = 27.261

Total Floor Area: 37,950 Base Cost New of Upper Floors = 1,034,537

37,950 Sq.Ft. of Sprinklers @ 2.15, County Mult.:1.56 Cost New = 127,284

Reproduction/Replacement Cost = 1,161,821
Eff.Age:3 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 94 /100/100/100/94.0
Total Depreciated Cost = 1,092,112

ECF (ECF DIS Discount) 0.820 => TCV of Bldg: 3 = 895,532
Replacement Cost/Floor Area= 30.61 Est. TCV/Floor Area= 23.60

(1) Excavation/Site Prep:

(2) Foundation: Footings

X	Poured Conc		Brick/Stone		Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

	Many Above Ave.		Average Typical		Few None

	Total Fixtures		Urinals
	3-Piece Baths		Wash Bowls
	2-Piece Baths		Water Heaters
	Shower Stalls		Wash Fountains
	Toilets		Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

	Gas Oil		Coal Stoker		Hand Fired Boiler

(11) Electric and Lighting:

Outlets:		Fixtures:
Few		Few
Average		Average
Many		Many
Unfinished		Unfinished
Typical		Typical
Flex Conduit		Incandescent
Rigid Conduit		Fluorescent
Armored Cable		Mercury
Non-Metalic		Sodium Vapor
Bus Duct		Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

(40) Exterior Wall:

	Thickness		Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

Parcel Number: 96-22-07-200-009 Jurisdiction: City of Wixom County: OAKLAND Printed on 03/17/2017

Grantor	Grantee	Sale Price	Sale Date	Inst. Type	Terms of Sale	Liber & Page	Verified By	Prcnt. Trans.
FORD MOTOR CO	MENARD INCORPORATED	6,417,600	10/11/2013	D	1-ValidSale	46444:445	SelectSource	100.0

Property Address
10400 ASSEMBLY PARK DR

Class: 201 Bus Imp Zoning: B-1
School: 270 Walled Lk Cnsldtd Sch
P.R.E. 0%
ITOnly: POST
2016 Est TCV 11,670,098 TCV/TFA: 50.05

Building Permit(s)	Date	Number	Status
NewBuilding	05/12/2014	9614B-0011-A	Closed

Owner's Name/Address
MENARD INC
5101 MENARD DR
EAU CLAIRE WI 54703

X Improved Vacant

Public Improvements
- Dirt Road
- Gravel Road
- X Paved Road
- Storm Sewer
- X Sidewalk
- X Water
- X Sewer
- X Electric
- X Gas
- X Curb
- Street Lights
- Standard Utilities
- Underground Utils.

Topography of Site
- X Level
- Rolling
- Low
- High
- Landscaped
- Swamp
- Wooded
- Pond
- Waterfront
- Ravine
- Wetland
- Flood Plain

Land Value Estimates for Land Table COM.Land Table COM COM"L LAND

Description	Frontage	Depth	* Factors * Front	Depth	Rate	%Adj.	Reason	Value
sq ft land C 1.94			1335550 SqFt		1.94000	100		2,590,966
			30.66 Total Acres				Total Est. Land Value =	2,590,966

Land Improvement Cost Estimates

Description	Rate	CountyMult.	Size	%Good	Cash Value
Commercial/Industrial Local Cost Land Improvements					
Description	Rate	CountyMult.	Size	%Good	%Arch.Mult	Cash Value
PA1-AsphaltPaving	1.34	1.00	268715.0	75	100	270,059
PC1-ConcretePaving	2.53	1.00	14520.0	75	100	27,552
Total Estimated Land Improvements True Cash Value =						297,610

Tax Description
T1N, R8E, SEC 7 PART OF NE 1/4 BEG AT PT DIST S 86-53-16 W 60 FT & S 02-58-27 E 1417.40 FT FROM NE SEC COR, TH S 02-58-27 E 1217.58 FT, TH S 87-20-41 W 1100.02 FT, TH N 02-58-27 W 1211.46 FT, TH N 87-01-33 E 1100 FT TO BEG 30.67 A 10-23-12 FR 006

Comments/Influences
09/24/15 - MEAS/APP MENARD'S AND 2ND BLDG - LUMBERYARD OUTBLDG. TOOK PICS CLOSE BP #21
05/07/15 - ROADWORK - ROADS BLOCKED. CONST EQPT MEAS/APP 2ND PASS #21
11/26/14 WALLS ALMOST UP, CALL 40% COMP, MEASD FROM PRINTS, CP. #21
10-6-14 Class Change, ECF Nbhd Change #28
9/11/14 3 WALLS UP, REV FINAL PASS. #21
7/15/14 SITE WORK JUST BEGUN, CK 2ND PASS. #21
12/17/12 ALL BLDGS DEMO'D ON THIS PARCEL. #75

Who	When	What
021	09/21/2004	BuildingPe
921	05/07/2015	BuildingPe
921	11/26/2014	BuildingPe

Year	Land Value	Building Value	Assessed Value	Board of Review	Tribunal/ Other	Taxable Value
2016	1,295,480	4,539,570	5,835,050			5,246,520C
2015	1,295,430	1,172,750	2,468,230			1,923,640C
2014	732,960	0	732,960			732,960S
2013	732,960	0	732,960			732,960S

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*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: Building 1, Section 1
Calculator Occupancy: Store, Warehouse Discount

Class: C
Floor Area: 165,720
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 28
Bsmnt Wall Hght

Depr. Table : 2%
Effective Age : 2
Physical %Good: 96
Func. %Good : 100
Economic %Good: 100

2014 Year Built Remodeled

28 Overall Bldg Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: %+0 $/SqFt:0.00
Heat#1: Package Heating & Cooling 100
Heat#2: Package Heating & Cooling 0%
Ave. SqFt/Story: 165720
Ave. Perimeter: 1750
Has Elevators: X

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 165720
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: C Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 37.85

(10) Heating system: Package Heating & Cooling Cost/SqFt: 3.30 100%
Adjusted Square Foot Cost for Upper Floors = 41.15

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 28 Height per Story Multiplier: 1.160
Ave. Floor Area: 165,720 Perimeter: 1750 Perim. Multiplier: 0.792
Refined Square Foot Cost for Upper Floors: 37.81

County Multiplier: 1.54, Final Square Foot Cost for Upper Floors = 58.220

Total Floor Area: 165,720 Base Cost New of Upper Floors = 9,648,252

165,720 Sq.Ft. of Sprinklers @ 1.60, County Mult.:1.54 Cost New = 408,334

Reproduction/Replacement Cost = 10,056,586
Eff.Age:2 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 96 /100/100/100/96.0
Total Depreciated Cost = 9,654,323

Unit in Place Items	Rate	Quantity	Cnty	Arch	%Good	Depr.Cost
LOADING WELL	10.50	3850	1.54	1.00	96	59,764
ADL	6200.00	3	1.54	1.00	96	27,498

<<<<< Calculations too long. See Valuation printout for complete pricing. >>>>>

(1) Excavation/Site Prep:

(2) Foundation: Footings

X	Poured Conc		Brick/Stone		Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

	Many Above Ave.		Average Typical		Few None

	Total Fixtures		Urinals
	3-Piece Baths		Wash Bowls
	2-Piece Baths		Water Heaters
	Shower Stalls		Wash Fountains
	Toilets		Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

	Gas Oil		Coal Stoker		Hand Fired Boiler

(11) Electric and Lighting:

Outlets:		Fixtures:
Few		Few
Average		Average
Many		Many
Unfinished		Unfinished
Typical		Typical
Flex Conduit		Incandescent
Rigid Conduit		Fluorescent
Armored Cable		Mercury
Non-Metalic		Sodium Vapor
Bus Duct		Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

(40) Exterior Wall:

	Thickness		Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: BLDG 1 SEC 2
Calculator Occupancy: Shed, Equipment, 4 Wall

Class: S
Floor Area: 29,488
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 28
Bsmnt Wall Hght

Depr. Table : 2%
Effective Age : 2
Physical %Good: 96
Func. %Good : 100
Economic %Good: 100

2014 Year Built
Remodeled

Overall Bldg
Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: %+0 $/SqFt:0.00
Heat#1: Space Heaters, Gas with Fan 28%
Heat#2: No Heating or Cooling 72%
Ave. SqFt/Story: 29488
Ave. Perimeter: 687
Has Elevators:

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 29488
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: S Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 16.00

(10) Heating system: Space Heaters, Gas with Fan Cost/SqFt: 0.00 28%
(10) Heating system: No Heating or Cooling Cost/SqFt: -1.60 72%
Combined Heating System adjustment: -1.15 100%
Adjusted Square Foot Cost for Upper Floors = 14.85

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 28 Height per Story Multiplier: 1.190
Ave. Floor Area: 29,488 Perimeter: 687 Perim. Multiplier: 0.839
Refined Square Foot Cost for Upper Floors: 14.82

County Multiplier: 1.50, Final Square Foot Cost for Upper Floors = 22.237

Total Floor Area: 29,488 Base Cost New of Upper Floors = 655,712

29,488 Sq.Ft. of Sprinklers @ 2.28, County Mult.:1.50 Cost New = 100,849

Reproduction/Replacement Cost = 756,561
Eff.Age:2 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 96 /100/100/100/96.0
Total Depreciated Cost = 726,299

ECF (ECF DIS Discount) 0.760 => TCV of Bldg: 2 = 551,987
Replacement Cost/Floor Area= 25.66 Est. TCV/Floor Area= 18.72

(1) Excavation/Site Prep:

(2) Foundation: Footings

X	Poured Conc		Brick/Stone		Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

	Many Above Ave.		Average Typical		Few None

	Total Fixtures		Urinals
	3-Piece Baths		Wash Bowls
	2-Piece Baths		Water Heaters
	Shower Stalls		Wash Fountains
	Toilets		Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

	Gas Oil		Coal Stoker		Hand Fired Boiler

(11) Electric and Lighting:

	Outlets:		Fixtures:
	Few		Few
	Average		Average
	Many		Many
	Unfinished		Unfinished
	Typical		Typical
	Flex Conduit		Incandescent
	Rigid Conduit		Fluorescent
	Armored Cable		Mercury
	Non-Metalic		Sodium Vapor
	Bus Duct		Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

(40) Exterior Wall:

	Thickness		Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

Desc. of Bldg/Section: BLDG 2 SEC 1
Calculator Occupancy: Shed, Lumber Yard, Vertical

Class: D
Floor Area: 37,950
Gross Bldg Area: 233,158
Stories Above Grd: 1
Average Sty Hght : 24
Bsmnt Wall Hght

Depr. Table : 2%
Effective Age : 2
Physical %Good: 96
Func. %Good : 100
Economic %Good: 100

2014 Year Built
Remodeled

24 Overall Bldg
Height

Comments:

Construction Cost

High	Above Ave.	Ave.	X	Low

** ** Calculator Cost Data ** **
Quality: Average Adj: %+0 $/SqFt:0.00
Heat#1: No Heating or Cooling 100
Heat#2: No Heating or Cooling 0%
Ave. SqFt/Story: 37950
Ave. Perimeter: 890
Has Elevators:

*** Basement Info ***
Area:
Perimeter:
Type:
Heat: Hot Water, Radiant Floor

* Mezzanine Info *
Area #1:
Type #1:
Area #2:
Type #2:

* Sprinkler Info *
Area: 37950
Type: Average

<<<<< Calculator Cost Computations >>>>>
Class: D Quality: Average Percent Adj: +0

Base Rate for Upper Floors = 16.40

(10) Heating system: No Heating or Cooling Cost/SqFt: 0.00 100%
Adjusted Square Foot Cost for Upper Floors = 16.40

1 Stories Number of Stories Multiplier: 1.000
Average Height per Story: 24 Height per Story Multiplier: 1.270
Ave. Floor Area: 37,950 Perimeter: 890 Perim. Multiplier: 0.839
Refined Square Foot Cost for Upper Floors: 17.47

County Multiplier: 1.52, Final Square Foot Cost for Upper Floors = 26.562

Total Floor Area: 37,950 Base Cost New of Upper Floors = 1,008,010

37,950 Sq.Ft. of Sprinklers @ 2.15, County Mult.:1.52 Cost New = 124,021

Reproduction/Replacement Cost = 1,132,031
Eff.Age:2 Phy.%Good/Abnr.Phy./Func./Econ./Overall %Good: 96 /100/100/100/96.0
Total Depreciated Cost = 1,086,750

ECF (ECF DIS Discount) 0.760 => TCV of Bldg: 3 = 825,930
Replacement Cost/Floor Area= 29.83 Est. TCV/Floor Area= 21.76

(1) Excavation/Site Prep:

(2) Foundation: Footings

X Poured Conc	Brick/Stone	Block

(3) Frame:

(4) Floor Structure:

(5) Floor Cover:

(6) Ceiling:

(7) Interior:

(8) Plumbing:

Many Above Ave.	Average Typical	Few None

Total Fixtures	Urinals
3-Piece Baths	Wash Bowls
2-Piece Baths	Water Heaters
Shower Stalls	Wash Fountains
Toilets	Water Softeners

(9) Sprinklers:

(10) Heating and Cooling:

Gas Oil	Coal Stoker	Hand Fired Boiler

(11) Electric and Lighting:

Outlets:	Fixtures:
Few	Few
Average	Average
Many	Many
Unfinished	Unfinished
Typical	Typical
Flex Conduit	Incandescent
Rigid Conduit	Fluorescent
Armored Cable	Mercury
Non-Metalic	Sodium Vapor
Bus Duct	Transformer

(13) Roof Structure: Slope=0

(14) Roof Cover:

(39) Miscellaneous:

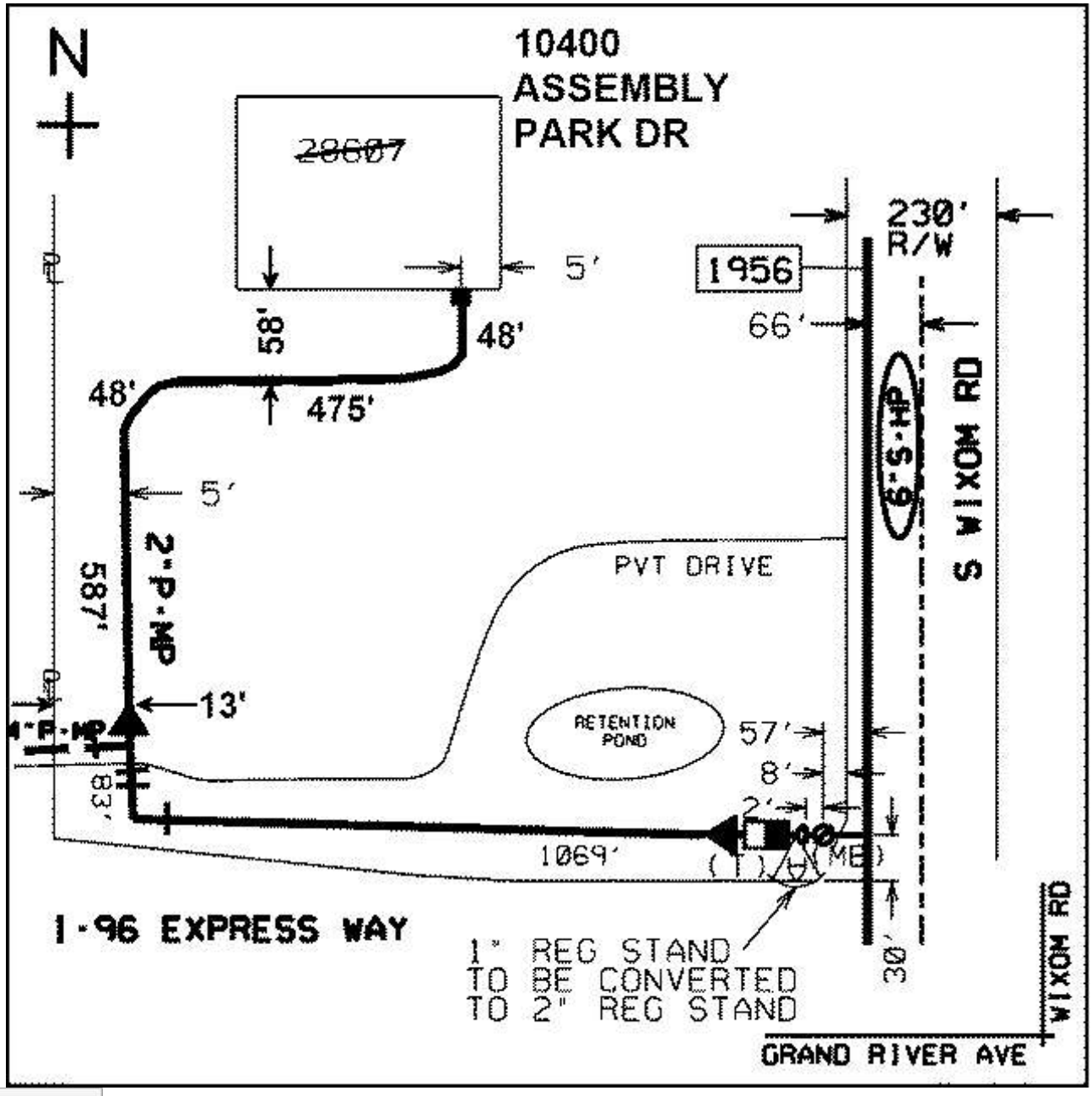
(40) Exterior Wall:

Thickness	Bsmnt Insul.

*** Information herein deemed reliable but not guaranteed***

NATURAL GAS CONNECTION RECORDS

Address: **10400 ASSEMBLY PARK DR, WIXOM**
Gas Service Extension:**2" P** , Inserted: **N** , Year Installed: **2014**



Previous

Notice: **This information is for design purposes only and is not reliable for construction. All locations are approximate, facilities may have been added and/or altered after any revision or as-printed date, and service lines may not be shown. Field staking is available at no charge by calling MISS DIG (800-482-7171) three working days in advance of the digging, and the precise location and depth of all underground facilities must be identified in accordance with the MISS DIG Act, PA 174 of 2013 as amended, and any other applicable law or ordinance. Use of these maps does not relieve the user of any legal duty to comply with all applicable laws or ordinances. Consumers**

DETAILS

ELEVATIONAL DETAILS ARE NOT TO BE SHOWN IN THIS SPACE. THEY WILL BE SHOWN ON THE MAP, NEAR THE AREA BEING DETAILED

DETAIL "A"

ISSUED BY Gas Information Management ON 03-12-15. FACILITIES MAY HAVE BEEN ADDED AFTER MAP PRINTED DATE THEREFORE, CONSUMERS ENERGY SHALL BE CONSULTED BEFORE ANY ACTION IS TAKEN ON THE BASIS OF THIS MAP. THIS MAP TO BE DESTROYED WHEN NO LONGER NEEDED.

CONSUMERS ENERGY UNDERGROUND PLANT

ALL LOCATIONS ARE APPROXIMATE. SERVICES ARE NOT SHOWN. LOCATIONS WILL BE VERIFIED BY STAKING UPON REQUEST.

72 HOURS (3 WORKING DAYS)
BEFORE YOU DIG CALL MISS DIG
800-482-7171
(TOLL FREE)

FOR QUESTIONS CONCERNING THIS MAP PLEASE CALL 1-877-240-9602

01-58-07-1

01-58-07-3

01-58-08-3

01-58-18-1

ALL MEASUREMENTS ARE TAKEN FROM ACTUAL PROPERTY LINES UNLESS OTHERWISE NOTED. CENTER LINE MEASUREMENTS ARE TAKEN FROM CENTER LINE OF EXISTING ROADWAY, UNLESS OTHERWISE NOTED, AND MAY NOT BE CENTER LINE OF R.O.W.

Caution: Some locations are approximated for exact location of Gas Transmission Facilities (CPTD, MGS, T&S, CMS, MCV, NOMLCO & Jackson Pipelines & foreign gas mains (PLPL), contact Gas Control in Jackson.

6	5	4	3	2	1	
7	2	9	10	1	12	
18	17	16	15	14	13	
19	20	21	22	23	24	
30	3	28	27	4	25	
31	32	33	34	35	36	

Consumers Energy

Gas Information Management

GAS DISTRIBUTION MAP

QUARTER SECTION MAP
TOWN • RANGE • SECTION • 1/4
01-58-07-4

TOWNSHIP: NOVI
COUNTY: OAKLAND
HEADQUARTERS: WAYNE

SCALE: Varies
EXCEPT FOR DETAILS

REQUEST DATE: 03-12-15
REQUESTED BY: GML

This map has been plotted and approved by the GIM Conversion Team: by

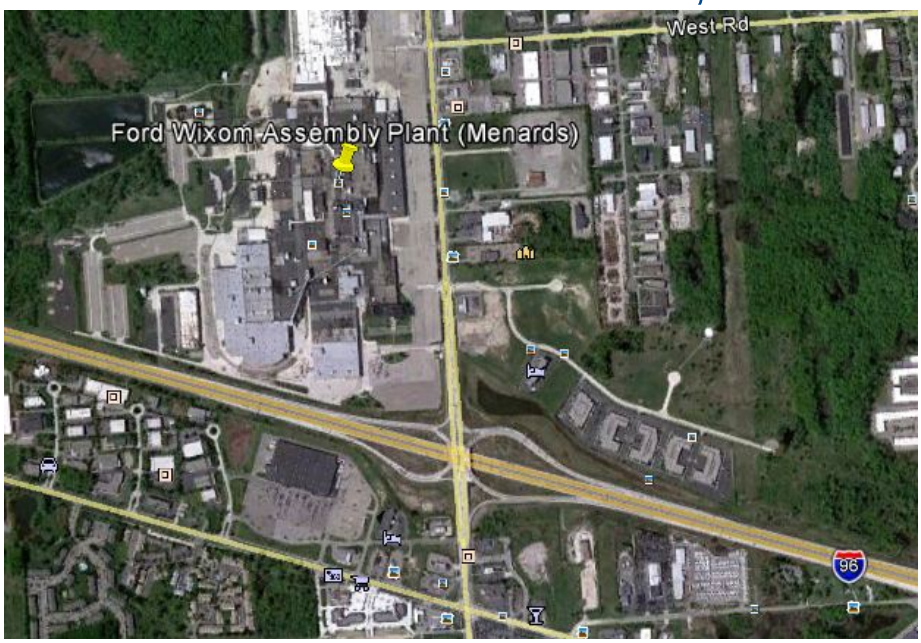
Appendix C

PM ENVIRONMENTAL Environmental & Engineering Services

PREVIOUS SITE INVESTIGATION

Geotechnical Investigation Report

New Menard Home Improvement and Building Materials Supply Store
NW Intersection of Wixom Road and I-96
Wixom, Michigan



November 1, 2012

Prepared for:

Menard, Inc.
5101 Menard Drive
Eau Claire, Wisconsin 54703

GEOTECHNICAL INVESTIGATION REPORT

NEW MENARD HOME IMPROVEMENT AND BUILDING MATERIALS SUPPLY STORE
NW INTERSECTION OF WIXOM ROAD AND I-96
WIXOM, MICHIGAN

NOVEMBER 1, 2012

PREPARED BY: _____

TEJ H. RAVAL
ENGINEER II

STATE OF MICHIGAN
JEFFREY
LYNN
SNYDER
ENGINEER
No.
6201059180
LICENSED PROFESSIONAL ENGINEER

REVIEWED BY: _____

JEFFREY L. SNYDER, PE
GEOTECHNICAL ENGINEER

The Mannik & Smith Group, Inc.

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle ▪ Maumee, Ohio 43537 ▪ Tel 419 891-2222 ▪ Fax 419 891-1595
www.manniksmithgroup.com

November 1, 2012

Mike Simonds
Real Estate Representative
Menard, Inc. – Properties Division
5101 Menard Drive
Eau Claire, WI 54703

VIA EMAIL: msimonds@menard-inc.com

RE: Geotechnical Investigation Report
New Menard Home Improvement and Building Materials Supply Store
Report No: M2350002

Dear Mr. Simonds:

The Mannik and Smith Group, Inc. have finalized our geotechnical investigation for the new Menard Home Improvement and Building Materials Supply Store in Wixom, Michigan. This geotechnical report presents our findings from our observations and analyses, and our recommendations for subgrade preparation and earthwork, slab on grade, foundation design and an initial pavement design.

We trust that this report addresses your project needs. We appreciate the opportunity to work with you on this very important project and look forward to providing additional services in the future. Please contact us if you have any questions or if we can be of further assistance.

Sincerely,
The Mannik and Smith Group, Inc.

Jeffrey L. Snyder, PE
Geotechnical Engineer

Enclosures

Submitted: (1) Electronic Copy via email
File

EXECUTIVE SUMMARY

The Mannik & Smith Group, Inc. (MSG) was retained Menard Inc. (Menard) to perform a geotechnical investigation for a new commercial home improvement and building materials supply store in the City of Wixom, Oakland County, Michigan (Subject Property). The Subject Property is located at the northwest corner of Wixom Road and I-96 at the site of the inactive Ford Wixom Assembly Plant. The Subject Property as referenced to nearby roads and major topographical features is presented as *Figure 1: Site Location Map*.

Based on the information obtained from our geotechnical subsurface investigation, the site can be developed for the proposed project and the following considerations were identified:

- The existing soils conditions at the site were variable across the site but generally consisted of silty sand (SM or SP) and silty clay (CL). The silty sand was typically loose to medium dense. The silty clay was typically medium stiff to very stiff. Problematic soils such as very soft silty clay, very loose to loose silty sand or moderately organic soils were encountered at seven (7) boring locations with the depths and locations discussed in detail in Section 3.2.

- Groundwater was encountered at SB-04, SB-06, SB-10, SB-24, SB-27 through SB-29, SB-31, SB-32, and SB-34 at depths ranging from 6 feet bgs to 17 feet bgs. Moreover, heaving sands were encountered at a depth of about 10 feet bgs at SB-31 and SB-34. The contractor should be equipped to utilize sump pit and pumping methods to dewater excavations, and should be prepared to stabilize subgrades, where necessary.

- Shallow isolated footings and/or continuous footings should bear on natural onsite soils including stiff to very stiff silty clay and/or medium dense silty sand or well compacted engineered fill. A maximum allowable <u>bearing pressure of 2,000 psf is recommended</u>. MSG recommends that <u>perimeter</u> and <u>interior</u> footings should be <u>stiffened with a top and bottom layer of reinforcing steel</u> so as to resist possible differential movements caused by volume changes in clay. Foundation subgrades should be evaluated by a geotechnical engineer to verify that all debris, mud, and loose, frozen or soft soils, or other unsuitable materials are removed. Localized undercuts of up to 10 feet bgs may be required in a few isolated areas due to the presence of problematic soils beneath the planned bearing depths. We strongly recommend MSG be retained to observe and test the foundation subgrades, evaluate the suitability of subgrades for foundation support and provide assistance during construction. <u>Column footings should be at least 16 square feet (4 feet by 4 feet) and wall footings should at least be a minimum of 2 feet wide regardless of the resulting contact pressure.</u>

- As indicated previously, the subgrade soils anticipated under the proposed structure will consist of natural low plasticity silty clay, silty sand or engineered fill. Based on the existing materials and a subgrade prepared as outlined above, for slab-on-grade design, an <u>estimated modulus for subgrade reaction on top of the existing subgrade of 125 pounds per cubic inch (pci)</u> may be used. It is recognized that the use of stabilized base increases the modulus of subgrade reaction appreciably. The final construction of floor slabs-on-grade should include at least 6 inches of stabilized aggregate base/subbase, compacted to 95% of the modified Proctor maximum dry density.

- The recommended <u>California Bearing Ratio (CBR) value of 7</u> is based on the limited laboratory testing and the silty clay and silty sand soils encountered on the site. Preliminary Design Recommendations (Section 4.9) provides specific recommendations for the pavement.

This Executive Summary articulates selective findings and recommendations and is provided solely for the purposes of overview and should not be counted upon to provide details in its entirety for the design and construction of the proposed structure, but rather than a reference for recommendations and other design considerations

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FIGURES

Figure 1 Site Location Map
Figure 2 Soil Boring Location Map

APPENDICES

Appendix A Soil Boring Logs
Appendix B Geotechnical Laboratory Test Results
Appendix C International Building Code Site Seismic Classifications

1.0 INTRODUCTION AND PROJECT DESCRIPTION

The Mannik & Smith Group, Inc. (MSG) was retained Menard Inc. (Menard) to perform a geotechnical investigation for a new commercial home improvement and building materials supply store in the City of Wixom, Oakland County, Michigan (Subject Property). The Subject Property is located at the northwest corner of Wixom Road and I-96 in Wixom, Michigan. The Subject Property as referenced to nearby roads and major topographical features is presented as *Figure 1: Site Location Map*.

The existing site is occupied by the inactive Ford Wixom Assembly Plant. We understand Menard is in the process of purchasing the southeastern portion (approximately 40 acres) of the Ford property for the planned Menard development. The development plan involves demolition of the Ford facility within the portion being acquired by Menard and relocation of some utilities and corresponding easements.

Structural loading conditions (wall loads, column loads, traffic loads etc.) were not provided at the time of preparation of this report, thus we have assumed the column and wall foundations will be subject to maximum loads of 60 kips and 3 kips per foot, respectively.

The purpose of this geotechnical investigation is to evaluate subsurface conditions for the construction of the new structures. This investigation involved the completion of thirty four (34) soil borings, designated as SB-01 through SB-34, drilled to a maximum depth of 20 feet below ground surface (bgs). This report describes the geotechnical investigative and testing procedures, presents the subsurface conditions encountered, and provides evaluations and recommendations relative to construction considerations.

This work was completed in accordance with the request for proposal (RFP) dated September 10, 2012.

2.0 INVESTIGATION PROCEDURES

Our investigation consisted of a field investigation and laboratory testing programs. Details of these programs are presented below.

2.1 Field Exploration

Our field investigation consisted of drilling 34 borings, as requested by Menard's RFP. The boring locations were selected by Menard as shown on Exhibit A of the RFP and were laid out in an approximate grid pattern to provide proper coverage of the proposed structures and pavements. A total of twelve borings were located within the existing Ford plant structures including soil borings SB-06, SB-07, SB-13, SB-14, SB-18, SB-23, SB-25, SB-26, SB-29, SB-30, SB-32, and SB-33. At the time of the MSG investigation in October 2012, demolition work of a portion of the existing structures was being performed by others. The locations of the borings are shown on *Figure 2: Soil Boring Location Map.*

Between October 9 and 17, 2012, a track-mounted drill rig was used to perform the borings by direct push of a 3.25-inch steel casing into the soil. All borings were backfilled with auger cuttings and granular bentonite pellets to the ground surface.

Standard penetration testing (SPT) was conducted in accordance with ASTM D1586 and was completed at 2.5 feet intervals to refusal or a depth of 20 feet bgs (terminus). Soil borings SB-13, SB-18 and SB-26 inside the existing structure encountered refusal between about 4 and 7 feet bgs, possibly on unmarked utility ducts. Offset boreholes at each of these locations also encountered refusal at the same depths. Soil borings SB-17, SB-24 and SB-25 encountered refusal between about 11 and 16 feet bgs, possibly on cobbles or boulders. Soil boring SB-34 was terminated at 15 feet bgs due to heaving sands preventing further advancement of the borehole. During the SPT testing, soil samples were obtained with a 2-inch outer diameter split spoon sampler driven 18 inches into the soil with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and

designated the "standard penetration resistance" or blow count. The standard penetration resistance, "N" value, when properly evaluated, is an index of the soil's strength, density and ability to support foundations.

The disturbed samples recovered by the split spoon samplers were visually classified in the field, logged, sealed in sample jars and returned to the MSG's office for examination by a geotechnical engineer. Geotechnical samples are typically stored in the MSG lab for a period of 60 days and can be kept for longer periods upon written notice from the client.

Soil boring logs, indicating soil descriptions, standard penetration resistance, and ground water observations are included within *Appendix A: Soil Boring Logs*. The type of sampler utilized to collect each soil sample is identified on the boring logs. Split spoon samples are designated as SS.

2.2 Laboratory Testing

Each of the split spoon samples recovered from the borings was examined and visually classified by a geotechnical professional. This examination was performed to verify conditions identified within the field boring logs, perform visual-manual classification of samples not subjected to further laboratory testing and select samples for laboratory testing. Based on the review of the test boring logs and visual examination of the collected samples, we completed a laboratory testing program on selected samples. Our laboratory testing program consisted of the following:

- Thirty three moisture content tests performed in accordance with ASTM D2216;
- Five sieve analyses performed in accordance with ASTM D422;
- Three hydrometer tests performed in accordance with ASTM D422;
- Three Atterberg limit tests performed in accordance with ASTM D4318; and,
- Three unconfined compression tests performed in accordance with ASTM D2166.

The geotechnical laboratory test data are contained within *Appendix B: Geotechnical Laboratory Test Data*.

3.0 SUBSURFACE CONDITIONS

3.1 Regional Geology

The Subject Property lies within an area generally consisting of loamy glacial till which are poorly drained to moderately well drained. In general Wixom consists of undulating to very hilly end moraine bands separated by three major outwash plains. The till units often weather into silt and clay loams.

3.2 Subsurface Soil Conditions

The subsurface soil conditions encountered in the bore holes drilled at the site are shown in detail on the soil boring logs contained in *Appendix A: Soil Boring Logs*. The following sections have been simplified in terms of major soil strata for the purposes of geotechnical design. The subsurface conditions discussed in the following paragraphs and those shown on the boring logs represent an estimate of the subsurface conditions based on interpretation of the field and laboratory data using normally accepted geotechnical engineering judgments. The subsurface conditions described herein may vary between and beyond the borings.

The surficial materials at the boring locations generally consisted of topsoil, concrete floor slabs or pavement consisting of asphalt or concrete underlain by granular base. The topsoil was generally 6 inches thick in grassy areas. The floor slab inside the existing structure consisted of 6 to 8 inches of concrete. Exterior concrete pavements were 6 to 8 inches thick. The asphalt encountered in the parking lots and drives was 6 to 12 inches thick.

Subsurface conditions at the site were variable from boring to boring across the site. Generally, the soils encountered consist of two predominant material types, silty sand (SM or SP) and silty clay (CL) with no discernible pattern across the site. The silty sand was typically loose to medium dense. The silty clay was typically medium stiff to very stiff. As discussed previously, refusal was encountered at soil borings SB-13, SB-18 and SB-26 inside the existing structure between about 4 and 7 feet bgs, possibly on unmarked utility ducts as indicated by the probable fill material encountered above refusal depth. Soil borings SB-17, SB-24 and SB-25 encountered refusal between about 11 and 16 feet bgs, possibly on cobbles or boulders as it is not believed that bedrock was encountered at these depths. Soil borings SB-31 and SB-34 encountered heaving sands during drilling. SB-34 was terminated at 15 feet bgs due to those heaving sands. Heaving during drilling can be caused by stress relief from soil during excavation or upward seepage of water.

Problematic Soil Conditions

- At SB-02, a 3.5-foot thick layer of very soft silty clay was encountered at a depth of 7.5 feet bgs.
- At SB-03, two layers of very soft silty clay were encountered between 11 and 17.5 feet bgs.
- At SB-08, a 6-foot layer of very loose to loose silty sand was encountered at a depth of 9 feet bgs.
- At SB-24, a 2-foot layer of very loose silty sand was encountered at a depth of 14 feet bgs.
- At SB-30, a 1.5-foot thick layer of moderately organic stiff dark brown silty clay (probable fill) was encountered at a depth of one (1) foot bgs that is probable fill.
- At SB-27 and SB-31, very loose to loose silty sand was encountered at about 10 to 11.5 feet bgs and extended to the boring terminus (20 feet bgs) at both locations.

3.3 Groundwater

As the borings were advanced, the drill crew checked the drilling rods and sampling equipment for indications of groundwater or seepage. Each borehole was checked again for groundwater immediately after completion of drilling. Groundwater was encountered at SB-04, SB-06, SB-10, SB-24, SB-27 through SB-29, SB-31, SB-32, and SB-34 at depths ranging from 6 to 17 feet bgs. Note, sands can be highly permeable and may require and methods of controlling water during construction for excavations that extend below the water table. As discussed previously, heaving sands were encountered at about 10 feet bgs in soil borings SB-31 and SB-34 at the northeast portion of the site.

The groundwater conditions observed, or lack thereof, reflects the conditions at the time of our exploration. Fluctuations of the groundwater table should be expected to occur both seasonally and annually due to variations in rainfall, evaporation, transpiration, construction activities, and other site-specific locations.

4.0 EVALUATION

4.1 General

The following evaluations and conclusions are based on interpretations of field and laboratory data obtained during the geotechnical investigation and MSG's experience with similar soils and subsurface conditions. Where comments are made on construction or regarding the proposed development, they are provided in order to highlight aspects of construction that could potentially affect the design of the project. Contractors bidding on or undertaking the work should make their own interpretations of the factual results of the investigation as it affects their construction methods, equipment capabilities, costs, schedule, sequencing and similar issues.

This report and evaluation reflects only the geotechnical aspects of the subsurface conditions at the site. Review and evaluation of environmental aspects of subsurface conditions is beyond the scope of this report.

4.2 Site Preparation

The following are our preliminary recommendations for the site soil preparation, which may require confirmation of comparable conditions and additional borings. These recommendations should be incorporated into the project specifications.

Before proceeding with construction, topsoil, vegetation, root systems, existing fill, refuse, asphalt, concrete including existing footings, and other deleterious materials should be stripped from the proposed construction areas. We understand that Ford is responsible for clearing the proposed site of all vertical structures including all concrete slabs. It was brought to MSG's attention that there is a planned excavation to remove environmentally impacted soils in the vicinity of the existing Executive Garage, which falls within the Menards Parcel. MSG is under contract to provide compaction testing services for the backfill operations in this overexcavation area.

Generally, areas exposed by stripping operations on which subgrade preparations are to be performed should be compacted in place to 98% of standard Proctor or 95% of Modified Proctor. If there are areas where the building floor slab will be located partially on a fill area and partially on a cut area, it is recommended that the depth of subgrade compaction in the cut area be increased to 18 inches, to provide uniform support of the rigid slab.

It is also recommended that the prepared subgrade be proof-rolled to detect any unstable or soft areas. Proof-rolling should be accomplished by making a minimum of two complete passes with a fully-loaded tandem-axle dump truck, or other approved pneumatic-tired vehicle, with a minimum weight of 20 tons in each of two perpendicular directions. If proof-rolling reveals the presence of softened or poorly performing material within the subgrade, some remedial measures will be required to stabilize the subgrade soils. Depending on the severity of distress encountered during proof-rolling, undercutting of 18 to 48 inches below subgrade and backfilling with compacted lifts of drier materials as outlined herein should be performed. If this fails to stabilize the subgrade, use of granular backfill with geotextile stabilization may be required. The actual undercut depths and/or subgrade remediation measures required should be determined by the on-site geotechnical engineer or his/her designated representative.

Because the site contains the existing inactive Ford Assembly Plant, we anticipate the presence of existing abandoned utilities within the proposed development. It is unknown whether Ford is also responsible for removal of any abandoned utilities. Note abandoned utilities were not identified during the geotechnical investigation. If such abandoned utilities are present, they should be removed and relocated or abandoned in place. If abandoned in place, it is recommended that the utility pipe be filled with cement grout to avoid potential collapse in the future. Should the utility lines be removed from the site, the resultant trench excavations should be backfilled with well-compacted granular material, placed, and compacted in accordance with the recommendations of Section 4.3.

4.3 Fill Placement

All fill materials should be free of organics, debris, frozen soils or any other deleterious materials. Sand, gravel or low to medium plasticity clays may be used as fill and should be verified by an approved testing laboratory or by a geotechnical engineering firm.

All fine grained fill soils should be checked for plasticity index and liquid limit before placement. Cohesive fill materials should have a liquid limit less than 40 percent and plasticity index less than 20 percent (i.e. non-expansive), also known as low plasticity clays.

Coarse crushed granular material is recommended as fill for replacement of undercut areas. For undercut areas, the coarse crushed granular material may consist of natural aggregate materials or a geotechnical engineer approved equivalent. Typical lift thickness utilized for this material is 8 inches. As an alternative, in very soft subgrade areas, the use of a woven geotextile for stabilization in addition to the coarse crushed granular material should be considered. Use of geotextile, meeting the requirements of MDOT Section 910.0, physical requirements of geotextiles, Table 910-1, should enable undercutting, if necessary, to be reduced to a range of 8 to 12 inches instead of 12 to 24 inches in very soft subgrade areas. Replacement material must meet MDOT Section 301.02 granular material.

Fill should be compacted to 95% of Modified Proctor maximum dry density and should be compacted at ±2% of optimum moisture content. Fill materials should be placed in horizontal lifts and adequately keyed into stripped and scarified subgrade soils and adjacent fill. Proper drainage should be maintained during and after fill placement to prevent water from impacting compaction efforts or long-term fill integrity.

The actual thickness suitable for placement is dependent upon the soil type, compaction equipment, and the compaction specification. In general, engineered fill should be placed in 9-inch loose thickness lifts; assuming appropriately weighted and ballasted compaction equipment is utilized. Sand fills should be compacted using smooth vibratory rollers. Clay fills should be compacted using a sheep foot compactor. The geotechnical engineer, as part of the construction monitoring, should review the equipment utilized for compaction to confirm suitability relative to the specified loose lift thickness. If necessary, the geotechnical engineer will recommend a revised lift thickness suitable to the equipment performing compaction.

As a working platform for the new construction, and prior to footing excavation, it is recommended that at least 6 inches of granular base material meeting the gradation requirements of MDOT Item 301.02 stabilized crushed aggregate be placed and compacted to 95 percent of Modified Proctor maximum dry density.

Trench excavations associated with abandonment of existing utilities or installation of new utilities should be backfilled with well-compacted granular material meeting the gradation requirements of MDOT Table 902-3. The material should be uniformly compacted to 95 percent of Modified Proctor maximum dry density. Typical lift thickness utilized for this material is 8 inches. Granular materials should extend at least two pipe diameters above the pipe's crown. Clay (also on-site material) compacted to 95 percent of Modified Proctor can be used as a backfill for the balance of the trench excavation.

A qualified geotechnical consultant should be retained to monitor fill placement in order to assure compaction requirements are achieved. Soil density testing should be performed during fill placement activities to assure proper fill compaction. Areas that do not achieve compaction requirements after initial placement should be recompacted to meet project requirements.

As discussed previously, an overexcavation of the environmentally impacted soils in the area of the existing Executive Garage will be performed as part of the ongoing demolition activities for which MSG is under contract to perform compaction testing. We understand Menard requested Ford provide them with the backfill specifications. MSG has reviewed the backfill specifications and noted that the compaction

specification requires the backfill material to be compacted to 95% of the Standard proctor maximum dry density which does not meet the compaction recommendations in this section for engineered fill. We understand the proposed backfill material is MDOT 21AA. Additional compaction effort may be warranted in the area of this overexcavation within the bearing zone of any proposed structure foundations and pavements.

4.4 Excavation

Familiarity with applicable local state and federal safety regulations, including current OSHA excavation and trench safety is vital. Therefore it should be a requisite for both the owner and contractor with the contractor by and large being responsible for the safety of the site. Activities at the site, such as utilities or building demolition, may require excavations at significant depth below the ground surface. Slope height, slope inclination, and excavation depth (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety (OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926 Subpart P) regulations. Such regulations are strictly enforced and, if not followed, the owner, contractor, or earthwork or utility subcontractors could be liable for substantial penalties. Maximum allowable slopes for excavations less than 20 feet based on soil type and angle to horizontal are reflected in Table 4.4.1.

The overburden soils encountered during our investigation were generally composed of loose to medium dense silty sand or medium stiff to very stiff silty clay. Based upon the data obtained, we anticipate OSHA will classify site soils as Type B soil. Flatter slopes may be required where soft or very loose and/or wet soils are encountered, if seepage conditions occur during construction or if subsurface sand lenses are encountered. For permanent excavations and slopes, the grades should be no steeper than 4H: 1V without further geotechnical review of the finalized grading plan. If any excavation, including a utility trench, is extended to a depth of more than 20 feet, OSHA requires that a Professional Engineer design the side slopes of such excavations.

TABLE 4.4.1

ALLOWABLE SLOPES		
Soil Type	H:V	Slope Angle
Stable Rock	Vertical	90°
Type A	¾:1	53°
Type B	1:1	45°
Type C	1 ½ : 1	34°
Type A (Short-Term) –for a maximum excavation depth of 12 ft.	½:1	63°

4.5 Foundations

MSG has developed the foundation recommendations presented herein based on the geotechnical investigation and the sandy silt and silty clay soils encountered during drilling operations.

Based upon our review of the existing soil conditions, the recommended allowable bearing capacity for shallow footings bearing within the natural stiff to very stiff silty clay, medium dense silty sand and/or well compacted engineered fill is 2,000 psf. By utilizing proper construction techniques, the total settlement (i.e. from immediate consolidation and secondary compression components) in the clay layer should be limited to 1 inch and the differential settlement should not exceed ¾ of the total settlement. The recommended value takes into account variation in shear strength of the underlying soil likely to be encountered within portions of the site, and should provide economical shallow footing sizes for the type of structures proposed with an adequate factor of safety.

The potential for volume change in clay material encountered is moderate. MSG recommends that the perimeter and interior footings should be stiffened with a top and bottom layer of reinforcing steel so as to resist possible differential movements caused by volume changes in the clays. The evaluation was based on footing elevations with regards to existing site elevations.

Column footings should be at least 16 square feet (i.e. width of 4 feet) and wall footings should be at least 2 feet wide, regardless of the resulting contact pressure. Exterior footing bottoms and footings in unheated areas should be no less than 42 inches below final exterior grade for protection against possible frost damage. Interior footings, which should not be subject to frost action, may bear at shallower depths, provided they are supported on native compact soil or engineered fill capable of supporting the design load. MSG recommends the interior shallow foundations bear no less then 24 inches below final floor subgrade.

A qualified geotechnical consultant, prior to the placement of reinforcing steel and concrete, should evaluate foundation excavations to verify that an adequate bearing material is present and that all debris, mud, and loose, frozen or soft soils, or other unsuitable materials are removed. All footings should bear in the undisturbed natural stiff to very stiff silty clay, medium dense silty sand, or in well-compacted fill soils. Refer to Section 3.2 for the locations and depths of problematic soils (i.e. soft or very loose and/or wet soils) encountered in the borings. In general, problematic soils located a depth of more than 6 feet below planned bearing depth can be typically bridged by stronger natural soils or well compacted engineered fill. However, some of the problematic soils may be encountered at shallower depths and may require undercutting and replacement to provide a suitable bearing surface for the foundations. Localized undercuts up to 10 feet bgs should be anticipated in a few isolated areas. MSG recommends that the floor of all foundation excavations be compacted. In addition, MSG recommends that a cone penetrometer test (ASTM D3441), or similar field analysis, be performed by the geotechnical engineer representative to assure a suitable bearing capacity for all foundations prior to concrete placement.

Foundations should be constructed on the same day as foundation excavation activities, if possible. Otherwise a thin mat of lean concrete should be placed over the bottom to minimize damage to the bearing surface from weather or construction activities. Water should not be allowed to pond in any excavation. Foundation concrete should not be placed on a frozen or flooded subgrade.

4.6 Slabs-on-Grade

The subgrade soils will generally consist of natural silty clay, silty sand or engineered fill. The subgrade should be inspected and tested to assure proper preparation. The building pad shall be proof rolled as described in Section 4.2. Based on observations made during proof rolling operations, soft/yielding areas should be undercut and backfilled as described in Section 4.3. We recommend that the top 6 inches of the floor slabs-on-grade subgrade consist of at least 6 inches of granular materials meeting the requirements in Section 4.3 and compacted to 95% of the Modified Proctor maximum dry density.

Based on the existing materials and a subgrade prepared as outlined above, for slab-on-grade design, an estimated modulus for subgrade reaction on top of the existing subgrade of 125 pounds per cubic inch (pci) may be used. The use of stabilized base increases the modulus of subgrade reaction appreciably.

In order to minimize the potential impacts caused by differential settlement, the slab-on-grade should be kept structurally separate from walls and columns and saw cut control joints should be provided at suitable intervals.

4.7 Lateral Earth Pressure

Lateral earth pressures (horizontal stresses) are developed during soil displacements (or strains). Lateral earth pressure for design of underground structures and retaining walls is determined utilizing an earth pressure coefficient to relate horizontal stress to vertical stress. Three separate earth pressure coefficients

are utilized to determine lateral earth pressure: at rest; active; and passive. Active earth pressure addresses displacement of a vertical soil face away from the retained soil. Passive earth pressure addresses displacement against the retained soil. At rest earth pressure addresses a negligible displacement scenario. Applied horizontal stress can be determined by multiplying the appropriate earth pressure coefficient by the applied vertical stress. Earth pressure coefficients are a direct function of the internal friction of a soil. Laboratory testing to determine internal friction angles for soil was not performed. However, index laboratory and field data obtained can be utilized to approximate earth pressure coefficients based upon empirical relationships.

For remolded clay, the lateral earth pressure coefficients are: at-rest earth pressure (K_o) = 0.6, active pressure coefficient (K_a) = 0.5, and the passive earth pressure coefficient (K_p) = 2.0. For gravel backfill, the lateral earth pressure coefficients are K_o = 0.5, K_a = 0.3 and K_p = 3.0 (refer to Table 4.7.1).

TABLE 4.7.1

Soil Parameters	Engineered Fill Material Type	
	Granular	Silty Clay
Unit Weight	125	135
Angle of Internal Friction, degrees	30	20
Soil/Concrete Friction Angle, degrees	21	13
At Rest Pressure Coefficient, Ko	0.5	0.6
Active Pressure Coefficient, Ka	0.3	0.5
Passive Pressure Coefficient, Kp *	3.0	2.0

* The passive pressure in the upper 3.0 feet should be neglected

4.8 Site Seismic Classification

According to the International Building Code (IBC) Chapter 16, Tables 1613.5.2 and 1613.5.3, the proposed site is designated as "Site Class D" based on the average Standard Penetration Test for the upper 100 feet of soil. It is considered as having a stiff soil profile, as defined by the IBC. MSG drilled to a maximum depth of 20 feet bgs per the approved scope of services. The seismic related design factor and coefficients are shown in Tables 1613.5.2 and 1613.5.3 presented in *Appendix C, International Building Code Site Seismic Classifications*.

4.9 Pavement Recommendations

Subgrade soils should be prepared for pavements as recommended in previous sections of this report. In-place stabilization (undercutting and replacement) may be required to utilize existing soils beneath the proposed pavements. Any yielding or loose areas (deflections greater than 1 inch) should be stabilized by additional compaction and undercutting as discussed in Section 4.2. The undercut areas should be backfilled with engineered fill or crushed aggregates, or by other means as dictated by the site at the time of construction. The use of pavement subdrains, in conjunction with free draining backfill, will also improve performance. Such measures should include consultation with a geotechnical engineer to assure soil improvement techniques result in pavement construction with an acceptable service life. Subgrade stability should be verified through proof rolling in accordance with Section 4.2 of this report.

Based on the soil characteristics and blow counts during the geotechnical investigation, a conservative California Bearing Ratio (CBR) value of 7 was estimated for the on-site soils. MSG recommends that underdrains be utilized around catch basins and in other low areas of the proposed pavements to limit the accumulation of water below the pavement structures. Surface edge drains should also be used at curbs.

Pavement design information was not provided for the proposed pavement areas. An assumption for the proposed pavement areas are the design 1.5 daily equivalent 18-kip Equivalent Axle Loading (EAL) for the

planned flexible Standard Duty Pavement areas and 4.0 daily EAL's in Heavy Duty Pavement areas. On that basis we recommend the use of the following pavement sections:

- Standard Duty Asphalt Concrete Pavement – 12-inches of MDOT Class II Aggregate Base overlain by 3.0-inches of MDOT 21AA Intermediate Course (Type 2 Intermediate, Medium Traffic), which in turn is overlain by 1.5-inches of MDOT Item 501.02 Asphalt Concrete Surface Course (Type 1 Surface, Medium Traffic).
- Heavy Duty Asphalt Concrete Pavement – 12-inches of MDOT Class II Aggregate Base overlain by 3.0-inches of MDOT 21AA Intermediate Course (Type 2 Intermediate, Medium Traffic), which in turn is overlain by 2.0-inches of MDOT Item 501.02 Asphalt Concrete Surface Course (Type 1 Surface, Medium Traffic).
- Heavy Duty Concrete Pavement – 9-inches of MDOT 21AA Dense Graded Aggregate Base overlain by 9-inches of MDOT Item 602.02 Plain Concrete Pavement.

4.10 Water Control

The location of the level of ground water is of importance in shallow foundations for a number of reasons. Most importantly, the bearing capacity of the soil is affected by the presence of a high water table, decreasing the bearing capacity.

Groundwater was observed at SB-04, SB-06, SB-10, SB-24, SB-27 through SB-29, SB-31, SB-32, and SB-34 at depths ranging from 6 feet bgs to 17 feet bgs. Typically, the groundwater elevation fluctuates and is higher during the winter and spring and lower in summer and early fall.

The amount and type of dewatering required during construction will depend on the weather, groundwater levels at the time of construction, and the effectiveness of the contractor's techniques in preventing surface water runoff from entering open excavations and lowering the ground water table. Given the cohesive nature of some of the soils encountered on-site, the contractor should be prepared to address general water infiltration (i.e. pumping water from prepared sumps). The use of perimeter drains and/or sub-drains is recommended by approval of the site civil design engineer.

The underdrains should consist of a 6-inch diameter, polyethylene, perforated corrugated pipe. The trench should be backfilled with pea stone and separated from the soil subgrade by a geotextile filter. The trench should be backfilled to the proposed bottom elevation of the aggregate base. Catch basins should be evaluated and repaired or replaced as required as part of the redevelopment project. The existing storm pipes should also be cleaned and field checked to verify their integrity.

4.11 Construction Monitoring

MSG knows that providing a quality testing program benefits the outcome of the product designed and minimizes the potential of major problems before they develop. Therefore, MSG recommends the use of MSG personnel to conduct quality assurance and quality control testing during construction.

5.0 CLOSURE

The evaluations, conclusions and recommendations in this report are based on MSG's interpretation of the field and laboratory data obtained during the geotechnical investigation, MSG's understanding of the project and MSG's experience during previous work, with similar sites and subsurface conditions. Data used during this exploration included:

- Thirty four (34) exploratory borings performed during this study;
- Observations of the project site by MSG staff; and,
- Results of laboratory soil testing.

The subsurface conditions discussed in this report and those shown on the boring logs represent an estimate of the subsurface conditions based on interpretation of the boring data using normally accepted geotechnical engineering judgments. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates shown, they are not necessarily indicative of subsurface conditions at other locations or at other times. As variations in the soil profile are encountered, additional subsurface sampling and testing may be necessary to provide data required to reevaluate the recommendations of this report. MSG is not responsible for independent conclusions, opinions or recommendations made by others based upon information presented in this report.

The project plans and specifications should be reviewed by the onsite geotechnical engineer to confirm that the geotechnical aspects are generally consistent with the recommendations of this report. In addition, site subgrade preparation, fill compaction activities, and foundation installation activities should be monitored by the geotechnical engineer or his/her representative.

FIGURES

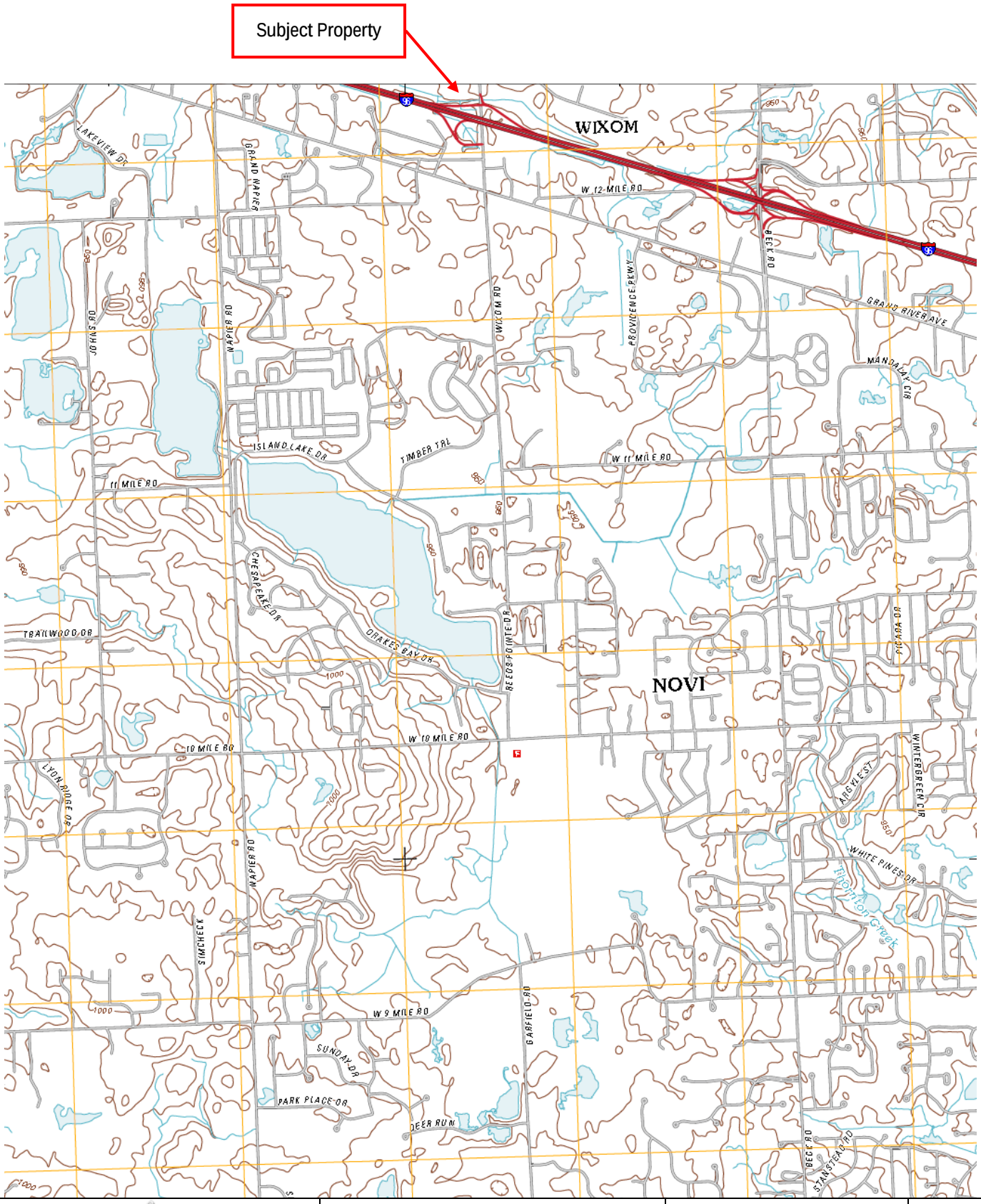

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Figure 1: Site Location Map
Wixom Road and I-96
Wixom, Michigan

Notes: Map adapted from USGS Salem Quadrangle 2011

7.5 Minute Series

N

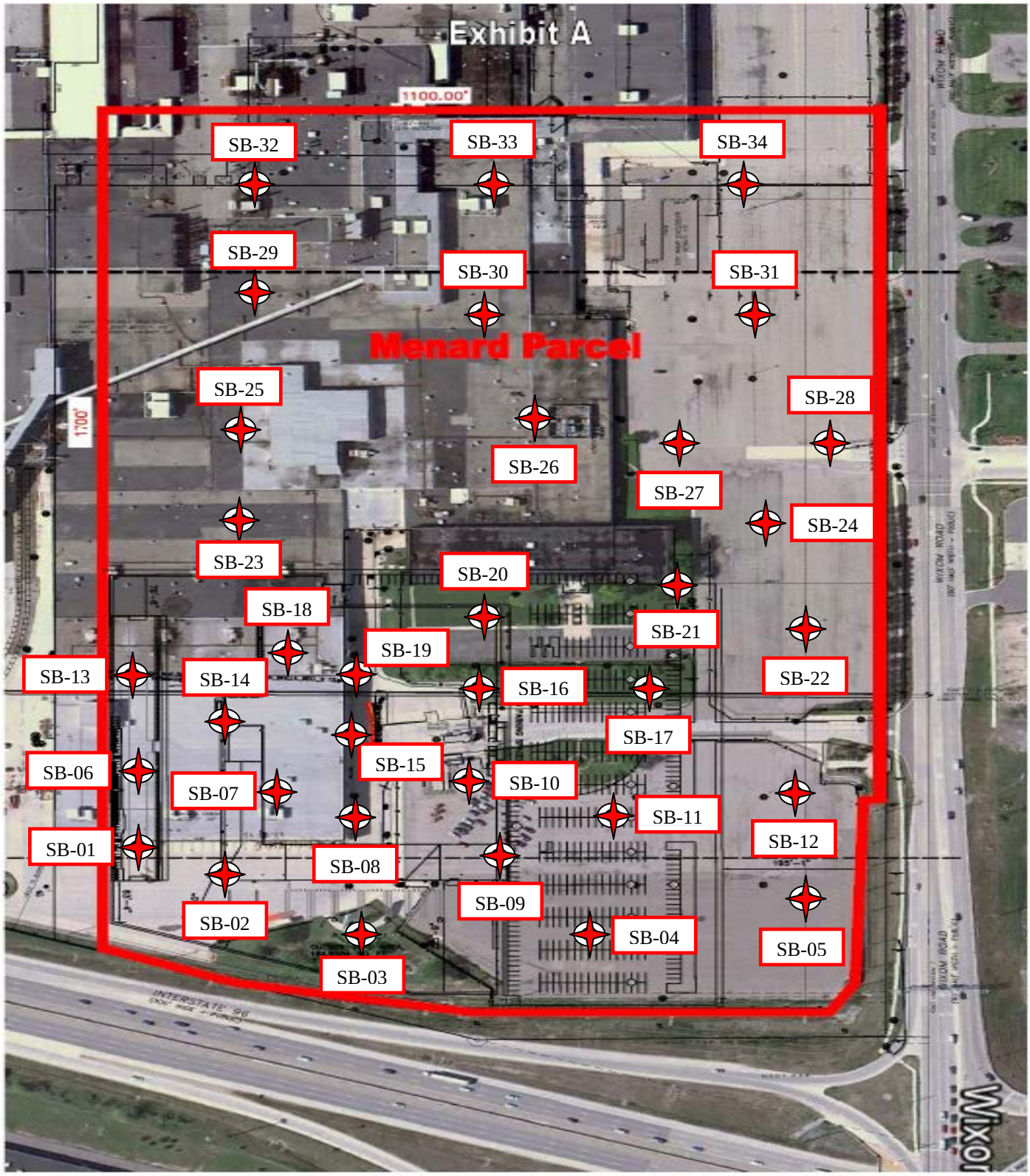

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Figure 2: Soil Boring Location Map
Wixom Road and I-96
Wixom, Michigan

Notes: Map adapted from Google Earth

Soil Boring Locations (NTS)

N

PHASE I ENVIRONMENTAL SITE ASSESSMENT

28955 & 28607 WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

NOVEMBER 1, 2012
UPDATED OCTOBER 4, 2013

PREPARED FOR:

MENARD, INC.
5101 MENARD DRIVE
EAU CLAIRE, WISCONSIN 54703

DRAFT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

28955 & 28607 WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

NOVEMBER 1, 2012
UPDATED OCTOBER 4, 2013

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Appendix F Sanborn Fire Insurance Maps
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Appendix H Historical Topographic Maps

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EXECUTIVE SUMMARY

The Mannik & Smith Group, Inc. (MSG) was retained by Menard, Inc. (Menard) to perform a Phase I Environmental Site Assessment (ESA) for approximately 40 acres of former industrial property used for the manufacturing and assembly of finished automobiles. The Subject Property has recently been assigned the address 28955 and 28607 Wixom Road in Wixom, Oakland County, Michigan (Subject Property). In addition two parcels (22-07-200-009 and 22-07-426-010) were recently carved out of the larger parcels 22-07-426-007 and 22-07-200-006 and assigned to the Subject Property. The Subject Property as referenced to nearby roads and major topographical features is presented as *Figure 1, Site Location Map.*

A Phase I ESA is intended to identify the actual or potential existence of environmental impairment that may be present at the Subject Property. A Phase I ESA is a compilation of information obtained through visual reconnaissance, inquiry into current and past ownership, uses of the Subject Property, and a review of standard environmental record sources. The Phase I ESA study was conducted according to the typical scope and limitations recommended by the American Society for Testing and Materials (ASTM) in their document E 1527-05, titled: "*Standard Practice For Environmental Site Assessments: Phase I Environmental Site Assessment Process*". In addition, MSG acts in general accordance with Environmental Protection Agency's (EPA) rule identifying federal standards and processes for conducting All Appropriate Inquiry (AAI) codified in Federal Regulation – *40 Code of Federal Regulations (CFR) Part 312 - Standards and Practices for All Appropriate Inquiries.*

According to ASTM E 1527-05, the term "recognized environmental conditions" (REC) means the presence of, or likely presence of, any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

This executive summary is provided to summarize potential environmental concerns that were identified for the Subject Property, as a result of performing a Phase I ESA. The executive summary is general in nature and should not be used to replace or be considered apart from the entire text of MSG's Phase I ESA Report for the Subject Property.

MSG has performed this Phase I ESA in general conformance with the scope and limitations of ASTM E 1527-05 on approximately 40 acres of formerly industrial property used for the manufacturing and assembly of finished automobiles located at 28955 and 28607 Wixom Road in Wixom, Oakland County, Michigan. Please note that the update to this report (October 2013) is intended to include information recently made available to MSG by Ford and their environmental consultant and does not include updates to other elements of this Phase I ESA, including, but not limited to, the regulatory database search and site reconnaissance. Any exceptions to, or deletions from, this practice are described in Appendix B of this report. This assessment has revealed evidence of 16 RECs in connection with the Subject Property as identified in Table 1.

1.0 INTRODUCTION

The Mannik & Smith Group, Inc. (MSG) was retained by Menard, Inc. (Menard) to perform a Phase I Environmental Site Assessment (ESA) for approximately 40 acres of former industrial property used for the manufacturing and assembly of finished automobiles. The Subject Property has recently been assigned the address 28955 and 28607 Wixom Road in Wixom, Oakland County, Michigan (Subject Property). In addition two parcels (22-07-200-009 and 22-07-426-010) were recently carved out of the larger parcels 22-07-426-007 and 22-07-200-006 and assigned to the Subject Property. The Subject Property as referenced to nearby roads and major topographical features is presented as *Figure 1, Site Location Map.*

1.1 Assessment Objectives

The objective of the Phase I ESA is to identify recognized environmental conditions associated with the current and historical uses of a property and identify potential indicators of environmental concern which would suggest the need for additional investigation. This Phase I ESA study was conducted in general accordance with the scope and limitations recommended by the American Society for Testing and Materials (ASTM) in their document E 1527-05, titled: "*Standard Practice For Environmental Site Assessments: Phase I Environmental Site Assessment Process".* In addition, MSG acts in accordance with the United States Environmental Protection Agency's (USEPA) rule identifying federal standards and processes for conducting All Appropriate Inquiry (AAI) codified in Federal Regulation - *40 Code of Federal Regulations (CFR) Part 312 - Standards and Practices for All Appropriate Inquiries.*

According to ASTM E 1527-05, the term "recognized environmental condition" (REC) means the presence of, or likely presence of, any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with applicable laws and regulations. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

According to ASTM E 1527-05, the term "historical recognized environmental conditions" (HREC) is an environmental condition, which in the past would have been considered a REC, but that may or may not be considered a REC currently. The final decision rests with the environmental professional and will be influenced by the current impact of the HREC on the property.

According to Section 1.1 of the cited standard, "...the purpose of this practice... is to define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of real estate with respect to the range of contaminants within the scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products". As such, this practice is intended to permit a user to satisfy due diligence requirements to qualify for the innocent landowner defense to CERCLA liability; that is, the practices that constitute "all appropriate inquiry into the previous ownership and use of the property consistent with good commercial or customary practice" as defined in 42 USC § 9601(35)(B).

1.2 Scope of Services

The Scope of Services for conducting a Phase I ESA outlined in ASTM practice E 1527-05 and EPA's standards for AAI outlined in *40 CFR Part 312* typically includes the following four components: a site walk-through and visual survey of the Subject Property; a review of pertinent records for evidence of present or historical use of the Subject Property and adjacent properties; interviews with current owners or operators and local government officials; and evaluation of information collected and development of a report. In order to fulfill the objectives of this Phase I ESA and meet or exceed due diligence requirements, the following tasks were completed:

- A visual survey of the Subject Property to identify areas of potential environmental concern. Color photographs taken to document conditions of the Subject Property at the time of the site reconnaissance are provided in *Appendix A, Site Reconnaissance Photographs.*
- A visual observation of neighboring properties or facilities to assess whether surface conditions on these properties may have adverse environmental impact on the Subject Property.
- Historical land use review of the Subject Property back to 1940 or the first developed use, whichever occurred earlier.
- Collection and review of existing published information relating to general geology, hydrogeology, and topographical information for the Subject Property.
- A regulatory agency file search to identify federal and state listed sites of known or potential environmental concern located within the minimum search distances from the Subject Property as specified in ASTM E 1527-05 and EPA's All Appropriate Inquiry codified in federal regulation - *40 CFR, Part 312.*
- Interviews with the site owner, the owner's representative(s), representatives of the state, county, and local regulatory agencies, or other person's with knowledge of the site.
- Review of owners and prior prospective purchasers environmental reports and process drawings.
- Evaluation of compiled information and preparation of a report.

1.3 Reliance Statement

This report is addressed to Menard and such other persons as may be designated by Menard and their respective successors and assigns. Special Conditions include (i) the Report may be relied upon in determining whether to make a loan evidenced by a note ("the Property Note") secured by the Subject Property, (ii) the Report is provided for the exclusive use of Menard in determining whether to purchase, lease, foreclosure, or otherwise occupy the Property, (iii) the Report may be referred to in and included with materials offering the Property Note for sale or an interest in the Property Note, (iv) persons who acquire the Property Note may not rely on the Report without the express written consent of MSG, and (v) the Report speaks only as of its date in the absence of a specific written update of the Report.

The findings of this report are valid as of the report date, subject to the Phase I ESA Limitations, presented in *Appendix B, Phase I ESA Limitations*, which are incorporated by reference herein. An updated Phase I ESA will be required for the Subject Property after a period of 180 days.

2.0 SUBJECT PROPERTY DESCRIPTION

2.1 Subject Property Location and Legal Description

The Subject Property located west of Wixom Road and north Interstate 96 in Wixom, Oakland County, Michigan (Figure 1). The legal description for each parcel of land is presented in *Appendix C, Legal Description and Local Municipal/County/State Documents.*

2.2 Subject Property and Vicinity Characteristics

Based on visual observations at the time of MSG's site reconnaissance and records review, the Subject Property consists of approximately 40 acres of former industrial property used for the manufacturing and assembly of finished automobiles located at 28955 and 28607 Wixom Road in Wixom, Oakland County, Michigan. The Subject Property was occupied by a portion of the Main Assembly Plant, Executive Garage, office space, parking area and loading docks of the former Ford Wixom Assembly Plant. The topography of the Subject Property and in the vicinity of the Subject Property is relatively flat and gently sloping to Norton Creek which eventually drains to the Huron River. Properties in the vicinity of the Subject Property, as observed from the Subject Property or public access areas, consisted of either vacant or used for commercial purposes.

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2.3 Current Subject Property Use

At the time of MSG's site reconnaissance, the Subject Property contained of an 800,000 square foot portion of the 4.7 million square feet automotive assembly building and associated structures which were in the process of being demolished. In addition, a small guard shack was located near the center of the Subject Property. The remainder of the Subject Property consisted of asphalt parking lots and landscaped areas.

2.4 Description and Condition of Structures and Other Subject Property Improvements

The portion of the 4.7 million square foot automotive assembly plant located on the Subject Property was in the process of being demolished. In addition, a small guard shack was located near the center of the Subject Property. The guard shack has no utilities with the exception of overhead electrical. The remainder of the Subject Property consisted of asphalt parking lots.

2.5 Current Uses of Adjacent Properties

A summary of current uses of adjoining properties relative to the Subject Property is listed below:

Direction	Land Use
North	Additional portions of the 4.7 million square foot automotive assembly plant and associated structures
South	Interstate 96 followed by commercial properties
East	Commercial properties including a Sunoco Gasoline Station and Cross Point Community Church
West	Additional portions of the 4.7 million square foot automotive assembly plant and associated structures

MSG observed the adjacent properties from the Subject Property or public access areas. Based upon observations made at the time of MSG's site reconnaissance, the current uses of the northern and western adjacent properties as a former automotive assembly plant and the eastern adjacent property as a gasoline station are RECs for the Subject Property.

3.0 PREVIOUS REPORTS

As part of this assessment MSG reviewed all reports and documents listed in the records inventory database list in the September 2012 proposal to Menard as well as the *XP Operations Area Baseline Environmental Assessment* prepared by MSG for a prior prospective purchaser in October 2010 and revised in November 2010. The RECs identified on the Subject Property ascertained from the review of the above referenced reports have been included within this report.

4.0 PHYSICAL SETTING

MSG reviewed available aerial photographs, soils information and topographic maps to determine the physical setting of the Subject Property and surrounding areas. This information was reviewed to assess the topographic and subsurface characteristics of the Subject Property and surrounding areas, and how those characteristics may ultimately influence potential environmental concerns at and surrounding the Subject Property.

4.1 Topography and Local Hydrogeology

The United States Geological Survey (USGS) topographical map titled *Milford, Michigan*, dated 1969, photorevised 1983, was reviewed for topographical information in the vicinity of the Subject Property as part of this Phase I ESA (Figure 1). The surface topography in the immediate vicinity of the Subject Property is gently sloping towards the western portion of the Subject Property. The elevation of the Subject Property ranges from approximately 950 feet above mean sea level (msl). The nearest identified surface water body is an unnamed tributary to Norton Creek, which is located approximately 1,000 feet west of the Subject Property. Based on the surface topography, ground water is expected to flow in a westerly direction towards the unnamed tributary. The anticipated direction of groundwater flow is based on the assumption

that surface water and ground water are interconnected and the direction of shallow ground water flow typically mimics the ground surface contours, moving from topographic highs to topographic lows. However, local groundwater flow may vary as a result of underground utilities and heterogeneous subsurface materials.

4.2 Geology and Local Soils

According to the *Quaternary Geology of Michigan*, W. R. Farrand (1982), the geology in the vicinity of the Subject Property consists of glacial outwash sand and gravel and thin to discontinuous glacial till. According to the *Michigan Department of Natural Resources Land and Minerals Services Division Resource Mapping and Aerial Photography* (1987), the bedrock geology in the vicinity of the Subject Property consists of the Cold Water Shale.

The United States Department of Agriculture (USDA) Web Soil Survey website was consulted for soil classifications. The following is a brief description of the individual soil mapping units present on the Subject Property.

> *Urban land* – This soil consists of nearly level and sloping land that is covered by commercial buildings, condominiums and apartment buildings, parking lots, streets, sidewalks, driveways, railroad yards, industrial complexes, and other structures. Included with the Urban land in mapping are some small areas of sandy to clayey soils.

5.0 RECORDS REVIEW

As part of the current study, readily available regulatory database information was reviewed to assess the possible risk for environmental liabilities from regulatory action, hazardous material spills, or documented hazardous waste disposal at the Subject Property or surrounding properties located within ASTM-specified search distances and the search distances specified in EPA's standards for AAI. This information was obtained from a review of information included in a standard environmental database search report, historical aerial photographs, Sanborn Fire Insurance Maps, historical topographic maps, and/or records of local municipalities for the Subject Property and surrounding area.

5.1 Standard Environmental Database Search Report

FirstSearch Technology Corporation (FirstSearch) was retained to perform a regulatory agency database search to evaluate the possible presence of federal and state listed sites of known or potential environmental concern that may be located within the recommended minimum search distances from the Subject Property as specified in Section 7.2.1.1 of ASTM E 1527-05 and EPA's final rule for AAI. A list of the federal and state databases researched by FirstSearch for the current study, including a brief description of each database searched and their respective search distance radius is presented *Appendix D, Environmental FirstSearch Report.*

Discussion of Database

The FirstSearch Report provides an extensive list of Federal, State, local and other environmental databases. The identified properties and the categories they are listed under are summarized below. A list of the environmental databases searched by FirstSearch is provided in Appendix D.

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Table 5.1-1 Summary of Database

Database	ASTM Research Radius (Miles)	AAI Search Radius (Miles)	Number of Identified Sites	Subject Property (SP), Adjacent Property (AP)? Yes or No	REC? Yes or No
Federal Databases					
Comprehensive Environmental response, Compensation and Liability Information System (CERCLIS)	0.5	0.5	1	No	No
No Further Remediation Action Planned (NFRAP)	0.5	0.5	1	No	No
Resource Conservation and Recovery Act (RCRA) Generator	0.25	0.25	6	SP/AP	Yes
Emergency Response Notification System (ERNS)	0.12	0.12	1	SP/AP	Yes
State and Tribal Databases					
State/Tribal Sites	1.00	1.00	2	AP	No
State/Tribal LUST (Leaking UST)	0.5	0.5	17	SP/AP	Yes
State/Tribal UST/AST (Under Ground Storage Tank / Above Ground Storage Tank)	0.25	0.25	9	SP/AP	Yes

Subject Property

Upon review of the FirstSearch Report search of available ("reasonably ascertainable") government records, the Subject Property address was identified in nine of the FirstSearch databases; however, these listings may be associated with the northern and western adjacent properties which were also portions of the former Ford Wixom Assembly Plant.

According to the database the address of the Ford Wixom Assembly Plant, which encompasses the Subject Property and northern and western adjacent properties, has four active LUSTs. In addition, the Subject Property as a having one propane AST and 14 closed (removed from the ground) USTs were present at the address.

The FirstSearch database also lists the former automotive plant in the ERNS database for a 14,000 lbs spill of corrosive liquid due to a tank overfill. The exact location of the spill was not identified in the database.

The address that formerly included the Subject Property was listed as a RCRA small quantity generator in the environmental database. All violations in association with the generator status have been resolved.

Finally the former Ford Wixom Assembly Plant was listed as a state site. The state site designation indicated that remedial action is in progress and may include use restrictions, operations and maintenance (O and M) and or monitoring.

The possible listing of the Subject Property on the above mentioned databases is a REC for the Subject Property. However, MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

Surrounding Property Summary

A total of 30 geocoded database entries with 20 different addresses were identified to be within the ASTM-specified minimum search distances relative to the Subject Property.

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MSG eliminated 16 of the 30 properties from further consideration based on their locations cross gradient of the Subject Property. Based on the anticipated groundwater flow direction these properties are unlikely to impact the Subject Property.

Of the remaining 14 identified properties, MSG eliminated eight from further consideration based on their regulatory status being a closed LUST and closed UST facility. Based on their closed status, these properties are not likely to impact the Subject Property.

Of the remaining 6 identified properties, MSG eliminated three from further consideration based on their regulatory status of RCRA generator with no or resolved violations. Based on the lack of current violations, these properties are not likely to impact the Subject Property.

The remaining three identified properties are associated with two properties, Wixom Fuel Stop on the eastern adjacent property and Wixom Shell located approximately 0.25 mile SE of the Subject Property. Wixom Fuel Stop has two diesel USTs currently in use. The presence of these tanks on an adjacent property is considered an REC for the Subject Property.

The Wixom Shell property currently has three USTs and two ASTs that are currently in use. No releases have been reported for this property. Based on the distance from the Subject Property and the lack of releases this facility is not likely to impact the Subject Property.

Non-Geocoded Sites

A non-geocoded site is a property that has been identified by FirstSearch as a site within a zip code. This type of site has insufficient geo-coded information available to accurately plot the property. A review of the FirstSearch Report indicates that eight non-geocoded sites were identified during their regulatory database search. MSG used available mapping software and observations made during the site reconnaissance to eliminate all eight identified non-geocoded properties because they appear to be located outside the ASTM and AAI recommended minimum search distances for their respective databases.

5.2 Additional Sources

The following sections contain research information regarding the Subject Property from state, county and local sources.

5.2.1 State, County and Local Governmental Sources

MSG requested information under the Freedom of Information Act (FOIA) from the Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division, Oakland County Environmental Health Department, and the Wixom Fire Department.

At the time of this report, no responded has been received to MSG's FOIA request. If a response is received that results in an environmental concern, an addendum to this report will be provided. County and local government information requests are included in Appendix C.

5.2.2 Title Records and Environmental Liens

Title records for the Subject Property were obtained from Fidelity National Title Insurance Company. No environmental liens or use limitations were recorded. Title information for the Subject Property is included in Appendix C.

5.2.3 Ford Process and Layout Drawings

MSG reviewed drawings provided by Ford to identify the locations of possible items of environmental concern. The Ford Process and layout drawings identified the locations of USTs, AST, substations and belowgrade hydraulic equipment and process lines. These items are considered RECs for the Subject Property however, MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

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5.3 Historical Aerial Photographs

MSG obtained historical aerial photographs for the Subject Property and surrounding area from Historic Information Gatherers (HIG). MSG reviewed aerial photographs dated 1949, 1952, 1957, 1964, 1967, 1973, 1976, 1985, 1987, 1990, 1999, 2005 and 2009. Below is a summary of observations and interpretations made by MSG for the Subject Property and adjoining properties after reviewing each historical aerial photograph listed above. Copies of the historical aerial photographs are included in *Appendix E, Historical Aerial Photographs.*

5.3.1 Summary of Aerial Photographs

Date	Subject Property Observations	East Adjoining Property	South Adjoining Property	West Adjoining Property	North Adjoining Property
1949	Agricultural farmland. A farmhouse and several outbuildings are present on the northeast corner of the property. A creek extends through the southwest corner of the property.	Wixom Road followed by agricultural farmland with several farmhouses and associated outbuildings.	Agricultural farmland.	Agricultural farmland.	Agricultural farmland.
1952	Same as previous with an additional residential building on the southeast corner of the property.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1957	The property appears to have been cleared in preparation for development	Same as previous.	Same as previous.	The property appears to have been cleared in preparation for development	The property appears to have been cleared in preparation for development
1964	The property is developed with the current building.	Same as previous; Wixom Rd appears to have been increased to five lanes.	Interstate 96 is present.	The property is developed with the eastern portion of the current building.	The property is developed with the current building.
1967	Same as previous with additional parking lots on the southern portion of the property.	Commercial properties are located east of Wixom Rd.	Same as previous.	The property is developed with the current building.	Same as previous.
1973	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1976	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1985	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1987	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1990	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
1999	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
2005	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.
2009	Same as previous.	Same as previous.	Same as previous.	Same as previous.	Same as previous.

5.4 Sanborn Fire Insurance Maps

MSG contracted FirstSearch to provide historical Sanborn Fire Insurance Maps for the Subject Property and surrounding area. According to FirstSearch, Sanborn Fire Insurance Map coverage was not available for the Subject Property. A Copy of the "No Coverage Letter" is presented in *Appendix F, Sanborn Fire Insurance Maps.*

5.5 City Directories

MSG obtained information regarding the Subject Property and adjacent properties from city directories provided by HIG.

City directories were available for select years (2001/02, 1996/97, 1992/93, 1987/88, 1982/83, 1978/79, 1972/73 and 1967). The Subject Property was listed in the 1992-2001 directories as Ford Motor Company. No listing for the Subject Property address was listed from 1967-1987.

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Surrounding properties have consisted of residential and commercial listings. Most of the listings are not considered an environmental concern regarding the Subject Property. The property located at 29330 Wixom Road (eastern adjacent property) was listed as either Wixom Fuel Stop, B&J Gas and Oil or Standard Oil from 1972-2001. The used of the adjacent property as a gasoline fueling station is an REC for the Subject Property. City directories are included in *Appendix G, City Directories.*

5.6 Historical Topographic Maps

MSG reviewed historical topographic maps for the Subject Property and surrounding properties. Topographic maps were reviewed for the years 1909, 1936, 1945, 1954, 1969, 1969 photorevised 1973, and 1969 photorevised 1983. The topographic maps are included in *Appendix H, Historical Topographic Maps.*

Below is a summary of observations and interpretations made by MSG for the Subject Property and the adjoining properties after reviewing each topographic map presented in Appendix H.

5.6.1 Summary of Topographic Maps

Date	Subject Property Observations	North Adjoining Property	East Adjoining Property	South Adjoining Property	West Adjoining Property
1909	Undeveloped land	A small structure (residential building) is present	Wixom Road followed by undeveloped land	Undeveloped land, with Congdon Drain.	Undeveloped land, with Congdon Drain.
1936	Same as above.	Same as above	Small residential structures are present beyond Wixom Rd.	Same as above.	Same as above.
1945	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
1954	Same as above.	Same as above.	Same as above.	Same as above.	Same as above.
1969	The former automotive assembly plant is present	The former automotive assembly plant is present	Larger commercial structures are present beyond Wixom Rd.	Interstate 96 is present	The former automotive assembly plant is present
1969 rev. 73	Same as above	Same as above	Same as above with additional commercial structures.	Same as above.	Same as above.
1965 rev. 83	Same as above.	Same as above.	Same as above.	Same as above.	Same as above

5.7 Interviews

MSG attempted to contact local government officials regarding the Subject Property as well as the Subject Property owner and other persons who are familiar with the Subject Property.

5.7.1 Interviews with Subject Property Owner(s)

MSG participated in a meeting on September 23, 2013 with representatives of Menard, Ford, Ford's project environmental consultant, Conestoga-Rovers & Associates, Inc. (CRA), and Ford's general contractor, Devon Industrial Group (DIG), regarding the current conditions and environmental status of the Subject Property. Barb Rosinkowski of Ford and Nathan Kuhl of CRA provided the following updates to the Subject Property:

- The building slabs on Subject Property have been removed, consistent with site observations made by MSG in September 2013.
- Building foundations and subsurface utilities remain on the Subject Property.
- Remedial excavations in the Executive Garage have been completed and included removal of approximately 40,000 cubic yards of material and verification sampling was completed.
- Four post-excavation monitoring wells were installed.

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- One additional groundwater monitoring event is scheduled prior to preparation and submittal of a LUST Closure Report for the Former Executive Garage to MDEQ.
- Deed restrictions on the Subject Property have been recorded.
- Existing monitoring wells are scheduled to be removed by Ford prior to property transfer.
- CRA conducted a soil boring investigation at the former WAP and two areas of concern (AOCs) were identified and remediated on the Subject Property.
    - Benzene soil impacts were identified at AOC-1 and impacted soils were removed.
    - Hydraulic oil soil impacts were identified at AOC-3 and approximately 30-40 cubic yards of impacted soil were removed.
    - Based on currently available information, these AOCS are RECs to the Subject Property.
- An Investigation and Remediation Summary Report for the Subject Property will be prepared in October to November 2013.
- A Closure Report for the Executive Garage will be prepared and submitted to MDEQ for review and approval in November to December 2013.

5.7.2 Interview with Occupants

The Subject Property is vacant therefore; MSG did not conduct interviews with occupants of the Subject Property.

5.7.3 Interviews with Local Government Officials

Interviews with local government officials are discussed in Section 5.2.1 and are contained in Appendix C.

5.7.4 Interviews with Others

MSG interviewed Mr. Steve McLean, site representative for Conestoga-Rovers & Associates which is responsible for environmental issues during the demolition of the Subject Property building. Mr. McLean indicated that all of the equipment within the Subject Property was removed and the floors were cleaned to remove buildup from former plant operations prior to demolition. In addition Mr. McLean stated that all of the joint compound within the flooring was in the process of being removed due to high PCB content.

5.8 Fair Market Value

According to information regarding the Subject Property obtained from the Fidelity National Title Insurance Company, parcels 96-22-07-200-005 and 22-07-200-006, of which the Subject Property was created from, have a 2012 State Equalized Value (SEV) and taxable value of $10,883,270. The new parcels assigned to the Subject Property, 22-07-200-009 and 22-07-426-010, have not yet been assigned taxable values. The title information is included in Appendix C.

5.9 Past Use Summary

Based on review of the historic data, the Subject Property was agricultural farmland from at least 1949 to 1952. The Subject Property was cleared for development around 1957 and the automotive manufacturing plant was built in late 1950s.

6.0 SITE RECONNAISSANCE

On October 15, 2012, Ms. Michelle Henn of MSG performed a visual reconnaissance survey of the Subject Property. At the time of the Subject Property reconnaissance, the weather was clear and approximately 50 degrees Fahrenheit. Access to the Subject Property was granted by Mr. Clarence Jones of Brandenburg Demolition. Ms. Henn traversed the Subject Property by foot, however due to active demolition activities the portions of the property were not accessible. The Subject Property reconnaissance methodologies and observations are described below.

6.1 Methodology and Limiting Conditions

During the site reconnaissance, the Subject Property was observed for evidence of potential environmental concerns such as stressed vegetation, stained surface soils, discolored surface water, above ground storage tanks (ASTs) or underground storage tanks (USTs), hazardous waste containers and improper waste disposal practices. The Subject Property contained an 800,000 square foot portion of the 4.7 million square feet automotive assembly building and associated structures which were in the process of being demolished. In addition, a small guard shack was located near the center of the Subject Property. The remainder of the Subject Property consisted of asphalt parking lots and landscaped areas. Photographs of the Subject Property collected during the Subject Property reconnaissance are provided in Appendix A.

6.2 General Site Setting

The Subject Property is comprised of 40 acres of former industrial property used for the manufacturing and assembly of finished automobiles. The Subject Property has recently been assigned the address 28955 and 28607 Wixom Road in Wixom, Oakland County, Michigan.

6.2.1 Current Uses of the Subject Property

At the time of MSG's site reconnaissance, the Subject Property contained a portion of a 4.7 million square foot automotive manufacturing plant. The plant was undergoing active demolition therefore portions of the Subject Property were inaccessible.

6.2.2 Past Uses of the Subject Property

Based on review of the historic data, the Subject Property was agricultural farmland from at least 1949 to 1952. The Subject Property was cleared for development around 1957 and the automotive manufacturing plant was built in late 1950s.

6.2.3 Hazardous Substances and Petroleum Products in Connection with Identified Uses

At the time of MSG's site reconnaissance, MSG did not observe hazardous substances and/or petroleum products in connection with identified uses on the Subject Property. However, due to active demolition portions of the Subject Property were inaccessible.

6.2.4 Storage Tanks

No evidence of storage tanks were observed on the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

According to the 2010 MSG Baseline Environmental Assessment and the CRA's 2007 Phase I ESA four tanks were located within the Subject Property area. The following tanks were identified by CRA:

- One 500-gallon used oil AST in a belowgrade vault in the executive garage.
- One 1,000-gallon waste oil UST located west of the executive garage under the cort yard pavement. Available information indicated closure activities included removal of tank contents and filling the tank with sand and capping with concrete.
- One 500-gallon used oil and one 500-gallon gasoline above ground storage tank located in/near the executive garage.
- A 10,000-gallon gasoline UST was identified as being located in the executive garage in a June 2, 1981 SPCC Plan. No further information regarding the tank was available.

MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

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6.2.5 Odors

No foul or unusual odors were noted at the time of MSG's site reconnaissance.

6.2.6 Pools of Liquid

No pools of liquid were observed at the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

6.2.7 Drums

No drums were observed on the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

6.2.8 Hazardous Substances and Petroleum Products Containers

No hazardous substances and/or petroleum product containers were observed on the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

6.2.9 Unidentified Substance Containers

No unidentified substance containers were observed on the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

6.2.10 Polychlorinated Biphenyls (PCBs)

The Subject Property was surveyed for the presence of liquid-cooled electrical units (transformer and capacitors). Such units are of possible concern because they may be potential PCB sources. MSG did not observe and transformers on the Subject Property. However, due to active demolition portions of the Subject Property were inaccessible.

According to the 2010 MSG Baseline Environmental Assessment and the 2007 CRA Phase I Environmental Site Assessment report PCB dielectric oil containing transformers, PCB dielectric oil containing switches, and silicon oil transformers and associated switchgear are present at the Subject Property. Seven substations are located on the Subject Property with a total of ten PCB containing transformers. MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

6.3 Exterior Observations

During the site reconnaissance, MSG personnel traversed the Subject Property on foot and noted observations and findings.

6.3.1 Pits, Ponds or Lagoons

During the site reconnaissance, MSG did not observe any exterior pits, ponds or lagoons on the Subject Property. However, due to active demolition portions of the Subject Property were inaccessible.

According to the 2010 MSG Baseline Environmental Assessment and the CRA's 2007 Phase I ESA report 18 pits are located on the interior of the building. The pits were former machine pits. All machinery has been removed and MSG was able to observe pits in the northern portion of the remaining building. No gross staining was observed in any of the pits observed but all were filled with water at the time of the site reconnaissance. MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

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6.3.2 Stained Soil or Pavement

No stained soil or pavement was observed on the Subject Property at the time of MSG's site reconnaissance. However, due to active demolition portions of the Subject Property were inaccessible.

6.3.3 Stressed Vegetation

No stressed vegetation was observed on the Subject Property at the time of MSG's site reconnaissance.

6.3.4 Solid Waste

The Subject Property was vacant at the time of the site reconnaissance therefore no solid waste is being generated other than demolition debris which is being handled by Ford's demolition contractor. It is MSG's understanding that as of October 2013 debris associated with demolition of the former Wixom Assembly Plant buildings is present on the Subject Property.

6.3.5 Waste Water

No signs of wastewater lagoons were observed on the Subject Property at the time of MSG's site reconnaissance.

6.3.6 Ground Water Wells

MSG observed one ground water monitoring well on the southeast portion of the Subject Property. According to CRA's 2007 Phase I ESA report numerous monitoring wells were located throughout the Subject Property and northern and western adjacent properties. The exact location of all the wells is unknown. MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

6.3.7 Septic Systems

MSG did not observe any evidence of septic systems on the Subject Property at the time of MSG's site reconnaissance.

6.4 Interior Observations

The building was an approximately 800,000 square foot portion of a 4.7 million square foot former automotive manufacturing plant. The Subject Property building is currently undergoing demolition. Figure 2 depicts the general layout of the Subject Property prior to demolition.

6.4.1 Heating and Cooling

The Subject Property building is undergoing active demolition therefore no heating or cooling structures remaining in the Subject Property building.

6.4.2 Stains or Corrosion

During the site reconnaissance, no stains or corrosion was observed on the floors inside the Subject Property building. However, due to active demolition portions of the Subject Property were inaccessible.

6.4.3 Drains and Sumps

Due to the active demolition of the Subject Property buildings MSG did not observe any drains or sumps that may have been located within the building. According to CRA's 2007 Phase I ESA one sump was located in the executive garage and used as the car wash sump. No other information

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6.5 Out of Scope Items

The following information is listed as out of scope items based on the ASTM 1527-05 standards. However, the information has been included to more thoroughly address the observed conditions of the Subject Property.

6.5.1 Wetlands

At the time of the site reconnaissance MSG did not observe evidence of wetlands on the Subject Property. An unnamed tributary to Norton Creek is present along the southern boundary between the Subject Property and Interstate 96. A wetlands survey was not part of the scope of work for this Phase I ESA.

6.5.2 Potential Asbestos Containing Materials (ACMs)

Asbestos was widely used for decades in residential, commercial and industrial construction applications. Asbestos is a carcinogen when inhaled and may pose health risks when present in poor conditions. Due to active demolition the interior of the building could not be observed for evidence of ACM. MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

6.5.3 Lead Based Paint

Lead based paint is of concern for structures built prior to 1978 when it was banned from consumer usage. Based on the age of the building, constructed in the late 1950s, there is a potential for lead based paint. However, a LBP survey was not part of the scope of work for this Phase I ESA. MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

6.5.4 Radon

Radon was first recognized as an indoor environmental health concern in the mid-1980s. The Michigan Department of Public Health (MDPH), with the assistance of the U.S. EPA and Michigan's local health departments (LHDs), initiated a statewide residential indoor radon survey. Conducted during the 1987-88 winter heating season with all but four of the state's 83 counties participating, the survey found that approximately 12 percent of the homes in this state (nearly one in eight) would have radon screening levels greater than 4 picocuries per liter (pCi/l) of air (4 pCi/l is the recommended action guideline set by EPA). Oakland County has a moderate potential for elevated indoor radon levels with screening levels between 2 and 4 pCi/l. Therefore, the risk of radon levels in the area could potentially be an environmental concern in if structures are constructed on the Subject Property. However, a radon survey was not part of the scope of work for this Phase I ESA.

7.0 DATA GAPS

Sources of historical information that are reviewed for past uses of the Subject Property and adjacent properties include historical topographic maps, historical aerial photographs, historical city directories, federal, state and local records, and interviews of persons knowledgeable of the Subject Property. These interviews have included, but were not limited to, state and county agencies as well as local officials. When appropriate, MSG attempted to acquire information regarding the Subject Property from each of these sources. However, due to incomplete or a lack of coverage for the Subject Property area, historical documentation obtained contained data gaps such as the absence of Sanborn Fire Insurance maps, extended time period between topographic maps, poor resolution of aerial photographs and/or availability of previous owners and neighbors for interviews. In addition, the Subject Property was under active demolition and the interior could not be observed.

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With the exception of the above mentioned data gaps and any new information not identified heretofore, MSG does not believe there are any significant data gaps that would substantially change the findings and opinions regarding this Phase I ESA for the Subject Property.

8.0 FINDINGS & CONCLUSIONS

The following is a summary of the findings associated with the Subject Property and adjacent properties discovered during the Phase I ESA investigation.

- The Subject Property is comprised of approximately 40 acres of property formerly used for the manufacturing and assembly of finished automobiles, whose tax parcel identification number is #22-07-200-006. The Subject Property is located at 28955 and 28607 Wixom Road, west of Wixom Road and north Interstate 96 in Wixom, Oakland County, Michigan.
- Review of the USGS topographical maps indicates the Subject Property has a ground surface elevation of approximately 950 feet above msl. The nearest identified surface water body is an unnamed tributary to Norton Creek, which is located approximately 1,000 feet west of the Subject Property. Based on the surface topography, ground water is expected to flow in a westerly direction towards the unnamed tributary. The anticipated direction of groundwater flow is based on the assumption that surface water and ground water are interconnected and the direction of shallow ground water flow typically mimics the ground surface contours, moving from topographic highs to topographic lows. However, local groundwater flow may vary as a result of underground utilities and heterogeneous subsurface materials.
- MSG understands that Menard and Ford have an environmental agreement to address any environmental conditions.

MSG has performed a Phase I ESA in general conformance with the scope and limitations of ASTM E 1527-05 on approximately 40 acres of formerly industrial property used for the manufacturing and assembly of finished automobiles. The Subject Property is comprised of two parcels with Parcel numbers 22-07-200-009 and 22-007-426-010 located west of Wixom Road and north Interstate 96. Please note that the update to this report (October 2013) is intended to include information recently made available to MSG by Ford and their environmental consultant and does not include updates to other elements of this Phase I ESA, including, but not limited to, the regulatory database search and site reconnaissance. Any exceptions to, or deletions from, this practice are described in Appendix B of this report. This assessment has revealed evidence of 16 RECs in connection with the Subject Property as identified in Table 1.

9.0 QUALIFICATIONS AND ENVIRONMENTAL PROFESSIONAL STATEMENT

We declare that, to the best of our knowledge and belief, we meet the definition of Environmental Professional as defined in 312.10 of 40 CFR 312 and 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 inquires in conformance with the standards and practices set forth in 40 CFR Part 312.

A signatory page at the front of this report lists the MSG personnel primarily responsible for the completion of this report. The Phase I ESA site reconnaissance was performed by Ms. Michelle Henn. This Phase I ESA was written by Ms. Henn. Mr. Thomas P. Cok, CPG reviewed and approved the Phase I ESA report. Ms. Henn has over 9 years of experience; and Mr. Bolt has over 20 years of experience performing Phase I ESAs. All work associated with the research and development of this report was performed by qualified personnel and was performed in general accordance with ASTM E 1527-05 and EPA's standards for AAI described in *40 CFR Part 312*.

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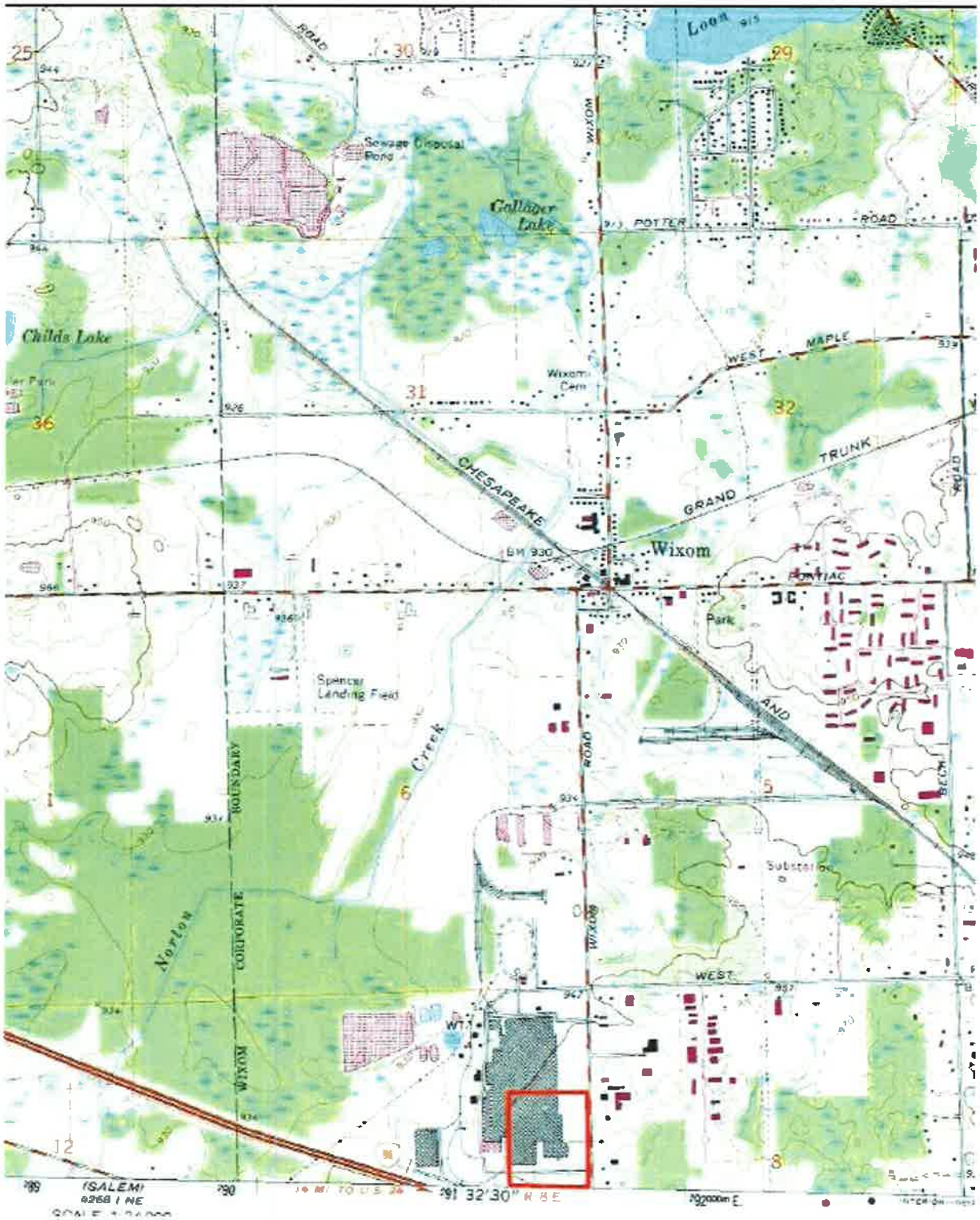
FIGURES

THE MANNIK & SMITH GROUP, INC.



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Traverse City ◆ Cleveland ◆ Columbus ◆ Toledo

Figure 1: Site Location Map
28801 Wixom Road
Wixom, Oakland County, Michigan

Notes: Map adapted from USGS, Milford, Michigan Quadrangle 7.5 Minute series dated 1969 photorevised 1983

Approx. Subject Property Boundary
Scale: Not to scale

N

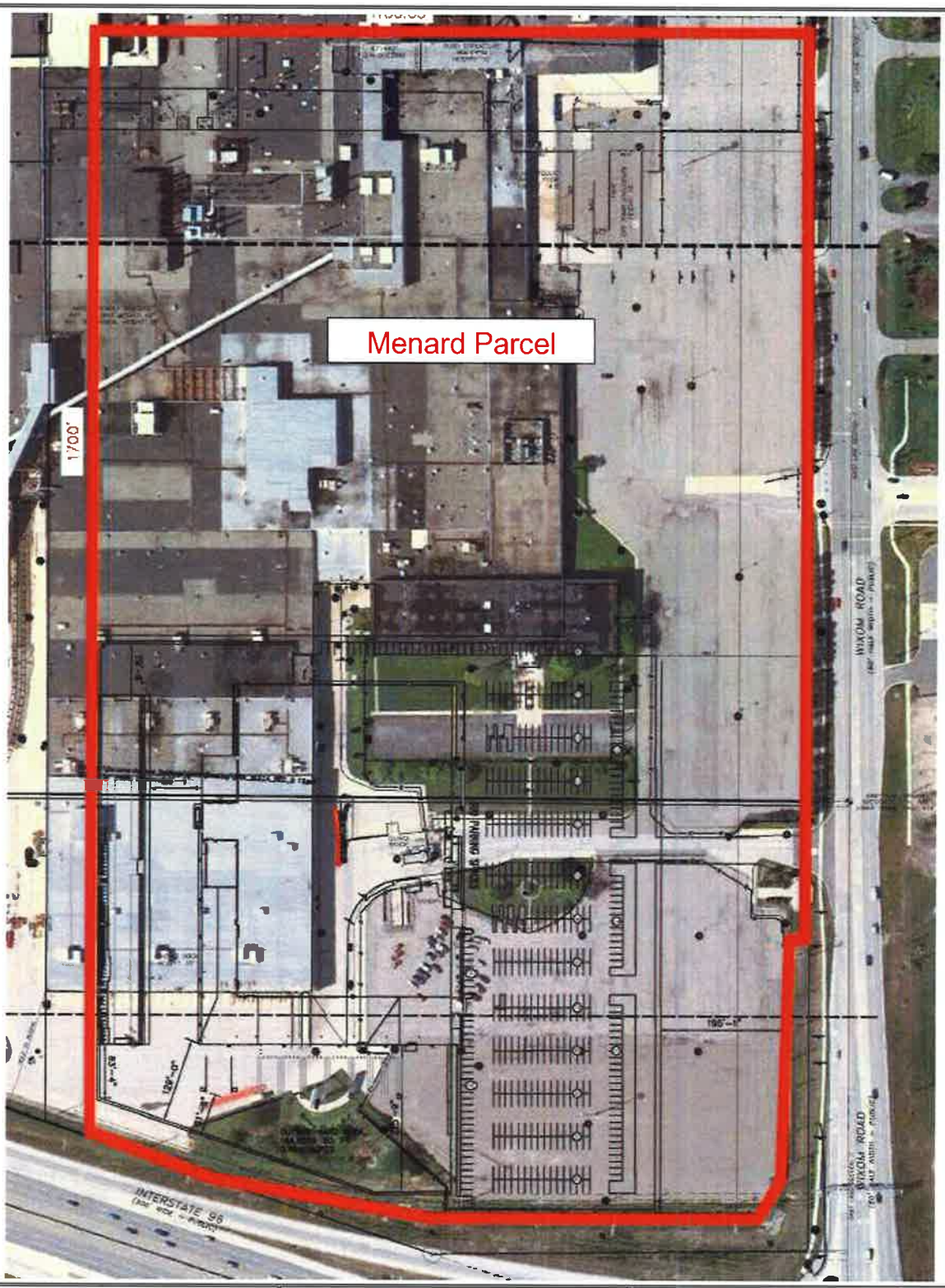

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Figure 2: Site Schematic
28801 Wixom Road
Wixom, Oakland County, Michigan

Notes: Map adapted from Washtenaw County GIS dated 2010

Approx. Subject Property Boundary

Scale: Not to scale

N

BASELINE ENVIRONMENTAL ASSESSMENT

MENARD'S HOME IMPROVEMENT BUILDING SITE
28955 & 28607 SOUTH WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

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OCTOBER 4, 2013

PREPARED FOR:

MENARD, INC.
5101 MENARD DRIVE
EAU CLAIRE, WISCONSIN 54703

Mannik Smith GROUP

EXECUTIVE SUMMARY

Menard, Inc. (Menard) intends to purchase approximately 45.8 acres of land (Site) from Ford Motor Company (Ford) for re-development as Menard's home improvement store. The Site is a portion of the former Wixom Assembly Plant (WAP), a 317-acre facility with an estimated 4.7 million square feet of building space. The former WAP is located on the northwestern corner of the I-96/Wixom Road interchange. Menard anticipates acquiring the Site from Ford Motor Company (Ford) in October 2013. The Site was occupied by a portion of the Main Assembly Plant, Executive Garage, office space, guard shack, parking area and loading docks of the former WAP. The Site is surrounded to the north and west by other portions of the former WAP, to the east by South Wixom Road followed by commercial properties, and to the south by I-96 followed by commercial properties. The Site as referenced by nearby roads and major topographical features is depicted on *Figure 1, Site Location Map*; is shown in relation to the former WAP in *Figure 2A, Former Wixom Assembly Plant Identified REC Elements*; and is shown in greater detail in *Figure 2B, Site Identified REC Elements.*

Ford ownership and operation of the former WAP dates back to 1955. The total area of the former WAP is approximately 317 acres, of which approximately 45.8 acres comprises the Site. A Phase I Environmental Site Assessment (ESA) prepared by the Mannik & Smith Group (MSG) for the Site in general accordance with Environmental Protection Agency's (EPA) All Appropriate Inquiry (AAI) standard revealed 16 RECs directly associated with the former operations of the WAP. Many of these RECs have been identified in earlier environmental investigations conducted on behalf of Ford, the former facility owner. Ford has completed major investigation efforts at the former WAP. These investigations have effectively identified the general type of existing chemical impacts in Site soil and groundwater samples in excess of Part 201 Generic Residential Cleanup Criteria demonstrating that the Site is a "facility" pursuant to Part 201 of the Natural Resources and Environmental Protection Act, 1994 of PA 451, as amended (NREPA). This BEA provides liability protection from environmental impacts existing at the time of property transfer pursuant to Part 201 rules.

MDEQ is currently reviewing the environmental investigation reports submitted by Ford. The MDEQ will evaluate these reports to determine whether the chemical impacts (on-site and off-site) have been fully delineated to allow for site closure in accordance with Part 201 and Part 213 requirements. Based upon the on-going review(s) MDEQ may require additional investigation or response activities. If required by MDEQ, Ford may generate additional documentation further clarifying the chemical impacts resulting from previous automotive manufacturing operations at the site.

MSG understands that Menard intends to enter into an environmental cooperation agreement (ECA) with Ford in which responsibilities for remediating or mitigating existing and currently unknown chemical impacts will be specified. An ECA provides framework of obligations and requirements to facilitate cooperation on environmental issues at the Site. Based on MSG's review of an ECA pertaining to a separate portion of the former WAP, MSG anticipates that Ford Land will retain responsibility for identified pre-closing environmental conditions and certain environmental obligations will be conveyed to Menard and subsequent property purchasers. An ECA is a legal agreement and MSG recommends that Menard consult qualified legal counsel to ensure complete understanding of ECA impacts on environmental liability and future operations related to the Site.

In accordance with Michigan regulations, Site concrete and asphalt pavement should be inspected for evidence of contamination and sampling and characterization should be conducted where evidence of potential contamination above *de minimus* quantities is observed.

Based on the past use of the Site, previously unidentified chemical impacts may be present in the Site subsurface. MSG recommends that an environmental professional be present on call during subsurface disturbance activities to perform monitoring and assess previously unidentified chemical impacts and that Section 20107a Compliance Analysis (i.e., a Due Care Plan) be prepared for the Site to outline Menard's due care obligations and provide to facilitate compliance with those obligations.

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APPENDICES

Appendix A Legal Boundary Survey
Appendix B Phase I Environmental Site Assessment

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1.0 INTRODUCTION

Menard, Inc. (Menard) intends to purchase approximately 45.8 acres of land (Site) from Ford Motor Company (Ford) for re-development as Menard's home improvement store. The Site is a portion of the former Wixom Assembly Plant (WAP), a 317-acre facility with an estimated 4.7 million square feet of building space. The former WAP is located on the northwestern corner of the I-96/Wixom Road interchange. Menard anticipates acquiring the Site from Ford Motor Company (Ford) in October 2013. The Site was occupied by a portion of the Main Assembly Plant, Executive Garage, office space, guard shack, parking area and loading docks of the former WAP. The Site is surrounded to the north and west by other portions of the former WAP, to the east by South Wixom Road followed by commercial properties, and to the south by I-96 followed by commercial properties. The Site as referenced by nearby roads and major topographical features is depicted on *Figure 1, Site Location Map*; is shown in relation to the former WAP in *Figure 2A, Former Wixom Assembly Plant Identified REC Elements*; and is shown in greater detail in *Figure 2B, Site Identified REC Elements.*

1.1 Site Addresses

The Site comprises two parcels with addresses of 28955 and 28607 South Wixom Road, Wixom, Oakland County Michigan based on county property records. The Site parcels were recently divided from two former WAP parcels which had addresses of 28621 and 29311 South Wixom Road, Wixom, Oakland County, Michigan.

1.2 Legal Description and Scaled Map

This BEA has been prepared for only the proposed Menard's home improvement building site (i.e., the Site). This area is comprised of two parcels totaling approximately 45.8 acres of the overall 317-acre former WAP property. A legal description and graphical depiction of the Site are provided in *Appendix A, Legal Boundary Survey.*

1.3 Property Tax Identification Numbers

The Site comprises of two parcels with parcel identification numbers of 22-07-200-009 and 22-07-426-010 and are depicted in Appendix A as parcels 'B1' and B2', respectively. These parcels were recently divided from two former WAP parcels, 96-22-07-200-005 and 96-22-07-426-007, respectively.

1.4 Previous BEAs

Ford owned and operated the WAP property since at least 1955. To MSG's knowledge, there is no previous BEA for this property conducted for Ford. However, a BEA titled XP Operations Area Baseline Environmental Assessment, Ford Renewable Energy Park, dated October 1, 2010 and revised November 23, 2010 was conducted by MSG for a prospective purchaser. This BEA was conducted for a portion of the former WAP which encompasses approximately the southern ¾ of the Site. The MDEQ provided an affirmation letter, dated December 9, 2010, for this former BEA.

1.5 Proposed Future Uses

Menard intends to redevelop a portion of the Site for commercial use as a Menard's home improvement store with additional lots available for future commercial development. Current conceptual plans include an approximate 16.7-acre lot for the Menard's store (including parking and landscaped areas), approximately 25 acres for future commercial development, and approximately 4 acres for a retention pond area.

2.0 PAST USES/ACTIVITIES

Prior to development the former WAP property was vacant wooded/wetland or cultivated agricultural land. The WAP was initially developed by Ford in 1955 for the manufacture and assembly of finished automobiles. The WAP underwent several major expansions between 1963 and 1998. During the former WAP operation, Ford conducted numerous vehicle production processes that included metal working, sealing, welding, metal preparation (sanding,

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surface preparation, electro-coating and phosphating), painting, assembly and quality assurance/quality control testing. Ancillary operations conducted at the former WAP by Ford included: wastewater treatment, power generation, vehicle storage, equipment maintenance, receipt/storage/handling of raw materials and waste management (on-site land filling as well as hazardous/non-hazardous waste handling/storage for off-site disposal). Ford ceased production at the former WAP in June 2007. It is MSG's understanding that the portions of the former WAP buildings (including building foundations and floor slabs) that were located on the Site have been demolished and removed by Ford.

2.1 Summary of Past Site Investigations

Multiple environmental investigations have been completed at the former WAP and have been prepared by Conestoga-Rovers & Associates, Inc. (CRA), on behalf of Ford, to determine existing on-site chemical impacts. These past investigations have identified chemical constituents released into the environment at concentrations exceeding generic cleanup criteria and screening values developed pursuant to Part 201 Environmental Remediation (Part 201) and Part 213 Leaking Underground Storage Tanks (Part 213), of the Natural Resources and Environmental Protection Act, 1994 of PA 451, as amended (NREPA). These documents were reviewed in preparing this BEA. CRA is an environmental consulting firm with recognized expertise in Michigan and known to be familiar with the performance of environmental sampling in accordance with State of Michigan accepted standards and practices. As such, the data provided in these reports is considered to be reliable and relevant. Section 7 provides a list of investigation reports prepared for the WAP, and maintained in Michigan Department of Environmental Quality (MDEQ) – Remediation and Redevelopment Division (RRD) files, that were relied upon for preparation of this BEA.

Past environmental investigations conducted by Ford identified 57 RECs and 3 areas of further evaluation (AFE) throughout the WAP site. The location and designation of REC elements and AFEs identified in previous investigations throughout the WAP are reflected on Figure 2A with number designations. Thirteen of the identified WAP RECs are located on the Site as identified on Figure 2B.

2.2 Phase I Environmental Site Assessment

MSG conducted a Phase I Environmental Site Assessment (ESA), dated November 1, 2012 and updated October 4, 2013, for the Site in accordance with American Society for Testing and Materials (ASTM) standard E 1527-05, titled: "*Standard Practice For Environmental Site Assessments: Phase I Environmental Site Assessment Process*" and in general accordance with Environmental Protection Agency's (EPA) All Appropriate Inquiry (AAI) standard codified in Federal Regulation – *40 Code of Federal Regulations (CFR) Part 312 - Standards and Practices for All Appropriate Inquiries.* The updated Phase I ESA identified 16 RECs at the Site, 13 of which were previously identified by Ford in the WAP Phase I ESA, two of which were reportedly discovered during Ford remedial activities conducted subsequent to WAP Phase I and Phase II ESA investigations, and one of which is the presence of the former automotive plant itself. Refer to the *Appendix B, Phase I Environmental Site Assessment.*

3.0 KNOWN CHEMICAL IMPACTS

Environmental investigations completed on the Site have included assessment of the areas of historic operations and potential releases regulated under Part 201. Details of the investigations and findings are found in the investigation reports referenced in Section 2.1.

The updated Phase I ESA conducted for the Site identified 16 RECs as listed below. REC numbers in parentheses indicate identifiers of WAP RECs that were evaluated in previous investigations conducted on behalf of Ford, where applicable.

- Former Adjacent Automotive Manufacturing Plant (northern and western adjacent properties)
- Open Leaking Underground Storage Tank (Executive Garage; REC 2)
- Former Adjacent Service Station (eastern adjacent property; REC 8)

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- Belowgrade Hydraulic Equipment (REC 12)
- Miscellaneous Pits, Trenches and Sumps (RECs 13 and 38)
- Former 1,000-gallon waste oil UST (REC 16)
- Former 6,000-Gallon Brake Fluid UST (REC 20)
- Used Oil UST (REC 34)
- Former PCB-Containing Substations (REC 40)
- 10,000-gallon gasoline UST (REC 41)
- Historic Farmstead (REC 42)
- Current ASTs and USTs (REC 44)
- Belowgrade Industrial Process Lines (REC 45)
- Agricultural Chemical Use (REC 46)
- AOC 1 Benzene impacts
- AOC 3 Hydraulic oil impacts

In addition to the RECs that were identified in the updated Phase I ESA, the following WAP RECs identified in previous investigations are located adjacent to the Site, but were not determined to be RECs for the Site. Due to their proximity to the Site, sampling associated with some of these RECs has been conducted on the Site.

- Additional Areas of Potential Fill Activities (REC 7)
- Drainage Ditch Sediments (REC 9)
- Power Wash Booth in Truck Repair (REC 25)
- Vehicle Wash Pits (REC 31)
- Battery Charging Area (REC 39)
- Fluid Fill Areas (REC 48)
- Former Degreasing Operations (REC 51)

The location and designation of RECs that are associated with the Site are reflected on Figure 2B with circled number designations. Sampling activities conducted by CRA during previous Phase II and supplemental Phase II investigations for the WAP identified chemical compounds in soil and groundwater at levels exceeding their respective Part 201/213 Generic Residential Cleanup Criteria (GRCC). MSG's review identified eight WAP RECs (RECs 2, 7, 8, 20, 31, 38, 46 and 48) where sampling was conducted by Ford within the Site boundaries. Sampling associated with the AOC 1 and AOC 3 RECs has reportedly been conducted on the Site. However, this sampling and analytical data has not yet been available to Menard or MSG.

3.1 Hazardous Substances Known to Have Been Released

The investigations conducted to date for the former WAP have identified volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCB), metals, and chloride at concentrations greater than Part 201 GRCC in soil and groundwater at the WAP facility. Site soil samples have identified VOCs and metals at concentrations greater than Part 201 Residential Drinking Water Protection Criteria (DWPC), Groundwater Surface Water Interface Protection Criteria (GSIPC), and/or Soil Volatilization to Indoor Air Inhalation Criteria (SVIIC) as discussed below. Site groundwater samples have identified VOCs and metals at concentrations greater than Part 201 Residential Drinking Water Criteria (DWC), Groundwater Surface Water Interface Criteria (GSIC) and Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC) as discussed below. Sample analytical results associated with AOC 1 and AOC 3 have not made available to Menard or MSG at this time.

GRCC are the comparison standard for a baseline environmental site assessment. Summaries of detected concentrations of chemicals in soil and groundwater samples collected on the Site are provided *in Table 1, Soil Analytical Summary* and *Table 2, Groundwater Analytical Summary.*

The Chemical Abstracts Service (CAS) registry number and maximum detected chemical concentration from Ford investigation samples collected from the Site property are provided in *Table 3, Summary of Soil Maximum Analytical Detection Concentrations* and *Table 4, Summary of Groundwater Maximum Analytical Detection Concentrations.*

3.1.1 Soil

Chemical concentrations of the following VOCs and metals detected in one or more soil samples from the Site exceed Part 201 GRCC as follows:

Residential DWPC Exceedances

- Benzene
- Ethylbenzene
- Tetrachloroethene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic
- Cobalt
- Iron
- Magnesium
- Manganese

GSIPC Exceedances

- Benzene
- Ethylbenzene
- 2-Methylnaphthalene
- Naphthalene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic
- Cobalt
- Manganese
- Selenium

Residential SVIIC Exceedances

- Benzene

VOC exceedances in Site soil samples in the vicinity of the former Executive Garage where two leaking underground storage tanks were formerly located (REC 2). Metals exceedances are located in soil samples collected throughout the Site without any apparent spatial correlations. Site area soil sample exceedances are depicted on *Figure 3, Site Soil Sample Results.*

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3.1.2 Groundwater

Chemical concentrations of the following VOCs and metals detected in one or more groundwater samples from the Site exceed Part 201 GRCC as follows:

Residential DWC Exceedances

- Benzene
- Ethylbenzene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Aluminum (total)
- Arsenic (total)
- Iron (total and dissolved)
- Lead (total)
- Manganese (total and dissolved)
- Sodium (total and dissolved)
- Vanadium (total)

GSIC Exceedances

- Benzene
- Ethylbenzene
- Naphthalene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic (total)
- Barium (dissolved)

GVIIC Exceedances

- Benzene

VOC exceedances in Site groundwater samples are limited to samples collected in the vicinity of the former Executive Garage where two leaking underground storage tanks were formerly located (REC 2). Ford indicated during a September 23, 2013 meeting with Menard and MSG, that the only GNRCC VOC exceedances remaining in the Menard Site soils, including those associated with AOC 1 and AOC 3, are DWPC and GSIPC exceedances. Metals exceedances in Site groundwater samples were observed throughout the Site without any apparent spatial correlations and calculations conducted by Ford indicate that some of the elevated metal concentrations may be representative of naturally occurring background concentrations. Site area groundwater sample exceedances are depicted on *Figure 4, Site Groundwater Sample Results.*

3.1.3 Other Media

Light non-aqueous phase liquid (LNAPL) has been identified on the Site as "free product" in previous investigations associated with the Executive Garage by Ford. LNAPL has been observed in nine of the 28 monitoring wells currently or formerly located on the Site. It is MSG's understanding that remediation activities at the Site have been conducted by Ford, approximately

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five monitoring wells currently remain on the Site, and that Ford is currently seeking closure for the Executive Garage LUST impacts (REC 2) through the MDEQ.

Based on available data, no soil gas samples have been collected on the Site for comparison to MDEQ screening levels for vapor intrusion to indoor air. Concentrations of benzene in soil and groundwater exceed the promulgated GRCC pertaining to volatilization to indoor air (i.e. SVIIC and GVIIC, respectively). The MDEQ is in the process of developing soil and groundwater vapor intrusion screening levels that may supersede the promulgated GRCC, depending on the applicability of the GRCC to current and future site conditions. Residential vapor intrusion screening levels, as provided in the MDEQ draft final Guidance Document for the Vapor Intrusion Pathway, dated May 2013, were compared to Site sample data for evaluation of potential future exceedances. Concentrations in soil exceeded the Residential Vapor Intrusion Soil Screening Levels for benzene, ethylbenzene, isopropylbenzene, 2-methylnaphthalene, naphthalene, tetrachloroethene, toluene, 1,2,4-trimethlybenzene, 1,3,5-trimethlybenzene, and/or total xylenes in several samples. Concentrations in groundwater exceeded the Residential Vapor Intrusion Groundwater Screening Levels for benzene, ethylbenzene, and/or total xylenes in two samples (TW2-38 and TW2-42). Note that the Site sample concentrations were not compared to the Residential Vapor Intrusion Shallow Groundwater Screening Levels as they are unlikely to be applicable to the Site based on the depth to groundwater.

A total of three roof-mounted and two ground level electrical substations were reportedly located on the Site. Based on the June 2007 CRA Phase I ESA for the WAP, two of the roof-mounted substations on the Site included transformers and switch gear that contained PCB oil. Based on the 2008 CRA Draft Regulated Materials Sampling and Analysis Report, concrete samples collected from the two aforementioned roof-mounted substations as well and the two ground level substations contained PCB. All of the substations, associated equipment and concrete substation foundations located on the Site were removed during building demolition. The former WAP building floor slab has been removed by Ford's demolition contractor.

The former WAP concrete and asphalt access drives and parking areas have been left in-place at the Site. Based on the 2008 CRA Draft Regulated Materials Sampling and Analysis Report, two asphalt and one concrete pavement sample were collected on the Site and analyzed for VOCs, SVOCs, metals, toxicity characteristics leaching procedure (TCLP) metals, and PCBs. Limited concentrations of metals and SVOCs were noted in the samples at levels that would be expected for the materials. Based on the analytical results, the exterior pavement materials can be recycled or disposed of as inert material under Michigan Part 115 and 201 requirements. A visual inspection of the pavement should be conducted to identify potential areas of contamination above *de minimus* quantities. If inspections of pavement indicate that it may be contaminated (i.e. staining or odors), the material in question should be sampled and characterized. Reuse of more than 1,000 cubic yard of recycled concrete or asphalt requires notification to the MDEQ.

Previous investigations identified asbestos containing materials (ACM) throughout the Site building. Ford developed plans, retained contractors and acquired necessary permits to facilitate proper handling and disposal of ACMs prior to and during demolition of the Site buildings. There is no direct evidence that ACMs are present in the Site subsurface. However, the potential exists for ACMs to be present in subsurface utility lines, pipes and pipe wraps and suspected ACMs discovered during demolition activities should be managed appropriately.

3.1.4 Basis for Concluding that the Subject Property is a Facility

Chemical compounds have been identified on the Site at concentrations exceeding Part 201 GRCC and screening levels as specified in Remediation and Redevelopment Operations

Memorandum 2, Revised January 23, 2006. Accordingly, the Site is considered a "facility" pursuant to PA 451, Part 201.

3.2 Abandoned or Discarded Containers

No containers of hazardous substances were observed during the Phase I ESA site reconnaissance conducted on April 18, 2013.

4.0 ENVIRONMENTAL COOPERATION AGREEMENT

MSG understands that Menard intends to enter into an environmental cooperation agreement (ECA) with Ford in which responsibilities for remediating or mitigating existing and currently unknown chemical impacts will be specified. An ECA provides framework of obligations and requirements to facilitate cooperation on environmental issues at the Site. Based on MSG's review of an ECA pertaining to a separate portion of the former WAP, MSG anticipates that Ford Land will retain responsibility for identified pre-closing environmental conditions and certain environmental obligations will be conveyed to Menard and subsequent property purchasers. An ECA is a legal agreement and MSG recommends that Menard consult qualified legal counsel to ensure complete understanding of ECA impacts on environmental liability and future operations related to the Site.

5.0 IDENTIFICATION OF AUTHORS

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6.0 CONCLUSIONS

Based on review of pertinent site data and environmental investigation reports, the following can be concluded:

- Existing contaminated media (such as soil and groundwater) is present on the Site as identified by samples collected on the Site. As such, the Site meets the definition of a "facility" pursuant to Part 201 rules.
- Environmental investigations have been conducted by Ford. Based upon on-going review(s) environmental investigation reports submitted to MDEQ by Ford, additional Site investigation or response activities by Ford may be required.
- An updated Phase I ESA conducted for the Menard Site identified 16 RECs associated with the past use of the Site and adjacent properties as an automotive manufacturing plant.
- This BEA provides liability protection from environmental impacts existing at the time of property transfer pursuant to Part 201 rules.
- MSG understands that Menard intends to enter into an ECA with Ford in which responsibilities for remediating or mitigating existing and currently unknown chemical impacts will be specified.
- Menard should consult qualified legal counsel to ensure complete understanding of ECA impacts on environmental liability and future operations related to the Site.
- In accordance with Michigan regulations, Site pavement from the former WAP should be characterized prior to recycling, reuse or disposal. Characterization of concrete and asphalt pavement has been conducted by Ford previously and indicates that the Site pavement is eligible for recycling and reuse as inert material. A

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visual inspection of the pavement should be conducted and sampling and characterization should be conducted where evidence of potential contamination above *de minimus* quantities is observed.

- Provide notification to the MDEQ if more than 1,000 cubic yard of recycled concrete and/or asphalt is to be used on the Site.
- Based on the past use of the Site, previously unidentified chemical impacts may be present in the Site subsurface. MSG recommends that an environmental professional be on-call during subsurface disturbance activities to perform monitoring and assess previously unidentified chemical impacts that may be encountered.
- MSG recommends that a Section 20107a Compliance Analysis (i.e., a Due Care Plan) be prepared for the Site.

7.0 REFERENCES

1) Phase I Environmental Site Assessment, Ford Wixom Assembly Plant, Conestoga-Rovers & Associates, Inc. (CRA), dated June 2007.

2) Draft Part II – Regulated Materials Sampling and Analysis Report, Ford Wixom Assembly Plant, CRA, dated July 2008.

3) Phase II Environmental Site Assessment, Ford Wixom Assembly Plant, CRA, dated September 2008.

4) Part I – Regulated Materials Survey, Ford Wixom Assembly Plant, CRA, dated September 2008.

5) Phase II Environmental Site Assessment Supplement No. 1, Ford Wixom Assembly Plant, CRA, dated May 2009.

6) 2008 Free Product Recovery Status and GW Monitoring Report, Ford Wixom Assembly Plant, CRA, dated August 24, 2009 (Release Nos. C-0519-98 and C-0674-00).

7) Revised Corrective Action Plan, Ford Wixom Assembly Plant, CRA, dated March 19, 2010 (Release Nos. C-0519-98 and C-0674-00).

8) 2009 Free Product Recovery Status and GW Monitoring Report, Ford Wixom Assembly Plant, CRA, dated March 19, 2010 (Release Nos. C-0519-98 and C-0674-00).

9) First Quarter 2010 Free Product Recovery Status Report, Executive Garage, Ford Wixom Assembly Plant, CRA, dated April 28, 2010 (Release Nos. C-0519-98 and C-0674-00).

10) Conceptual Remedial Action Plan, Ford Wixom Assembly Plant, CRA, dated June 2010.

11) Phase II Environmental Site Assessment Supplement No. 2, Ford Wixom Assembly Plant, CRA, dated June 2010.

12) XP Operations Area Baseline Environmental Assessment, Ford Renewable Energy Park, MSG, dated October 1, 2010 and revised November 23, 2010.

13) Third Quarter 2012 Free Product Recovery Status Report, Ford Wixom Assembly Plant, CRA, dated October 16, 2012 (Release Nos. C-0519-98 and C-0674-00).

14) Phase I Environmental Site Assessment, 28955 & 28607 Wixom Road, Wixom, Oakland County, Michigan, MSG, November 1, 2012, updated October 4, 2013.

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TABLES

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Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

SOIL Part 201/213 Generic Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Residential Vapor Intrusion Screening Values May 23, 2013 Units: µg/kg			Volatile Organic Compounds (VOCs)																Semivolatile Organic Compounds (SVOCs)						Metals/Inorganics			
			Acetone	Benzene	2-Butanone (MEK)	Ethylbenzene	Isopropylbenzene	4-Methyl-2-Pentanone	Methyl Cyclohexane	2-Methylnaphthalene	Methyl-tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(a)pyrene	Chrysene	Fluoranthene	Pyrene	Aluminum (B)	Antimony	Arsenic (B)	Barium (B)
Statewide Default Background Levels (X)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9E+06	NA	5,800	75,000
Drinking Water Protection Criteria (XI)			15,000	100	2.6E+05	1,500	91,000	36,000	NA	57,000	800	35,000	100	16,000	4,000	2,100	1,800	5,600	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1,000	4,300	4,600	1.3E+06
Groundwater Surface Water Interface Protection Criteria (XII)			34,000	4,000 (X)	44,000	360	3,200	ID	NA	4,200	1.4E+05 (X)	730	1,200 (X)	5,400	1,800	570	1,100	820	NLL	NLL	NLL	NLL	5,500	ID	NA	94,000 (X)	4,600	4.4E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1E+08 (C)	2.2E+05	2.7E+07 (C)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	5.5E+06	5.9E+06 (C)	2.1E+06	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1.0E+09 (D)	4.9E+07	2.0E+06	1.0E+09 (D)
Vapor Intrusion Soil Screening Level (S_{VI-ICS})			311,000	50 (I)	181,000	198	250 (I)	61,900	NA	7,480	14,200	443	52.4	10,100	3,970	2,200	1,660	291	ID	NA	NA	NA	NA	6.5E+07	NA	NA	NA	NA
Soil Volatilization to Indoor Air Inhalation (XIV)			1E+08 (C)	1,600	2.7E+07 (C)	87,000	3.9E+05 (C)	2.7E+06 (C)	NA	2.7E+06	5.9E+06 (C)	2.5E+05	11,000	2.5E+05 (C)	2.5E+05	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLV	ID	NLV	ID	1.0E+09 (D)	1.0E+09 (D)	NLV	NLV	NLV	NLV
Infinite Source Volatile Soil Inhalation Criteria (XXIII)			1.3E+08	13,000	2.9E+07	7.2E+05	1.7E+06	4.5E+07	NA	1.5E+06	2.5E+07	3.0E+05	1.7E+05	2.8E+06	3.8E+06	2.10E+07	1.6E+07	4.6E+07	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (5 m) (XXIV)			1.3E+08	34,000	2.9E+07	1.0E+06	1.7E+06	4.5E+07	NA	1.5E+06	3.9E+07	3.0E+05	4.8E+05	5.1E+06	1.2E+07	5.0E+08	3.8E+08	6.1E+07	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (2 m) (XXV)			1.9E+08	79,000	3.5E+07	2.2E+06	2.8E+06	6.7E+07	NA	1.5E+06	8.7E+07	3.0E+05	1.1E+06	1.2E+07	2.8E+07	5.0E+08	3.8E+08	1.3E+08	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Particulate Soil Inhalation Criteria (XXVI)			3.9E+11	3.8E+08	6.7E+10	1.0E+10	5.8E+09	1.4E+11	NA	6.7E+08	2.0E+11	2.0E+08	2.7E+09	2.7E+10	6.7E+10	8.2E+10	8.2E+10	2.9E+11	ID	ID	1.5E+06	ID	9.3E+09	6.7E+09	ID	1.3E+07	7.2E+05	3.3E+08
Direct Contact Criteria (XXVII)			2.3E+07	1.8E+05	2.7E+07 (C, DD)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	8.1E+06	1.5E+06	1.6E+07	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	20,000	20,000	2,000	2.0E+06	4.6E+07	2.9E+07	5.0E+7 (DD)	1.8E+05	7,600	3.7E+07
Soil Saturation Concentration Screening Levels (Csat) (XX)			1.1E+08	4.0E+05	2.7E+07	1.40E+05	3.90E+05	2.7E+06	NA	NA	5.9E+06	NA	88,000	2.5E+05	4.6E+05	1.10E+05	94,000	1.5E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																										
SB-13	18-19'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-13	27-28'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-17	27-28'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-32	18.5-19.5'	10/2/2009	ND	1,400	ND	26,000	ND	ND	ND	1,500 J	ND	6,600	ND	8,400	ND	74,000	21,000	93,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-33	16-17'	10/2/2009	ND	ND	ND	29,000	ND	ND	ND	4,900 J	ND	6,200	ND	21,000	ND	62,000	17,000	140,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-34	23-24	10/2/2009	ND	8,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	56,000	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-35	11.5-12.5'	10/2/2009	ND	390	ND	23 J	ND	ND	ND	ND	ND	ND	ND	810	ND	44 J	ND	76 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-36	15.5'	10/5/2009	ND	2,600	ND	3,500	ND	ND	ND	ND	310 J	ND	ND	50,000	ND	6,200	2,200	13,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37	14-14.5'	10/5/2009	ND	1,200	ND	49	ND	ND	ND	ND	ND	ND	ND	1,400	ND	76 J	ND	120 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37 (Dup)	14-14.5'	10/5/2009	ND	1,200	ND	40 J	ND	ND	ND	ND	ND	18 J	ND	1,300	ND	78 J	ND	99 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-38	14-14.5'	10/5/2009	ND	87	ND	ND	ND	ND	ND	ND	ND	ND	ND	24 UB	ND	ND	ND	34 UB	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-39	10-10.5'	10/5/2009	ND	9.3 J	ND	150	ND	ND	ND	ND	ND	56 J	ND	240	ND	650	180	830	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-40	7.5-8'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-41	13.5-14'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-42	14-14.5'	10/6/2009	ND	29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-43	4-4.5'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-44	17-17.5'	10/7/2009	ND	4,000	ND	13,000	ND	ND	ND	ND	ND	3,400 J	ND	130,000	ND	65,000	21,000	45,000	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-45	6.5-7'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26 UB	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-46	4-5'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-46 (Dup)	4-5'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-47	2-2.5'	10/19/2009	ND	760	ND	21 J	ND	ND	ND	ND	ND	ND	ND	90	ND	51 J	ND	20 J	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-47 (Dup)	2-2.5'	10/19/2009	ND	800	ND	38 J	ND	ND	ND	ND	ND	ND	ND	51 J	ND	41 J	ND	33 J	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB2-48	4-4.5'	10/19/2009	ND	ND	ND	ND	ND	ND	ND	14,000	ND	2,700 J	ND	ND	ND	ND	1,500 J	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS
SB7-8	2-6'	3/4/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND	ND	ND	9.4 J	11 J	7.5 J	8.5 J	16 J	13 J	1,470,000	27 J	1,800	8,500
SB31-1	4-8'	3/10/2008	30	ND	4.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,540,000	150 J	18,100 J	65,900
SB31-5	2-5'	6/13/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5,500	NS
SB38-4	1-3'	10/9/2008	ND	ND	ND	10 J	ND	ND	ND	ND	ND	ND	600	ND	ND	ND	ND	64 J	NS	NS	NS	NS	NS	NS	5,820,000	49 J	3,900	39,300
SB38-5	1-3'	10/9/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	1,950,000	ND	3,600	8,600
SB38-11	1-2'	10/9/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.9	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	5,370,000	76 J	4,700	37,100
SB38-22	1-1.5'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.77 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-23	1-1.5'	6/4/2009	ND	ND	ND	770 J	540 J	730 J	550 J	ND	ND	ND	ND	ND	ND	15,000	4,400	2,900 J	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-24	2.5-3'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26 J	13	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-25	5.5-6'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-30	1-3'	8/28/2009	24	ND	4.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Residential Cleanup Criteria Revised September 26, 2012 and Part 201/213 Draft Final Residential Vapor Intrusion Screening Values May 23, 2013 Units: µg/kg			Metals/Inorganics																						
			Beryllium	Cadmium (B)	Calcium	Chromium	Chromium III	Chromium VI	Cobalt	Copper (B)	Iron (B)	Lead (B)	Lead - coarse fraction (B)	Lead - fine fraction (B)	Lead - total (B)	Magnesium (B)	Manganese (B)	Mercury (B,Z)	Nickel (B)	Potassium	Selenium (B)	Silver (B)	Sodium	Thallium (B)	Vanadium	Zinc (B)
Statewide Default Background Levels (X)			NA	1,200	NA	18,000	NA	NA	6,800	32,000	1.2E+07	21,000	21,000	21,000	21,000	NA	4.4E+05	130	20,000	NA	410	1,000	NA	NA	NA	47,000
Drinking Water Protection Criteria (XI)			51,000	6,000	NA	30,000	1.0E+09 (D)	30,000	800	5.8E+06	6,000	7.0E+05	7.0E+05	7.0E+05	7.0E+05	8.0E+06	1,000	1,700	1.0E+05	NA	4,000	4,500	2.5E+06	2,300	72,000	2.4E+06
Groundwater Surface Water Interface Protection Criteria (XII)			84,000 (G)*	,600 (G,X)	NA	3,300	.0E+9 (G,X)*	3,300	2,000	73,000 (G)*	NA	5.1E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	NA	56,000 (G,X)*	50 (M), 1.2	76,000 (G)*	NA	400	100 (M), 27	NA	4,200 (X)	4.3E+05	1.7E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1.0E+09 (D)	2.3E+08	NA	1.4E+08	1.0E+09 (D)	1.4E+08	4.8E+07	1.0E+09 (D)	1.0E+09 (D)	ID	ID	ID	ID	1.0E+09 (D)	1.8E+08	47,000	1.0E+09 (D)	NA	7.8E+07	2.0E+08	1.0E+09 (D)	1.5E+07	1.0E+09 (D)	1.0E+09 (D)
Vapor Intrusion Soil Screening Level ($S_{VI/RS}$)			NA	NA	NA	NA	NLV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soil Volatilization to Indoor Air Inhalation (XIV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Infinite Source Volatile Soil Inhalation Criteria (XXIII)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (5 m) (XXIV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (2 m) (XXV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Particulate Soil Inhalation Criterie (XXVI)			1.3E+06	1.7E+06	NA	2.6E+05	1.3E+08	2.6E+05	1.3E+07	1.3E+08	ID	1.0E+08	1.0E+08	1.0E+08	1.0E+08	6.7E+09	3.3E+06	2.0E+07	1.3E+07	NA	1.3E+08	6.7E+06	ID	1.3E+07	ID	ID
Direct Contact Criteria (XXVII)			4.1E+05	5.5E+05	NA	2.5E+06	1.1E+07	2.5E+06	2.6E+06	2.0E+07	1.6E+08	4.0E+05	4.0E+05	4.0E+05	4.0E+05	1.0E+09 (D)	2.5E+07	1.6E+05	4.0E+07	NA	2.6E+06	2.5E+06	1.0E+09 (D)	35,000	7.5E+05 (DD)	1.7E+08
Soil Saturation Concentration Screening Levels (Csat) (XX)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																								
SB-13	18-19'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-13	27-28'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-17	27-28'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-32	18.5-19.5'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-33	16-17'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-34	23-24	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-35	11.5-12.5'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-36	15.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37 (Dup)	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-38	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-39	10-10.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-40	7.5-8'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-41	13.5-14'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-42	14-14.5'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-43	4-4.5'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-44	17-17.5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-45	6.5-7'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-46	4-5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-46 (Dup)	4-5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-47	2-2.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-47 (Dup)	2-2.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-48	4-4.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB7-8	2-6'	3/4/2008	ND	120	49,800,000	4,300	4,300	ND	1,700	4,700	3,890,000	ND	3,800 J	6,000 J	4,800 J	9,600,000 J	150,000 J	ND	4,500	290,000 J	180	ND	673,000 J	ND	5,300	17,300
SB31-1	4-8'	3/10/2008	360	450	35,700,000	11,200	11,200	ND	7,300	27,300 J	19,700,000	NS	11,200	17,000	12,600	17,300,000 J	707,000	ND	18,000	653,000	610	ND	ND	160	26,100	69,500
SB31-5	2-5'	6/13/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-4	1-3'	10/9/2008	160 J	250	48,900,000	13,400	13,400	ND	4,800	11,200	10,700,000	4,600	ND	ND	ND	15,500,000	230,000	25 J	13,100	1,100,000	260	89	159,000	250	14,100	33,300
SB38-5	1-3'	10/9/2008	ND	130	47,400,000	5,300	4,900	ND	2,500	8,200	5,730,000	3,200	ND	ND	ND	9,610,000	208,000	ND	6,300	306,000 J	150 J	ND	80,100 J	78 J	7,200	21,700
SB38-11	1-2'	10/9/2008	160 J	290	48,600,000	10,200	10,200	ND	4,800	13,200	11,300,000	5,100	NS	NS	NS	14,400,000	196,000	28 J	13,200	1,060,000	260	20 J	154,000	260	15,400	33,500
SB38-22	1-1.5'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-23	1-1.5'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-24	2.5-3'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-25	5.5-6'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-30	1-3'	6/28/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Residential Vapor Intrusion Screening Values May 23, 2013 Units: µg/kg			Volatile Organic Compounds (VOCs)																Semivolatile Organic Compounds (SVOCs)						Metals/Inorganics			
			Acetone	Benzene	2-Butanone (MEK)	Ethylbenzene	Isopropylbenzene	4-Methyl-2-Pentanone	Methyl Cyclohexane	2-Methylnaphthalene	Methyl-tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(a)pyrene	Chrysene	Fluoranthene	Pyrene	Aluminum (B)	Antimony	Arsenic (B)	Barium (B)
Statewide Default Background Levels (X)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9E+06	NA	5,800	75,000
Drinking Water Protection Criteria (XI)			15,000	100	2.6E+05	1,500	91,000	36,000	NA	57,000	800	35,000	100	16,000	4,000	2,100	1,800	5,600	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1,000	4,300	4,600	1.3E+06
Groundwater Surface Water Interface Protection Criteria (XII)			34,000	4,000 (X)	44,000	360	3,200	ID	NA	4,200	1.4E+05 (X)	730	1,200 (X)	5,400	1,800	570	1,100	820	NLL	NLL	NLL	NLL	5,500	ID	NA	94,000 (X)	4,600	4.4E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1.1E+08 (C)	2.2E+05	2.7E+07 (C)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	5.5E+06	5.9E+06 (C)	2.1E+06	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1.0E+09 (D)	4.9E+07	2.0E+06	1.0E+09 (D)
Vapor Intrusion Soil Screening Level (S_{Vinf})			311,000	50 (I)	181,000	198	250 (I)	61,900	NA	7,480	14,200	443	52.4	10,100	3,970	2,200	1,660	291	ID	NA	NA	NA	NA	6.5E+07	NA	NA	NA	NA
Soil Volatilization to Indoor Air Inhalation (XIV)			1.1E+08 (C)	1,600	2.7E+07 (C)	87,000	3.9E+05 (C)	2.7E+06 (C)	NA	2.7E+06	5.9E+06 (C)	2.5E+05	11,000	2.5E+05 (C)	2.5E+05	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLV	ID	NLV	ID	1.0E+09 (D)	1.0E+09 (D)	NLV	NLV	NLV	NLV
Infinite Source Volatile Soil Inhalation Criteria (XXIII)			1.3E+08	13,000	2.9E+07	7.2E+05	1.7E+06	4.5E+07	NA	1.5E+06	2.5E+07	3.0E+05	1.7E+05	2.8E+06	3.8E+06	2.10E+07	1.6E+07	4.6E+07	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (5 m) (XXIV)			1.3E+08	34,000	2.9E+07	1.0E+06	1.7E+06	4.5E+07	NA	1.5E+06	3.9E+07	3.0E+05	4.8E+05	5.1E+06	1.2E+07	5.0E+08	3.8E+08	6.1E+07	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (2 m) (XXV)			1.9E+08	79,000	3.5E+07	2.2E+06	2.8E+06	6.7E+07	NA	1.5E+06	8.7E+07	3.0E+05	1.1E+06	1.2E+07	2.8E+07	5.0E+08	3.8E+08	1.3E+08	NLV	ID	NLV	ID	7.4E+08	6.5E+08	NLV	NLV	NLV	NLV
Particulate Soil Inhalation Criteria (XXVI)			3.9E+11	3.8E+08	6.7E+10	1.0E+10	5.8E+09	1.4E+11	NA	6.7E+08	2.0E+11	2.0E+08	2.7E+09	2.7E+10	6.7E+10	8.2E+10	8.2E+10	2.9E+11	ID	ID	1.5E+06	ID	9.3E+09	6.7E+09	ID	1.3E+07	7.2E+05	3.3E+08
Direct Contact Criteria (XXVII)			2.3E+07	1.8E+05	2.7E+07 (C, DD)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	8.1E+06	1.5E+06	1.6E+07	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	20,000	20,000	2,000	2.0E+06	4.6E+07	2.9E+07	5.0E+7 (DD)	1.8E+05	7,600	3.7E+07
Soil Saturation Concentration Screening Levels (Csat) (XX)			1.1E+08	4.0E+05	2.7E+07	1.40E+05	3.90E+05	2.7E+06	NA	NA	5.9E+06	NA	88,000	2.5E+05	4.6E+05	1.10E+05	94,000	1.5E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																										
SB46-3	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6,110,000	120 J	5,600	46,600
SB46-3 (Dup)	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	9,600	NS
SB48-3	6-8'	3/24/2008	NS	0.24 J	NS	ND	NS	NS	NS	NS	NS	NS	NS	0.94 J	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS

Notes:
Free Product present at REC 2 (Executive Garage Open Leaking Underground Storage Tank)
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Protection Cleanup Criteria (XI)
Exceeds Groundwater Surface Water Interface Protection Cleanup Criteria (XII)
Exceeds Generic Drinking Water Protection (XI) and Groundwater Surface Water Interface Protection (XII) Cleanup Criteria
Exceeds Generic Drinking Water Protection (XI) and Soil Volatilization to Indoor Air Cleanup (XIV) Criteria
Exceeds Generic Drinking Water Protection (XI), Ground Water Surface Water Interface Protection (XII), and Soil Volatilization to Indoor Air (XIV) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Equals or Exceeds Soil Saturation Concentration Screening Level (XX)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

SOIL Part 201/213 Generic Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Residential Vapor Intrusion Screening Values May 23, 2013 Units: µg/kg			Metals/Inorganics																						
			Beryllium	Cadmium (B)	Calcium	Chromium	Chromium III	Chromium VI	Cobalt	Copper (B)	Iron (B)	Lead (B)	Lead - coarse fraction (B)	Lead - fine fraction (B)	Lead - total (B)	Magnesium (B)	Manganese (B)	Mercury (B,Z)	Nickel (B)	Potassium	Selenium (B)	Silver (B)	Sodium	Thallium (B)	Vanadium	Zinc (B)
Statewide Default Background Levels (X)			NA	1,200	NA	18,000	NA	NA	6,800	32,000	1.2E+07	21,000	21,000	21,000	21,000	NA	4.4E+05	130	20,000	NA	410	1,000	NA	NA	NA	47,000
Drinking Water Protection Criteria (XI)			51,000	6,000	NA	30,000	1.0E+09 (D)	30,000	800	5.8E+06	6,000	7.0E+05	7.0E+05	7.0E+05	7.0E+05	8.0E+06	1,000	1,700	1.0E+05	NA	4,000	4,500	2.5E+06	2,300	72,000	2.4E+06
Groundwater Surface Water Interface Protection Criteria (XII)			84,000 (G)*	6,600 (G,X)	NA	3,300	3.0E+9 (G,X)*	3,300	2,000	73,000 (G)*	NA	5.1E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	NA	56,000 (G,X)*	50 (M); 1.2	76,000 (G)*	NA	400	100 (M); 27	NA	4,200 (X)	4.3E+05	1.7E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1.0E+09 (D)	2.3E+08	NA	1.4E+08	1.0E+09 (D)	1.4E+08	4.8E+07	1.0E+09 (D)	1.0E+09 (D)	ID	ID	ID	ID	1.0E+09 (D)	1.8E+08	47,000	1.0E+09 (D)	NA	7.8E+07	2.0E+08	1.0E+09 (D)	1.5E+07	1.0E+09 (D)	1.0E+09 (D)
Vapor Intrusion Soil Screening Level (S_{VI-res})			NA	NA	NA	NA	NLV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Soil Volatilization to Indoor Air Inhalation (XIV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Infinite Source Volatile Soil Inhalation Criteria (XXIII)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (5 m) (XXIV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Finite Source Source Volatile Soil Inhalation Criteria (2 m) (XXV)			NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	52,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Particulate Soil Inhalation Criteria (XXVI)			1.3E+06	1.7E+06	NA	2.6E+05	1.3E+08	2.6E+05	1.3E+07	1.3E+08	ID	1.0E+08	1.0E+08	1.0E+08	1.0E+08	6.7E+09	3.3E+06	2.0E+07	1.3E+07	NA	1.3E+08	6.7E+06	ID	1.3E+07	ID	ID
Direct Contact Criteria (XXVII)			4.1E+05	5.5E+05	NA	2.5E+06	1.1E+07	2.5E+06	2.6E+06	2.0E+07	1.6E+08	4.0E+05	4.0E+05	4.0E+05	4.0E+05	1.0E+09 (D)	2.5E+07	1.6E+05	4.0E+07	NA	2.6E+06	2.5E+06	1.0E+09 (D)	35,000	7.5E+05 (DD)	1.7E+08
Soil Saturation Concentration Screening Levels (Csat) (XX)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																								
SB46-3	2-3'	10/2/2008	160 J	190	53,600,000	12,700	12,300	370 J	6,300	13,900	14,100,000	6,900	NS	NS	NS	18,500,000	308,000	ND	18,400	1,350,000	650	ND	ND	350	18,300	37,100
SB46-3 (Dup)	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB48-3	6-8'	3/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
Free Product present at REC 2 (Executive Garage Open Leaking Underground Storage Tank)
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Exceeds Four or More Cleanup Criteria
Equals or Exceeds Soil Saturation Concentration Screening Level (XX)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Volatile Organic Compounds (VOCs)																SVOCs	Metals/Inorganic Ions						
		Acetone	Benzene	2-Butanone (MEK)	Carbon Disulfide	Cyclohexane	1,1-Dichloroethane	Ethylbenzene	Methyl Acetate	4-Methyl-2-Pentanone	2-Methylnaphthalene	Naphthalene	Tetrachloroethene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	4-Methylphenol	Aluminum	Antimony	Antimony (dissolved)	Arsenic	Arsenic (Dissolved)	Barium	Barium (dissolved)
Drinking Water Criteria (II)		2,100	5.0 (A)	38,000	2,300	NA	2,500	74 (E)	NA	5,200	750	1,500	5.0 (A)	790 (E)	63 (E)	72 (E)	280 (E)	1000	50 (V)	6.0 (A)	6.0 (A)	10 (A)	10 (A)	2,000 (A)	2,000 (A)
Groundwater Surface Water Interface Criteria (GSI) (III)		1,700	200 (X)	2,200	ID	NA	740	18	NA	ID	19	11	60 (X)	270	17	45	41	30 (M); 25	NA	130 (X)	130 (X)	10	10	670 (G)*	670 (G)*
GSI Final Acute Value (FAV)		30,000	1,900	40,000	ID	ID	13,000	320	NA	ID	340	200	2,900	2,600	310	810	730	450	NA	2,300	2,300	680	680	3,800 (G)*	3,800 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V		1.0E+09 (D,S)	35,000	2.4E+8 (S)	5.5E+05	NA	2.3E+06	1.7E+05 (S)	NA	2.0E+07 (S)	25,000 (S)	31,000 (S)	1.7E+05	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		3.1E+07	11,000	2.4E+8 (S)	1.2E+6 (S)	NA	2.4.E+06	1.7E+05 (S)	NA	1.3E+07	25,000 (S)	31,000 (S)	12,000	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	8.1E+05	6.40E+07	68,000	68,000	4,300	4,300	1.4E+07	1.4E+07
Vapor Intrusion Groundwater Screening Level ($GW_{VI\ bn}$)		3.4E+07	140	1.8E+07	9,900	8,100	18,000	2,600	NA	4.4E+06	3,900	1,200	460	1.5E+05	7,300	5,100	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI\ sh\ nn}$)		34,000	5.0 (d)	18,000	9.9	10 (I)	18	700 (d)	NA	4,400	5.0 (I)	5.0 (I)	5.0 (d)	1,000 (d)	7.3	5.1	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		1.0E+09	1.75E+06	2.40E+08	1.19E+06	NA	5.06E+06	1.69E+05	NA	2.00E+07	24,600	31,000	2.0E+05	5.26E+05	55,890	61,150	1.86E+05	2.80E+07	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		1.5E+07	68,000	ID	13,000	NA	3.8.E+05	43,000	NA	ID	ID	NA	ID	61,000	56,000 (S)	ID	70,000	NA	ID	ID	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		1.0E+09 (D)	67,000	2.4E+8 (S)	ID	NA	ID	1.7E+05 (S)	NA	2.0E+07 (S)	ID	31,000 (S)	2.0E+05 (S)	ID	ID	ID	1.9E+05 (S)	ID	ID	ID	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																								
MW2-45	11/23/2009	NS	0.25 J	NS	NS	NS	NS	0.73 J	NS	NS	ND	0.98 J	NS	3.7	3.6	0.88 J	4.7	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-6	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-7	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	0.18 J	0.50 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-7 (Dup)	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	0.17 J	0.50 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	0.47 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9 (Dup)	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/20/2008	NS	1.0 J	NS	NS	NS	NS	7.1	NS	NS	ND	ND	NS	5.3	90	25	17	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/23/2009	NS	0.72 J	NS	NS	NS	NS	2.8	NS	NS	1.0 J	1.1 J	NS	5.8	18	4.0	4.0	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-12	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-13R	10/24/2008	ND	ND	ND	ND	0.12 J	ND	ND	ND	ND	ND	ND	ND	0.44 J	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS
PMW-3	5/5/2008	18 J	ND	3.3 J	0.48 J	ND	ND	ND	2.2 J	0.52 J	ND	ND	ND	0.22 J	ND	ND	ND	5.0 J	255	0.31 J	0.36 J	14.6	4.8 J	465	527
PMW-3D	4/29/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND	ND	ND	186	179
PMW-4D	4/25/2008	ND	ND	0.79 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15 J	ND	ND	ND	136	132
PMW-4S	4/25/2008	ND	ND	0.68 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	302	305
RW-1	11/23/2009	NS	ND	NS	NS	NS	NS	56	NS	NS	15 J	77 J	NS	3.0 J	900	11 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
RW-2	11/23/2009	NS	1,900	NS	NS	NS	NS	500	NS	NS	ND	250 J	NS	20,000	2,300	590	4,000	NS	NS	NS	NS	NS	NS	NS	NS
RW-3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
RW-4	11/23/2009	NS	3,800	NS	NS	NS	NS	1,400	NS	NS	ND	360 J	NS	45,000	3,600	970	5,400	NS	NS	NS	NS	NS	NS	NS	NS
TW2-35	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-36	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-37	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-38	11/23/2009	NS	9,200	NS	NS	NS	NS	2,000	NS	NS	ND	240 J	NS	21,000	1,500	330	11,000	ND	NS	NS	NS	NS	NS	NS	NS
TW2-42	11/23/2009	NS	11,000	NS	NS	NS	NS	1,900	NS	NS	ND	200 J	NS	18,000	1,400	330	9,800	ND	NS	NS	NS	NS	NS	NS	NS
TW2-44	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Metals/Inorganic Ions																						
		Cadmium	Calcium	Calcium (dissolved)	Chromium	Cobalt	Cobalt (Dissolved)	Copper	Iron	Iron (dissolved)	Lead	Magnesium	Magnesium (dissolved)	Manganese	Manganese (Dissolved)	Nickel	Nickel (Dissolved)	Potassium	Potassium (Dissolved)	Sodium	Sodium (Dissolved)	Vanadium	Zinc	Zinc (Dissolved)
Drinking Water Criteria (II)		5.0(A)	NA	NA	100 (A)	100	100	1,000 (E)	300 (E)	300 (E)	4.0 (L)	1.1E+06	1.1E+06	50 (E)	50 (E)	100 (A)	100 (A)	NA	NA	3.5E+05	3.5E+05	62	5,000 (E)	5,000 (E)
Groundwater Surface Water Interface Criteria (GSI) (III		3.0 (G,X)*	NA	NA	11	100	100	13 (G)*	NA	NA	29 (G,X)*	NA	NA	2,800 (G,X)*	2,800 (G,X)*	73 (G)*	73 (G)*	NA	NA	NA	NA	27	170 (G)*	170 (G)*
GSI Final Acute Value (FAV)		13.2 (G)*	NA	NA	1,600 (G)*	740	740	39.4 (G)*	NA	NA	550 (G)*	NA	NA	12,000 (G)*	12,000 (G)*	1,300 (G)*	1,300 (G)*	NA	NA	NA	NA	220	330 (G)*	330 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V		NLV	NA	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NA	NA	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		1.90E+05	NA	NA	4.60E+05	2.40E+06	2.40E+06	7.4E+06	5.8E+07	5.8E+07	ID	1.0E+09 (D)	1.0E+09 (D)	9.1E+06	9.1E+06	7.4E+07	7.4E+07	NA	NA	1.0E+09 (D)	1.0E+09 (D)	9.7E+05	1.1E+08	1.1E+08
Vapor Intrusion Groundwater Screening Level (GW_{Inf})		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{Ish\ Inf}$)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																							
MW2-45	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-6	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-7	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7 (Dup)	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9 (Dup)	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-12	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13R	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PMW-3	5/5/2008	1.5	160,000	186,000	5.6	6.1 J	1.8 J	ND	24,400	24,900	ND	43,100	53,300	1,940	2,210	10.8 J	6.6 J	6,290	7,210 J	141,000	163,000	5.7	6.2 J	ND
PMW-3D	4/29/2008	ND	133,000	128,000	ND	ND	ND	ND	2,370	2,240	ND	29,900	28,800	379	365	ND	ND	4,970	4,740	480,000	461,000	ND	ND	ND
PMW-4D	4/25/2008	ND	110,000	107,000	ND	ND	ND	ND	2,590 J	2,390	ND	34,700	33,700	140	140	ND	ND	1,600	1,560	31,500	32,400	ND	ND	ND
PMW-4S	4/25/2008	ND	201,000	201,000	ND	ND	ND	0.36 J	6,900 J	6,720	ND	54,300	54,200	662	663	ND	ND	3,290	3,250	207,000	207,000	1.7 J	6.2 J	14.2 J
RW-1	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RW-2	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RW-3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
RW-4	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-35	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-36	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-37	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-38	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-42	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-44	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Volatile Organic Compounds (VOCs)																SVOCs	Metals/Inorganic Ions						
		Acetone	Benzene	2-Butanone (MEK)	Carbon Disulfide	Cyclohexane	1,1-Dichloroethane	Ethylbenzene	Methyl Acetate	4-Methyl-2-Pentanone	2-Methylnaphthalene	Naphthalene	Tetrachloroethene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	4-Methylphenol	Aluminum	Antimony	Antimony (dissolved)	Arsenic	Arsenic (Dissolved)	Barium	Barium (dissolved)
Drinking Water Criteria (II)		2,100	5.0 (A)	38,000	2,300	NA	2,500	74 (E)	NA	5,200	750	1,500	5.0 (A)	790 (E)	63 (E)	72 (E)	280 (E)	1000	50 (V)	6.0 (A)	6.0 (A)	10 (A)	10 (A)	2,000 (A)	2,000 (A)
Groundwater Surface Water Interface Criteria (GSI) (III		1,700	200 (X)	2,200	ID	NA	740	18	NA	ID	19	11	60 (X)	270	17	45	41	30 (M); 25	NA	130 (X)	130 (X)	10	10	670 (G)*	670 (G)*
GSI Final Acute Value (FAV)		30,000	1,900	40,000	ID	ID	13,000	320	NA	ID	340	200	2,900	2,600	310	810	730	450	NA	2,300	2,300	680	680	3,800 (G)*	3,800 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V		1.0E+09 (D,S)	35,000	2.4E+8 (S)	5.5E+05	NA	2.3E+06	1.7E+05 (S)	NA	2.0E+07 (S)	25,000 (S)	31,000 (S)	1.7E+05	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		3.1E+07	11,000	2.4E+8 (S)	1.2E+6 (S)	NA	2.4.E+06	1.7E+05 (S)	NA	1.3E+07	25,000 (S)	31,000 (S)	12,000	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	8.1E+05	6.40E+07	68,000	68,000	4,300	4,300	1.4E+07	1.4E+07
Vapor Intrusion Groundwater Screening Level ($GW_{VI\,nt}$)		3.4E+07	140	1.8E+07	9,900	8,100	18,000	2,600	NA	4.4E+06	3,900	1,200	460	1.5E+05	7,300	5,100	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI\,sh\,nt}$)		34,000	5.0 (d)	18,000	9.9	10 (I)	18	700 (d)	NA	4,400	5.0 (I)	5.0 (I)	5.0 (d)	1,000 (d)	7.3	5.1	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		1.0E+09	1.75E+06	2.40E+08	1.19E+06	NA	5.06E+06	1.69E+05	NA	2.00E+07	24,600	31,000	2.0E+05	5.26E+05	55,890	61,150	1.86E+05	2.80E+07	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		1.5E+07	68,000	ID	13,000	NA	3.8.E+05	43,000	NA	ID	ID	NA	ID	61,000	56,000 (S)	ID	70,000	NA	ID	ID	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		1.0E+09 (D)	67,000	2.4E+8 (S)	ID	NA	ID	1.7E+05 (S)	NA	2.0E+07 (S)	ID	31,000 (S)	2.0E+05 (S)	ID	ID	ID	1.9E+05 (S)	ID	ID	ID	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																								
TW8-1	5/2/2008	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW20-1	10/24/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW31-1	4/29/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	1,840	0.22 J	ND	8.3	6.9	324	344
TW38-4	10/24/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW38-11	10/24/2008	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	0.53 J	0.22 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
FP = Free Product
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Cleanup Criteria (II)
Exceeds Groundwater Surface Water Interface (III
Exceeds Generic Drinking Water (II) and Groundwater Surface Water Interface (III) Cleanup Criteria
Exceeds Generic Drinking Water (II) and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Contact (VI) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Exceeds Flammability & Explosivity Screening Level (VIII)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed
NR = Not Reported

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Metals/Inorganic Ions																						
		Cadmium	Calcium	Calcium (dissolved)	Chromium	Cobalt	Cobalt (Dissolved)	Copper	Iron	Iron (dissolved)	Lead	Magnesium	Magnesium (dissolved)	Manganese	Manganese (Dissolved)	Nickel	Nickel (Dissolved)	Potassium	Potassium (Dissolved)	Sodium	Sodium (Dissolved)	Vanadium	Zinc	Zinc (Dissolved)
Drinking Water Criteria (II)		5.0(A)	NA	NA	100 (A)	100	100	1,000 (E)	300 (E)	300 (E)	4.0 (L)	1.1E+06	1.1E+06	50 (E)	50 (E)	100 (A)	100 (A)	NA	NA	3.5E+05	3.5E+05	62	5,000 (E)	5,000 (E)
Groundwater Surface Water Interface Criteria (GSI) (III		3.0 (G,X)*	NA	NA	11	100	100	13 (G)*	NA	NA	29 (G,X)*	NA	NA	2,800 (G,X)*	2,800 (G,X)*	73 (G)*	73 (G)*	NA	NA	NA	NA	27	170 (G)*	170 (G)*
GSI Final Acute Value (FAV)		13.2 (G)*	NA	NA	1,600 (G)*	740	740	39.4 (G)*	NA	NA	550 (G)*	NA	NA	12,000 (G)*	12,000 (G)*	1,300 (G)*	1,300 (G)*	NA	NA	NA	NA	220	330 (G)*	330 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V		NLV	NA	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NA	NA	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		1.90E+05	NA	NA	4.60E+05	2.40E+06	2.40E+06	7.4E+06	5.8E+07	5.8E+07	ID	1.0E+09 (D)	1.0E+09 (D)	9.1E+06	9.1E+06	7.4E+07	7.4E+07	NA	NA	1.0E+09 (D)	1.0E+09 (D)	9.7E+05	1.1E+08	1.1E+08
Vapor Intrusion Groundwater Screening Level (GW_{Vim})		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{Vish,nr}$)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																							
TW8-1	5/2/2008	ND	NS	NS	3.0 J	NS	NS	NS	NS	NS	3.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW20-1	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW31-1	4/29/2008	ND	350,000	377,000	6.3	ND	ND	6.1	8,670	6,110	ND	85,600	92,000	316	277	4.5 J	ND	15,800	17,200	3,590,000	3,990,000	5.7	21.2	ND
TW38-4	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW38-11	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
FP = Free Product
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Cleanup Criteria (II)
Exceeds Groundwater Surface Water Interface (III)
Exceeds Generic Drinking Water (II) and Groundwater Surface Water Interface (III) Cleanup Criteria
Exceeds Generic Drinking Water (II) and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Contact (VI) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Exceeds Flammability & Explosivity Screening Level (VIII)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed
NR = Not Reported

Table 3
Summary of Soil Maximum Detection Concentration
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

Compound	CAS	Maximum Concentration (ug/kg)	Sample Location(s) With Maximum Reportable Concentration	BEA Comparison Criteria Exceeded*
VOCs				
Acetone	67641	30	SB31-1	
Benzene	71432	8,200	SB2-34	XI, XII, XIV, SVI-res
2-Butanone (MEK)	78933	4.6	SB31-1	
Ethylbenzene	100414	29,000	SB2-33	XI, XII, $S_{VI\text{-}res}$
Isopropylbenzene	98828	540	SB38-23	$S_{VI\text{-}res}$
4-Methyl-2-Pentanone	108101	730	SB38-23	
Methyl Cyclohexane	108872	550	SB38-23	
2-Methylnaphthalene	91576	14,000	SB2-48	XII, $S_{VI\text{-}res}$
Methyl-tert-butyl ether (MTBE)	1634044	310	SB2-36	
Naphthalene	91203	6,600	SB2-32	XII, $S_{VI\text{-}res}$
Tetrachloroethene	127184	600	SB38-4	XI, $S_{VI\text{-}res}$
Toluene	108883	130,000	SB2-44	XI, XII, $S_{VI\text{-}res}$
1,1,1-Trichloroethane	71556	13	SB38-24	
1,2,4-Trimethylbenzene	95636	74,000	SB2-32	XI, XII, $S_{VI\text{-}res}$
1,3,5-Trimethylbenzene	108678	21,000	SB2-44, SB2-32	XI, XII, $S_{VI\text{-}res}$
Total Xylenes	1330207	140,000	SB2-33	XI, XII, $S_{VI\text{-}res}$
SVOCs				
Benzo(a)anthracene	56553	9.4	SB7-8	
Benzo(b)fluoranthene	205992	11	SB7-8	
Benzo(a)pyrene	50328	7.5	SB7-8	
Chrysene	218019	8.5	SB7-8	
Fluoranthene	206440	16	SB7-8	
Pyrene	129000	13	SB7-8	
Metals				
Aluminum	7429905	6,110,000	SB46-3	
Antimony	7440360	150	SB31-1	
Arsenic	7440382	18,100	SB31-1	XI,XII
Barium	7440393	65,900	SB31-1	
Beryllium	7440417	360	SB31-1	
Cadmium	7440439	450	SB31-1	
Calcium	7440702	53,600,000	SB46-3	
Chromium	7440473	13,400	SB38-4	
Chromium III	16065831	13,400	SB38-4	
Chromium VI	18540299	370	SB46-3	
Cobalt	7440484	7,300	SB31-1	XI,XII
Copper	7440508	27,300	SB31-1	
Iron	7439896	19,700,000	SB31-1	XI
Lead	7439921	6,900	SB46-3	
Lead - coarse fraction	7439921	11,200	SB31-1	
Lead - fine fraction	7439921	17,000	SB31-1	
Lead - total	7439921	12,600	SB31-1	
Magnesium	7439954	18,500,000	SB46-3	XI
Manganese	7439965	707,000	SB31-1	XI,XII
Mercury	Varies	28	SB38-11	
Nickel	7440020	18,400	SB46-3	
Potassium	7440097	1,350,000	SB46-3	
Selenium	7782492	650	SB46-3	XII
Silver	7440224	89	SB38-4	
Sodium	17341252	673,000	SB7-8	
Thallium	7440280	350	SB46-3	
Vanadium	7440622	26,100	SB31-1	
Zinc	7440666	69,500	SB31-1	

Part 201 Generic Residential Cleanup Criteria:
XI = Drinking Water Protection
XII = Ground Water Surface Water Interface Protection
XIV = Soil Volatilization to Indoor Air Inhalation
MDEQ 2013 Draft Final Residential Vapor Intrusion Screening Values:
$S_{VI\text{-}res}$ = Vapor Intrusion Soil Screening Level

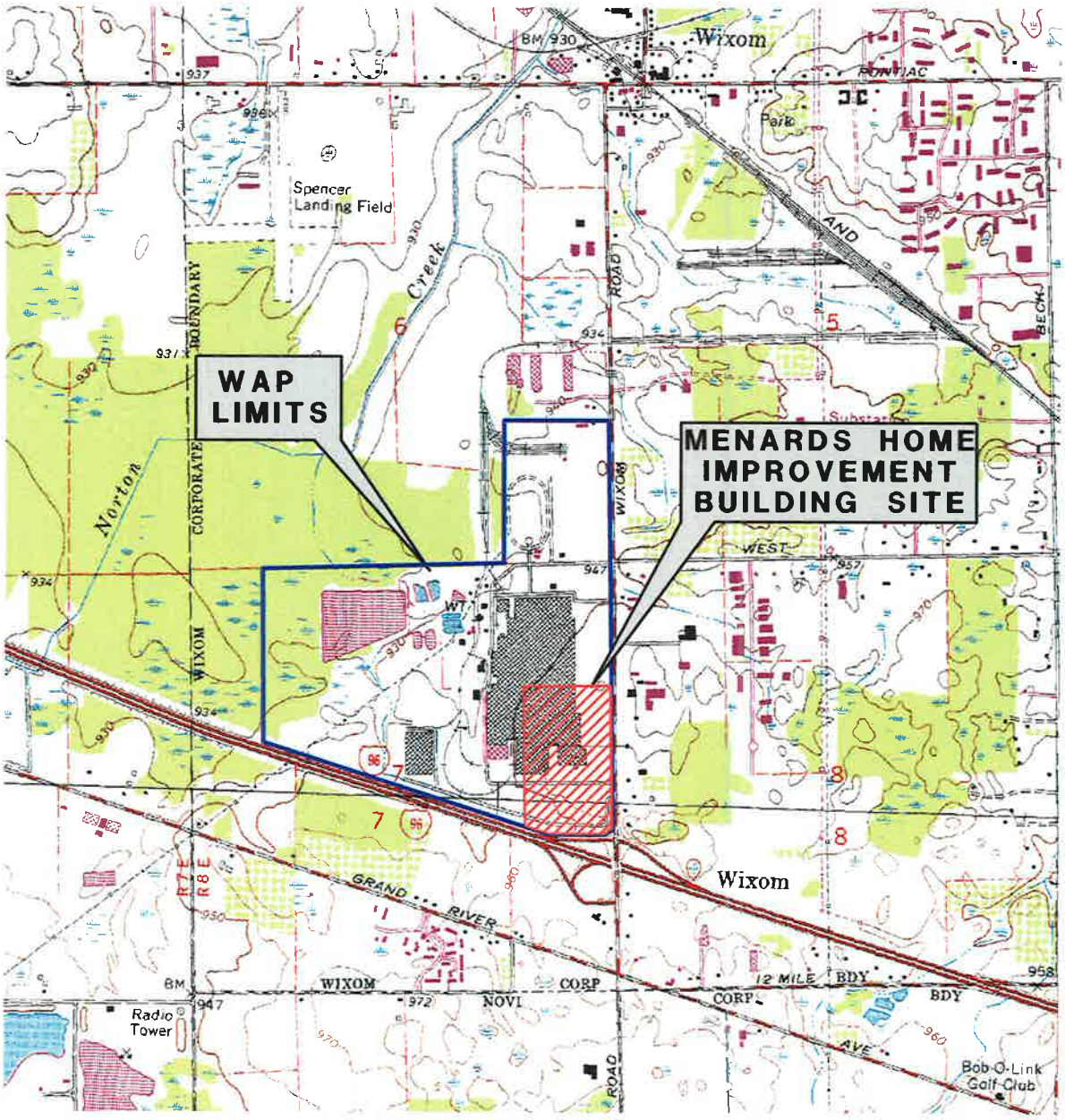
Table 4
Summary of Groundwater Maximum Detection Concentrations
Menard's Home Improvement Building Site
28955 28607 S. Wixom Rd., Wixom, MI

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
VOCs				
Acetone	CAS	18	PMW-3	
Benzene	71432	11,000	TW2-42	I, III, IV, $GW_{VI\text{-}res}$
2-Butanone (MEK)	78933	3.3	PMW-3	
Carbon Disulfide	75150	0.48	PMW-3	
Cyclohexane	1735177	0.12	MW-13R	
1,1-Dichloroethane	75343	1.8	TW38-11	
Ethylbenzene	100414	2,000	TW2-38	I, III, $GW_{VI\text{-}res}$
Methyl Acetate	79209	2.2	PMW-3	
4-Methyl-2-Pentanone	108101	0.52	PMW-3	
2-Methylnaphthalene	91576	15	RW-1	
Naphthalene	91203	360	RW-4	III, $GW_{VI\text{-}res}$
Tetrachloroethene	127184	0.53	TW38-11	
Toluene	108883	45,000	RW-4	I, III, $GW_{VI\text{-}res}$
1,2,4-Trimethylbenzene	95636	3,600	RW-4	I, III, $GW_{VI\text{-}res}$
1,3,5-Trimethylbenzene	108678	970	RW-4	I, III
Total Xylenes	1330207	11,000	TW2-38	I, III, $GW_{VI\text{-}res}$
SVOCs				
4-Methylphenol	1319773	5.0	PMW-3	
Metals				
Aluminum	7429905	1,840	TW31-1	I
Antimony	7440360	0.31	PMW-3	
Antimony (dissolved)	7440360	0.36	PMW-3	
Arsenic	7440382	14.6	PMW-3	I, III
Arsenic (dissolved)	7440382	6.9	TW31-1	
Barium	7440393	465	PMW-3	
Barium (dissolved)	7440393	527	PMW-3	
Cadmium	7440439	1.5	PMW-3	
Calcium	7440702	350,000	TW31-1	
Calcium (dissolved)	7440702	377,000	TW31-1	
Chromium	7440473	6.3	TW31-1	
Cobalt	7440484	6.1	PMW-3	
Cobalt (dissolved)	7440484	1.8	PMW-3	
Copper	7440508	6.1	TW31-1	
Iron	7439896	24,400	PMW-3	I
Iron (dissolved)	7439896	24,900	PMW-3	I
Lead	7439921	3.2	TW8-1	
Magnesium	7439954	85,600	TW31-1	
Magnesium (dissolved)	7439954	92,000	TW31-1	
Manganese	7439965	1,940	PMW-3	I
Manganese (dissolved)	7439965	2,210	PMW-3	I
Nickel	7440020	10.8	PMW-3	
Nickel (dissolved)	7440020	6.6	PMW-3	
Potassium	7440097	15,800	TW31-1	
Potassium (dissolved)	7440097	17,200	TW31-1	
Sodium	17341252	3,590,000	TW31-1	I
Sodium (dissolved)	17341252	3,990,000	TW31-1	I
Vanadium	7440622	5.7	PMW-3, TW31-1	I
Zinc	7440666	21.2	TW31-1	
Zinc (dissolved)	7440666	14.2	PMW-4S	

Part 201 Generic Residential Cleanup Criteria:
I = Drinking Water
III = Ground Water Surface Water Interface
IV = Groundwater Volatilization to Indoor Air Inhalation
MDEQ 2013 Draft Final Residential Vapor Intrusion Screening Values:
$GW_{VI\text{-}res}$ = Vapor Intrusion Groundwater Screening Level

FIGURES

Mannik Smith GROUP



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

NOTE: MAP ADAPTED FROM USGS MILFORD, MICHIGAN -OAKLAND CO. QUADRANGLE 7.5 MINUTE SERIES, DATED 1969, PHOTOREVISED 1983 AND SALEM, MICHIGAN-OAKLAND CO. QUADRANGLE 7.5 MINUTE SERIES, DATED 1969, PHOTOREVISED 1973 & 1980.

Mannik Smith GROUP
TECHNICAL SKILL. CREATIVE SPIRIT.
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FIGURE 1
SITE LOCATION MAP
28955 & 28607 WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

DATE	DRAWN BY	DESIGNED BY	PROJECT NO.
9/16/13	HMW	ZTR	M2350003

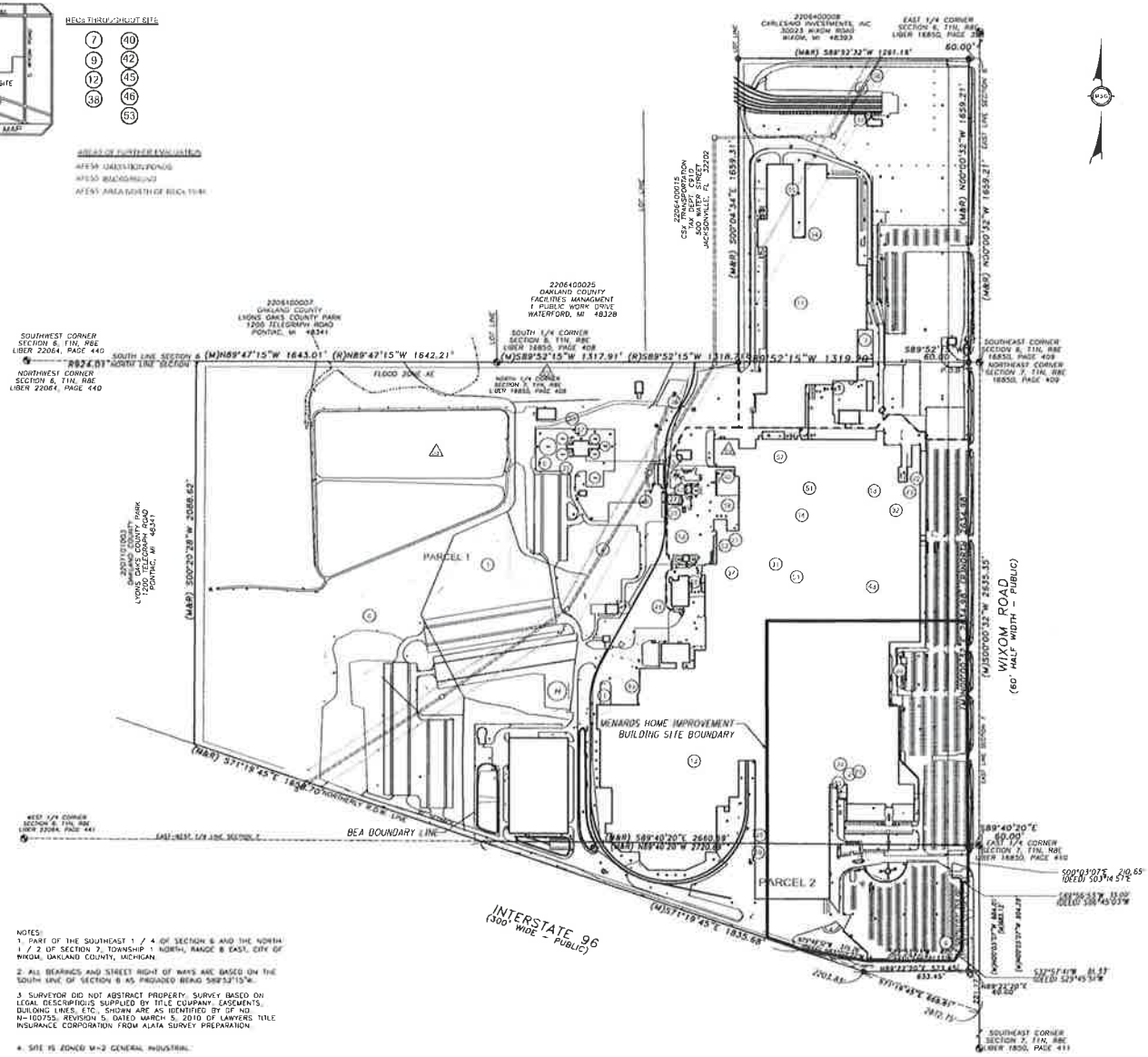
W:\Projects\Projects K-O\M2350003\CAD\BEA\M2350003_Site_Location.dgn 9/18/2013 10:29:41 AM

RECs THROUGHOUT SITE

7, 9, 12, 38, 40, 42, 45, 46, 53

AREAS OF FURTHER EVALUATION

AFES1 OXIDATION PONDS
AFES2 BOILERHOUSE
AFES3 AREA SOUTH OF RECs 11-14



NOTES:
1. PART OF THE SOUTHEAST 1 / 4 OF SECTION 6 AND THE NORTH 1 / 2 OF SECTION 7, TOWNSHIP 1 NORTH, RANGE 8 EAST, CITY OF WIXOM, OAKLAND COUNTY, MICHIGAN.

2. ALL BEARINGS AND STREET RIGHT OF WAYS ARE BASED ON THE SOUTH LINE OF SECTION 6 AS PROVIDED BEING S89°52'15"W.

3. SURVEYOR DID NOT ABSTRACT PROPERTY. SURVEY BASED ON LEGAL DESCRIPTIONS SUPPLIED BY TITLE COMPANY, EASEMENTS, BUILDING LINES, ETC., SHOWN ARE AS IDENTIFIED BY OF NO. N-160755, REVISION 5, DATED MARCH 5, 2010 OF LAWYERS TITLE INSURANCE CORPORATION FROM ALATA SURVEY PREPARATION.

4. SITE IS ZONED M-2 GENERAL INDUSTRIAL.

REC ELEMENT	REC ELEMENT DESCRIPTION
NA.	FORMER AUTOMOTIVE MANUFACTURING PLANT
NA.	PERIMETER GW ASSESSMENT
1.	FORMER LANDFILL
2.	OPEN LEAKING UNDERGROUND STORAGE TANK
3.	CURRENT PAINT SLUDGE PITS
4.	FORMER WWTP
5.	PART 201 LISTING (WWTP)
6.	OPEN BURNING AREA
7.	ADDITIONAL AREAS OF POTENTIAL FILL ACTIVITES
8.	FORMER ADJACENT SERVICE STATION
9.	DRAINAGE DITCH SEDIMENTS
10.	FORMER HAZARDOUS WASTE STORAGE AREA
11.	ZINC PHOSPHATING AND ELECTROCOAT OPERATIONS
12.	BELOW GRADE HYDRAULIC EQUIPMENT
13.	PITS IN BODY SHOP
14.	FORMER 10,000 GALLON E-COAT UST
15.	FORMER 10,000 GALLON OILY WASTE UST
16.	FORMER 1,000 GALLON WASTE OIL UST
17.	PAINT SLUDGE SETTLING TANKS (PITS)
18.	PDA SLUDGE SYSTEM TANK
19.	FORMER TANK FARM
20.	FORMER 5K BRAKE FLUID UST
21.	FORMER E-COAT PAINT UST
22.	FORMER 3,000 GALLON WASTE GASOLINE UST
23.	FORMER 3,000 GALLON WASTE GASOLINE UST
24.	5K WASTE & 10K PURGE SOLVENT USTs, 5K 2 of 2 CONTAIN
25.	POWERWASH BOOTH IN TRUCK REPAIR
26.	ROLLER OPERATIONS
27.	OILY WASTE STORAGE AREA
28.	COAL PILE AREA AND DITCH
29.	GLYCOL RELEASE
30.	POTENTIAL OIL WATER SEPARATOR
31.	VEHICLE WASH PITS
32.	PUMP STATION
33.	RAILCAR LOADING DOCKS
34.	USED OIL UST
35.	PHOSGUARD WASTE RELEASE
36.	FORMER BALE STORAGE AREA
37.	OIL/WATER SEPARATOR
38.	MISC. PITS, TRENCHES AND SUMPS
39.	BATTERY CHARGING AREA
40.	PCB-CONTAINING SUBSTATIONS
41.	10K GAS UST
42.	HISTORIC FARMSTEAD
43.	HAZARDOUS WASTE STORAGE BUILDING
44.	"CURRENT" ASTs AND USTs
45.	BELOWGRADE INDUSTRIAL PROCESS LINE
46.	AGRICULTURAL CHEMICALS
47.	WWTP PROCESS TANKS
48.	FLUID FILL AREAS
49.	BULK LOAD/UNLOAD AREAS
50.	BASEMENT BLOWDOWN
51.	FORMER DEGREASING OPERATIONS
52.	OIL AND PAINT HOUSE
53.	RAILROAD TRACKS
54.	FORMER TEST TRACK
55.	HORSESHOE AREA
56.	SEPTIC SYSTEMS
57.	FORMER DISPENSERS

LEGEND

- = FOUND IRON AS NOTED
- = SET BAR & CAP #12034
- = FENCE
- = OVERHEAD WIRE
- = GUARD RAIL
- = ELECTRIC MANHOLE
- = UTILITY POLE
- = GUY WIRE
- = ELECTRIC PEDESTAL
- = LIGHT POLE
- = STREET LIGHT
- = TELEPHONE PEDESTAL
- = TELEPHONE MANHOLE
- = TV PEDESTAL
- = SIGNAL
- = COOLING VENT
- = TANKS
- = SANITARY MANHOLE
- = SANITARY CLEANOUT
- = MANHOLE
- = DRAINAGE MANHOLE
- = CATCHBASIN
- = GAS SHUTOFF
- = GAS PUMP
- = GAS VALVE
- = WATER MANHOLE
- = FIRE HYDRANT
- = WATER VALVE
- = PUMP WELL
- = POST
- = SIGN
- = WELL
- = A/C UNIT
- = FLAGPOLE
- = SURFACE WATER DRAINAGE
- = LANDFILL AREA BASED ON TECHNICAL MEMORANDUM NO. 1 — REC 1 TEST PIT AND TEST TRENCH INSTALLATION SEE CRA PHASE II SUBMITTALS
- (1) = REC INVESTIGATED IN PHASE II
- △ = AREA OF FURTHER EVALUATION INVESTIGATED IN PHASE II

Mannik Smith GROUP
TECHNICAL BULLETIN
DATE: 8/19/2013
PROJECT NO. 1-255206
DRAWN BY: HWY
CHECKED BY: TTL

PREPARED FOR: MENARD, INC.
WIXOM, MICHIGAN

BASELINE ENVIRONMENTAL ASSESSMENT
MENARDS HOME IMPROVEMENT BUILDING SITE

FORD WIXOM ASSEMBLY PLANT IDENTIFIED RECS

FIGURE 2A

REC ELEMENT	REC ELEMENT DESCRIPTION
NA	FORMER AUTOMOTIVE MANUFACTURING PLANT
NA	PERIMETER GW ASSESSMENT
1	FORMER LANDFILL
2	OPEN LEAKING UNDERGROUND STORAGE TANK
3	CURRENT PAINT SLUDGE PITS
4	FORMER WWTP
5	PART 201 LISTING (WWTP)
6	OPEN BURNING AREA
7	ADDITIONAL AREAS OF POTENTIAL FILL ACTIVITES
8	FORMER ADJACENT SERVICE STATION
9	DRAINAGE DITCH SEDIMENTS
10	FORMER HAZARDOUS WASTE STORAGE AREA
11	ZINC PHOSPHATING AND ELECTROCOAT OPERATIONS
12	BELOW GRADE HYDRAULIC EQUIPMENT
13	PITS IN BODY SHOP
14	FORMER 10,000 GALLON E-COAT UST
15	FORMER 10,000 GALLON OILY WASTE UST
16	FORMER 1,000 GALLON WASTE OIL UST
17	PAINT SLUDGE SETTLING TANKS (PITS)
18	PDA SLUDGE SYSTEM TANK
19	FORMER TANK FARM
20	FORMER 6K BRAKE FLUID UST
21	FORMER E-COAT PAINT UST
22	FORMER 3,000 GALLON WASTE GASOLINE UST
23	FORMER 3,000 GALLON WASTE GASOLINE UST
24	5K WASTE & 10K PURGE SOLVENT USTs/5K 2nd CONTAIN.
25	POWERWASH BOOTH IN TRUCK REPAIR
26	KOLENE OPERATIONS
27	OILY WASTE STORAGE AREA
28	COAL PILE AREA AND DITCH
29	GLYCOL RELEASE
30	POTENTIAL OIL WATER SEPARATOR
31	VEHICLE WASH PITS
32	DUMP STATION
33	RAILCAR LOADING DOCKS
34	USED OIL UST
35	PHOSSOATING WASTE RELEASE
36	FORMER SALT STORAGE AREA
37	OIL/WATER SEPARATOR
38	MISC. PITS, TRENCHES AND SUMPS
39	BATTERY CHARGING AREA
40	PCB-CONTAINING SUBSTATIONS
41	10K GAS UST
42	HISTORIC FARMSTEAD
43	HAZARDOUS WASTE STORAGE BUILDING
44	"CURRENT" ASTs AND USTs
45	BELOWGRADE INDUSTRIAL PROCESS LINE
46	AGRICULTURAL CHEMICALS
47	WWTP PROCESS TANKS
48	FLUID FILL AREAS
49	BULK LOAD/UNLOAD AREAS
50	BASEMENT BLOWDOWN
51	FORMER DEGREASING OPERATIONS
52	OIL AND PAINT HOUSE
53	RAILROAD TRACKS
54	FORMER TEST TRACK
55	HORSESHOE AREA
56	SEPTIC SYSTEMS
57	FORMER DISPENSERS

REC ELEMENTS THROUGHOUT WAP

7, 9, 12, 38, 40, 42, 44, 45, 46, 53

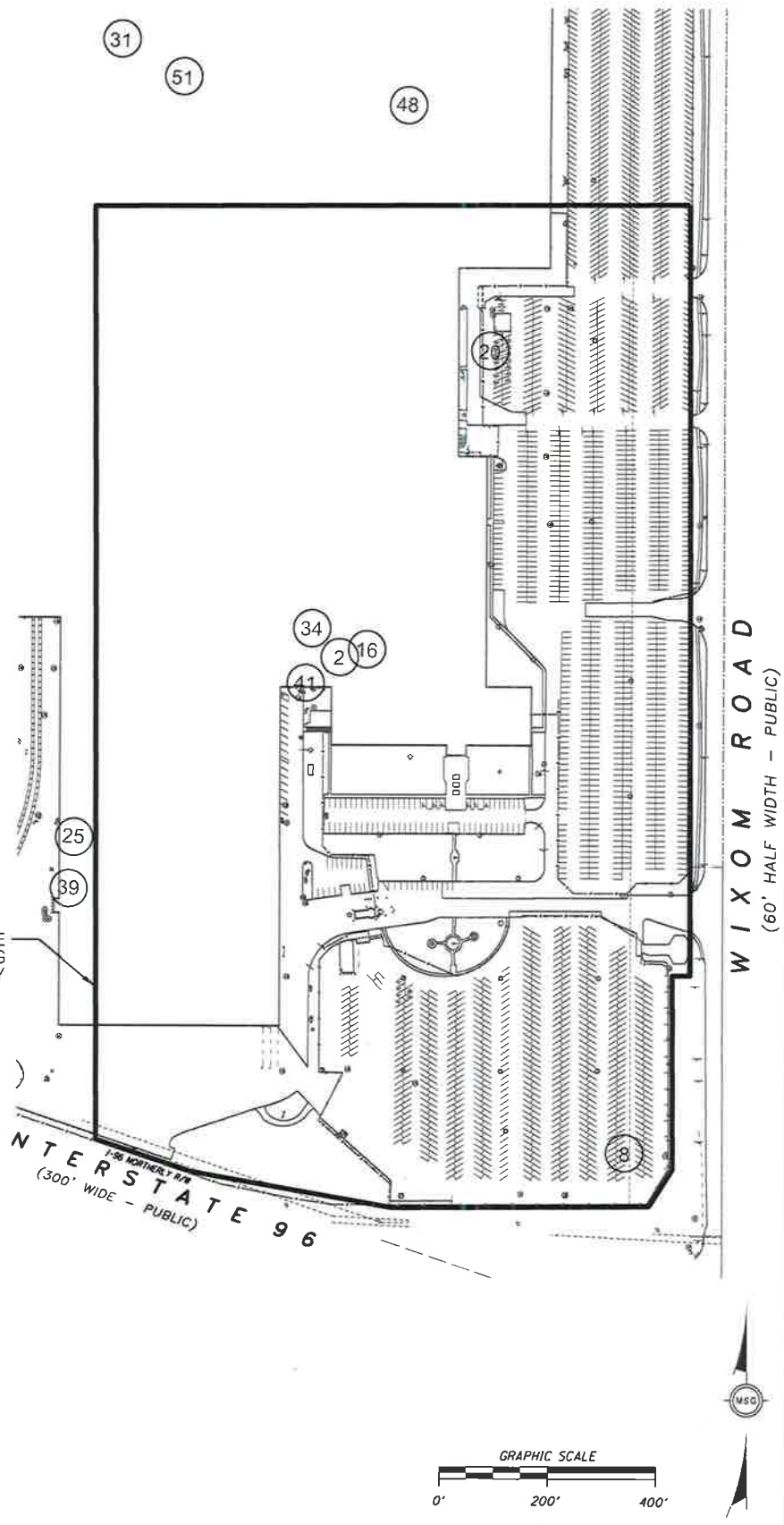
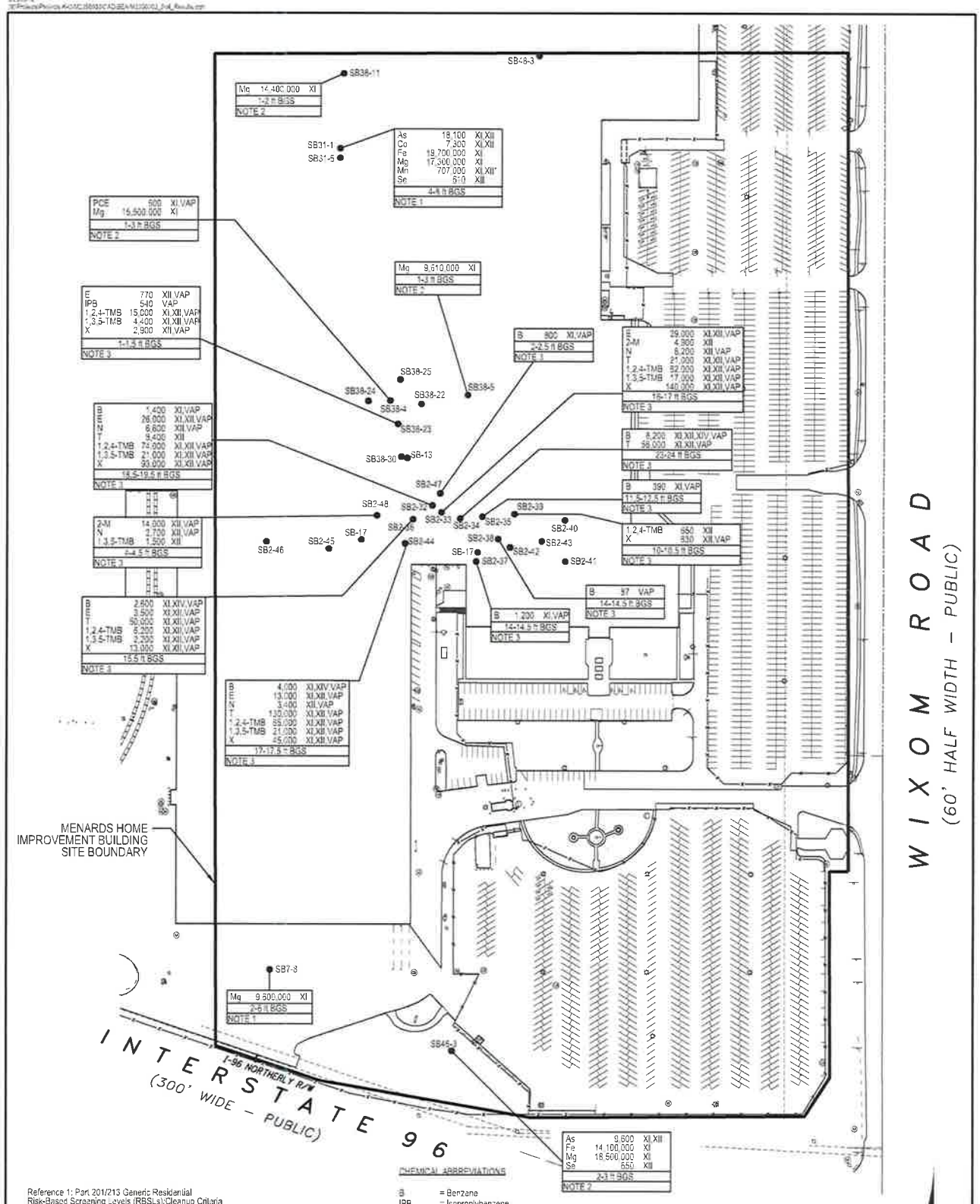


FIGURE 2B	SITE IDENTIFIED REC ELEMENTS	BASELINE ENVIRONMENTAL ASSESSMENT MENARDS HOME IMPROVEMENT SITE	PREPARED FOR: MENARD, INC. WIXOM, MICHIGAN	Mannik Smith GROUP TECHNICAL SKILL. CREATIVE SPIRIT. www.MannikSmithGroup.com	DATE: 9/15/2013 PROJECT NO.: M1400013 DRAWN BY: ZTR CHECKED BY: ZTR



Reference 1: Part 201/213 Generic Residential Risk-Based Screening Levels (RBSLs):Cleanup Criteria (Revised September 28, 2012).

Reference 2: Residential Vapor Intrusion Screening Values (May 23, 2013)

RESIDENTIAL SOIL CRITERIA

(XI)	Exceeds drinking water protection cleanup criteria
(XII)	Exceeds groundwater/surface water interface (GSI) protection cleanup criteria
(XIV)	Exceeds soil volatilization to indoor air cleanup criteria
(VAP)	Exceed vapor intrusion soil screening level

* POTENTIAL EXCEEDENCE OF GSI PROTECTION CRITERIA WHICH WAS CALCULATED BASED ON AN ASSUMED SURFACE WATER HARDNESS OF 150 mg/L.

CHEMICAL ABBREVIATIONS

B	= Benzene
IPB	= Isopropylbenzene
E	= Ethylbenzene
T	= Toluene
X	= Xylenes
1,2,4-TMB	= 1,2,4-Trimethylbenzene
1,3,5-TMB	= 1,3,5-Trimethylbenzene
PCE	= Tetracholorpethene
2-M	= 2-Methylnaphthalene
N	= Naphthalene
As	= Arsenic
Co	= Cobalt
Fe	= Iron
Mn	= Manganese
Mg	= Magnesium
Se	= Selenium

NOTES:

NOTE 1: REFERENCE PHASE II ESA.
NOTE 2: REFERENCE PHASE II ESA-SUPPLEMENT NO. 1
NOTE 3: REFERENCE PHASE II ESA-SUPPLEMENT NO. 2.

GRAPHIC SCALE

0' 160' 320'

FIGURE 3

SITE SOIL SAMPLE RESULTS

BASELINE ENVIRONMENTAL ASSESSMENT

MENARDS HOME IMPROVEMENT SITE

PREPARED FOR

MENARD, INC.

WIXOM, MICHIGAN

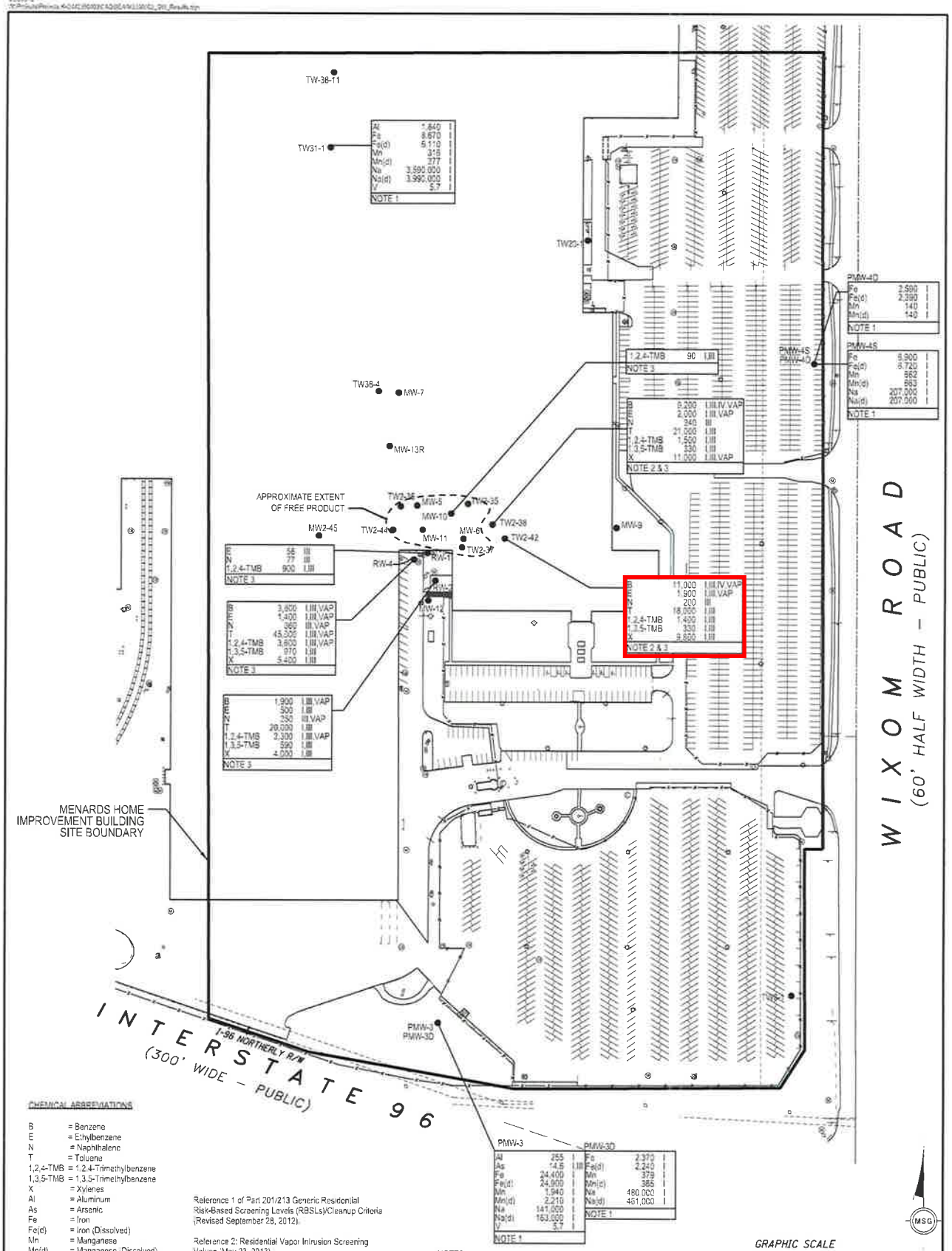
Mannik Smith GROUP

TECHNICAL SKILL. CREATIVE SPIRIT.

www.MannikSmithGroup.com

NO.	DATE	BY	DESCRIPTION

DATE
PROJECT NO.
DRAWN BY
CHECKED BY



CHEMICAL ABBREVIATIONS

B	= Benzene
E	= Ethylbenzene
N	= Naphthalene
T	= Toluene
1,2,4-TMB	= 1,2,4-Trimethylbenzene
1,3,5-TMB	= 1,3,5-Trimethylbenzene
X	= Xylenes
Al	= Aluminum
As	= Arsenic
Fe	= Iron
Fe(d)	= Iron (Dissolved)
Mn	= Manganese
Mn(d)	= Manganese (Dissolved)
Na	= Sodium
Na(d)	= Sodium (Dissolved)
V	= Vanadium

Reference 1 of Part 201/213 Generic Residential Risk-Based Screening Levels (RBSLs)/Cleanup Criteria (Revised September 28, 2012).

Reference 2: Residential Vapor Intrusion Screening Values (May 23, 2013).

RESIDENTIAL GROUNDWATER CRITERIA

(I)	Exceeds Drinking Water Cleanup Criteria (residential)
(III)	Exceeds Groundwater/Surface Water Interface (gsi)
(IV)	Exceeds Groundwater Volatilization to Indoor Air Inhalation
(VAP)	Exceeds Vapor Intrusion Soil Screening Level

NOTES:

NOTE 1: REFERENCE PHASE II ESA.
NOTE 2: REFERENCE PHASE II ESA-SUPPLEMENT NO. 2
NOTE 3: REFERENCE FREE PRODUCT RECOVERY STATUS AND GROUNDWATER MONITORING REPORT (MARCH 19, 2010)

FIGURE 4	SITE GROUNDWATER SAMPLE RESULTS	BASELINE ENVIRONMENTAL ASSESSMENT MENARDS HOME IMPROVEMENT SITE	PREPARED FOR MENARD, INC. EAU CLAIRE, WISCONSIN	Mannik Smith GROUP TECHNICAL SKILL. CREATIVE SPIRIT. www.MannikSmithGroup.com	DATE: 5/14/2013 PROJECT NO.: M5R2034 DRAWN BY: ZTN CHECKED BY: ZTN	NO. / DATE / BY / DESCRIPTION

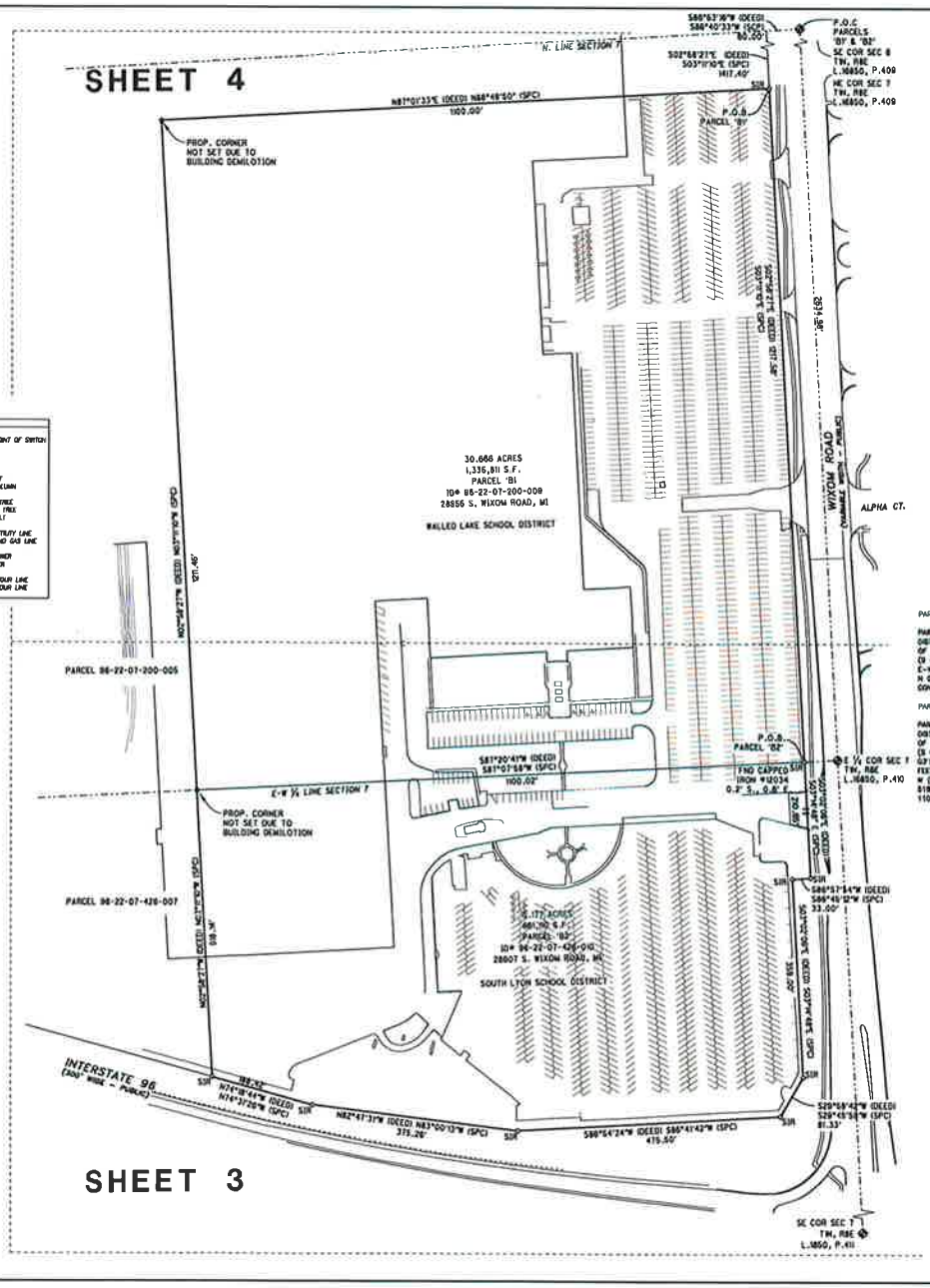
APPENDIX A
LEGAL BOUNDARY SURVEY

Mannik Smith GROUP

ALTA / ACSM LAND TITLE SURVEY
OF
PART OF THE NE ¼ & SE ¼ OF SECTION 7, TOWN 1 NORTH, RANGE 8 EAST, CITY OF WIXOM, OAKLAND COUNTY, MICHIGAN
FOR
MENARD, INC.

VICINITY MAP (1"=2000')

SHEET INDEX:
SHEET 1: COVER SHEET
SHEET 2: DETAIL OF EASEMENTS
SHEETS 3-4: DETAIL OF IMPROVEMENTS



GRAPHIC SCALE
0' 50' 100' 200'

ZONING:
ZONED M-2 GENERAL INDUSTRIAL

SETBACK REQUIREMENTS:
MINIMUM FRONT YARD: 170' FROM CENTERLINE OF WIXOM ROAD
MINIMUM SIDE YARD: 30' (90' WHERE ABUTTING RESIDENTIAL DISTRICT)
MINIMUM REAR YARD: 20' (90' WHERE ABUTTING RESIDENTIAL DISTRICT)
MAXIMUM BUILDING HEIGHT: 60'

NOTES:
THERE IS NO OBSERVABLE EVIDENCE OF CEMETERIES OR BURIAL GROUNDS, PONDS, LAKES, SPRINGS OR RIVERS BORDERING ON OR RUNNING THROUGH THE SUBJECT PROPERTY.

THERE ARE NO CAPS OR CORES AND THE PROPERTY ON THE SURVEY IS THE SAME AS THE PROPERTY DESCRIBED WITHIN THE TITLE COMMITMENT, PARCELS ARE CONTIGUOUS.

BEARING BASIS
(DEED) Bearings are based on recorded descriptions
(SPC) Bearings are based on State Plane Coordinates, NAD83/86, International Feet, Michigan South Zone

VERTICAL DATUM
NAVD 88

ORIGINATING BENCHMARK:
NGS HEIGHT MODERNIZATION SURVEY STATION 63686 (PID DJ5135)
THE STATION IS A 4 INCH HEIGHT MODERNIZATION STATION DISK STAMPED 63686 2006 SET IN A 16 INCH DIAMETER CONCRETE POST FLUSH WITH THE GROUND THE STATION IS 186.3 FEET SOUTH OF THE CENTERLINE OF MARTIN STREET, 92.5 FEET SOUTH-SOUTHEAST OF A POWER POLE, 37.4 FEET NORTH OF THE CENTERLINE OF THE NORTHERLY DRIVE TO ANGELO'S LANDSCAPE SUPPLIES ADDRESS 30023, 11.1 FEET WEST OF THE BACK OF CURB OF WIXOM ROAD, AND 11 INCHES EAST OF A CARSONITE WITNESS POST.

ELEVATION = 838.0'

PARCEL '01'

PART OF THE NORTHEAST 1/4 OF SECTION 7, TOWN 1 NORTH, RANGE 8 EAST, CITY OF WIXOM, OAKLAND COUNTY, MICHIGAN, WALLED LAKE SCHOOL DISTRICT, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NORTHEAST CORNER OF SECTION 7; THENCE ALONG THE NORTH SECTION LINE OF SAID SECTION 7 S 86°53'18" W (S 86°40'33" W SPC) 60.00 FEET TO THE WEST LINE OF WIXOM ROAD (120 FEET WIDE); THENCE S 02°58'21" E (S 03°11'10" E SPC) 1417.40 FEET TO THE POINT OF BEGINNING; THENCE S 02°58'21" E (S 03°11'10" E SPC) 1213.58 FEET TO A POINT ON THE E-W 1/4 SECTION LINE OF SECTION 7; THENCE ALONG SAID E-W 1/4 SECTION LINE S 87°20'47" W (S 87°07'58" W SPC) 1100.02 FEET; THENCE N 02°58'21" W (N 03°11'10" W SPC) 1211.46 FEET; THENCE N 87°01'33" E (N 86°48'50" E SPC) 1100.00 FEET TO THE POINT OF BEGINNING. CONTAINING 30.666 ACRES MORE OR LESS. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.

PARCEL '02':

PART OF THE SOUTHEAST 1/4 OF SECTION 7, TOWN 1 NORTH, RANGE 8 EAST, CITY OF WIXOM, OAKLAND COUNTY, MICHIGAN, SOUTH LYON SCHOOL DISTRICT, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NORTHEAST CORNER OF SECTION 7; THENCE ALONG THE NORTH SECTION LINE OF SAID SECTION 7 S 86°53'18" W (S 86°40'33" W SPC) 60.00 FEET TO THE WEST LINE OF WIXOM ROAD (120 FEET WIDE); THENCE S 02°58'21" E (S 03°11'10" E SPC) 2634.98 FEET TO A POINT ON THE E-W 1/4 LINE OF SECTION 7 AND THE POINT OF BEGINNING; THENCE S 03°02'04" E (S 03°14'48" E SPC) 310.65 FEET; THENCE S 86°57'54" W (S 86°45'12" W SPC) 33.50 FEET; THENCE S 03°03'06" E (S03°14'48" E SPC) 358.00 FEET; THENCE S 39°58'43" W (S 39°45'54" W SPC) 81.33 FEET; THENCE S 86°54'24" W (S 86°41'42" W SPC) 475.50 FEET; THENCE N 82°41'37" W (N 83°00'13" W SPC) 375.26 FEET; THENCE N 74°18'44" E (N 74°31'28" W SPC) 186.42 FEET; THENCE N 02°58'21" W (N 03°11'10" W SPC) 818.41 FEET TO A POINT ON THE E-W 1/4 LINE OF SECTION 7; THENCE ALONG SAID 1/4 SECTION LINE N 87°20'47" E (N 87°07'58" W SPC) 1100.02 FEET TO THE POINT OF BEGINNING. CONTAINING 15.177 ACRES MORE OR LESS. SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.

LEGEND

●	= MONUMENT	⊗	= FLOOD LIGHT	⊗	= RAILROAD POINT OF SWITCH		
●	= IRON PIPE	⊙	= TELEPHONE MANHOLE	●	= POST		
●	= IRON PIN	⊕	= TELEPHONE POLE	●	= SIGN		
⊙SIR	= SET IRON ROD & CAP	⊠	= TRAFFIC SIGNAL	⊠	= A/C UNIT		
●	= BENCHMARK	⊗	= SIGNAL CONTROL BOX	F	= FLAGPOLE		
⊕	= CONTROL POINT	⊕	= SIGNAL MANHOLE	⊕	= STORM SPOUT		
●	= UTILITY POLE	⊕	= SANITARY MANHOLE	■	= BUILDING COLUMN		
●	= GUY WIRE	⊙	= MANHOLE	○	= BUSH		
●	= POWER POLE	⊕	= STORM MANHOLE	○	= DECIDUOUS TREE		
●	= GUY POLE	⊙⊠	= CATCHBASIN	☆	= CONIFEROUS TREE		
●	= ELECTRIC METER	■	= GASLINE MARKER	-	= 2' x 3' WALL		
●	= ELECTRIC PEDESTAL	■	= NATURAL GAS VALVE	—x—	= FENCE		
⊙	= ELECTRIC MANHOLE	■	= WATER MANHOLE	—/—	= OVERHEAD UTILITY LINE		
⊠	= ELECTRIC HANDHOLE	○	= FIRE HYDRANT	—G—	= UNDERGROUND GAS LINE		
■	= ELECTRIC OUTLET	⊥	= WATER VALVE	—W—	= WATER LINE		
■	= ELECTRIC TRANSFORMER	⊥	= GATE VALVE & WELL	—SAN—	= SANITARY SEWER		
●	= BREAKER PANEL	▲	= POST INDICATOR VALVE	-------	= STORM SEWER		
●	= LIGHT POLE	■	= IRRIG. CONTROL VALVE	■	= GUARD RAIL		
●	= STREET LAMP	⊙	= MONITORING WELL	—■—	= MAJOR CONTOUR LINE		
				—■—	= MINOR CONTOUR LINE		

NOTES:

1. NOTHING IN THIS SURVEY IS INTENDED TO EXPRESS AN OPINION REGARDING OWNERSHIP OR TITLE.
2. THE WORD CERTIFY IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL JUDGMENT BY THE SURVEYOR, WHICH IS BASED ON HIS BEST KNOWLEDGE, INFORMATION AND BELIEF.
3. SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.
4. THIS SURVEY IS BEING PROVIDED SOLELY FOR THE USE OF THE CURRENT PARTIES AND NO LICENSE HAS BEEN CREATED, EXPRESSED OR IMPLIED, TO COPY THE SURVEY EXCEPT AS NECESSARY IN CONJUNCTION WITH THE ORIGINAL TRANSACTION.
5. THE EXISTING FORD PLANT IS IN THE PROCESS OF BEING DEMOLISHED. DUE TO SAFETY RESTRICTIONS, THERE ARE AREAS NEAR THE BUILDING AND INSIDE THE BUILDING TO WHICH WE DID NOT HAVE ACCESS DURING THE FIELD SURVEY AND SOME DATA IN THOSE AREAS MAY BE INCOMPLETE.
6. DUE TO THE LAND DIVISION AND PREVIOUS OWNER USE, WE HAVE SHOWN DIMENSIONS OF FENCE FROM PARCEL LINE. WE HAVE NOT ATTEMPTED TO IDENTIFY OR DELINEATE ENCROACHMENTS.
7. THE PARCEL GROSS AND NET SQUARE FEET ARE EQUAL.
8. UNDERGROUND UTILITIES BASED ON FIELD MEASUREMENTS AND EITHER RECORD OR DESIGN PLANS. NO FURTHER INFORMATION IS AVAILABLE.

FLOOD NOTE:
SUBJECT PROPERTY LIES WITHIN FLOOD ZONE X, AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER NATIONAL FLOOD INSURANCE RATE MAP NUMBER 26125C0468F WHICH HAS AN EFFECTIVE DATE OF SEPTEMBER 28, 2006.

FLOOD NOTE:
SUBJECT PROPERTY LIES WITHIN FLOOD ZONE X PER NATIONAL FLOOD INSURANCE RATE MAP NUMBER 26125C0468F WHICH HAS AN EFFECTIVE DATE OF SEPTEMBER 28, 2006.

SURVEYOR'S CERTIFICATE:
To: Menard, Inc.
Ford Motor Company Land Corporation
Fidelity National Title Insurance Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 3, 4, 5, 6, 7a, 8, 9, 11a,18 and 19 of Table A thereof. The field work was completed on October 23, 2012.

KENNETH S. WILKERSON, P.S.
LICENSED PROFESSIONAL SURVEYOR
MICHIGAN LICENSE NO. 29584
DATE: OCTOBER 29, 2012
JOB NUMBER: M2350002

UPDATED NOVEMBER 28, 2012
UPDATED OCTOBER 2, 2013

The Mannik & Smith Group, Inc
2365 Haggerty Rd. South
Canton, Michigan 48188
Tel (734) 397-3100
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Civil Engineering, Surveying and Environmental Consulting

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SECTION 20107a COMPLIANCE ANALYSIS

MENARD'S HOME IMPROVEMENT BUILDING SITE
28955 & 28607 SOUTH WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

DRAFT

OCTOBER 4, 2013

PREPARED FOR:

MENARD, INC.
5101 MENARD DRIVE
EAU CLAIRE, WISCONSIN 54703

Mannik Smith GROUP

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FIGURES

Figure 1 Site Location Map
Figure 2A Former Wixom Assembly Plant Identified RECs
Figure 2B Site Identified RECs
Figure 3 Site Soil Sample Results
Figure 4 Site Groundwater Sample Results

TABLES

Table 1 Soil Analytical Summary
Table 2 Groundwater Analytical Summary

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1.0 INTRODUCTION

This Section 7a Compliance Analysis (Due Care Plan) was completed for a 45.8-acre plot of land (Site) that Menard, Inc. (Menard) intends to purchase from Ford Motor Company (Ford) for re-development as a Menard's home improvement store and other commercial lots. The Site is a portion of the former Wixom Assembly Plant (WAP), a 317.31-acre former automotive assembly plant that had approximately 4.7 million square feet of building space. Menard anticipates acquiring the Site from Ford Motor Company (Ford) in October 2013. The Site was occupied by a portion of the Main Assembly Plant, Executive Garage, office space, guard shack, parking area and loading docks of the former WAP. The Site is located on the northwestern corner of the I-96/Wixom Road interchange and comprises two parcels with parcel ID numbers of 22-07-200-009 and 22-07-426-010 and addresses of 28955 and 28607 South Wixom Road, Wixom, Oakland County, Michigan. The Site as referenced by nearby roads and major topographical features is depicted on *Figure 1, Site Location Map*; is shown in relation to the former WAP in *Figure 2A, Former Wixom Assembly Plant Identified RECs*; and is shown in greater detail in *Figure 2B, Site Identified RECs.*

Historic production processes at the WAP have resulted in multiple releases of hazardous substances into the environment at concentrations exceeding Part 201, Environmental Remediation (Part 201), and Part 213, Leaking Underground Storage Tank (Part 213) of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended, regulatory cleanup criteria and screening levels. As defined under Part 201, the term "Facility" applies to any area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. Therefore the former WAP is defined as a "Facility" under Part 201.

The purpose of this document is to ensure compliance with the Part 20107a (1) requirement that the owner and/or operators of contaminated properties defined as a "Facility" under NREPA assure responsible and safe use of the property. Section 7a of Part 201 provides that a person who owns or operates property that he/she has knowledge is a "Facility" must: 1) undertake measures as are necessary to prevent exacerbation; 2) exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety; and 3) take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that foreseeably could result from those acts or omissions. In accordance with the Michigan Department of Environmental Quality (MDEQ) Rule 1003(6), this document will be maintained on-site and upon request be presented to MDEQ to provide documentation (in part) of compliance with Section 7a requirements.

The Site occupies approximately 45.8 acres on the southeastern portion of the former WAP property. In conjunction with this Due Care Plan, the Mannik & Smith Group, Inc. (MSG) prepared Phase I Environmental Site Assessment (ESA), dated November 1, 2012 and updated October 4, 2013, and a Baseline Environmental Assessment (BEA), dated October 4, 2013, for the Site. Menard intends to acquire the property in October 2013. This Due Care Plan is limited to meeting regulatory requirements for the likely existing chemical impacts (known or unknown) at the time of purchase. This Due Care Plan is intended to address due care responsibilities for Menard during the demolition/construction phase and into the facility operations phase. Menard may retain a qualified environmental consultant to update the Due Care Plan periodically to address changes in site use or conditions.

MSG understands that Menard intends to enter into an environmental cooperation agreement (ECA) with Ford in which responsibilities for remediating or mitigating existing and currently unknown chemical impacts will be specified. An ECA provides framework of obligations and requirements to facilitate cooperation on environmental issues at the Site. Based on MSG's review of an ECA pertaining to a separate portion of the former WAP, MSG anticipates that Ford Land will retain responsibility for identified pre-closing environmental conditions and certain environmental obligations will be conveyed to Menard and subsequent property purchasers. An ECA is a legal agreement and MSG recommends that Menard consult qualified legal counsel to ensure complete understanding of ECA impacts on

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environmental liability and future operations related to the Site. Although some contractual obligations of Menard may be borne under an ECA, this Due Care Plan was developed to fulfill due care obligations under Part 201.

This Due Care Plan follows the required format outlined in the "Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analysis to the Michigan Department of Environmental Quality and for Requesting Optional Determinations". The information necessary to support this Section 20107a Compliance Analysis is provided below.

2.0 DETAILED CHARACTERISTICS OF PROPERTY USE

Prior to development as the WAP, the 317.31 acre property was vacant wooded/wetland or cultivated agricultural land. The Site was initially developed by Ford in 1955 as the WAP for the manufacture and assembly of finished automobiles. The WAP underwent several major expansions between 1963 and 1998. An estimated 4.7 million square feet of building space was present within the former WAP including the Main Assembly building, Paint Shop, prototype build center (a.k.a. Carlite building), Administrative Office and several ancillary structures (Waste Water Treatment Plant, Power House, Pump Houses, Hazardous Storage Building, etc.). The locations of the structures and other prominent features on the WAP property are depicted on Figure 2A.

During the WAP operation, Ford conducted numerous vehicle production processes at the WAP that included: metal working, sealing, welding, metal preparation (sanding, surface preparation, electro-coating and phosphating), painting, assembly and quality assurance/quality control testing. Bulk storage of fuel and other automotive associated fluids were maintained on-site to support vehicle production. Ancillary operations conducted at the WAP by Ford included: waste water treatment, power generation, vehicle storage, equipment maintenance, receipt/storage/handling of raw materials and waste management (on-site land filling as well as hazardous/non-hazardous waste handling/storage for off-site disposal). Ford ceased production at the WAP in June 2007. Environmental investigations conducted by Ford since then have identified hazardous substances that have been released into the environment during the operation of the former WAP.

To facilitate the property acquisition, Ford decommissioned the WAP, including equipment removal, building interior environmental cleaning, and conducting ongoing remedial activities to address issues associated with the known releases of hazardous substances. The remedial activities are being undertaken as interim response actions to meet regulatory cleanup requirements under Part 201 as necessary to satisfy the requirements of a limited industrial land use based "Facility" closure. Remedial activities are anticipated to include response actions and land use (deed) restrictions. Ford's response actions will extend past the planned property transfer date and will be incorporated into the Site Due Care Plan where appropriate.

Menard purchased the 45.8-acre Site from Ford for re-development as a Menard's home improvement store and other commercial lots to be determined. Conceptual plans for the Site include an approximate an approximate 16.7-acre lot for the Menard's store, approximately 25 acres for future commercial development, and approximately 4 acres for a retention pond area. This Due Care Plan is prepared for Menard for use in the construction and operation phases of the Site.

3.0 HAZARDOUS SUBSTANCE INFORMATION

Multiple environmental investigations have been completed at the former WAP by Ford to identify and define existing chemical impacts. These past investigations have identified chemical constituents released into the environment at concentrations exceeding generic cleanup criteria and screening values developed pursuant to Part 201 and Part 213 of NREPA. Following is a list of documents prepared for the WAP, and maintained in MDEQ files, that were relied upon to identify chemical impacts to the Site.

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- Phase I Environmental Site Assessment, Ford Wixom Assembly Plant, Conestoga-Rovers & Associates, Inc. (CRA), dated June 2007.
- Draft Part II – Regulated Materials Sampling and Analysis Report, Ford Wixom Assembly Plant, CRA, dated July 2008.
- Phase II Environmental Site Assessment, Ford Wixom Assembly Plant, CRA, dated September 2008.
- Part I – Regulated Materials Survey, Ford Wixom Assembly Plant, CRA, dated September 2008.
- Phase II Environmental Site Assessment Supplement No. 1, Ford Wixom Assembly Plant, CRA, dated May 2009.
- 2008 Free Product Recovery Status and GW Monitoring Report, Ford Wixom Assembly Plant, CRA, dated August 24, 2009 (Release Nos. C-0519-98 and C-0674-00).
- Revised Corrective Action Plan, Ford Wixom Assembly Plant, CRA, dated March 19, 2010 (Release Nos. C-0519-98 and C-0674-00).
- 2009 Free Product Recovery Status and GW Monitoring Report, Ford Wixom Assembly Plant, CRA, dated March 19, 2010 (Release Nos. C-0519-98 and C-0674-00).
- First Quarter 2010 Free Product Recovery Status Report, Executive Garage, Ford Wixom Assembly Plant, CRA, dated April 28, 2010 (Release Nos. C-0519-98 and C-0674-00).
- Conceptual Remedial Action Plan, Ford Wixom Assembly Plant, CRA, dated June 2010.
- Phase II Environmental Site Assessment Supplement No. 2, Ford Wixom Assembly Plant, CRA, dated June 2010.
- XP Operations Area Baseline Environmental Assessment, Ford Renewable Energy Park, MSG, dated October 1, 2010 and revised November 23, 2010.
- Third Quarter 2012 Free Product Recovery Status Report, Ford Wixom Assembly Plant, CRA, dated October 16, 2012 (Release Nos. C-0519-98 and C-0674-00).
- Phase I Environmental Site Assessment, 28955 & 28607 Wixom Road, Wixom, Oakland County, Michigan, MSG, dated November 1, 2012 and updated October 4, 2013.
- Baseline Environmental Assessment, Menard's Home Improvement Building Site, 28955 & 28607 South Wixom Road, Wixom, Oakland County, Michigan, MSG, dated October 4, 2013.

These environmental reports completed for the WAP property have included assessment of historic Ford operations and potential releases regulated under Part 201 and underground storage tank (UST) releases regulated under Part 213. Based on these investigations, Ford identified and assessed 57 recognized environmental concerns (REC) for the WAP and 3 areas of further evaluation (AFE). The location and designation of the 60 separate RECs and AFEs identified across the WAP are identified on Figure 2A. Details of the investigations and findings are found in the investigation reports referenced above.

In addition to the above reports, CRA has indicated to Menard and MSG that they intend to prepare and submit the following environmental reports:

- Investigation and Remediation Summary Report – Pertaining to the Site and anticipated to be available in October/November 2013.
- Closure Report for the Executive Garage – Pertaining to REC 2 and anticipated to be made available in November/December 2013.

Ford's environmental investigations conducted at the former WAP have advanced over 450 soil borings, installed more than 125 permanent monitoring wells, installed over 30 temporary monitoring wells, excavated more than 80

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test pits/trenches. Over the course of these investigations more than 440 soil, 210 groundwater, 15 surface water and 12 sediment samples have been collected and submitted for laboratory analysis of the chemicals of concern.

MSG conducted a Phase I ESA for the Site in accordance with American Society for Testing and Materials (ASTM) standard E 1527-05, titled: "*Standard Practice For Environmental Site Assessments: Phase I Environmental Site Assessment Process*" and in general accordance with Environmental Protection Agency's (EPA) All Appropriate Inquiry (AAI) standard codified in Federal Regulation – *40 Code of Federal Regulations (CFR) Part 312 - Standards and Practices for All Appropriate Inquiries* and a BEA for the Site for the purpose of establishing an exemption to liability pursuant to Part 201 Section 20126(1)(c). The updated Phase I ESA identified 16 RECs for the Site as listed below. REC numbers in parentheses indicate identifiers of WAP RECs that were evaluated in previous investigations conducted on behalf of Ford, where applicable.

- Former Adjacent Automotive Manufacturing Plant (northern and western adjacent properties)
- Open Leaking Underground Storage Tank (Executive Garage; REC 2)
- Former Adjacent Service Station (eastern adjacent property; REC 8)
- Belowgrade Hydraulic Equipment (REC 12)
- Miscellaneous Pits, Trenches and Sumps (RECs 13 and 38)
- Former 1,000-gallon waste oil UST (REC 16)
- Former 6,000-Gallon Brake Fluid UST (REC 20)
- Used Oil UST (REC 34)
- Former PCB-Containing Substations (REC 40)
- 10,000-gallon gasoline UST (REC 41)
- Historic Farmstead (REC 42)
- Current ASTs and USTs (REC 44)
- Belowgrade Industrial Process Lines (REC 45)
- Agricultural Chemical Use (REC 46)
- AOC 1 Benzene impacts
- AOC 3 Hydraulic oil impacts

In addition to the RECs that were identified in the updated Phase I ESA, the following WAP RECs identified in previous investigations are located adjacent to the Site, but were not determined to be RECs for the Site. Due to their proximity to the Site, sampling associated with some of these RECs has been conducted on the Site.

- Additional Areas of Potential Fill Activities (REC 7)
- Drainage Ditch Sediments (REC 9)
- Power Wash Booth in Truck Repair (REC 25)
- Vehicle Wash Pits (REC 31)
- Battery Charging Area (REC 39)
- Fluid Fill Areas (REC 48)
- Former Degreasing Operations (REC 51)

The location and designation of RECs that are associated with the Site are reflected on Figure 2B with circled number designations. Within the Site boundaries, Ford has advanced at least 32 soil borings, installed 24 monitoring wells and installed four recovery wells over the course of their environmental investigations associated with eight of the RECs (RECs 2, 7, 8, 20, 31, 38, 46 and 48). At least 37 soil and 26 groundwater samples have been collected and submitted for laboratory analysis of the chemicals of concern. The locations of the Site sampling points are depicted on *Figure 3, Site Soil Sample Results* and *Figure 4, Site Groundwater Sample Results*. Ford soil laboratory detections are summarized in *Table 1, Soil Analytical Summary* and groundwater laboratory detections are summarized in *Table 2, Groundwater Analytical* Summary. The Area of Concern (AOC) 1 and AOC 3 RECs were reportedly discovered during Ford remedial activities conducted subsequent to the WAP Phase I and Phase II ESA

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investigations. Sampling associated with the AOC 1 and AOC 3 RECs has reportedly been conducted on the Site, however this sampling and analytical data has not yet been made available to Menard or MSG.

Based on environmental investigations results, the following sub-sections describe the environmental conditions and chemical releases that are known to exist at Site prior to Menard taking control of the property.

3.1 Hazardous Substances Known to Have Been Released

Prior investigations conducted by Ford identified volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCB), metals, and chloride at concentrations greater than Part 201 Generic Nonresidential Clean-up Criteria (GNRCC) in soil, groundwater and other media samples collected at the WAP facility. For soil and groundwater samples collected on the Site, exceedances of GNRCC are limited to VOCs, SVOCs, and metals. Based on the current and planned site usage and zoning, GNRCC are the comparison standard for the Site. A summary of the detected chemical concentration from Ford investigation samples collected from the Site are provided in Table 1 and Table 2. Sample analytical results associated with AOC 1 and AOC 3 have not made available to Menard or MSG at this time.

3.1.1 Soil

Chemical concentrations of the following VOCs and metals have been detected in one or more soil samples from the Site exceed Part 201 GNRCC as follows:

Nonresidential Drinking Water Protection Criteria (DWPC) Exceedances

- Benzene
- Ethylbenzene
- Tetrachloroethene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic
- Cobalt
- Iron
- Magnesium
- Manganese

Groundwater Surface Water Interface Protection Criteria (GSIPC) Exceedances

- Benzene
- Ethylbenzene
- 2-Methylnaphthalene
- Naphthalene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic
- Cobalt
- Manganese
- Selenium

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Nonresidential Soil Volatilization to Indoor Air Inhalation Criteria (SVIIC) Exceedances

- Benzene

VOC exceedances in Site soil samples are limited to the vicinity of the former Executive Garage where two leaking underground storage tanks were formerly located (REC 2). Ford indicated during a September 23, 2013 meeting with Menard and MSG, that the only GNRCC VOC exceedances remaining in the Site soils, including those associated with AOC 1 and AOC 3, are DWPC and GSIPC exceedances. Metals exceedances are located in soil samples collected throughout the Site without any apparent spatial correlations and calculations conducted by Ford indicate that some of the elevated metal concentrations may be representative of naturally occurring background concentrations. Site area soil sample exceedances are depicted on Figure 3.

3.1.2 Groundwater

Chemical concentrations of the following VOCs, SVOC and metals have been detected in one or more groundwater samples from the Site exceed Part 201 GNRCC as follows:

Nonresidential Drinking Water Criteria (DWC) Exceedances

- Benzene
- Ethylbenzene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Aluminum (total)
- Arsenic (total)
- Iron (total and dissolved)
- Manganese (total and dissolved)
- Sodium (total and dissolved)
- Vanadium (total)

Groundwater Surface Water Interface Criteria (GSIC) Exceedances

- Benzene
- Ethylbenzene
- Napthalene
- Toluene
- 1,2,4-Trimethlybenzene
- 1,3,5-Trimethlybenzene
- Total Xylenes
- Arsenic (total)

Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC) Exceedances

- Benzene

VOC exceedances in Site groundwater samples are limited to samples collected in the vicinity of the former Executive Garage where two leaking underground storage tanks were formerly located (REC 2). Metals exceedances in Site groundwater samples were observed throughout the Site

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without any apparent spatial correlations. Site area groundwater sample exceedances are depicted on Figure 4.

3.1.3 Other Media

Light non-aqueous phase liquid (LNAPL) has been identified on the Site as "free product" in previous investigations associated with the Executive Garage by Ford. LNAPL has been observed in nine of the 28 monitoring and recovery wells currently or formerly located on the Site. It is MSG's understanding that remediation activities at the Site have been conducted by Ford, approximately five monitoring wells currently remain on the Site, and that Ford is currently seeking closure for the Executive Garage LUST impacts (REC 2) through the MDEQ.

Based on available data, no soil gas samples have been collected on the Site for comparison to MDEQ screening levels for vapor intrusion to indoor air. Concentrations of benzene in three soil and two groundwater samples exceeded the promulgated GNRCC pertaining to volatilization to indoor air (i.e. SVIIC and GVIIC, respectively). The MDEQ has developed soil and groundwater vapor intrusion screening levels that may supersede the promulgated GNRCC, depending on the applicability of the GNRCC to current and future site conditions. Nonresidential vapor intrusion screening levels, as provided in the MDEQ draft final Guidance Document for the Vapor Intrusion Pathway, dated May 2013, were compared to Site sample data for evaluation of potential future exceedances.

Concentrations in soil exceeded the Nonresidential Vapor Intrusion Soil Screening Levels ($S_{VI\text{-}nr}$) for the following chemicals:

- Benzene
- Ethylbenzene
- Isopropylbenzene
- 1,2,4-Trimethlybenzene
- Total Xylenes

Concentrations in groundwater exceeded the Nonresidential Vapor Intrusion Groundwater Screening Levels for the following chemicals:

- Benzene
- Total Xylenes

Note that the Site sample concentrations were not compared to the Nonresidential Vapor Intrusion Shallow Groundwater Screening Levels as they are unlikely to be applicable to the Site based on the depth to groundwater.

A total of three roof-mounted and two ground level electrical substations were reportedly located on the Site. Based on the June 2007 CRA Phase I ESA for the WAP, two of the roof-mounted substations on the Site included transformers and switch gear that contained PCB oil. Based on the 2008 CRA Draft Regulated Materials Sampling and Analysis Report, concrete samples collected from the two aforementioned roof-mounted substations as well and the two ground level substations contained PCB. All of the substations, associated equipment and concrete substation foundations located on the Site were removed during building demolition. The former WAP building floor slab has been removed by Ford's demolition contractor. Any concrete demolition debris remaining on the Site at the time of property transfer should be assumed to contain PCB's unless demonstrated otherwise through documentation of the generation process and/or sampling.

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The former WAP concrete and asphalt access drives and parking areas have been left in-place at the Site. Based on the 2008 CRA Draft Regulated Materials Sampling and Analysis Report, two asphalt and one concrete pavement samples were collected on the Site and analyzed for VOCs, SVOCs, metals, toxicity characteristics leaching procedure (TCLP) metals, and PCBs. Limited concentrations of metals and SVOCs were noted in the samples at levels that would be expected for the materials. Based on the analytical results, the exterior pavement materials can be recycled or disposed of as inert material under Michigan Part 115 and 201 requirements. A visual inspection of the pavement should be conducted to identify potential areas of contamination above *de minimus* quantities. If inspections of pavement indicate that it may be contaminated (i.e. staining or odors), the material in question should be sampled and characterized. Reuse of more than 1,000 cubic yard of recycled concrete or asphalt requires notification to the MDEQ.

Previous investigations identified asbestos containing materials (ACM) throughout the Site building. Ford developed plans, retained contractors and acquired necessary permits to facilitate proper handling and disposal of ACMs prior to and during demolition of the Site buildings. Provided that demolition debris and associated ACM have been removed from the Site, potential ACMs would be limited to subsurface building materials such as utility lines, pipe and pipe wrap. There is no direct evidence that ACMs are present in the Site subsurface. However, the potential exists for ACMs to be present in subsurface utility lines, pipes and pipe wraps and suspected ACMs discovered during demolition activities should be managed appropriately.

3.2 Human Exposure Pathway Evaluation

This exposure pathway evaluation is conducted to identify which exposure pathways are or may become complete and therefore require response activities or other actions to be compliant with Section 7a of Part 201 (Due Care) obligations. GNRCC that have been developed correspond to a specific exposure pathway for the Part 201 nonresidential use category. Table 1 and Table 2 summarize sample locations and chemical concentrations that have been detected in laboratory samples at levels exceeding their respective GNRCC.

Due care obligations under Part 201 require a person who owns or operates property that he/she has knowledge is a "Facility" must: 1) undertake measures as are necessary to prevent exacerbation; 2) exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the facility in a manner that protects the public health and safety; and 3) take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that foreseeably could result from those acts or omissions. Potentially exposed human receptors for the Site include:

- Operational workers, service workers, customers, visitors and/or trespassers that may be exposed to impacted surface soils, drinking water or vapors.
- Construction workers that may be exposed to impacted soils, groundwater, or vapors during Site construction activities. These would include remedial activities and/or the installation of any exposure barriers or controls.
- Utility workers installing, maintaining or improving utilities at the Site that may be exposed to impacted subsurface soils, groundwater, or vapors.

This exposure pathway evaluation is based on the hydrogeologic setting, maximum known chemical concentrations/distribution, likely presence of a chemical release, intended property use and potential receptors. Likely presence of a chemical release includes potential releases from RECs identified in the Menard updated Phase I ESA prepared by MSG that may or may not have been adequately investigated.

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Human exposure pathways of due care concern at the property that are or may become complete in light of the intended commercial use include:

Soil

- Soil Leaching to Groundwater used for Drinking Water
- Soil Volatilization to Indoor Air
- Potential for Additional Soil Pathways due to Uninvestigated Chemical Releases

Groundwater

- Groundwater Ingestion as Drinking Water
- Groundwater Volatilization to Indoor Air
- Potential for Additional Groundwater Pathways due to Uninvestigated Chemical Releases

Other Media

- Potential for Free-Phase Liquids
- Potential for Particulate inhalation of ACM

Soil Leaching to Groundwater used for Drinking Water – Soil samples at the Site contain VOCs and metals at concentrations exceeding their respective residential and nonresidential DWPC. The Site is supplied with municipal water and there are currently no water supply wells present of the Site. A groundwater use restriction disallowing the use of groundwater for drinking water or the installation of water supply wells has been recorded with the County Register of Deeds. Therefore the DWPC pathway is not applicable to the Site.

Soil Volatilization to Indoor Air – There are no current indoor structures at the Site; however this pathway could become complete at the Site upon construction of Site buildings. Exceedances of SVIIC were noted at three locations and exceedances of $S_{VI\text{-}nr}$ have been noted at ten locations on the Site, all in the vicinity of the former WAP Executive Garage. Additionally, the soil volatilization to indoor air concerns may be present with respect to undiscovered soil impacts or uninvestigated RECs. This pathway could potentially be completed and warrants further assessment.

Potential for Additional Soil Pathways due to Uninvestigated Chemical Releases – Although the former WAP has been extensively investigated by Ford, due to over 50 years of industrial activities and large size of the former WAP, unknown impacts to soil from identified RECs may be present on the property. Potential pathways that could become complete upon discovery of impacted soils include Soil Direct Contact, Soil Volatilization to Ambient Air, Soil Leaching to Groundwater with Subsequent Direct Contact, Acute Toxic Effects and Physical Hazards. No exceedances of the criteria applicable to the above exposure pathways have been observed in Site soil samples. However, based on the past use of the Site as an automotive assembly plant and impacts observed in other portions of the former WAP, the potential for exceedances of applicable GNRCC exists at the Site.

Groundwater Ingestion as Drinking Water – Groundwater samples collected on the Site contain VOCs and metals at concentrations exceeding their respective DWC. The Site is supplied with municipal water and there are currently no water supply wells present of the Site. A groundwater use restriction disallowing the use of groundwater for drinking water or the installation of water supply wells has been recorded with the County Register of Deeds. Therefore the DWC pathway is not applicable to the Site.

Groundwater Volatilization to Indoor Air – There are no current indoor structures at the Site; however this pathway could become complete at the Site upon construction of Site buildings. Exceedances of GVIIC were noted at two locations and exceedances of $GW_{VI\text{-}nr}$ have been noted at four locations on the Site, all in

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the vicinity of the former WAP Executive Garage. Additionally, the groundwater volatilization to indoor air concerns may be present with respect to undiscovered groundwater impacts or uninvestigated RECs. This pathway could potentially be completed and warrants further assessment.

Potential for Additional Groundwater Pathways due to Uninvestigated Chemical Releases – Although the former WAP has been extensively investigated by Ford, due to over 50 years of industrial activities and large size of the former WAP, unknown impacts to soil from identified RECs may be present on the property. Potential pathways that could become complete upon discovery of impacted groundwater include Groundwater Direct Contact, Acute Toxic Effects and Physical Hazards. No exceedances of the criteria applicable to the above exposure pathways have been observed in Site groundwater samples. However, based on the past use of the Site as an automotive assembly plant and groundwater impacts observed in other portions of the former WAP, the potential for exceedances of applicable GNRCC exists at the Site.

Free-Phase Liquids – Free-phase liquids in the subsurface have been observed on the Site in the vicinity of the former WAP Executive Garage. MSG understands that Ford has completed remediation at this location. Depending on the extents and success of Ford's remediation efforts, free-phase liquids may or may not be a concern at the Site. In addition, based on the past use of the Site as an automotive assembly plant, the potential for the presence of free-phase liquids at other locations on the Site exists.

Potential for Inhalation of Asbestos Containing Materials – This pathway could become complete as a result of demolition or disturbance of ACM. MSG understands that known ACMs have been removed from the Site during building demolition. Provided that demolition debris and associated ACM have been removed from the Site, potential ACMs would be limited to subsurface building materials such as utility lines, pipe and pipe wrap.

4.0 PLAN FOR RESPONSE ACTIVITIES

The future intended use of the former WAP is commercial. Therefore, Part 201 GNRCC is being utilized to assess the need for remedial activities or due care requirements.

Multiple environmental investigations and remedial activities have been conducted by Ford at the former WAP. Reports for these investigations and remedial activities have been provided to MDEQ for review. Response actions to address the known impacts will be implemented by Ford. Ford is required to implement response activities which may include the use of engineering controls, (including, but not limited to caps, barrier walls and vapor barriers) and associated permanent markers, to contain, control or otherwise limit exposure to hazardous substances present on the property. MSG understands that Ford has addressed Part 201 Nonresidential DWPC and DWC exceedances with the recording of a groundwater use restriction with Oakland County Register of Deeds. In regards to GSIPC and GSIC exceedances, MSG understands that no active on-site remediation by Ford is planned, pending MDEQ review and approval. MSG further understands that long-term monitoring is anticipated to be required throughout the WAP, although exact locations of monitoring points are unknown at this time.

Based on known Site soil and groundwater impacts and the recording of the groundwater use restriction, no further evaluation of these media by Menard are required. However, given the duration and nature of the former property use as an automotive manufacturing plant, the presence of previously unidentified chemical impacts is possible as pavement is removed and soils are excavated. Evaluation of previously undiscovered impacts should be made at the time of discovery in accordance with the Construction and Maintenance Plan set forth below.

Additional environmental evaluations are warranted for other media on the Site including screening for potential volatilization to indoor air issues. Pending the conclusions of these evaluations, further due care response actions may be warranted. MSG recommends that the following activities be conducted prior to and during site demolition and construction activities:

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- Review of additional environmental data collected by Ford. MSG understands that Ford has collected further information regarding soil and groundwater impacts at the Site that has not yet been made available.
- Removal of building demolition debris located on the Site that is associated with demolition activities conducted on behalf of Ford.
- Obtain an environmental professional to be informed of and be on-call during pavement removal and soil disturbance activities that could potentially reveal previously unidentified impacts.
- Conduct a soil gas survey in areas intended for new construction of buildings and evaluate the need for remedial measures and/or engineering controls (e.g a vapor intrusion barrier and/or sub-slab depressurization system).

All environmental response activities conducted by Menard (or Ford) will require the appropriate MDEQ 72-hour notification.

5.0 CONSTRUCTION AND MAINTENANCE PLAN

This section identifies due care elements that are necessary to follow during Site construction and maintenance activities that disturb subsurface soils. This Due Care Plan will be provided to applicable contractors and serve as a notification of potential environmental concerns in regards to the potential exposure to known and potential unidentified hazardous substances in soil, groundwater and/or vapors. Applicable contractors include those who conduct demolition or subsurface activities during both the construction and operations phases, including subsurface utility work. A construction compliance plan and/or Health and Safety Plan (HASP) will be required to be provided to Menard by the general contractor, where appropriate depending on the nature of the task to be performed and potential exposures associated with that task.

Even though the former WAP has been extensively investigated by Ford, due to over 50 years of industrial activities and large size of the former WAP, unknown impacts to soil and/or groundwater may be present on the property. Construction projects that will disturb significant quantities of soil or have potential for exposure to shallow groundwater or soil vapors will be required to employ an environmental professional and have a task-specific HASP that conforms to the general contactor's construction compliance plan and submitted to Menard for review and approval. All project construction workers with potential exposures (e.g. subsurface workers) will be notified of potential exposure to the impacted soil, groundwater and/or vapors. Personal Protective Equipment (PPE) will be required to prevent worker direct contact with potentially impacted soil and/or shallow groundwater. Air monitoring may be conducted to protect against inhalation exposures, as well as, fire and explosion hazards.

Exposure Routes: None of the known chemical impacts that exceed human exposure pathways (Soil Leaching to Groundwater used for Drinking Water, Soil Volatilization to Indoor Air, Groundwater Ingestion as Drinking Water, and Groundwater Volatilization to Indoor Air) are of concern during construction and maintenance activities. However, due to the duration and nature of the former property use, unknown materials may be present in the subsurface soils and shallow groundwater. Inhalation of vapors or dust and direct contact with impacted soils and/or groundwater are exposure routes of concern for construction and maintenance worker. These exposures should be limited to the extent practical during construction activities.

Exposure Rates: Exposure frequencies and duration are not expected to exceed rates associated with normal construction/maintenance activities (e.g., soil excavation, transport, and disposal, surface and subsurface activities). Only authorized personnel should have access to the work zone unless the work area is cleared for access by an environmental professional or the potentially impacted soil or groundwater are covered or capped as to avoid the potential for exposure.

Construction activities with potential exposures to impacted soil, groundwater, soil vapors or other media will be conducted as described below.

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Construction Activities: During future construction activities, storage and management of construction-related hazardous substances will be performed in manner designed to maintain public and worker safety and environmental health. A construction compliance analysis will be prepared by the appropriate contractor designating appropriate construction-related hazardous substance storage and handling locations. Releases of construction-related hazardous substances will be managed in accordance with procedures described in "Release of Hazardous Materials from Construction Use" below. Prior to commencement of construction activities, a copy of the Menard-approved compliance analysis will be provided to the site construction manager.

Release of Hazardous Materials from Construction Use: If there is a release of hazardous materials from on-site usage during construction or maintenance activities, actions consistent with requirements of Part 201 and/or Part 213 of NREPA, as applicable, shall be implemented. These actions may include but are not limited to: 1) determining the extent and severity of the release; 2) reporting of the release, if subject to reportable quantities; 3) or there is a threat of imminent and substantial endangerment the Pollution Emergency Alerting System (PEAS, 1-800-292-4706) will be notified; 3) immediately stop or prevent the release at its source; 4) immediately identify and eliminate any threat of fire or explosion; 5) and diligently pursue response activities necessary to achieve applicable cleanup criteria.

Demolition Activities: Evaluations of concrete and asphalt pavements will be conducted prior to recycling or disposal of these materials. Pavement removal and disposal or reuse will follow appropriate state and federal regulations.

Exposure of previously unknown impacts or potential hazardous substances (including chemical impacts and ACMs) may occur during demolition activities which expose soils. An environmental professional will be on call during soil excavation activities and will be utilized, as appropriate, to perform environmental monitoring and soil assessment for indication of chemical impacts and due care exposure concerns, as described below. Additional PPE, engineering controls and administrative controls will be utilized to control exposures as required based the recommendations of the environmental professional.

Debris generated during previous or current demolition activities should be characterized and disposed of or recycled appropriately and in accordance with applicable local, state and federal regulations.

Soil Disturbance Activities: Based on known soil impacts on the Site, there are not any exposure concerns for construction or maintenance personnel performing soil disturbance activities. However, exposure of previously unknown impacts or potential hazardous substances (including chemical impacts and ACMs) may occur during demolition activities which expose subsurface soils. An environmental professional will be on call during demolition and subsurface disturbance activities in the event that unknown impacts or potential hazardous substances are exposed. If chemically impacted soils are exposed the environmental professional will perform environmental monitoring, evaluate chemical impacts for due care exposure concerns, and make recommendations to prevent exacerbation of existing impacts, as described below. Exposure of previously unknown chemical impacts or potential hazardous substances may occur during demolition, construction or soil disturbance activities and will be monitored as defined in a general contractor's construction compliance plan and a task specific HASP. Additional PPE, engineering controls and administrative controls will be utilized to control exposures as required based the recommendations of the environmental professional.

Any future development plans for the facility shall be performed in accordance with Section 20120c of Part 201. Soil that requires excavation for construction purposes will be assumed to contain chemical impacts above Part 201 Generic Residential Cleanup Criteria and as such will be appropriately managed, in that:

1. Where possible, the excavated soil will be returned to the excavation or managed on-site as a contaminated material until demonstrated otherwise.

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2. Characterization sampling is required to demonstrate lack of chemical impact to soils for any soil proposed for off-site reuse or relocation.

3. Soil will be characterized to determine proper off-site disposal requirements, and soil requiring off-site disposal will be transported and disposed at an appropriate licensed landfill facility. When necessary, soil to be disposed off-site may be temporarily staged within the site of environmental impacts prior to final off-site disposal.

To protect workers from inhalation exposure, air monitoring for VOCs will be conducted, as appropriate, during excavation activities with a calibrated photo-ionization detector (PID) in accordance with a Menard-approved HASP for the specific construction activity. To protect against particulate inhalation exposures, dust from excavations and/or earthwork will be kept to a minimum by wetting as necessary. Additional monitoring may be required based on recommendations of the environmental professional.

Shallow Groundwater: Based on known groundwater impacts on the Site, there are not any exposure concerns for construction or maintenance personnel performing demolition, construction or maintenance activities that may encounter Site groundwater. However, exposure of previously unknown impacts or potential hazardous substances may occur during activities which expose groundwater. An environmental professional will be on call during demolition and subsurface disturbance activities in the event that chemically impacted groundwater is exposed. If chemically impacted groundwater is exposed the environmental professional will perform environmental monitoring, evaluate chemical impacts for due care exposure concerns, and make recommendations to prevent exacerbation of existing impacts, as described below. Exposure of previously unknown chemical impacts or potential hazardous substances may occur during demolition, construction or soil disturbance activities and will be monitored as defined in a task-specific HASP prepared in accordance with the general contractor's compliance plan. Additional PPE, engineering controls and administrative controls will be utilized to control exposures as required based upon the recommendations of the environmental professional.

Groundwater that is extracted due to construction requirements will be appropriately managed, in that:

1. Where appropriate and possible, extracted groundwater will be discharged on the ground or back into the saturated formation of its origin in close proximity to the point of extraction. Extracted groundwater that is demonstrated to be non-impacted may also be discharged into the storm drain system provided proper permits for the discharge are obtained (i.e. NPDES permit).

2. The groundwater will be characterized to determine proper off-site disposal requirements, and will be transported and disposed into an appropriate properly licensed treatment facility. When necessary, groundwater to be disposed off-site may be temporarily containerized and relocated within the site of environmental impacts prior to final off-site disposal.

3. Groundwater may be treated on-site using appropriate treatment mechanism(s) (i.e. carbon adsorption filtration, air stripping, etc.). If permitted, treated water will be discharged into the public sanitary sewer system and/or transported off-site for disposal.

Off-site groundwater disposal activities will be recorded by appropriate documentation, including, but not limited to: manifests, trucking logs, receipts, and other required documentation.

Unknown Impacts: An environmental professional will be on call during construction, demolition and soil disturbance activities which may expose previously unidentified chemical impacts or hazardous materials. If soil and/or groundwater impacts are encountered during earthwork, demolition or construction activities that were not previously known to exist and are not consistent with known existing impacts, then such impacts shall be characterized and managed in accordance with Part 201 and/or Part 213 of NREPA, as applicable. Soil and groundwater with

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previously unidentified impacts, as determined by an environmental professional, will be assumed to contain hazardous substances at levels of concern until demonstrated otherwise and will be managed accordingly.

In the event that previously unidentified impacts are discovered by the environmental professional and/or contractor, the following actions will be implemented:

- The discovery will be immediately reported to Menard.
- Menard, with the concurrence of the environmental professional, will determine if the discovered impacts warrant a temporary cessation of work and what areas and types of work are affected. A stop work order will be issued, as necessary, based on this evaluation.
- If discovered impacts may be related to pre-closing environmental conditions, Menard will notify Ford, as the responsible party. Cooperative management of the environmental condition will be managed between Menard and Ford in accordance with applicable environmental laws and regulations.

In general, impacted soil, groundwater or other media will be characterized in-place or will be staged in a properly designated area until characterization is completed and appropriate relocation destinations are determined. In addition, all appropriate actions will immediately be taken in accordance with all applicable laws and regulations to prevent, abate, or minimize such release, threat of release, or endangerment. If during performance of construction, demolition or maintenance activities an event occurs that presents an imminent and substantial endangerment through a release or threat of release the PEAS (1-800-292-4706) shall be immediately notified.

Maintenance Activities: Maintenance activities involving work in subsurface areas, such as utility manholes, will require proper monitoring for explosive and oxygen deficient atmospheres. Known environmental impacts do not warrant monitoring for VOCs in subsurface atmospheres. However, during the course demolition, construction and soil disturbance activities, portions of the Site may be identified where VOC monitoring of subsurface atmospheres is warranted during maintenance activities.

Erosion Control: Runoff from the site during construction will be directed away from excavation areas and collected by the on-site storm water management system. As future construction for the property warrants, an Oakland County Sedimentation and Erosion Control permit will be utilized to control and mitigate sedimentation and erosion during construction activities.

Fugitive Dust Control Plan: A fugitive dust control plan will be implemented when necessary during construction activities. The plan may include the application of a dust suppressant during excavations or demolition as well as to all unpaved traffic areas unless the surface is wet or snow covered. The plan may also include sweeping of paved roads and paved parking areas to prevent spreading of impacted soils. A record will be maintained of dust suppressant application and sweeping frequency, as appropriate.

6.0 EVALUATION AND DEMONSTRATION OF COMPLIANCE WITH 7A OBLIGATIONS

Upon occupying the property Menard will 1) undertake measures to prevent exacerbation of existing soil and/or groundwater impacts; 2) exercise due care by undertaking response activities necessary to mitigate unacceptable exposure to hazardous substances and allow for the intended use of the property in a manner that protects the public health and safety; and 3) take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions. These due care requirements will be satisfied by undertaking the following activities.

6.1 Prevention of Exacerbation

Exacerbation occurs when a party's activities cause contamination to spread. The soil and groundwater management practices as described above in the Plan for Response Activities and Construction and Maintenance Plan sections will prevent exacerbation of existing contamination from occurring.

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6.2 Mitigation of Unacceptable Exposure

Ford is actively engaged with MDEQ in its efforts to address remediation requirements for known chemical impacts from the former WAP operations to satisfy the limited nonresidential cleanup standards established under Part 201 of NREPA. Any response activities (including engineering controls and land use restrictions) employed by Ford to the Site will be incorporated by reference into this Due Care Plan.

Prior conducting any on-site work, the potential for exposure hazards and fire and explosion hazards will be communicated by written notice any construction/utility workers or third parties including the following, as applicable:

- Easement Holders of Record;
- Utility Franchise Holders of Record;
- Owners/Operators of all Public Utilities that Serve the Site; and
- Owners or Lessees of Severed Subsurface Mineral Rights or Subsurface Formations.

The appropriate notices to off-site property owners of contamination migrating from the Site have been made by Ford in accordance with Rule 1017.

6.3 Precautions Against Third Party Acts or Omissions

As a precaution against third party acts or omissions, Site access will be restricted during the construction phase, particularly at times and in areas that contaminated soil and/or groundwater is exposed. During the operations phase, access to potentially contaminated soil and/or groundwater will be restricted through use of foundations, paving and landscaping and/or resource use restrictions.

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TABLES

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/kg			Volatile Organic Compounds (VOCs)																Semivolatile Organic Compounds (SVOCs)						Metals/Inorganics		
			Acetone	Benzene	2-Butanone (MEK)	Ethylbenzene	Isopropylbenzene	4-Methyl-2-Pentanone	Methyl Cyclohexane	2-Methylnaphthalene	Methyl-tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(a)pyrene	Chrysene	Fluoranthene	Pyrene	Aluminum (B)	Antimony	Arsenic (B)
Statewide Default Background Levels (X)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9E+06	NA	5,800
Drinking Water Protection Criteria (XXI)			15,000	100	2.6E+05	1,500	91,000	36,000	NA	57,000	800	35,000	100	16,000	4,000	2,100	1,800	5,600	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1,000	4,300	4,600
Groundwater Surface Water Interface Protection Criteria (XII)			34,000	4,000 (X)	44,000	360	3,200	ID	NA	4,200	1.4E+05 (X)	730	1,200 (X)	5,400	1,800	570	1,100	820	NLL	NLL	NLL	NLL	5,500	ID	NA	94,000 (X)	4,600
Groundwater Contact Protection Criteria (XIII)			1.1E+08 (C)	2.2E+05	2.7E+07 (C)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	5.5E+06	5.9E+06 (C)	2.1E+06	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1.0E+09 (D)	4.9E+07	2.0E+06
Soil Volatilization to Indoor Air Inhalation (XXII)			1.1E+08 (C)	1,600	2.7E+07 (C)	87,000	3.9E+05 (C)	2.7E+06 (C)	NA	2.7E+06	5.9E+06 (C)	2.5E+05	11,000	2.5E+05 (C)	2.5E+05	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLV	ID	NLV	ID	.0E+09 (D	1.0E+09 (D)	NLV	NLV	NLV
Direct Contact Criteria (XXVII)			2.3E+07	1.8E+05	2.7E+07 (C, DD)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	8.1E+06	1.5E+06	1.6E+07	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	20,000	20,000	2,000	2.0E+06	4.6E+07	2.9E+07	5.0E+7 (DD)	1.8E+05	7,600
Soil Saturation Concentration Screening Levels (Csat) (XX)			1.1E+08	4.0E+05	2.7E+07	1.40E+05	3.90E+05	2.7E+06	NA	NA	5.9E+06	NA	88,000	2.5E+05	4.6E+05	1.10E+05	94,000	1.5E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																									
SB-13	18-19'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-13	27-28'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-17	27-28'	6/16/2008	NS	ND	NS	ND	NS	NS	NS	ND	ND	ND	NS	ND	NS	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-32	18.5-19.5'	10/2/2009	ND	1,400	ND	26,000	ND	ND	ND	1,500 J	ND	6,600	ND	8,400	ND	74,000	21,000	93,000	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-33	16-17'	10/2/2009	ND	ND	ND	29,000	ND	ND	ND	4,900 J	ND	6,200	ND	21,000	ND	62,000	17,000	140,000	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-34	23-24	10/2/2009	ND	8,200	ND	ND	ND	ND	ND	ND	ND	ND	ND	56,000	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-35	11.5-12.5'	10/2/2009	ND	390	ND	23 J	ND	ND	ND	ND	ND	ND	ND	810	ND	44 J	ND	76 J	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-36	15.5'	10/5/2009	ND	2,600	ND	3,500	ND	ND	ND	ND	310 J	ND	ND	50,000	ND	6,200	2,200	13,000	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37	14-14.5'	10/5/2009	ND	1,200	ND	49	ND	ND	ND	ND	ND	ND	ND	1,400	ND	76 J	ND	120 J	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37 (Dup)	14-14.5'	10/5/2009	ND	1,200	ND	40 J	ND	ND	ND	ND	ND	18 J	ND	1,300	ND	78 J	ND	99 J	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-38	14-14.5'	10/5/2009	ND	87	ND	ND	ND	ND	ND	ND	ND	ND	ND	24 UB	ND	ND	ND	34 UB	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-39	10-10.5'	10/5/2009	ND	9.3 J	ND	150	ND	ND	ND	ND	ND	56 J	ND	240	ND	650	180	830	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-40	7.5-8'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-41	13.5-14'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-42	14-14.5'	10/6/2009	ND	29 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-43	4-4.5'	10/6/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-44	17-17.5'	10/7/2009	ND	4,000	ND	13,000	ND	ND	ND	ND	ND	3,400 J	ND	130,000	ND	65,000	21,000	45,000	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-45	6.5-7'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26 UB	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-46	4-5'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-46 (Dup)	4-5'	10/7/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-47	2-2.5'	10/19/2009	ND	760	ND	21 J	ND	ND	ND	ND	ND	ND	ND	90	ND	51 J	ND	20 J	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-47 (Dup)	2-2.5'	10/19/2009	ND	800	ND	38 J	ND	ND	ND	ND	ND	ND	ND	51 J	ND	41 J	ND	33 J	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB2-48	4-4.5'	10/19/2009	ND	ND	ND	ND	ND	ND	ND	14,000	ND	2,700 J	ND	ND	ND	ND	1,500 J	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
SB7-8	2-6'	3/4/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND	ND	ND	9.4 J	11 J	7.5 J	8.5 J	16 J	13 J	1,470,000	27 J	1,800
SB31-1	4-8'	3/10/2008	30	ND	4.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5,540,000	150 J	18,100 J
SB31-5	2-5'	6/13/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5,500
SB38-4	1-3'	10/9/2008	ND	ND	ND	10 J	ND	ND	ND	ND	ND	ND	600	ND	ND	ND	ND	64 J	NS	NS	NS	NS	NS	NS	5,820,000	49 J	3,900
SB38-5	1-3'	10/9/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	1,950,000	ND	3,600
SB38-11	1-2'	10/9/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.9	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	5,370,000	76 J	4,700
SB38-22	1-1.5'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.77 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-23	1-1.5'	6/4/2009	ND	ND	ND	770 J	540 J	730 J	550 J	ND	ND	ND	ND	ND	ND	15,000	4,400	2,900 J	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-24	2.5-3'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26 J	13	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-25	5.5-6'	6/4/2009	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-30	1-3'	8/28/2009	24	ND	4.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS

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Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/kg			Metals/Inorganics																							
			Barium (B)	Beryllium	Cadmium (B)	Calcium	Chromium	Chromium III	Chromium VI	Cobalt	Copper (B)	Iron (B)	Lead (B)	Lead - coaste fraction(B)	Lead - fine fraction (B)	Lead - total (B)	Magnesium (B)	Manganese (B)	Mercury (B,Z)	Nickel (B)	Potassium	Selenium (B)	Silver (B)	Sodium	Thallium (B)	Vanadium	Zinc (B)
Statewide Default Background Levels (X)			75,000	NA	1,200	NA	18,000	NA	NA	6,800	32,000	1.2E+07	21,000	21,000	21,000	21,000	NA	4.4E+05	130	20,000	NA	410	1,000	NA	NA	NA	47,000
Drinking Water Protection Criteria (XXI)			1.3E+06	51,000	6,000	NA	30,000	.0E+09 (D	30,000	800	5.8E+06	6,000	7.0E+05	7.0E+05	7.0E+05	7.0E+05	8.0E+06	1,000	1,700	1.0E+05	NA	4,000	4,500	2.5E+06	2,300	72,000	2.4E+06
Groundwater Surface Water Interface Protection Criteria (XII)			4.4E+5 (G)*	84,000 (G)*	3,600 (G,X)*	NA	3,300	0E+9 (G,X	3,300	2,000	73,000 (G)*	NA	5.1E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	NA	56,000 (G,X)*	50 (M); 1.2	76,000 (G)*	NA	400	.00 (M); 2	NA	4,200 (X)	4.3E+05	1.7E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1.0E+09 (D)	1.0E+09 (D)	2.3E+08	NA	1.4E+08	.0E+09 (D	1.4E+08	4.8E+07	1.0E+09 (D	1.0E+09 (D)	ID	ID	ID	ID	1.0E+09 (D)	1.8E+08	47,000	1.0E+09 (D	NA	7.8E+07	2.0E+08	1.0E+09 (D)	1.5E+07	1.0E+09 (D	1.0E+09 (D)
Soil Volatilization to Indoor Air Inhalation (XXII)			NLV	NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Direct Contact Criteria (XXVII)			3.7E+07	4.1E+05	5.5E+05	NA	2.5E+06	1.1E+07	2.5E+06	2.6E+06	2.0E+07	1.6E+08	4.0E+05	4.0E+05	4.0E+05	4.0E+05	1.0E+09 (D)	2.5E+07	1.6E+05	4.0E+07	NA	2.6E+06	2.5E+06	1.0E+09 (D)	35,000	.5E+05 (DI	1.7E+08
Soil Saturation Concentration Screening Levels (Csat) (XX)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																									
SB-13	18-19'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-13	27-28'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB-17	27-28'	6/16/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-32	18.5-19.5'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-33	16-17'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-34	23-24	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-35	11.5-12.5'	10/2/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-36	15.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-37 (Dup)	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-38	14-14.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-39	10-10.5'	10/5/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-40	7.5-8'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-41	13.5-14'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-42	14-14.5'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-43	4-4.5'	10/6/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-44	17-17.5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-45	6.5-7'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-46	4-5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-46 (Dup)	4-5'	10/7/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-47	2-2.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-47 (Dup)	2-2.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB2-48	4-4.5'	10/19/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB7-8	2-6'	3/4/2008	8,500	ND	120	49,800,000	4,300	4,300	ND	1,700	4,700	3,890,000	ND	3,800 J	6,000 J	4,800 J	9,600,000 J	150,000 J	ND	4,500	290,000 J	180	ND	673,000 J	ND	5,300	17,300
SB31-1	4-8'	3/10/2008	65,900	360	450	35,700,000	11,200	11,200	ND	7,300	27,300 J	19,700,000	NS	11,200	17,000	12,600	17,300,000 J	707,000	ND	18,000	653,000	610	ND	ND	160	26,100	69,500
SB31-5	2-5'	6/13/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-4	1-3'	10/9/2008	39,300	160 J	250	48,900,000	13,400	13,400	ND	4,800	11,200	10,700,000	4,600	ND	ND	ND	15,500,000	230,000	25 J	13,100	1,100,000	260	89	159,000	250	14,100	33,300
SB38-5	1-3'	10/9/2008	8,600	ND	130	47,400,000	5,300	4,900	ND	2,500	8,200	5,730,000	3,200	ND	ND	ND	9,610,000	208,000	ND	6,300	306,000 J	150 J	ND	80,100 J	78 J	7,200	21,700
SB38-11	1-2'	10/9/2008	37,100	160 J	290	48,600,000	10,200	10,200	ND	4,800	13,200	11,300,000	5,100	NS	NS	NS	14,400,000	196,000	28 J	13,200	1,060,000	260	20 J	154,000	260	15,400	33,500
SB38-22	1-1.5'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-23	1-1.5'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-24	2.5-3'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-25	5.5-6'	6/4/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB38-30	1-3'	8/28/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/kg			Volatile Organic Compounds (VOCs)															Semivolatile Organic Compounds (SVOCs)						Metals/Inorganics		
			Acetone	Benzene	2-Butanone (MEK)	Ethylbenzene	Isopropylbenzene	4-Methyl-2-Pentanone	Methyl Cyclohexane	2-Methylnaphthalene	Methyl-tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(a)pyrene	Chrysene	Fluoranthene	Pyrene	Aluminum (B)	Antimony	Arsenic (B)
Statewide Default Background Levels (X)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.9E+06	NA	5,800
Drinking Water Protection Criteria (XXI)			15,000	100	2.6E+05	1,500	91,000	36,000	NA	57,000	800	35,000	100	16,000	4,000	2,100	1,800	5,600	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1,000	4,300	4,600
Groundwater Surface Water Interface Protection Criteria (XII)			34,000	4,000 (X)	44,000	360	3,200	ID	NA	4,200	1.4E+05 (X)	730	1,200 (X)	5,400	1,800	570	1,100	820	NLL	NLL	NLL	NLL	5,500	ID	NA	94,000 (X)	4,600
Groundwater Contact Protection Criteria (XIII)			1.1E+08 (C)	2.2E+05	2.7E+07 (C)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	5.5E+06	5.9E+06 (C)	2.1E+06	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLL	NLL	NLL	NLL	7.3E+05	4.8E+05	1.0E+09 (D)	4.9E+07	2.0E+06
Soil Volatilization to Indoor Air Inhalation (XXII)			1.1E+08 (C)	1,600	2.7E+07 (C)	87,000	3.9E+05 (C)	2.7E+06 (C)	NA	2.7E+06	5.9E+06 (C)	2.5E+05	11,000	2.5E+05 (C)	2.5E+05	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	NLV	ID	NLV	ID	.0E+09 (D	1.0E+09 (D)	NLV	NLV	NLV
Direct Contact Criteria (XXVII)			2.3E+07	1.8E+05	2.7E+07 (C, DD)	1.4E+05 (C)	3.9E+05 (C)	2.7E+06 (C)	NA	8.1E+06	1.5E+06	1.6E+07	88,000 (C)	2.5E+05 (C)	4.6E+05 (C)	1.1E+05 (C)	94,000 (C)	1.5E+05 (C)	20,000	20,000	2,000	2.0E+06	4.6E+07	2.9E+07	5.0E+7 (DD)	1.8E+05	7,600
Soil Saturation Concentration Screening Levels (Csat) (XX)			1.1E+08	4.0E+05	2.7E+07	1.40E+05	3.90E+05	2.7E+06	NA	NA	5.9E+06	NA	88,000	2.5E+05	4.6E+05	1.10E+05	94,000	1.5E+05	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																									
SB46-3	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	6,110,000	120 J	5,600
SB46-3 (Dup)	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	9,600
SB48-3	6-8'	3/24/2008	NS	0.24 J	NS	ND	NS	NS	NS	NS	NS	NS	NS	0.94 J	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS

Notes:
Free Product present at REC 2 (Executive Garage Open Leaking Underground Storage Tank)
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Protection Cleanup Criteria (XXI)
Exceeds Groundwater Surface Water Interface Protection Cleanup Criteria (XII)
Exceeds Direct Contact Cleanup Criteria (XXVII)
Exceeds Generic Drinking Water Protection (XXI) and Groundwater Surface Water Interface Protection (XII) Cleanup Criteria
Exceeds Generic Drinking Water Protection (XXI) and Soil Volatilization to Indoor Air Cleanup (XXII) Criteria
Exceeds Generic Drinking Water Protection (XXI), Ground Water Surface Water Interface Protection (XII), and Soil Volatilization to Indoor Air (XXII) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Equals or Exceeds Soil Saturation Concentration Screening Level (XX)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed
NR = Not Reported

Table 1
Soil Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

SOIL: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/kg			Metals/Inorganics																							
			Barium (B)	Beryllium	Cadmium (B)	Calcium	Chromium	Chromium III	Chromium VI	Cobalt	Copper (B)	Iron (B)	Lead (B)	Lead - coarse fraction(B)	Lead - fine fraction (B)	Lead - total (B)	Magnesium (B)	Manganese (B)	Mercury (B,Z)	Nickel (B)	Potassium	Selenium (B)	Silver (B)	Sodium	Thallium (B)	Vanadium	Zinc (B)
Statewide Default Background Levels (X)			75,000	NA	1,200	NA	18,000	NA	NA	6,800	32,000	1.2E+07	21,000	21,000	21,000	21,000	NA	4.4E+05	130	20,000	NA	410	1,000	NA	NA	NA	47,000
Drinking Water Protection Criteria (XXI)			1.3E+06	51,000	6,000	NA	30,000	.0E+09 (D	30,000	800	5.8E+06	6,000	7.0E+05	7.0E+05	7.0E+05	7.0E+05	8.0E+06	1,000	1,700	1.0E+05	NA	4,000	4,500	2.5E+06	2,300	72,000	2.4E+06
Groundwater Surface Water Interface Protection Criteria (XII)			4.4E+5 (G)*	84,000 (G)*	3,600 (G,X)*	NA	3,300	0E+9 (G,X	3,300	2,000	73,000 (G)*	NA	5.1E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	2.5E+6 (G,X)*	NA	56,000 (G,X)*	50 (M); 1.2	76,000 (G)*	NA	400	.00 (M); 2	NA	4,200 (X)	4.3E+05	1.7E+5 (G)*
Groundwater Contact Protection Criteria (XIII)			1.0E+09 (D)	1.0E+09 (D)	2.3E+08	NA	1.4E+08	.0E+09 (D	1.4E+08	4.8E+07	1.0E+09 (D	1.0E+09 (D)	ID	ID	ID	ID	1.0E+09 (D)	1.8E+08	47,000	1.0E+09 (D	NA	7.8E+07	2.0E+08	1.0E+09 (D)	1.5E+07	1.0E+09 (D	1.0E+09 (D)
Soil Volatilization to Indoor Air Inhalation (XXII)			NLV	NLV	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	48,000	NLV	NA	NLV	NLV	NLV	NLV	NLV	NLV
Direct Contact Criteria (XXVII)			3.7E+07	4.1E+05	5.5E+05	NA	2.5E+06	1.1E+07	2.5E+06	2.6E+06	2.0E+07	1.6E+08	4.0E+05	4.0E+05	4.0E+05	4.0E+05	1.0E+09 (D)	2.5E+07	1.6E+05	4.0E+07	NA	2.6E+06	2.5E+06	1.0E+09 (D)	35,000	.5E+05 (DD	1.7E+08
Soil Saturation Concentration Screening Levels (Csat) (XX)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SAMPLE ID	Depth	SAMPLE DATE																									
SB46-3	2-3'	10/2/2008	46,600	160 J	190	53,600,000	12,700	12,300	370 J	6,300	13,900	14,100,000	6,900	NS	NS	NS	18,500,000	308,000	ND	18,400	1,350,000	650	ND	ND	350	18,300	37,100
SB46-3 (Dup)	2-3'	10/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
SB48-3	6-8'	3/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
Free Product present at REC 2 (Executive Garage Open Leaking Underground Storage Tank)
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Protection Cleanup Criteria (XXI)
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Exceeds Generic Drinking Water Protection (XXI), Ground Water Surface Water Interface Protection (XII), and Soil Volatilization to Indoor Air (XXII) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Equals or Exceeds Soil Saturation Concentration Screening Level (XX)
ND = Not Detected Above Method Detection Limits
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Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Volatile Organic Compounds (VOCs)																SVOCs	Metals/Inorganic Ions						
		Acetone	Benzene	2-Butanone (MEK)	Carbon Disulfide	Cyclohexane	1,1-Dichloroethane	Ethylbenzene	Methyl Acetate	4-Methyl-2-Pentanone	2-Methylnaphthalene	Naphthalene	Tetrachloroethene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	4-Methylphenol	Aluminum	Antimony	3	Arsenic	Arsenic (Dissolved)	Barium	Barium (dissolved)
Drinking Water Criteria (II)		2,100	5.0 (A)	38,000	2,300	NA	2,500	74 (E)	NA	5,200	750	1,500	5.0 (A)	790 (E)	63 (E)	72 (E)	280 (E)	1000	50 (V)	6.0 (A)	6.0 (A)	10 (A)	10 (A)	2,000 (A)	2,000 (A)
Groundwater Surface Water Interface Criteria (GSI) (III)		1,700	200 (X)	2,200	ID	NA	740	18	NA	ID	19	11	60 (X)	270	17	45	41	30 (M); 25	NA	130 (X)	130 (X)	10	10	670 (G)*	670 (G)*
GSI Final Acute Value (FAV)		30,000	1,900	40,000	ID	ID	13,000	320	NA	ID	340	200	2,900	2,600	310	810	730	450	NA	2,300	2,300	680	680	3,800 (G)*	3,800 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)		1.0E+09 (D,S)	35,000	2.4E+8 (S)	5.5E+05	NA	2.3E+06	1.7E+05 (S)	NA	2.0E+07 (S)	25,000 (S)	31,000 (S)	1.7E+05	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		3.1E+07	11,000	2.4E+8 (S)	1.2E+6 (S)	NA	2.4.E+06	1.7E+05 (S)	NA	1.3E+07	25,000 (S)	31,000 (S)	12,000	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	8.1E+05	6.40E+07	68,000	68,000	4,300	4,300	1.4E+07	1.4E+07
Vapor Intrusion Groundwater Screening Level (GW_{VI-nr})		3.4E+07	140	1.8E+07	9,900	8,100	18,000	2,600	NA	4.4E+06	3,900	1,200	460	1.5E+05	7,300	5,100	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI-sh-nr}$)		34,000	5.0 (d)	18,000	9.9	10 (t)	18	700 (d)	NA	4,400	5.0 (t)	5.0 (t)	5.0 (d)	1,000 (d)	7.3	5.1	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		1.0E+09	1.75E+06	2.40E+08	1.19E+06	NA	5.06E+06	1.69E+05	NA	2.00E+07	24,600	31,000	2.0E+05	5.26E+05	55,890	61,150	1.86E+05	2.80E+07	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		1.5E+07	68,000	ID	13,000	NA	3.8.E+05	43,000	NA	ID	ID	NA	ID	61,000	56,000 (S)	ID	70,000	NA	ID	ID	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		1.0E+09 (D)	67,000	2.4E+8 (S)	ID	NA	ID	1.7E+05 (S)	NA	2.0E+07 (S)	ID	31,000 (S)	2.0E+05 (S)	ID	ID	ID	1.9E+05 (S)	ID	ID	ID	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																								
MW2-45	11/23/2009	NS	0.25 J	NS	NS	NS	NS	0.73 J	NS	NS	ND	0.98 J	NS	3.7	3.6	0.88 J	4.7	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-6	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-7	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	0.18 J	0.50 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-7 (Dup)	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	0.17 J	0.50 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	0.47 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-9 (Dup)	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/20/2008	NS	1.0 J	NS	NS	NS	NS	7.1	NS	NS	ND	ND	NS	5.3	90	25	17	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/23/2009	NS	0.72 J	NS	NS	NS	NS	2.8	NS	NS	1.0 J	1.1 J	NS	5.8	18	4.0	4.0	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-12	11/20/2008	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	11/23/2009	NS	ND	NS	NS	NS	NS	ND	NS	NS	ND	ND	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-13R	10/24/2008	ND	ND	ND	ND	0.12 J	ND	ND	ND	ND	ND	ND	ND	0.44 J	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS
PMW-3	5/5/2008	18 J	ND	3.3 J	0.48 J	ND	ND	ND	2.2 J	0.52 J	ND	ND	ND	0.22 J	ND	ND	ND	5.0 J	255	0.31 J	0.36 J	14.6	4.8 J	465	527
PMW-3D	4/29/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND	ND	ND	186	179
PMW-4D	4/25/2008	ND	ND	0.79 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15 J	ND	ND	ND	136	132
PMW-4S	4/25/2008	ND	ND	0.68 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	302	305
RW-1	11/23/2009	NS	ND	NS	NS	NS	NS	56	NS	NS	15 J	77 J	NS	3.0 J	900	11 J	ND	NS	NS	NS	NS	NS	NS	NS	NS
RW-2	11/23/2009	NS	1,900	NS	NS	NS	NS	500	NS	NS	ND	250 J	NS	20,000	2,300	590	4,000	NS	NS	NS	NS	NS	NS	NS	NS
RW-3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
RW-4	11/23/2009	NS	3,800	NS	NS	NS	NS	1,400	NS	NS	ND	360 J	NS	45,000	3,600	970	5,400	NS	NS	NS	NS	NS	NS	NS	NS
TW2-35	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-36	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-37	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-38	11/23/2009	NS	9,200	NS	NS	NS	NS	2,000	NS	NS	ND	240 J	NS	21,000	1,500	330	11,000	ND	NS	NS	NS	NS	NS	NS	NS
TW2-42	11/23/2009	NS	11,000	NS	NS	NS	NS	1,900	NS	NS	ND	200 J	NS	18,000	1,400	330	9,800	ND	NS	NS	NS	NS	NS	NS	NS
TW2-44	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP

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Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Metals/Inorganic Ions																						
		Cadmium	Calcium	Calcium (dissolved)	Chromium	Cobalt	Cobalt (Dissolved)	Copper	Iron	Iron (dissolved)	Lead	Magnesium	Magnesium (dissolved)	Manganese	Manganese (Dissolved)	Nickel	Nickel (Dissolved)	Potassium	Potassium (Dissolved)	Sodium	Sodium (Dissolved)	Vanadium	Zinc	Zinc (DissolvEd)
Drinking Water Criteria (II)		5.0(A)	NA	NA	100 (A)	100	100	1,000 (E)	300 (E)	300 (E)	4.0 (L)	1.1E+06	1.1E+06	50 (E)	50 (E)	100 (A)	100 (A)	NA	NA	3.5E+05	3.5E+05	62	5,000 (E)	5,000 (E)
Groundwater Surface Water Interface Criteria (GSI) (III)		3.0 (G,X)*	NA	NA	11	100	100	13 (G)*	NA	NA	29 (G,X)*	NA	NA	2,800 (G,X)*	2,800 (G,X)*	73 (G)*	73 (G)*	NA	NA	NA	NA	27	170 (G)*	170 (G)*
GSI Final Acute Value (FAV)		13.2 (G)*	NA	NA	1,600 (G)*	740	740	39.4 (G)*	NA	NA	550 (G)*	NA	NA	12,000 (G)*	12,000 (G)*	1,300 (G)*	1,300 (G)*	NA	NA	NA	NA	220	330 (G)*	330 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)		NLV	NA	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NA	NA	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		1.90E+05	NA	NA	4.60E+05	2.40E+06	2.40E+06	7.4E+06	5.8E+07	5.8E+07	ID	1.0E+09 (D)	1.0E+09 (D)	9.1E+06	9.1E+06	7.4E+07	7.4E+07	NA	NA	1.0E+09 (D)	1.0E+09 (D)	9.7E+05	1.1E+08	1.1E+08
Vapor Intrusion Groundwater Screening Level (GW_{VI-nr})		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI-sh-nr}$)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																							
MW2-45	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-5	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-6	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-7	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7 (Dup)	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-9 (Dup)	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-10	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-11	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-12	11/20/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-13R	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
PMW-3	5/5/2008	1.5	160,000	186,000	5.6	6.1 J	1.8 J	ND	24,400	24,900	ND	43,100	53,300	1,940	2,210	10.8 J	6.6 J	6,290	7,210 J	141,000	163,000	5.7	6.2 J	ND
PMW-3D	4/29/2008	ND	133,000	128,000	ND	ND	ND	ND	2,370	2,240	ND	29,900	28,800	379	365	ND	ND	4,970	4,740	480,000	461,000	ND	ND	ND
PMW-4D	4/25/2008	ND	110,000	107,000	ND	ND	ND	ND	2,590 J	2,390	ND	34,700	33,700	140	140	ND	ND	1,600	1,560	31,500	32,400	ND	ND	ND
PMW-4S	4/25/2008	ND	201,000	201,000	ND	ND	ND	0.36 J	6,900 J	6,720	ND	54,300	54,200	662	663	ND	ND	3,290	3,250	207,000	207,000	1.7 J	6.2 J	14.2 J
RW-1	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RW-2	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
RW-3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
RW-4	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-35	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-36	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-37	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP
TW2-38	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-42	11/23/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW2-44	Free Product	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP	FP

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Volatile Organic Compounds (VOCs)																SVOCs	Metals/Inorganic Ions						
		Acetone	Benzene	2-Butanone (MEK)	Carbon Disulfide	Cyclohexane	1,1-Dichloroethane	Ethylbenzene	Methyl Acetate	4-Methyl-2-Pentanone	2-Methylnaphthalene	Naphthalene	Tetrachloroethene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Total Xylenes	4-Methylphenol	Aluminum	Antimony	3	Arsenic	Arsenic (Dissolved)	Barium	Barium (dissolved)
Drinking Water Criteria (II)		2,100	5.0 (A)	38,000	2,300	NA	2,500	74 (E)	NA	5,200	750	1,500	5.0 (A)	790 (E)	63 (E)	72 (E)	280 (E)	1000	50 (V)	6.0 (A)	6.0 (A)	10 (A)	10 (A)	2,000 (A)	2,000 (A)
Groundwater Surface Water Interface Criteria (GSI) (III)		1,700	200 (X)	2,200	ID	NA	740	18	NA	ID	19	11	60 (X)	270	17	45	41	30 (M); 25	NA	130 (X)	130 (X)	10	10	670 (G)*	670 (G)*
GSI Final Acute Value (FAV)		30,000	1,900	40,000	ID	ID	13,000	320	NA	ID	340	200	2,900	2,600	310	810	730	450	NA	2,300	2,300	680	680	3,800 (G)*	3,800 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)		1.0E+09 (D,S)	35,000	2.4E+8 (S)	5.5E+05	NA	2.3E+06	1.7E+05 (S)	NA	2.0E+07 (S)	25,000 (S)	31,000 (S)	1.7E+05	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		3.1E+07	11,000	2.4E+8 (S)	1.2E+6 (S)	NA	2.4.E+06	1.7E+05 (S)	NA	1.3E+07	25,000 (S)	31,000 (S)	12,000	5.3E+05 (S)	56,000 (S)	61,000 (S)	1.9E+05 (S)	8.1E+05	6.40E+07	68,000	68,000	4,300	4,300	1.4E+07	1.4E+07
Vapor Intrusion Groundwater Screening Level (GW_{VI-nr})		3.4E+07	140	1.8E+07	9,900	8,100	18,000	2,600	NA	4.4E+06	3,900	1,200	460	1.5E+05	7,300	5,100	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI-sh-nr}$)		34,000	5.0 (d)	18,000	9.9	10 (t)	18	700 (d)	NA	4,400	5.0 (t)	5.0 (t)	5.0 (d)	1,000 (d)	7.3	5.1	10,000 (d)	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		1.0E+09	1.75E+06	2.40E+08	1.19E+06	NA	5.06E+06	1.69E+05	NA	2.00E+07	24,600	31,000	2.0E+05	5.26E+05	55,890	61,150	1.86E+05	2.80E+07	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		1.5E+07	68,000	ID	13,000	NA	3.8.E+05	43,000	NA	ID	ID	NA	ID	61,000	56,000 (S)	ID	70,000	NA	ID	ID	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		1.0E+09 (D)	67,000	2.4E+8 (S)	ID	NA	ID	1.7E+05 (S)	NA	2.0E+07 (S)	ID	31,000 (S)	2.0E+05 (S)	ID	ID	ID	1.9E+05 (S)	ID	ID	ID	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																								
TW8-1	5/2/2008	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW20-1	10/24/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW31-1	4/29/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	1,840	0.22 J	ND	8.3	6.9	324	344
TW38-4	10/24/2008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
TW38-11	10/24/2008	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND	ND	0.53 J	0.22 J	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS

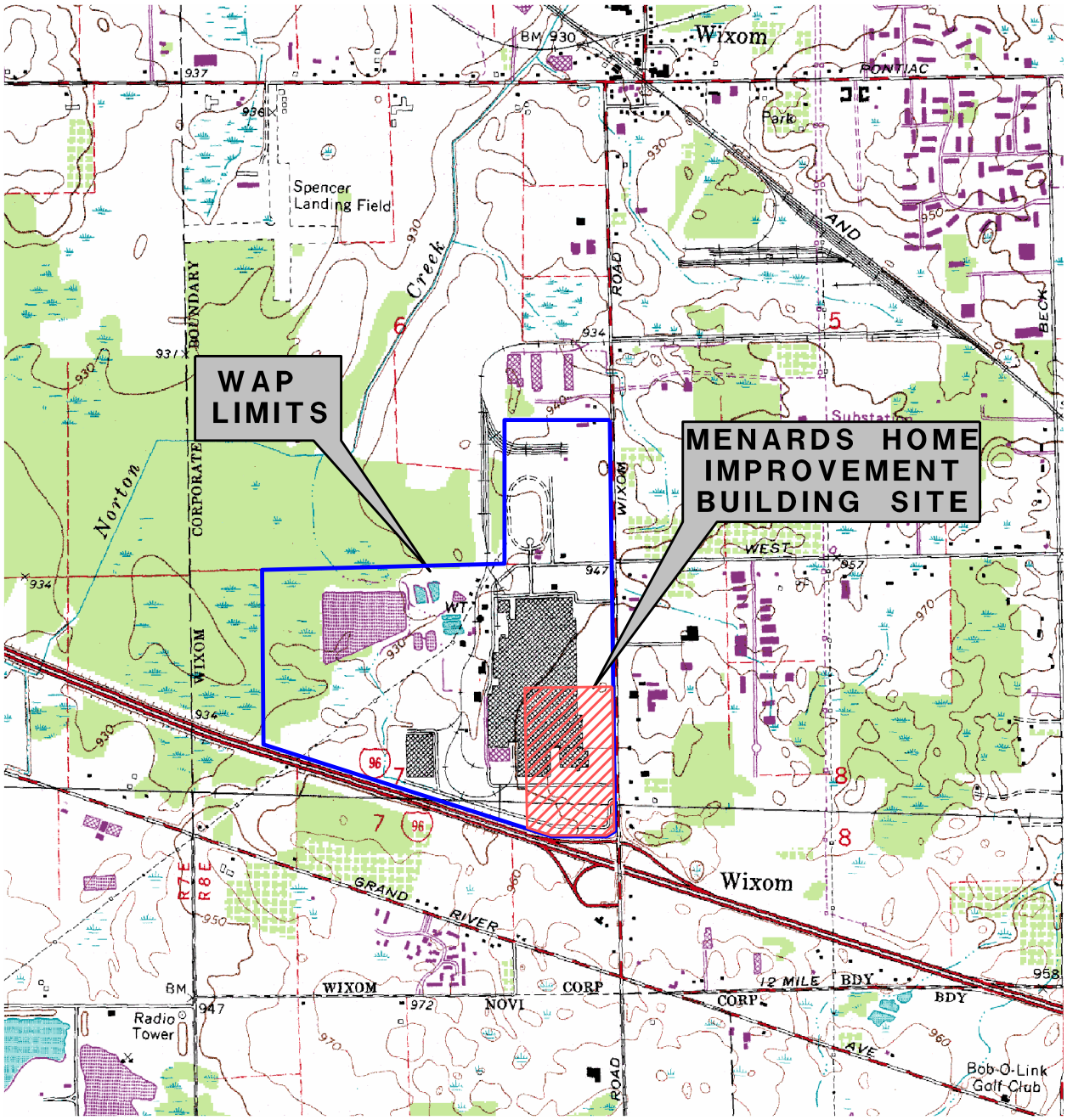
Notes:
FP = Free Product
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Cleanup Criteria (II)
Exceeds Groundwater Surface Water Interface (III)
Exceeds Generic Drinking Water (II) and Groundwater Surface Water Interface (III) Cleanup Criteria
Exceeds Generic Drinking Water (II) and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Contact (VI) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Exceeds Flammability & Explosivity Screening Level (VIII)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed
NR = Not Reported

Table 2
Groundwater Analytical Summary
Menard's Home Improvement Building Site
28955 and 28607 S. Wixom Rd., Wixom, MI

GROUNDWATER: Part 201/213 Generic Non-Residential Cleanup Criteria Revised September 28, 2012 and Part 201/213 Draft Final Non-Residential Vapor Intrusion Screening Values May 2013 Units: µg/L		Metals/Inorganic Ions																						
		Cadmium	Calcium	Calcium (dissolved)	Chromium	Cobalt	Cobalt (Dissolved)	Copper	Iron	Iron (dissolved)	Lead	Magnesium	Magnesium (dissolved)	Manganese	Manganese (Dissolved)	Nickel	Nickel (Dissolved)	Potassium	Potassium (Dissolved)	Sodium	Sodium (Dissolved)	Vanadium	Zinc	Zinc (DissolvEd)
Drinking Water Criteria (II)		5.0(A)	NA	NA	100 (A)	100	100	1,000 (E)	300 (E)	300 (E)	4.0 (L)	1.1E+06	1.1E+06	50 (E)	50 (E)	100 (A)	100 (A)	NA	NA	3.5E+05	3.5E+05	62	5,000 (E)	5,000 (E)
Groundwater Surface Water Interface Criteria (GSI) (III)		3.0 (G,X)*	NA	NA	11	100	100	13 (G)*	NA	NA	29 (G,X)*	NA	NA	2,800 (G,X)*	2,800 (G,X)*	73 (G)*	73 (G)*	NA	NA	NA	NA	27	170 (G)*	170 (G)*
GSI Final Acute Value (FAV)		13.2 (G)*	NA	NA	1,600 (G)*	740	740	39.4 (G)*	NA	NA	550 (G)*	NA	NA	12,000 (G)*	12,000 (G)*	1,300 (G)*	1,300 (G)*	NA	NA	NA	NA	220	330 (G)*	330 (G)*
Groundwater Volatilization to Indoor Air Inhalation Criteria (V)		NLV	NA	NA	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NA	NA	NLV	NLV	NLV	NLV	NLV
Groundwater Contact Criteria (VI)		1.90E+05	NA	NA	4.60E+05	2.40E+06	2.40E+06	7.4E+06	5.8E+07	5.8E+07	ID	1.0E+09 (D)	1.0E+09 (D)	9.1E+06	9.1E+06	7.4E+07	7.4E+07	NA	NA	1.0E+09 (D)	1.0E+09 (D)	9.7E+05	1.1E+08	1.1E+08
Vapor Intrusion Groundwater Screening Level (GW_{VI-nr})		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vapor Intrusion Shallow Groundwater Screening Level ($GW_{VI-sh-nr}$)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Solubility (VII)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flammability & Explosivity Screening Level (VIII)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
Acute Inhalation Screening Level (IX)		ID	NA	NA	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	ID	NA	NA	ID	ID	ID	ID	ID
SAMPLE ID	SAMPLE DATE																							
TW8-1	5/2/2008	ND	NS	NS	3.0 J	NS	NS	NS	NS	NS	3.2	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW20-1	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW31-1	4/29/2008	ND	350,000	377,000	6.3	ND	ND	6.1	8,670	6,110	ND	85,600	92,000	316	277	4.5 J	ND	15,800	17,200	3,590,000	3,990,000	5.7	21.2	ND
TW38-4	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
TW38-11	10/24/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
FP = Free Product
Roman numerals indicate DNRE criterion number
Exceeds Generic Drinking Water Cleanup Criteria (II)
Exceeds Groundwater Surface Water Interface (III)
Exceeds Generic Drinking Water (II) and Groundwater Surface Water Interface (III) Cleanup Criteria
Exceeds Generic Drinking Water (II) and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Volatilization to Indoor Air (V) Cleanup Criteria
Exceeds Generic Drinking Water (II), Ground Water Surface Water Interface (III), and Groundwater Contact (VI) Cleanup Criteria
Exceeds Four or More Cleanup Criteria
Exceeds Flammability & Explosivity Screening Level (VIII)
ND = Not Detected Above Method Detection Limits
NS = Not Sampled or Not Analyzed
NR = Not Reported

FIGURES



SCALE 1:24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

NOTE: MAP ADAPTED FROM USGS MILFORD, MICHIGAN -OAKLAND CO. QUADRANGLE 7.5 MINUTE SERIES, DATED 1969, PHOTOREVISED 1983 AND SALEM, MICHIGAN-OAKLAND CO. QUADRANGLE 7.5 MINUTE SERIES, DATED 1969, PHOTOREVISED 1973 & 1980.

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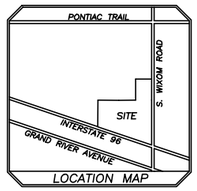
FIGURE 1
SITE LOCATION MAP
28955 & 28607 WIXOM ROAD
WIXOM, OAKLAND COUNTY, MICHIGAN

DATE	DRAWN BY	DESIGNED BY	PROJECT NO.
9/16/13	HMW	ZTR	M2350003

W:\Projects\Projects K-O\M2350003\CAD\BEA\M2350003_Site_Location.dgn 9/18/2013 10:29:41 AM

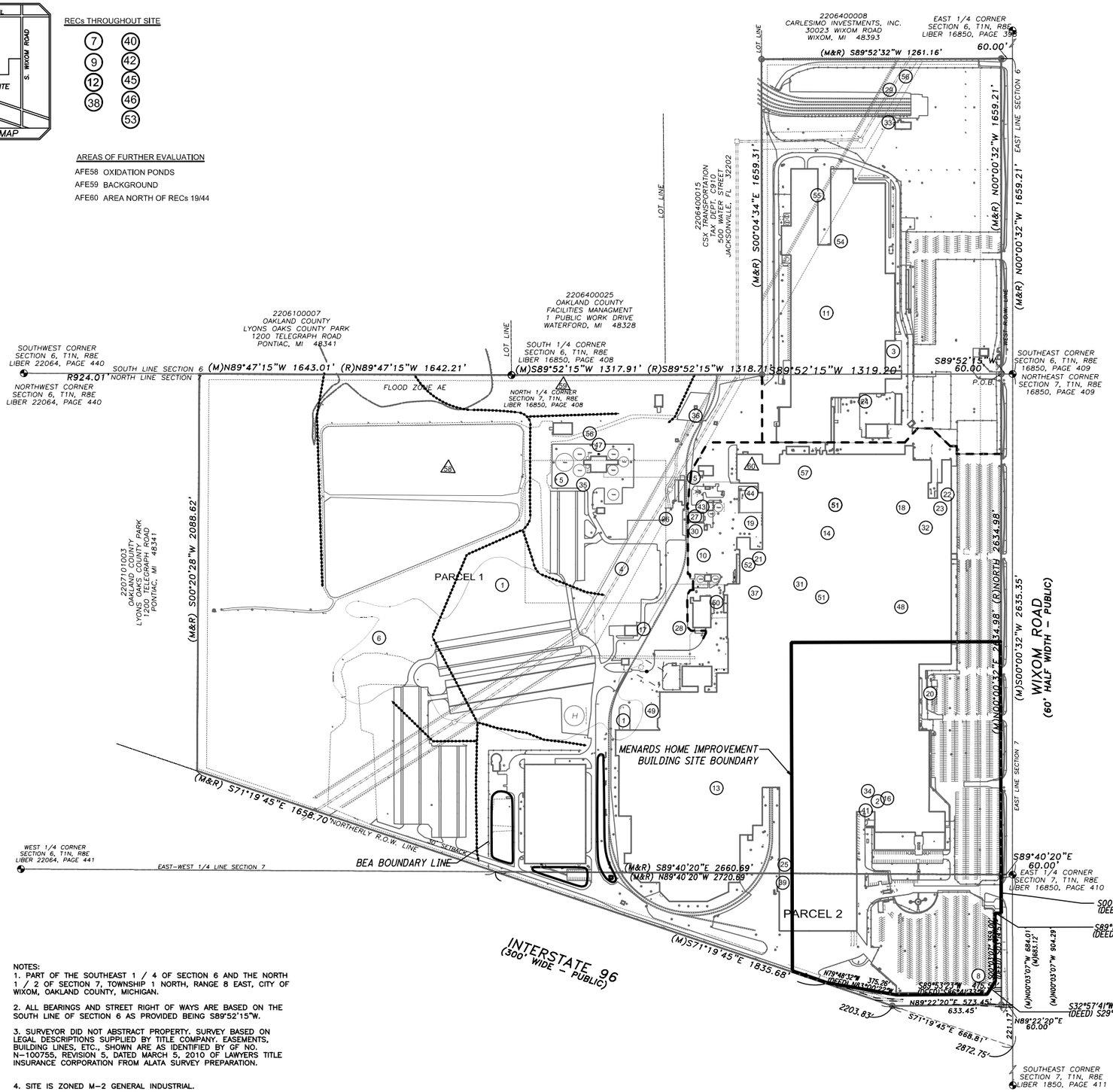


RECs THROUGHOUT SITE

7, 9, 12, 38, 40, 42, 45, 46, 53

AREAS OF FURTHER EVALUATION

AFE58 OXIDATION PONDS
AFE59 BACKGROUND
AFE60 AREA NORTH OF RECs 19/44



NOTES:

1. PART OF THE SOUTHEAST 1 / 4 OF SECTION 6 AND THE NORTH 1 / 2 OF SECTION 7, TOWNSHIP 1 NORTH, RANGE 8 EAST, CITY OF WIXOM, OAKLAND COUNTY, MICHIGAN.

2. ALL BEARINGS AND STREET RIGHT OF WAYS ARE BASED ON THE SOUTH LINE OF SECTION 6 AS PROVIDED BEING S89°52'15"W.

3. SURVEYOR DID NOT ABSTRACT PROPERTY. SURVEY BASED ON LEGAL DESCRIPTIONS SUPPLIED BY TITLE COMPANY. EASEMENTS, BUILDING LINES, ETC., SHOWN ARE AS IDENTIFIED BY GF NO. N-1007755, REVISION 5, DATED MARCH 5, 2010 OF LAWYERS TITLE INSURANCE CORPORATION FROM ALATA SURVEY PREPARATION.

4. SITE IS ZONED M-2 GENERAL INDUSTRIAL.

GRAPHIC SCALE

0' 300' 600' 1200'

REC ELEMENT	REC ELEMENT DESCRIPTION
NA.	FORMER AUTOMOTIVE MANUFACTURING PLANT
NA.	PERIMETER GW ASSESSMENT
1.	FORMER LANDFILL
2.	OPEN LEAKING UNDERGROUND STORAGE TANK
3.	CURRENT PAINT SLUDGE PITS
4.	FORMER WWTP
5.	PART 201 LISTING (WWTP)
6.	OPEN BURNING AREA
7.	ADDITIONAL AREAS OF POTENTIAL FILL ACTIVITES
8.	FORMER ADJACENT SERVICE STATION
9.	DRAINAGE DITCH SEDIMENTS
10.	FORMER HAZARDOUS WASTE STORAGE AREA
11.	ZINC PHOSPHATING AND ELECTROCOAT OPERATIONS
12.	BELOW GRADE HYDRAULIC EQUIPMENT
13.	PITS IN BODY SHOP
14.	FORMER 10,000 GALLON E-COAT UST
15.	FORMER 10,000 GALLON OILY WASTE UST
16.	FORMER 1,000 GALLON WASTE OIL UST
17.	PAINT SLUDGE SETTLING TANKS (PITS)
18.	PDA SLUDGE SYSTEM TANK
19.	FORMER TANK FARM
20.	FORMER 6K BRAKE FLUID UST
21.	FORMER E-COAT PAINT UST
22.	FORMER 3,000 GALLON WASTE GASOLINE UST
23.	FORMER 3,000 GALLON WASTE GASOLINE UST
24.	5K WASTE & 10K PURGE SOLVENT USTs/5K 2nd CONTAIN.
25.	POWERWASH BOOTH IN TRUCK REPAIR
26.	KOLENE OPERATIONS
27.	OILY WASTE STORAGE AREA
28.	COAL PILE AREA AND DITCH
29.	GLYCOL RELEASE
30.	POTENTIAL OIL WATER SEPARATOR
31.	VEHICLE WASH PITS
32.	DUMP STATION
33.	RAILCAR LOADING DOCKS
34.	USED OIL UST
35.	PHOSCOATING WASTE RELEASE
36.	FORMER SALT STORAGE AREA
37.	OIL/WATER SEPARATOR
38.	MISC. PITS, TRENCHES AND SUMPS
39.	BATTERY CHARGING AREA
40.	PCB-CONTAINING SUBSTATIONS
41.	10K GAS UST
42.	HISTORIC FARMSTEAD
43.	HAZARDOUS WASTE STORAGE BUILDING
44.	"CURRENT" ASTs AND USTs
45.	BELOWGRADE INDUSTRIAL PROCESS LINE
46.	AGRICULTURAL CHEMICALS
47.	WWTP PROCESS TANKS
48.	FLUID FILL AREAS
49.	BULK LOAD/UNLOAD AREAS
50.	BASEMENT BLOWDOWN
51.	FORMER DEGREASING OPERATIONS
52.	OIL AND PAINT HOUSE
53.	RAILROAD TRACKS
54.	FORMER TEST TRACK
55.	HORSESHOE AREA
56.	SEPTIC SYSTEMS
57.	FORMER DISPENSERS

LEGEND

●	= FOUND IRON AS NOTED	Ⓢ	= SANITARY MANHOLE
○	= SET BAR & CAP #12034	●	= SANITARY CLEANOUT
—x—x—x—	= FENCE	Ⓜ	= MANHOLE
———	= OVERHEAD RAIL	Ⓓ	= DRAINAGE MANHOLE
———	= GUARD RAIL	■	= CATCHBASIN
Ⓔ	= ELECTRIC MANHOLE	●	= GAS SHUTOFF
■	= UTILITY POLE	■	= GAS PUMP
←	= GUY WIRE	●	= GAS VALVE
■	= ELECTRIC PEDESTAL	Ⓦ	= WATER MANHOLE
✱	= LIGHT POLE	●	= FIRE HYDRANT
●	= STREET LIGHT	●	= WATER VALVE
■	= TELEPHONE PEDESTAL	■	= PUMP WELL
Ⓣ	= TELEPHONE MANHOLE	•	= POST
■	= TV PEDESTAL		= SIGN
■	= SIGNAL	●	= WELL
■	= COOLING VENT	■	= A/C UNIT
●	= TANKS		= FLAGPOLE

= SURFACE WATER DRAINAGE

= LANDFILL AREA BASED ON TECHNICAL MEMORANDUM NO. 1 – REC 1 TEST PIT AND TEST TRENCH INSTALLATION SEE CRA PHASE II SUBMITTALS

(1) = REC INVESTIGATED IN PHASE II

(58) = AREA OF FURTHER EVALUATION INVESTIGATED IN PHASE II

NO.	DATE	BY	DESCRIPTION
	/ /		
	/ /		
	/ /		
	/ /		
	/ /		
	/ /		
	/ /		
	/ /		

DATE 9/16/2013
PROJECT NO.: M2350003
DRAWN BY: HMW
CHECKED BY: ZTR

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PREPARED FOR:
MENARD, INC.
WIXOM, MICHIGAN

SECTION 20107a COMPLIANCE ANALYSIS

MENARDS HOME IMPROVEMENT BUILDING SITE

FORD WIXOM ASSEMBLY PLANT IDENTIFIED RECS

FIGURE 2A

9/20/2013
W:\Projects\Projects K-O\M2350003\CAD\Due Care Plan\M2350003_Identified Recs.dgn

9/20/2013
W:\Projects\Projects K-O\M2350003\CAD\Due Care Plan\M2350003_Fig2B_SiteRecs.dgn

REC ELEMENT	REC ELEMENT DESCRIPTION
NA.	FORMER AUTOMOTIVE MANUFACTURING PLANT
NA.	PERIMETER GW ASSESSMENT
1.	FORMER LANDFILL
2.	OPEN LEAKING UNDERGROUND STORAGE TANK
3.	CURRENT PAINT SLUDGE PITS
4.	FORMER WWTP
5.	PART 201 LISTING (WWTP)
6.	OPEN BURNING AREA
7.	ADDITIONAL AREAS OF POTENTIAL FILL ACTIVITES
8.	FORMER ADJACENT SERVICE STATION
9.	DRAINAGE DITCH SEDIMENTS
10.	FORMER HAZARDOUS WASTE STORAGE AREA
11.	ZINC PHOSPHATING AND ELECTROCOAT OPERATIONS
12.	BELOW GRADE HYDRAULIC EQUIPMENT
13.	PITS IN BODY SHOP
14.	FORMER 10,000 GALLON E-COAT UST
15.	FORMER 10,000 GALLON OILY WASTE UST
16.	FORMER 1,000 GALLON WASTE OIL UST
17.	PAINT SLUDGE SETTLING TANKS (PITS)
18.	PDA SLUDGE SYSTEM TANK
19.	FORMER TANK FARM
20.	FORMER 6K BRAKE FLUID UST
21.	FORMER E-COAT PAINT UST
22.	FORMER 3,000 GALLON WASTE GASOLINE UST
23.	FORMER 3,000 GALLON WASTE GASOLINE UST
24.	5K WASTE & 10K PURGE SOLVENT USTs/5K 2nd CONTAIN.
25.	POWERWASH BOOTH IN TRUCK REPAIR
26.	KOLENE OPERATIONS
27.	OILY WASTE STORAGE AREA
28.	COAL PILE AREA AND DITCH
29.	GLYCOL RELEASE
30.	POTENTIAL OIL WATER SEPARATOR
31.	VEHICLE WASH PITS
32.	DUMP STATION
33.	RAILCAR LOADING DOCKS
34.	USED OIL UST
35.	PHOSCOATING WASTE RELEASE
36.	FORMER SALT STORAGE AREA
37.	OIL/WATER SEPARATOR
38.	MISC. PITS, TRENCHES AND SUMPS
39.	BATTERY CHARGING AREA
40.	PCB-CONTAINING SUBSTATIONS
41.	10K GAS UST
42.	HISTORIC FARMSTEAD
43.	HAZARDOUS WASTE STORAGE BUILDING
44.	"CURRENT" ASTs AND USTs
45.	BELOWGRADE INDUSTRIAL PROCESS LINE
46.	AGRICULTURAL CHEMICALS
47.	WWTP PROCESS TANKS
48.	FLUID FILL AREAS
49.	BULK LOAD/UNLOAD AREAS
50.	BASEMENT BLOWDOWN
51.	FORMER DEGREASING OPERATIONS
52.	OIL AND PAINT HOUSE
53.	RAILROAD TRACKS
54.	FORMER TEST TRACK
55.	HORSESHOE AREA
56.	SEPTIC SYSTEMS
57.	FORMER DISPENSERS

REC ELEMENTS THROUGHOUT WAP

7, 9, 12, 38, 40, 42, 44, 45, 46, 53

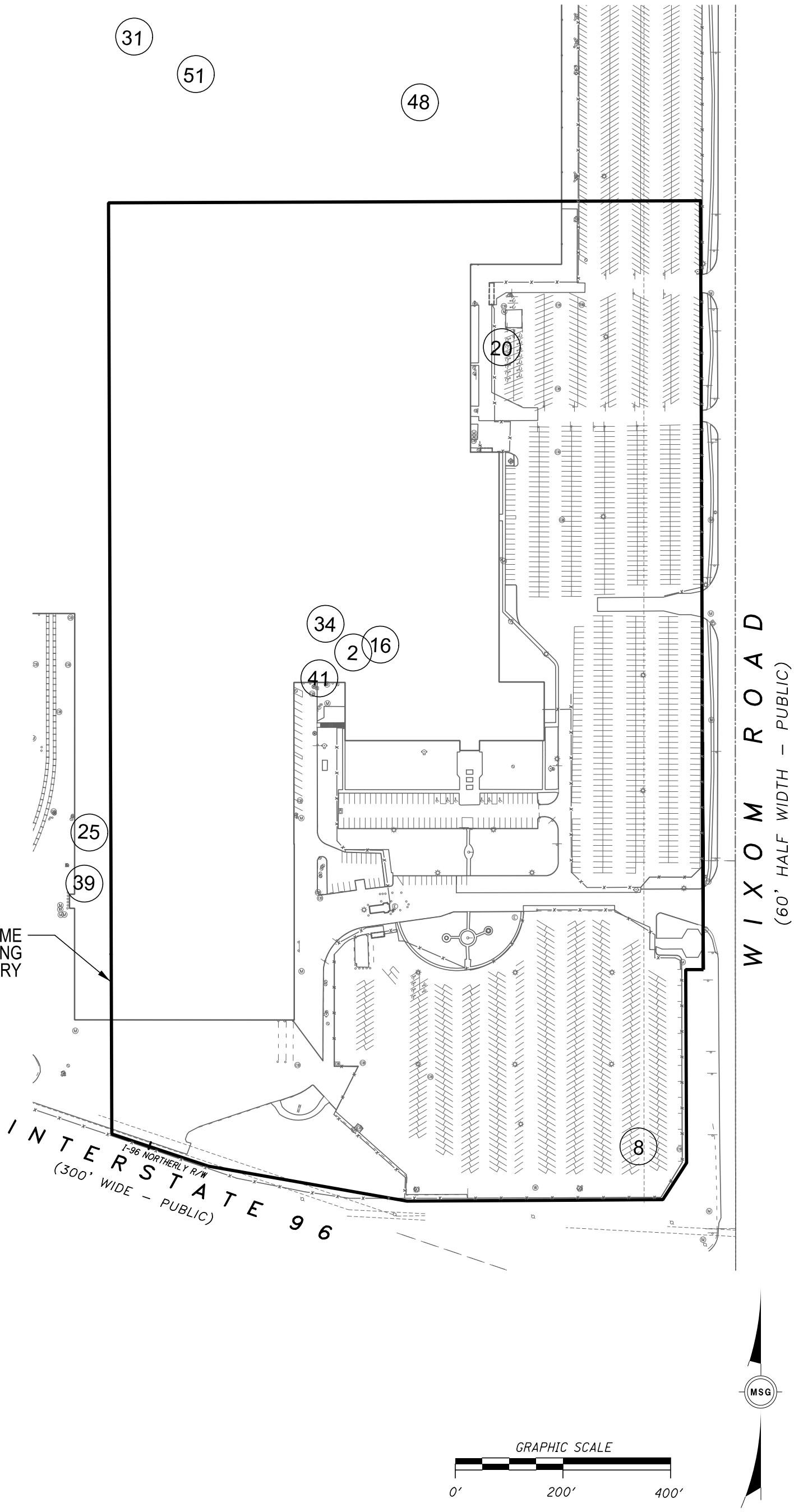
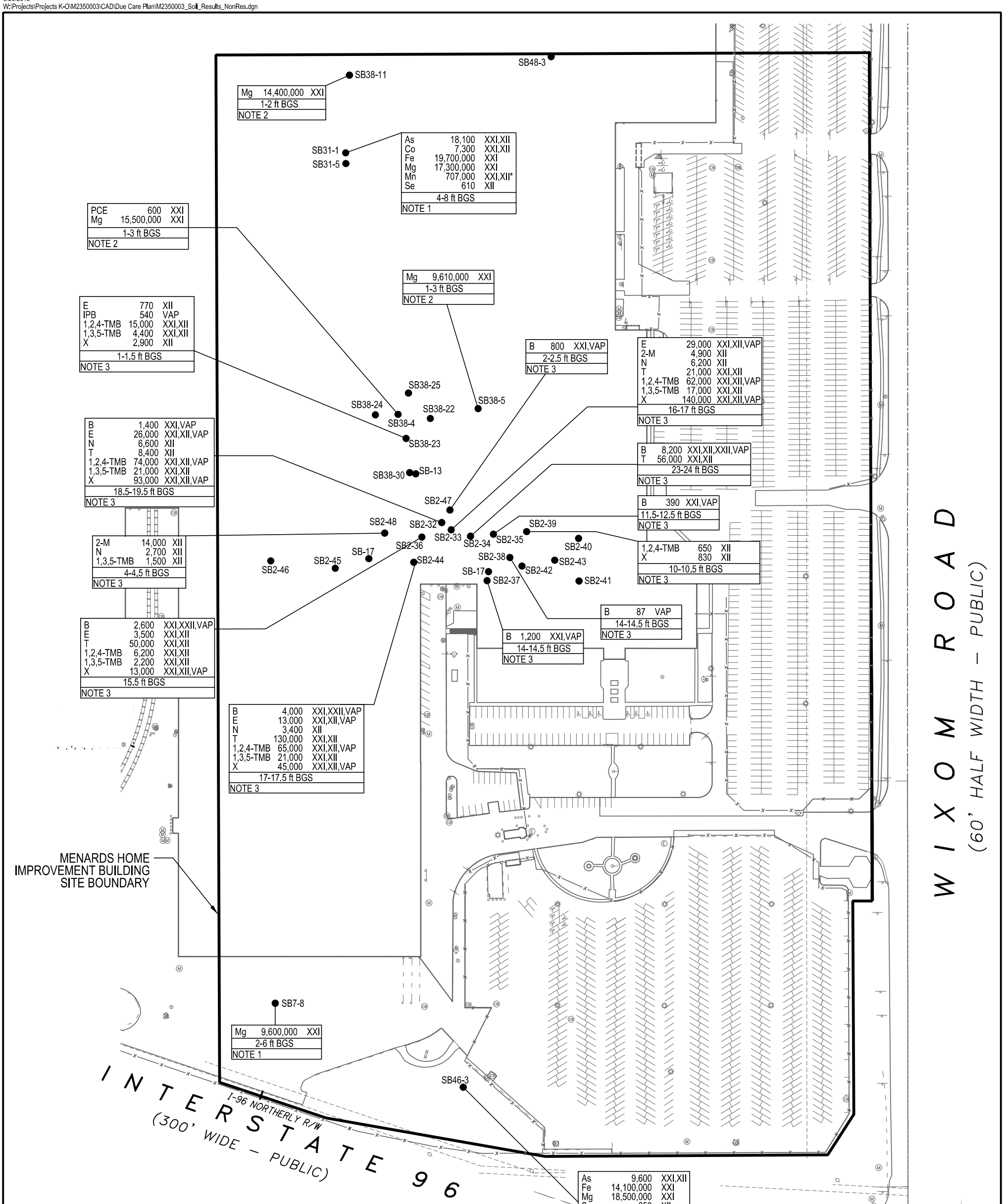


FIGURE 2B	SITE IDENTIFIED REC ELEMENTS	SECTION 20107a COMPLIANCE ANALYSIS MENARDS HOME IMPROVEMENT SITE	PREPARED FOR: MENARD, INC. WIXOM, MICHIGAN	Mannik Smith GROUP www.MannikSmithGroup.com TECHNICAL SKILL. CREATIVE SPIRIT.	DATE: 9/16/2013 PROJECT NO.: M2350003 DRAWN BY: ZTR CHECKED BY: ZTR	NO. / DATE / BY / DESCRIPTION

9/20/2013
W:\Projects\Projects K-O\M2350003\CAD\Due Care Plan\M2350003_Soil_Results_NonRes.dgn



Reference 1: Part 201/213 Generic Non-Residential Risk-Based Screening Levels (RBSLs)/Cleanup Criteria (Revised September 28, 2012).

Reference 2: Non-Residential Vapor Intrusion Screening Values (May 23, 2013)

NON-RESIDENTIAL SOIL CRITERIA
(XXI) Exceeds drinking water protection cleanup criteria
(XII) Exceeds groundwater/surface water interface (GSI) protection cleanup criteria
(XXII) Exceeds soil volatilization to indoor air cleanup criteria
(VAP) Exceed vapor intrusion soil screening level

* POTENTIAL EXCEEDENCE OF GSI PROTECTION CRITERIA WHICH WAS CALCULATED BASED ON AN ASSUMED SURFACE WATER HARDNESS OF 150 mg/L.

CHEMICAL ABBREVIATIONS

B = Benzene
IPB = Isoproplybenzene
E = Ethylbenzene
T = Toluene
X = Xylenes
1,2,4-TMB = 1,2,4-Trimethylbenzene
1,3,5-TMB = 1,3,5-Trimethylbenzene
PCE = Tetracholoroethene
2-M = 2-Methylnaphthalene
N = Naphthalene
As = Arsenic
Co = Cobalt
Fe = Iron
Mn = Manganese
Mg = Magnesium
Se = Selenium

NOTES:

NOTE 1: REFERENCE PHASE II ESA.
NOTE 2: REFERENCE PHASE II ESA-SUPPLEMENT NO. 1
NOTE 3: REFERENCE PHASE II ESA-SUPPLEMENT NO. 2.

FIGURE 3

SITE SOIL SAMPLE RESULTS

SECTION 20107a COMPLIANCE ANALYSIS

MENARDS HOME IMPROVEMENT SITE

PREPARED FOR:

MENARD, INC.

WIXOM, MICHIGAN

Mannik Smith GROUP
www.MannikSmithGroup.com
TECHNICAL SKILL. CREATIVE SPIRIT.

DATE: 9/16/2013
PROJECT NO.: M2350003
DRAWN BY: ZTR
CHECKED BY: ZTR

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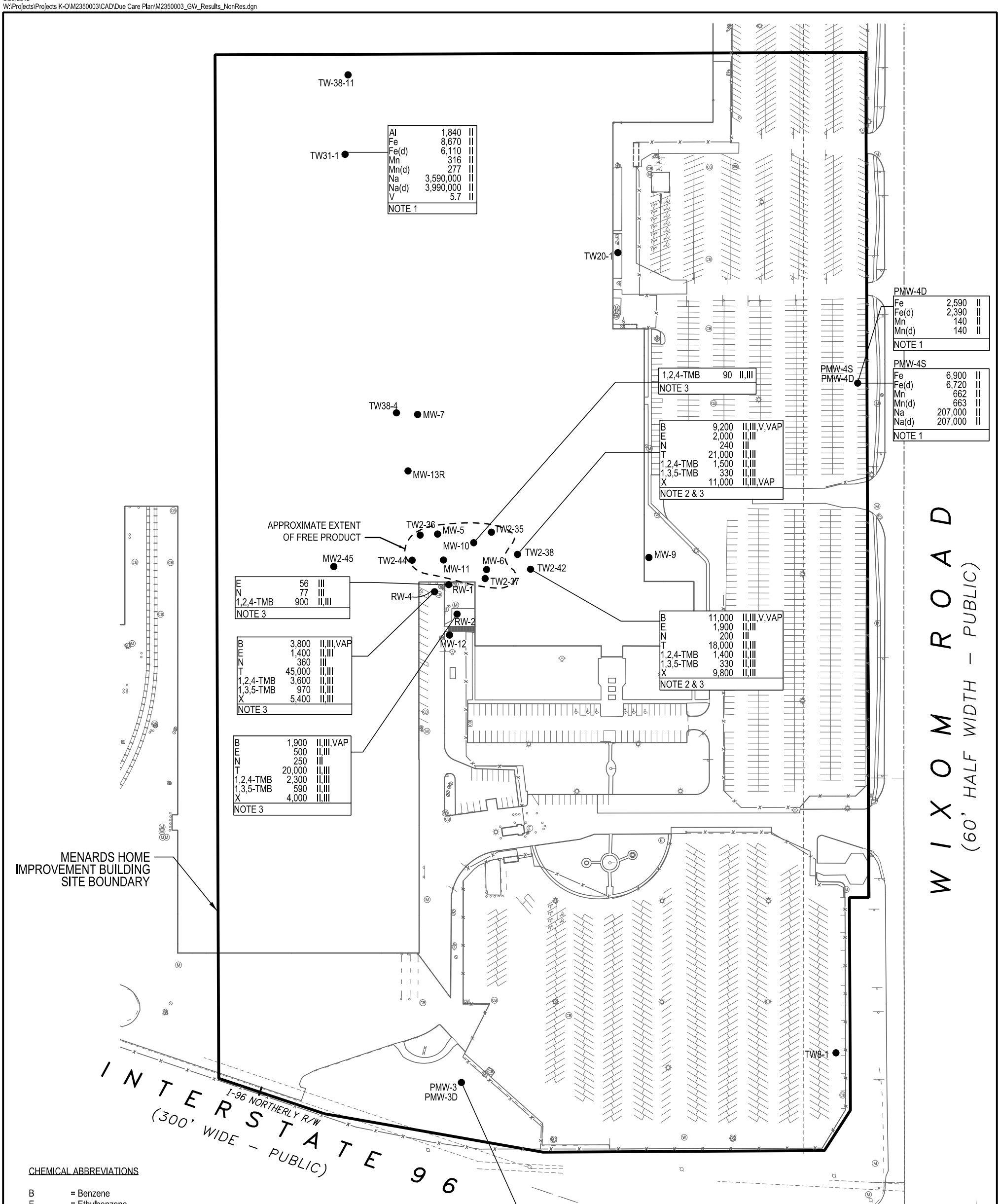

CHEMICAL ABBREVIATIONS

B = Benzene
E = Ethylbenzene
N = Naphthalene
T = Toluene
1,2,4-TMB = 1,2,4-Trimethylbenzene
1,3,5-TMB = 1,3,5-Trimethylbenzene
X = Xylenes
Al = Aluminum
As = Arsenic
Fe = Iron
Fe(d) = Iron (Dissolved)
Mn = Manganese
Mn(d) = Manganese (Dissolved)
Na = Sodium
Na(d) = Sodium (Dissolved)
V = Vanadium

Reference 1 of Part 201/213 Generic Non-Residential Risk-Based Screening Levels (RBSLs)/Cleanup Criteria (Revised September 28, 2012).

Reference 2: Non-Residential Vapor Intrusion Screening Values (May 23, 2013).

NON-RESIDENTIAL GROUNDWATER CRITERIA
(II) Exceeds Drinking Water Cleanup Criteria (residential)
(III) Exceeds Groundwater/Aurface Water Interface (gsi)
(V) Exceeds Groundwater Volatilization to Indoor Air Inhalation
(VAP) Exceeds Vapor Intrusion Soil Screening Level

NOTES:

NOTE 1: REFERENCE PHASE II ESA.
NOTE 2: REFERENCE PHASE II ESA-SUPPLEMENT NO. 2
NOTE 3: REFERENCE FREE PRODUCT RECOVERY STATUS AND GROUNDWATER MONITORING REPORT (MARCH 19, 2010)

FIGURE 4

SITE GROUNDWATER SAMPLE RESULTS

SECTION 20107a COMPLIANCE ANALYSIS

MENARDS HOME IMPROVEMENT SITE

PREPARED FOR:

MENARD, INC.

WIXOM, MICHIGAN

Mannik Smith GROUP
TECHNICAL SKILL. CREATIVE SPIRIT.
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DATE: 9/16/2013
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CONESTOGA-ROVERS & ASSOCIATES

14496 Sheldon Road, Suite #200
Plymouth, Michigan 48170
Telephone: (734) 453-5123 Fax: (734) 453-5201
www.CRAworld.com

TRANSMITTAL

DATE: November 21, 2013

REFERENCE NO.: 048891-32-003

PROJECT NAME: Ford Wixom

TO: Kevin Wojciechowski
Michigan Department of Environmental Quality
SE Michigan District Office
27700 Donald Court
Warren, MI 48092

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

Sent via:
- ☐ Mail
- ☒ Overnight Courier
- ☐ Same Day Courier
- ☐ Other

QUANTITY	DESCRIPTION
1	Closure Report - REC 2 - Executive Garage Area Release Nos. C-0519-98 and C-0674-00 Former Ford Wixom Assembly Plant (hard copy)

- ☒ As Requested
- ☐ For Your Use
- ☐ For Review and Comment
- ☐
- ☐

COMMENTS:

Copy to: Nathan Kuhl

Completed by: Thomas Kinney
[Please Print]

Signed: Thomas Kinney

Filing: **Correspondence File**

EQUAL EMPLOYMENT OPPORTUNITY EMPLOYER

REGISTERED COMPANY FOR ISO 9001 ENGINEERING DESIGN

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY – REMEDIATION AND REDEVELOPMENT DIVISION
PO BOX 30426, LANSING, MI 48909-7926, Phone 517-284-5087, Fax 517-241-9581

LEAKING UNDERGROUND STORAGE TANK CLOSURE REPORT

☒ NEW or ☐ REVISED PER DEQ AUDIT

INSTRUCTIONS: COMPLETION OF THIS REPORT WITH ALL APPLICABLE INFORMATION IS MANDATORY pursuant to Part 213, Section 21312a of the Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. **Check one of the boxes above to indicate whether this is a new or revised submittal.** The Owner/Operator (O/O) and Qualified Underground Storage Tank Consultant (QC) must complete the affidavits below. Please submit the completed closure report cover sheet and Table of Contents (Form EQP4008) to the appropriate District Office. See DEQ form EQP4410 at www.michigan.gov/DEQrrd_Office Map for a complete list of RRD District and Field Offices.

SITE NAME: Former Ford Wixom Assembly Plant		FACILITY ID NUMBER: 00014262	
STREET ADDRESS: 28801 South Wixom Road			
CITY: Wixom	ZIP: 48393	COUNTY: Oakland	
DATE(S) RELEASE(S) DISCOVERED: 6/19/98 and 7/19/00	CONFIRMED RELEASE NUMBER(S): C-0519-98 and C-0674-00		
O/O NAME: Ford Motor Company c/o Environmental Quality Office	O/O EMAIL ADDRESS: brusinow@ford.com		
O/O STREET ADDRESS: 290 Town Center Drive, Fairlane Plaza North, Suite 800	CITY: Dearborn	STATE: MI	ZIP: 48121
CONTACT PERSON: Barbara Rusinowski	PHONE: 313-322-3891	FAX: 313-248-5030	

Permission is given for the Department of Environmental Quality to contact the QC: ☒YES ☐NO

CLOSURE REPORT INFORMATION: Answer All Questions (DO NOT LEAVE BLANKS)

1. Site Classification (1-4): 4 Previous Site Classification (1-4): 1 Type of RBCA Evaluation: ☒ Tier I ☐ Tier II ☐ Tier III
2. Substance(s) released: ☒ Gasoline ☐ Diesel ☐ Ethanol: E-10 ☐ E-85 ☐ ☐ Other:
3. Has contamination migrated off-site above Tier 1 Residential RBSLs? ☐YES ☒NO
   If YES, have off-site impacted parties been notified per Section 21309a(3) of Part 213? ☐YES ☐NO
4. Predominant groundwater flow direction: West Depth to groundwater: ~13 feet
5. Is mobile NAPL present: Currently? ☐YES ☒NO Previously? ☒YES ☐NO
   If present, was it recovered? ☒YES ☐NO If recoverable, total gallons recovered since last reported: 0 to date: 3,190
6. Is migrating NAPL present: ☐YES ☒NO If yes, have actions been taken to prevent migration? ☐YES ☐NO
7. Since Last Report: cubic yards of soil remediated: 46,000 gallons of groundwater remediated: 589,000
   Totals to date: cubic yards of soil remediated: 46,060 gallons of groundwater remediated: 589,000
8. Have toxic or explosive vapors been identified in any confined spaces (basement, sewers, etc.)? ☐YES ☒NO
9. Drinking water supply affected? Currently: ☐YES ☒NO Previously: ☐YES ☒NO
   Indicate type and # of wells affected: ☐ Private # ☐ Public Type II/III # ☐ Municipal #
10. Has Surface water / Wetlands been contaminated? ☐YES ☒NO
11. Estimated distance and direction from point of release to nearest: Private well: ½ mile North Municipal well: >1 mile
    Surface water/wetland: 2000 feet Northwest Is site within a wellhead protection zone? ☐YES ☒NO
12. Closure report based on which type of land use? ☐Residential ☒Nonresidential
13. Institutional Controls: ☐None ☐Notice of Corrective Action ☒Restrictive Covenant ☐Other:
14. What type of Corrective Action was Completed? (i.e., AS/SVE; MNA; MPE; Excavation; Institutional Controls; etc.) :
    Excavation and Institutional Controls

CLOSURE REPORT AFFIDAVIT OF REPORT COMPLETENESS: (Must be completed before submitting form.)

OWNER/OPERATOR AFFIDAVIT OF REPORT COMPLETENESS

I attest that the information upon which the closure report is based is complete and true to the best of my knowledge, in accordance with Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

Signature of Owner or Operator / Affiant	Print Owner or Operator / Affiant Name	Date
	Andrew S. Hobbs	11/21/13

Name of Company (if applicable)	Address, City, State, Zip
Ford Motor Company c/o Environmental Quality Office	290 Town Center Drive, Fairlane Plaza North, Suite 800, Dearborn, MI 48121

Phone Number	Fax Number	Email Address
313-322-3891	313-248-5030	Brusinow@ford.com

Sworn to before me and subscribed in my presence this 21st day of November, 2013

Tracey Y. Davis
Notary Public

Tracey Y Davis
Print Name

TRACEY Y. DAVIS
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF WAYNE
My Commission expires May 26, 2015
Acting in the County of _____

County of Wayne

My Commission Expires May 26, 2015

Acting in the County of Wayne

QUALIFIED UNDERGROUND STORAGE TANK CONSULTANT AFFIDAVIT OF CLOSURE

As preparer of the Closure Report, I attest to the fact that the corrective actions detailed in the closure report complies with all applicable requirements under the applicable Risk Based Corrective Action standard and that the information upon which the closure report is based is true and accurate to the best of my knowledge. Attached is a Certificate of Insurance demonstrating that I have obtained all the insurance required under Section 21312a(1)(c) and 21325 of Part 213.

Signature of Qualified UST Consultant	Print Qualified QC Consultant Name	Date
Thomas Kinney	Thomas M. Kinney	11/21/13

Name of Company	Address, City, State, Zip
Conestoga-Rovers & Associates	14496 Sheldon Road, Suite 200, Plymouth, MI 48170

Phone Number	Fax Number	Email Address
734-453-5123	734-453-5201	tkinney@craworld.com

Sworn to before me and subscribed in my presence this 21st day of November, 2013

Tracey Y. Davis
Notary Public

Tracey Y. Davis
Print Name

TRACEY Y. DAVIS
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF WAYNE
My Commission expires May 26, 2015
Acting in the County of _____

County of Wayne

My Commission Expires May 26, 2015

Acting in the County of Wayne

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

CLOSURE REPORT

REC 2 - EXECUTIVE GARAGE AREA
RELEASE NOs. C-0519-98 AND C-0674-00
FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Prepared for: Ford Motor Company

Conestoga-Rovers & Associates
14496 Sheldon Road, Suite 200
Plymouth, Michigan 48170

November 2013 • 048891 • Report No. 46

Partners in Sustainability

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Section 1.0 Introduction

This Closure Report (Report) has been prepared by Conestoga-Rovers & Associates (CRA) on behalf of Ford Motor Company (Ford) for submittal to the Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division (RRD). This Report was prepared pursuant to Part 213 of Michigan's Natural Resources and Environmental Protection Act of 1994 (Public Act [PA] 451), as amended.

This Report presents a summary of the closure activities associated with leaking underground storage tank (LUST) incidents (Release Nos. C-0519-98 and C-0674-00) within Recognized Environmental Condition (REC) 2 – Executive Garage area of the former Ford Wixom Assembly Plant located in Wixom, Michigan (Site). The Site location is presented on Figure 1.1. For purposes of this Report, the term "Site" refers to the former Ford Wixom Assembly Plant Property and not the location where a release has occurred from an UST system as defined by Section 324.21303 of Part 213.

Excavation was chosen as the most appropriate and effective corrective action for the REC 2 area. Between December 2012 and April 2013, approximately 46,000 cubic yards of soil were excavated and 589,000 gallons of groundwater was pumped out and disposed of off Site from this area. Six months of performance monitoring has been conducted for the presence of light non-aqueous phase liquid (LNAPL) and no measureable LNAPL was detected. Therefore, no further remediation or monitoring activities are necessary.

The remainder of this Report provides a background summary and describes the LUST remediation and confirmatory sampling activities. This document provides pertinent LUST investigative information required by the MDEQ under Part 213 that support a Tier I, Non-Residential closure of confirmed release numbers C-0519-98 and C-0674-00 within REC 2.

Section 2.0 Site Background and Setting

The former Ford Wixom Assembly Plant encompassed approximately 320 acres of land. Plant operations ceased in 2007 and demolition of the Site buildings began in 2012. The REC 2 – Executive Garage area is located within the southeast 45-acre parcel that is currently under contract with a buyer. All of the former buildings (Administration Building and a portion of the Main Assembly Building) within this 45-acre parcel have been demolished and the slab for the entire area has been removed by Ford. Redevelopment of this parcel is anticipated to begin in the spring of 2014.

The REC 2 – Executive Garage area currently has two open LUST incidents, Release Nos. C-0519-98 and C-0674-00. Based on the review of available documentation, both releases occurred in the same general area. The REC 2 Historic Site Plan is shown on Figure 2.1. The UST system for this area included USTs #10-2 and #10-3, which were double-walled 30,000-gallon steel tanks used for the storage of

unleaded gasoline. These USTs were located approximately 1,600 feet northwest of the Executive Garage area, within a concrete slab containment area. These two USTs were removed in 2008. The USTs were connected via aboveground piping to the dispenser located outside (south) of the Executive Garage door. The layout of the complete Historic UST system is shown on Figure 2.2. Release No. C-0519-98 occurred from a release of unleaded gasoline in the underground piping associated with the dispenser in 1998. Release No. C-0674-00 occurred when a gasket on the dispenser failed and approximately 5 gallons of fuel spilled in 2000.

2.1 Geology and Hydrogeology

This geology and hydrogeology summary for the REC 2 area are based on information obtained from drilling and excavation activities. Soil boring and monitoring well completion logs are included in Appendix A.

Geologic conditions consist of 3 to 8 feet of surficial fill (i.e., sand, gravel and/or clay fill). Fill sand is present to a maximum depth of approximately 30 feet within the recently excavated area. A silty clay unit is encountered below the fill and extends to depths of at least 43 feet below grade. The silty clay unit contains thin (0.5 to 2 feet) interbedded sand seams. Perched groundwater is encountered at the base of the fill unit at approximate depths of 7 to 10 feet below grade. Groundwater was also encountered within the interbedded sand seams at approximate depths of 10 to 15 feet below grade. It should be noted that these sand seams were discontinuous and groundwater was not necessarily encountered at these depths throughout the REC 2 area. Depth to water measurements were collected on October 8, 2012 from all the perimeter monitoring wells located throughout the property. A Site-wide groundwater contour map is presented on Figure 2.3. As shown on the figure, groundwater flow within the REC 2 area is to the northwest.

A cross-section location map is presented on Figure 2.4. Cross section A-A' represents a west to east cross-cut of the area and cross-section B-B' represents a south to north cross-cut. These cross sections are presented on Figure 2.5 and Figure 2.6, respectively.

As shown on the cross-sections, the current geology of the area includes fill sands that extend up to approximately 30 feet below grade because of the recent completed excavation. Groundwater has been encountered at approximate depths of 9 to 15 feet below grade. As shown on Figure 2.3, groundwater flow in this area of the former Plant is to the northwest.

According to the MDEQ website, there is no wellhead protection area located near the Site and no known active water wells exist within a 1-mile radius of the Site. Groundwater is not being used as a drinking water source or for any other purpose at the Site.

Section 3.0 Exposure Pathway Evaluation

To determine applicable PA 451, Part 201 Generic Cleanup Criteria, and Part 213 Risk-Based Screening Levels (RBSLs) consideration is given to REC-specific characteristics, including the nature and extent of criteria exceedances, current and future intended use of the Site and existing exposure controls such as the use of a municipal supply of drinking water. These REC-specific characteristics determine whether a given exposure pathway is relevant (i.e., the pathway is present and a potential exists for human exposure, absent exposure controls that are or will be in place). If a pathway is relevant, the associated criteria are applicable (i.e., the pathway is complete and exposures may occur, unless reliably controlled).

A Restrictive Covenant (RC) has been recorded with the Oakland County Register of Deeds (Section 6.4). The RC filed for the southeast 45-acre parcel limits the use to Non-Residential only. Therefore, this Exposure Pathway Evaluation will only address the Non-Residential exposure pathways.

Currently, groundwater at the Site is not used as a drinking water source (drinking water source supplied by the City of Detroit) and the use of groundwater as a drinking water source for the southeast 45-acre parcel has been restricted by the RC. Therefore, the drinking water pathway has been eliminated and is not relevant.

The 15-inch storm sewer which bisected the Executive Garage area (and was the only storm sewer within the excavation area) was removed during the excavation activities and was not replaced. The remaining storm sewer was capped at the edges of the excavation area. Furthermore, the RC filed for the 45-acre parcel prohibits the installation of new storm sewer utilities below the groundwater table and/or must be lined per industry standards. In addition, the soil impacts remaining within the REC 2 area that are above Groundwater Surface Water Interface Protection Criteria (GSIPC) are not located near any storm sewers and/or there exists a clean soil sample between that location and the storm sewer. Further, there are no Groundwater Surface Water Interface (GSI) exceedances in groundwater other than historic data from the excavated area of REC 2. The nearest surface water body, Congdon Drain, is present on the furthest northwest corner of the Site, approximately 3,300 feet northwest of REC 2. Congdon Drain discharges to Norton creek and eventually the Huron River. Natural groundwater transport from the REC 2 area to this surface water body is not expected based on the large distance between. Therefore, the groundwater surface water pathway has been eliminated and is not relevant.

Based on the 45-acre parcel restrictions and utilities discussed above, the following have been identified in developing an exposure pathway characterization:

- Potential sources – impacted soils and dissolved groundwater impacts
- Potential transport mechanisms – volatilization, leaching and groundwater transport
- Potential receptors – on-Site employees within future buildings, construction or utility worker

The following are possible exposure pathways:

- Inhalation/absorption/ingestion of or direct contact with impacted soils and/or groundwater by an on-Site construction or utility worker
- Inhalation of vapors resulting from soil or groundwater volatilization by on-Site employees, construction or utility worker

Based on this exposure pathway analysis, the following criteria are applicable for the REC 2 area:

Applicable Soil Exposure Pathways and Criteria:

- Groundwater Contact Protection Criteria (GCPC)
- Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria(SVIIC)
- Non-Residential Particulate Soil Inhalation Criteria (PSIC)
- Non-Residential Direct Contact Criteria (DCC)
- Soil Saturation Concentration Screening Levels (Csat)

Applicable Groundwater Exposure Pathways and Criteria:

- Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)
- Groundwater Contact Criteria (GCC)
- Water Solubility Limits (WSLs)
- Flammability and Explosivity Screening Levels (FESLs)
- Acute Inhalation Screening Levels (AISLs)

The applicable criteria can therefore be summarized as Non-Residential criteria, not including Drinking Water Criteria/Drinking Water Protection Criteria (DWC/DWPC) and GSI/GSIPC. Although DWC/DWPC and GSI/GSIPC are not considered applicable criteria, any exceedances of these criteria are identified in the tables and figures of this report. Additionally, the extent of impacts was delineated to the most restrictive criteria (including DWC/DWPC and GSI/GSIPC).

Section 4.0 Previous Investigations

Since 1988, various assessment and investigation activities have occurred at the Site. The assessment information required by the MDEQ has been submitted to the MDEQ in previous Part 213 reports such as the Initial Assessment Report, Final Assessment Report, Revised Corrective Action Plan and periodic Free Product Recovery Status Reports. A list of pertinent historical reports associated with the REC 2 – Executive Garage area is included in Section 9.0.

The soil boring, monitoring well, and other installed borings are shown on Figure 4.1. Soil boring and monitoring well completion details are presented in Table 4.1 and Appendix A.

Chemicals of concern (COCs) identified from site investigations consist of unleaded gasoline volatile organic compounds (VOCs); specifically:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX)
- Trimethylbenzene (TMBs)
- Methyl tert-butyl ether (MTBE)
- Naphthalene
- 2-methylnaphthalene

The soil and groundwater analytical data presented in this Report has been compared to the MDEQ Generic Cleanup soil criteria presented in MDEQ Operational Memorandum No. 1, dated December 4, 2004 and its revised look-up table attachments dated September 28, 2012.

Since 2010, all soil samples analyzed for VOCs were collected using the field methanol preservation/preparation method.

4.1 Part 213 Investigations

Since 1998, multiple subsurface investigations and free product recovery events have been conducted in this area. These investigation and remediation activities were previously completed and reported to the MDEQ by McLaren Hart and NTH between 1998 and 2008. CRA has been Ford's environmental consultant of record at this Site since August 2008.

On June 21, 1998, following the initial unleaded gasoline release, McLaren Hart removed approximately 60 cubic yards of gasoline-saturated soils from the area immediately surrounding the release point (underground piping associated with the dispenser island). Free product that accumulated in the excavation was recovered by installing a temporary recovery well and removing the product using a vacuum truck.

Additionally as part of McLaren Hart's remediation activities in 1998, an automated free product recovery system consisting of positive air displacement pumps at three recovery wells (RW-1, RW-2, and RW-3) connected by a manifold to an aboveground storage tank (AST) was installed. The system was deactivated in April 2000 due to limited free product within the recovery wells resulting in poor recovery system performance. In 1999, McLaren Hart also completed a pilot demonstration test of a spray aeration vacuum extraction (SAVE) system. SAVE operates using an internal combustion engine to drive an extraction pump connected to the recovery wells. Extracted hydrocarbon vapors are drawn from the

wells into the combustion engine where they are burned. The results of the pilot test concluded that recoverable volumes of free product and concentrations of volatile compounds were insufficient to maintain operation of the SAVE system.

Between December 2001 and August 2008, NTH completed additional subsurface delineation activities, free product removal and groundwater monitoring. During this time, recovery well RW-4 was installed in December 2002 to evaluate the free product that was identified in soil boring SB-13. Results of these efforts were presented in quarterly free product status reports and a Corrective Action Plan (CAP) was submitted in February 2005.

The historical soil sample analytical results are summarized on Figure 4.2 and in Table 4.2. One or more unleaded gasoline related VOCs were detected above current Generic Criteria. Exceedances include:

- Non-Residential DWPC: SB-2, 3, 4, 5, 7, 11, 12, 13, 14, 15, 16, 17, 22, 23 and 27
- GSIPC: SB-1, 2, 3, 5, 10, 11, 12, 13, 14, 15, 16, 17, 22, 27 and 29
- GCP: SB-15, 17 and 27
- Non-Residential SVIIC: SB-15, 17, 22 and 27
- Non-Residential VSIC: SB-27
- Non-Residential Finite VSIC for 5 Meter Source Thickness: SB-27
- Non-Residential Finite VSIC for 2 Meter Source Thickness: SB-27
- Non-Residential Direct Contact: SB-15, 17, 27
- Csat: SB-15, 17, 27

In August 2008, CRA became the environmental consultant of record for the Site. CRA performed monthly free product gauging and manual bailing of measurable free product from January 2009 to September 2012. The estimated extent of free product measured during this time period is presented on Figure 4.3.

In September 2010, CRA conducted an air-knife investigation in an attempt to locate potential USTs as indicated on historic documentation. A review of historic drawings referenced two possible USTs that would have been outside the plant prior to the addition of the Executive Garage. No documentation of UST removal was found. A typical geophysical survey could not be conducted in this area due to interference from rebar in the concrete, subsurface and overhead utility and process lines, and height of ceiling. The air-knife was chosen over typical drilling methods as a safety precaution. The air-knife locations were installed in a grid pattern over the area of suspected former gasoline USTs and were advanced to an average depth of 5 feet below ground surface (bgs). A total of 42 air-knife locations were installed. The air-knife locations are presented on Figure 4.4 and the depths are presented in Table 4.3. All soil cuttings generated during this investigation were put back into their respective hole

immediately following the completion of each location. Potential USTs and/or any other subsurface component were not identified in any of the air-knife investigation locations. The complete results from the air-knife investigation were presented in the 1st Quarter 2012 Free Product Recovery Status Report (CRA; May 2012).

In September 2010, CRA completed a laser induced fluorescence (LIF) survey of the Executive Garage Area. The objective of the survey was to verify the lateral extent, vertical distribution, relative intensity, and relative type of LNAPL. In addition, the LIF survey was a reliable demonstration to show that free phase was/was not present in the soil, as stated by the MDEQ in their previous Audit Letters. Based on the survey results, the majority of LNAPL identified was characterized as gasoline-range. The highest intensity LIF results (greater than 100 percent reference emitter [%RE]) were observed at BH-4, 10, 13, 24, and 56 shown on Figure 4.5. The maximum combined thickness of the impacted zone(s) was 7.79 feet at BH-21 and the average thickness of the impacted zone(s) was 3.01 feet. The deepest impacts were noted at 23.73 feet bgs at BH-21 and the highest maximum result was 391.07 %RE at BH-56. The complete results from the LIF survey were presented in the 4th Quarter 2011 Free Product Recovery Status Report (CRA; February 2012).

From July through November 2012, additional soil investigation activities were conducted in REC 2 to further characterize and define the vertical and lateral extents of soil impacts for the proposed excavation/remediation activities and delineate soil sample exceedances to the MDEQ Part 213 most stringent Generic Cleanup Criteria. A total of 21 soil borings (SB2-49 through SB2-56 and SB2-59 through SB2-71) were installed in and around the limits of the proposed excavation. Soil borings installed outside of the proposed limits of excavation were installed to horizontally delineate the most stringent Generic Cleanup Criteria. Based on the lack of evidence of impact (visual or olfactory) in these borings, soil samples were collected from the most permeable zone (i.e., sands) and/or just above the water table. Soil borings installed within the proposed limits of excavation were installed to vertically meet the most stringent Generic Cleanup Criteria and analytical results from these soil samples were intended to confirm the proposed excavation depth of approximately 20 feet bgs and confirm the LIF survey results. Soil borings were installed to intervals between 25 and 43 feet bgs. At least one soil sample was collected from borings SB2-49 through SB2-67 and soil samples were analyzed for TCL VOCs, gasoline VOCs, TPH, and/or lead. Soil borings SB2-68 through SB2-71 were installed for field screening purposes and soil samples were not collected because soil verification samples would be collected from the floor and sidewalls of the excavation. TPH analysis was conducted on two of the soil samples submitted (SB2-59 and SB2-60) to confirm the results of the LIF survey that indicated a potential presence of free product. Lead was included for analysis on six samples (from soil borings SB2-49, SB2-51, SB2-53, SB2-56, SB2-63, and SB2-66) to confirm the presence/absence of lead impact from potentially historic leaded gasoline USTs.

The pre-excavation soil sample analytical results are summarized on Figure 4.2 and in Table 4.2. One or more unleaded gasoline related VOCs were detected above current Generic Criteria. Exceedances include:

- Non-Residential DWPC: SB2-61, 63
- GSIPC: SB2-61

In February 2013, six soil borings (SB2-72 through SB2-78) were installed in the area of the former Administration Building, north of the excavation area, and southwest of the excavation area. Soil samples collected from these borings were collected in order to delineate the most stringent Generic Cleanup Criteria outside the limits of excavation, around the REC 2 area. There were no detections of VOCs above Generic Criteria in the soil samples collected from these borings.

4.2 Part 201 Investigations

CRA completed the following due diligence investigations consistent with Part 201 which included collecting soil and/or groundwater data from within the REC 2 area:

- Phase II Environmental Site Assessment (ESA) in February to June 2008 (CRA; September 008)
- Phase II ESA Supplement No. 1 in September to October 2008 (CRA; May 2009)
- Phase II ESA Supplement No. 2 in May 2009 to March 2010 (CRA; June 2010)

These investigations included the following soil boring and well installations (shown on Figure 4.1):

- Twenty-one soil borings (SB-13, SB-17, SB2-32 through SB2-48, SB2-33A and SB2-45A) were completed to depths of 15 to 40 feet below ground surface (bgs) within and adjacent to the Executive Garage. Two soil borings encountered refusal (SB2-33A and SB2-45A).
- Six temporary monitoring wells (TW2-35, TW2-36, TW2-37, TW2-38, TW2-42, and TW2-44) and two monitoring wells (MW-13R and MW2-45) were installed.

Soil boring and monitoring well completion details are presented in Table 4.1 and Appendix A.

The pre-excavation soil sample analytical results are summarized on Figure 4.2 and in Table 4.2. One or more unleaded gasoline related VOCs were detected above current Generic Criteria. Exceedances include:

- Non-Residential DWPC: SB2-32, SB2-33, 34, 35, 36, 37, 44, 47, 61, 63
- GSIPC: SB2-32, SB2-33, 34, 36, 39, 44, 48, 61

Pre-excavation groundwater analytical results collected by CRA are summarized on Figure 4.6 and in Table 4.4. Dissolved phase VOCs, specifically BTEX, TMBs and naphthalene, were historically detected in the monitoring and recovery wells in this REC (i.e., wells RW-1, RW-2, RW-4, MW-10, TW2-38 and TW2-42). However, these VOC constituents were only detected above Residential/Non-Residential DWC and/or GSIC. The dissolved phase impacts detected in REC 2 were delineated to the Part 213 most stringent criteria by surrounding monitoring wells MW-7, MW-8, MW-9 and MW-12. These four monitoring wells have all been non-detect for VOCs since groundwater sampling was initiated in 2005 (results and analytical reports were previously submitted in Free Product Status Reports and included sample events for May 2005, August 2005, November 2005, March 2006, April 2007, October 2007, November 2008 and November 2009). The data from 2008 and 2009 are summarized on Figure 4.6 and Figure 6.11, respectively. The historical figure showing the results from 2005-2007 has been included in Appendix B.

Section 5.0 Conceptual Site Model

Prior to the completion of the excavation activities, remedial options for the area were evaluated based on the presence of LNAPL. A complete LNAPL Conceptual Site Model (CSM) was developed at that time and has been included in Appendix C. The following CSM is based on the current conditions of the REC 2 area (i.e., post-excavation of the gasoline-impacted soils) and summarizes the geology, hydrogeology and extent of impacts.

Since the REC 2 has been excavated and backfilled (Section 6.0), the majority of the area is clean fill material (i.e., sand). The clean fill is present from the ground surface to depths extending from 15 to 32 feet bgs. The geology surrounding the REC 2 excavated area is a silty clay unit that extends to depths of at least 43 feet below grade and the silty clay unit contains interbedded, discontinuous sand seams. Groundwater is typically encountered within the interbedded sand seams at approximate depths of 10 to 15 feet below grade. Within the excavated area, groundwater has been encountered at approximate depths of 9 to 15 feet below grade. The groundwater flow direction is to the northwest. It should be noted that because these sand seams are discontinuous, groundwater was not necessarily encountered at these depths throughout the REC 2 area.

The excavation and dewatering activities successfully removed the LNAPL. Additionally, soil and groundwater that were impacted above applicable criteria were removed by the excavation and dewatering. Since the excavation activities were completed there has been no LNAPL observed in the REC 2 area (Section 6.3).

As shown on Figures 4.2, 6.10 and 6.11, following the excavation and dewatering activities there are no exceedances of applicable criteria in soil or groundwater at or adjacent to the REC 2 area.

Section 6.0 Corrective Actions

6.1 Corrective Actions Completed

Based on timing and redevelopment of the 45-acre parcel, excavation was chosen as the most appropriate corrective action for the REC 2 area. The objectives of the excavation were to remove free phase impacts and soils impacted above applicable Non-Residential Criteria.

Prior to the excavation activities, geologic cross-sections were developed based on a three-dimensional (3-D) data model created using soil borings and LIF data. The cross-section locations are shown on Figure 6.1 and geologic/LIF cross-sections A-A' through G-G' are shown on Figures 6.2 through 6.8, respectively. The proposed excavation depth was 20 feet bgs and was expected to extend deeper (i.e., 25 feet bgs) in some areas depending on field evidence of impacts (PID greater than 100 ppm), verification sampling, and/or around LIF borings where residual LNAPL was detected at depths deeper than 20 feet bgs (i.e., BH-20 and BH-21).

In November 2012, prior to the start of the excavation, an attempt to properly abandon all of the monitoring and recovery wells within the REC 2 area was made. Wells MW-5, MW-10, MW-11, MW-12, RW-2, RW-3 and RW-4 were abandoned by cutting off the riser pipe of each well at a minimum of 2 feet bgs then filling each annulus with a cement grout to the ground surface. An attempt to locate and abandon wells TW2-42, TW2-36, TW2-37, TW2-38, TW2-45, MW-6, MW-7, MW-8, MW-9 and RW-1 was made; however these wells could not be located and/or had already been destroyed by the demolition activities.

Between December 2012 and April 2013, approximately 46,000 cubic yards of soil were excavated and disposed of at Veolia ES Arbor Hills Landfill in Northville, Michigan from the REC 2 area. A photo log documenting the excavation activities is presented in Appendix D. Soil waste manifests are included in Appendix E. The final excavation measured 300 feet by 190 feet and extended to a maximum of 32 feet deep. Groundwater was present within the excavation from thin, discontinuous sand units typically encountered between 16 and 18 feet bgs. Accumulated groundwater/precipitation was pumped into staged frac tanks then shipped off-Site to The Environmental Quality Company in Detroit, Michigan. Approximately 589,000 gallons of groundwater/precipitation was pumped out of the excavation for off-Site disposal. Groundwater waste manifests are included in Appendix F.

Two concrete saddles that appear to have formerly held USTs were uncovered during the excavation activities. Both pads measured approximately 12 feet long by 8 feet wide and 2 feet thick and were located approximately 15 feet below the former Executive Garage floor. Approximate locations of the former UST pads are shown on Figure 6.9. The discovered pads were broken up and disposed of off Site. The concrete pads were set atop a gravel fill layer and the soils beneath and surrounding consisted of silty clay. Each of these areas was excavated to at least 25 feet bgs, completely removing the gravel layers and surrounding soils. As explained below in Section 6.2, two soil verification samples were

collected from below each concrete pad, one at either end; one sample was analyzed for unleaded gasoline related VOCs and one sample for lead. Based on VOC exceedances of applicable criteria in one of the initial soil samples collected from below the pad found in grids 9 and 10 (at approximately 20 feet bgs), this area was over-excavated and an additional soil verification sample was collected from approximately 30 feet bgs.

Any and all underground utilities encountered during the excavation were removed and were not replaced, including the 15-inch storm sewer which bisected the excavation from east to west which was cut and capped at each end.

6.2 Closure Verification Sampling

6.2.1 Soil Results

In accordance with the MDEQ's Sampling Strategies and Statistics Training Materials (S3TM) Document, verification soil samples were collected for analysis from the excavation floor and sidewalls prior to backfilling. Verification samples were biased toward the suspected worst case areas of the floors and sidewalls (based on visual and PID screening). Additionally, verification samples were collected from beneath the locations of the former dispenser island, below the former UST concrete pads/saddles, preferential pathways (i.e., utility corridors) and changes in soil characteristics (i.e., sand/clay interfaces). Sidewall verification samples were collected approximately every 45 lineal feet and/or were biased to the preferential pathways and changes in soil characteristics. Soil verification sample locations and depths are presented on Figure 6.9.

Verification soil samples were field preserved with methanol and analyzed for unleaded gasoline VOCs using USEPA SW-846 Methods 5035/8260B. Soil verification sample results are included in Table 6.1 and presented on Figure 6.10. Laboratory analytical data and associated data verification reports for the verification samples are included in Appendix G. As stated above, the objectives of the excavation were to remove soils impacted above applicable Non-Residential Criteria; therefore, verification samples which exceeded only GSIPC and/or DWPC were not over-excavated.

Based on discussions with the MDEQ it was decided that TPH analysis to document the presence/absence of NAPL was not needed. The extent of LNAPL had been thoroughly delineated using LIF and traditional methods. The MDEQ's current approach to document the absence of NAPL in soils was based on comparing results to Csat for individual constituents. Therefore, soil verification samples were not analyzed for TPH-GRO. The MDEQ's concurrence with this sampling approach is included in Appendix H.

6.2.2 Backfilling of Excavation

Following receipt of the verification sample results, approximately 40,500 cubic yards of certified, clean, material was imported from the Ashley Land Development Co., Inc. quarry in Milford, Michigan to backfill the excavation. The certificate of clean fill is included in Appendix I. Compaction and density testing were completed to meet Ford Section 2200 North American Compaction Specifications (95 percent compaction per ASTM D 1557 Modified Proctor). The compaction test results are included in Appendix J. The area was graded with 1,680 tons of crushed 21AA aggregate to meet applicable Ford standards.

6.2.3 Groundwater Results

Sixteen monitoring and four recovery wells were present within the REC 2 prior to excavation activities. Groundwater analytical results collected by CRA are summarized on Figure 4.10 and in Table 4.4. Dissolved phase VOCs, specifically BTEX, TMBs and naphthalene, were historically detected in the monitoring and recovery wells located within the excavation area (i.e., wells RW-1, RW-2, RW-4, MW-10, TW2-38 and TW2-42). However, these VOC constituents were only detected above Residential/Non-Residential DWC and/or GSIC and these locations were removed and dewatered during the excavation activities (i.e., the water bearing unit that the wells were screened in were completely removed by excavation). The dissolved phase impacts detected in REC 2 were delineated to the Part 213 most stringent criteria by surrounding monitoring wells MW-7, MW-8, MW-9 and MW-12. These four monitoring wells have all been non-detect for VOCs since groundwater sampling was initiated in 2005. Based on the dissolved phase impacts in groundwater being delineated to the Part 213 most stringent criteria, the lack of VOC detections in the perimeter monitoring wells prior to implementing the corrective action and the removal of approximately 589,000 gallons of groundwater during the excavation activities, the groundwater within the area was not sampled after the excavation was complete. Figure 6.11 presents the monitoring locations and groundwater analytical data after the excavation activities. Based on conversations with the MDEQ during the excavation activities, dissolved phase monitoring was not required. The agreed upon performance monitoring to document the corrective action was successful was to perform 6 months of monitoring for LNAPL (detailed in Section 6.3).

6.3 Performance Monitoring

Following completion of the excavation activities, on May 1, 2013, four observation monitoring wells (OW-1 through OW-4) were installed within the backfilled area. Observation well locations are shown on Figure 6.9 and were based on the areas of highest impact encountered during excavation activities. The completed monitoring wells were constructed of 2-inch diameter, 0.010-inch slot, Schedule 40 polyvinyl chloride (PVC) screen threaded to a 5-foot long, 2-inch diameter PVC riser pipe extending to the ground surface. The wells were finished with a flush-mount steel protective casing. Observation

well screens varied between 10 to 25-feet long. The well screens were designed to monitor the entire saturated thickness of the backfill material.

Following installation, the observation wells were gauged with an oil/water interface probe monthly for a period of 6 months (May through October 2013) to monitor for the presence of LNAPL. Observation well gauging results are presented in Table 6.2. As shown in Table 6.2, there was no LNAPL observed in any of the observation wells during the 6-month monitoring period.

6.4 Institutional Controls

On October 16, 2013, a Restrictive Covenant (RC) (RC-RRD-213-13-072) for the southeastern 45-acre parcel was recorded with the Oakland County Register of Deeds. Prior to recording the RC with Oakland County, the draft RC was reviewed and approved by the MDEQ. The RC restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes, prohibits the construction of wells and use of groundwater other than for environmental usage or short-term dewatering for construction and requires that any new storm sewer utilities installed at the property be installed above the groundwater table and/or must be lined per industry standards. The fully executed Register of Deeds stamped copy of the RC (Liber 46444, Page 431-444) is included in Appendix K. Notices to Local Units of Government of Land Use Restrictions (LUG) of the recorded RC were sent to the Oakland County Public Health Department and the City of Wixom. Copies of the LUG Notices as well as copies of the Registered Mail Receipts are included Appendix L.

6.5 Corrective Action Summary

An excavation and dewatering corrective action was completed within the REC 2 area of the Site. The objectives of the corrective action were to remove free phase impacts and gasoline-impacted soils impacted above applicable Non-Residential Criteria. Approximately 46,000 cubic yards of soil and 589,000 gallons of groundwater/precipitation were removed and disposed of off-Site. Prior to backfilling the excavation with clean fill material, verification soil samples were collected from the floor and sidewalls to confirm the excavation objectives and applicable criteria had been met. Based on the pathway analysis presented in Section 3.0, and as shown on Figures 4.2, 6.10 and 6.11, following the excavation and dewatering activities there are no exceedances of applicable criteria at or adjacent to the REC 2 area.

Since the corrective action activities have been completed, a RC for the southeastern 45-acre parcel has been recorded with Oakland County which restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes, prohibits the construction of wells and use of groundwater other than for environmental usage or short-term dewatering for construction and requires that any new storm sewer utilities installed at the property be installed above the groundwater table and/or must be lined per industry standards.

Section 7.0 Site Classification

The Site Classification Level has been determined to be Class 4, as described in RRD Operational Memorandum No. 3, Leaking Underground Storage Tank (LUST) Site Classification System, based on investigation activities conducted by CRA. Previously, based on the presence of LNAPL, the Site Classification Level was a Class 1; however, the completion of the excavation activities and removal of LNAPL has downgraded the Site to a Class 4.

Section 8.0 Summary

The REC 2 – Executive Garage area currently has two open LUST incidents, Release Nos. C-0519-98 and C-0674-00. LNAPL was present in this area and had been recovered via manual bailing since 2001. Between December 2012 and April 2013, approximately 46,000 cubic yards of soil were excavated and 589,000 gallons of groundwater was pumped out and disposed of off-Site from this area. As shown on Figure 2.8, the maximum remaining soil contaminant concentrations only exceed Residential/Non-Residential DWC and/or GSIC and all have been delineated to below the most stringent criteria. Following the excavation, 6 months of gauging was conducted on the four newly installed observation wells for the presence of LNAPL. No measureable LNAPL was detected during the 6 months. Therefore, no further remediation or monitoring activities are warranted.

Dissolved phase VOCs were historically detected in monitoring and recovery wells located within the excavated area. However, these impacted areas were removed during the excavation activities. The dissolved phase impacts detected in REC 2 were delineated to the Part 213 most stringent criteria by surrounding monitoring wells MW-7, MW-8, MW-9 and MW-12. Therefore, no further groundwater remediation or disposal activities will be conducted.

On October 16, 2013, a RC for the southeast 45-acre parcel was recorded with the Oakland County Register of Deeds. The RC restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes and requires that any new storm sewer utilities installed the property be installed above the groundwater table and/or must be lined per industry standards.

Based on the successful completion of the corrective action and the RC that has been recorded for the REC 2 area, Release Nos. C-0519-98 and C-0674-00 can be closed.

Section 9.0 References

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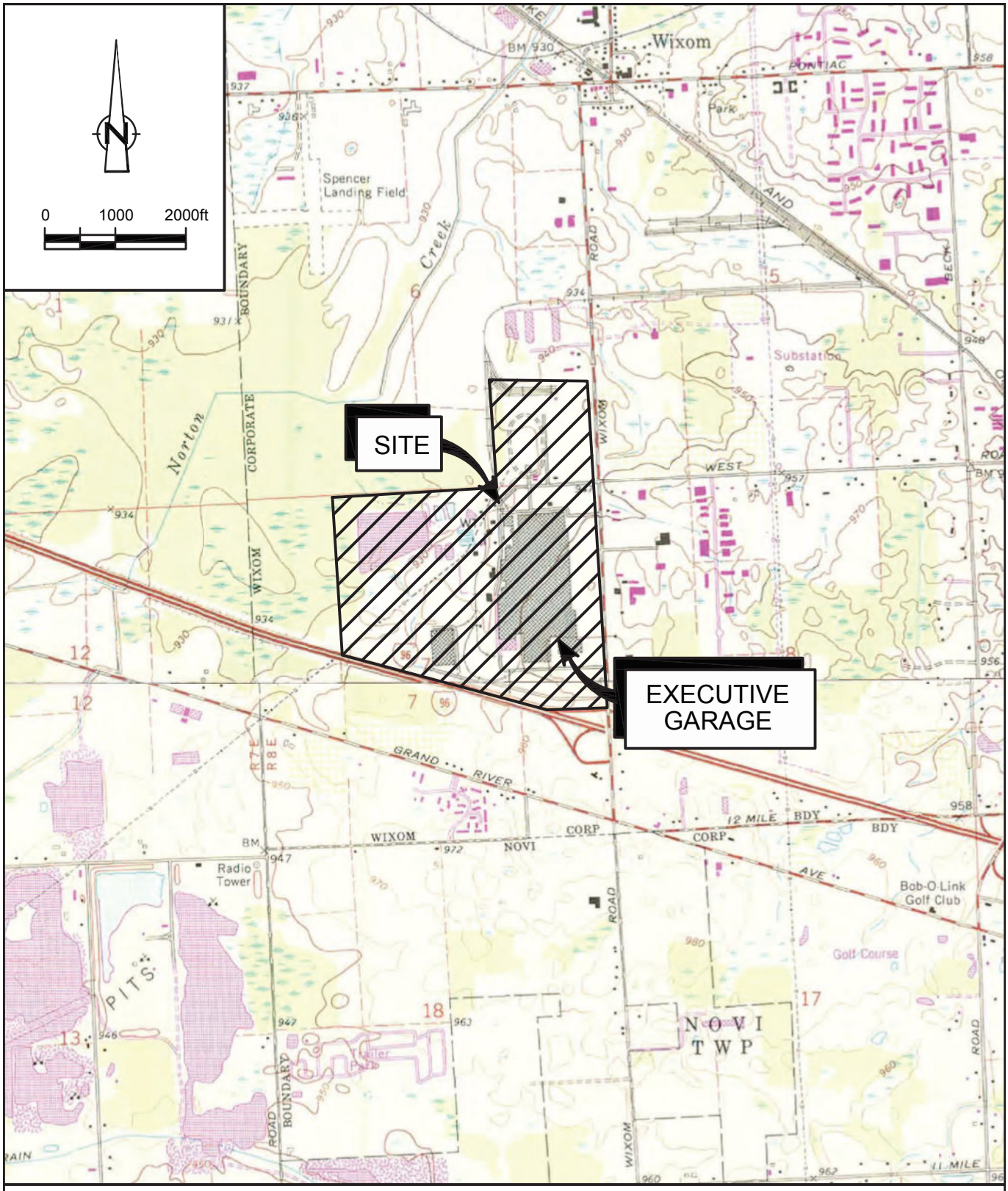
Figures

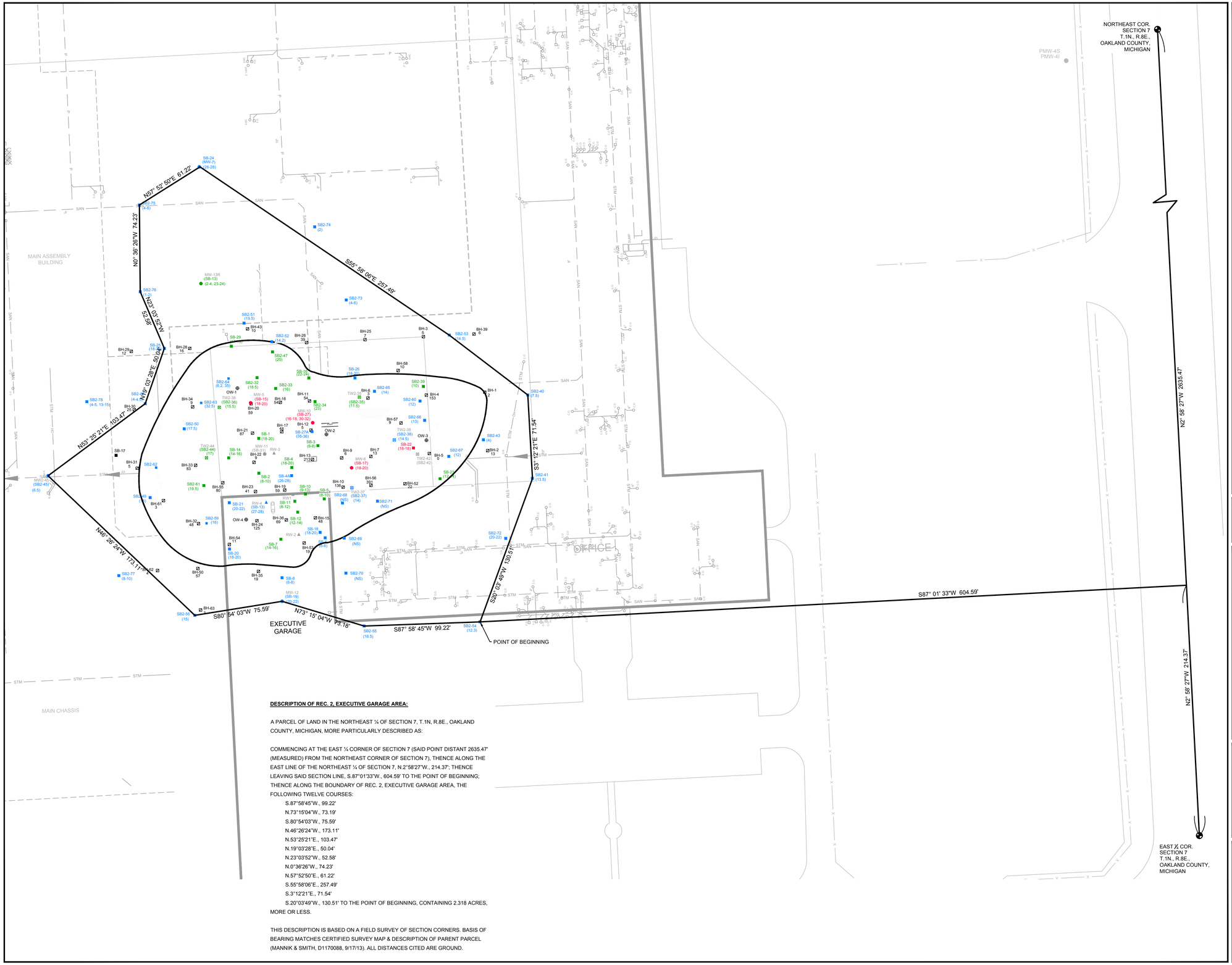


SOURCE: USGS QUADRANGLE MAP;
MILFORD AND SALEM, MICHIGAN

figure 1.1

SITE LOCATION
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE006 SEP 16/2013



DESCRIPTION OF REC. 2, EXECUTIVE GARAGE AREA:

A PARCEL OF LAND IN THE NORTHEAST ¼ OF SECTION 7, T.1N, R.8E., OAKLAND COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

COMMENCING AT THE EAST ¼ CORNER OF SECTION 7 (SAID POINT DISTANT 2635.47' (MEASURED) FROM THE NORTHEAST CORNER OF SECTION 7), THENCE ALONG THE EAST LINE OF THE NORTHEAST ¼ OF SECTION 7, N.2°58'27"W., 214.37'; THENCE LEAVING SAID SECTION LINE, S.87°01'33"W., 604.59' TO THE POINT OF BEGINNING; THENCE ALONG THE BOUNDARY OF REC. 2, EXECUTIVE GARAGE AREA, THE FOLLOWING TWELVE COURSES:

S.87°58'45"W., 99.22'
N.73°15'04"W., 73.19'
S.80°54'03"W., 75.59'
N.46°26'24"W., 173.11'
N.53°25'21"E., 103.47'
N.19°03'28"E., 50.04'
N.23°03'52"W., 52.58'
N.0°36'26"W., 74.23'
N.57°52'50"E., 61.22'
S.55°58'06"E., 257.49'
S.3°12'21"E., 71.54'
S.20°03'49"W., 130.51' TO THE POINT OF BEGINNING, CONTAINING 2.318 ACRES, MORE OR LESS.

THIS DESCRIPTION IS BASED ON A FIELD SURVEY OF SECTION CORNERS. BASIS OF BEARING MATCHES CERTIFIED SURVEY MAP & DESCRIPTION OF PARENT PARCEL (MANNIK & SMITH, D1170088, 9/17/13). ALL DISTANCES CITED ARE GROUND.

Nº	Revision	Date	Initial

0 20 40ft

LEGEND

- SB2-48 SOIL BORING LOCATION
- OW-1 OBSERVATION WELL LOCATION
- MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- RW-2 RECOVERY WELL LOCATION
- TW2-36 TEMPORARY WELL LOCATION
- 4 LIF LOCATIONS AND MAXIMUM LIF RESULT (% RE)
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- EXTENT OF RESIDENTIAL CRITERIA EXCEEDANCES
- HISTORIC EXTERIOR WALL OF PLANT
- VOCs IN SOIL HAVE NOT BEEN DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE GROUNDWATER CONTACT PROTECTION, SOIL VOLATILIZATION TO INDOOR AIR INHALATION AND/OR DIRECT CONTACT CRITERIA
- (18-20) SAMPLE DEPTH - ft BGS
- (NS) NOT SAMPLED

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

EXTENT OF RESIDENTIAL EXCEEDANCES REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

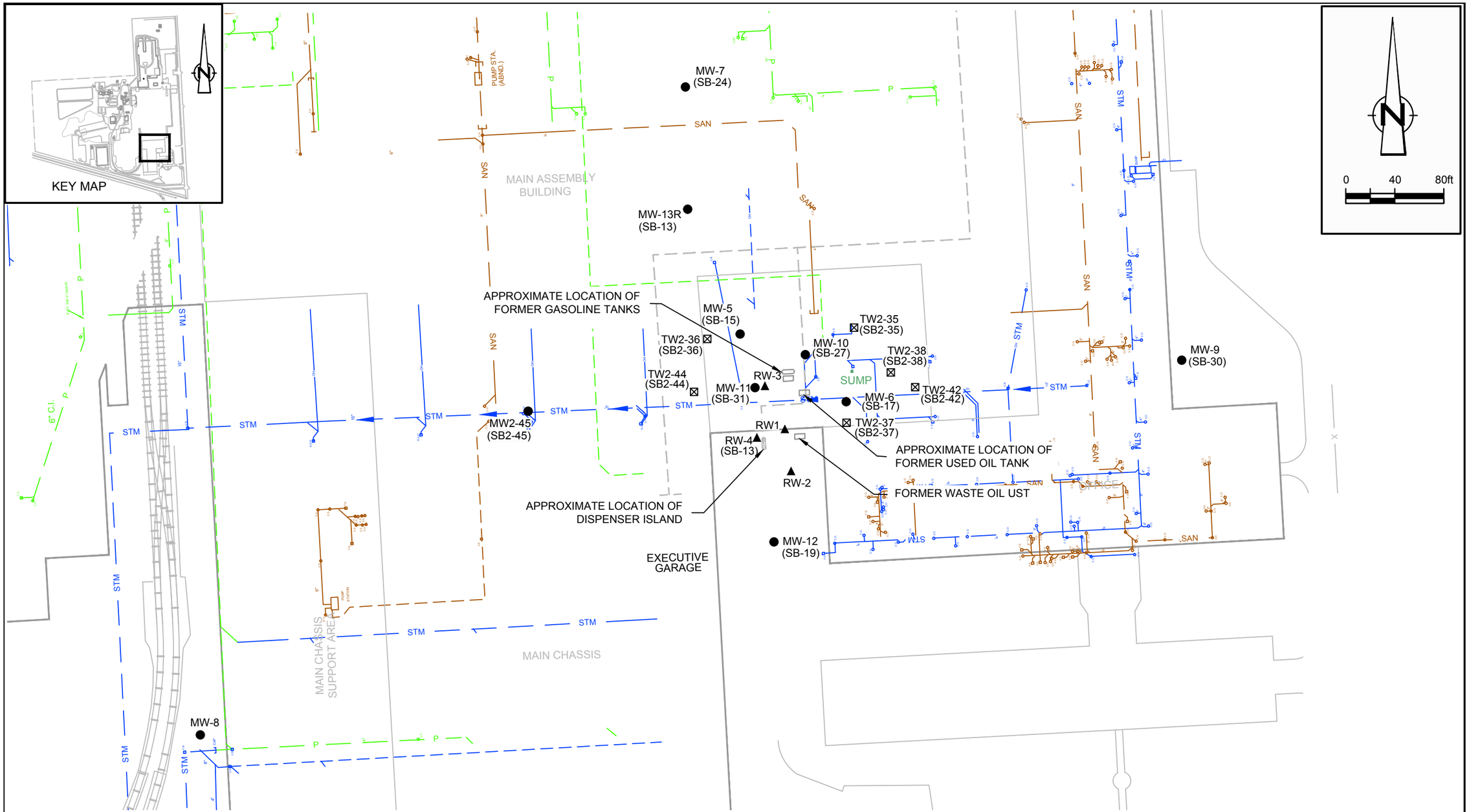
FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	B. HOSKO	DECEMBER 2013	
Scale: 1:40	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: 1

048891-32(046)GN-DE028 DEC 19/2013



LEGEND

- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY (ASSUMED DEPTH WITHIN 8 FEET BGS.)
- PROCESS (ASSUMED DEPTH WITHIN 8 FEET BGS.)
- HISTORIC EXTERIOR WALL OF PLANT

figure 2.1

HISTORIC SITE PLAN
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE007 OCT 1/2013

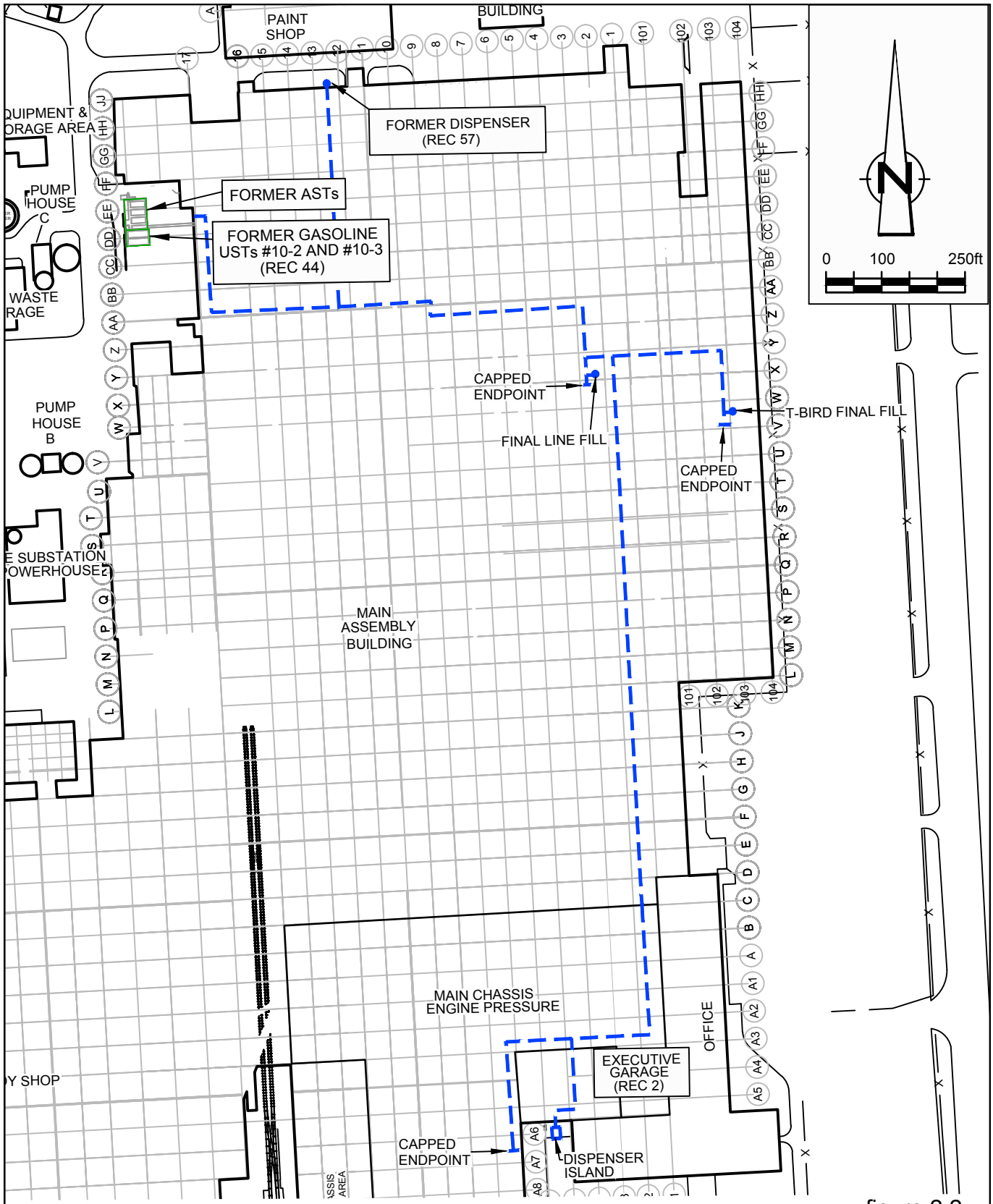


figure 2.2

LEGEND

HISTORIC ABOVEGROUND GASOLINE PIPELINE

DROP POINT TO FORMER FILLING STATION

FENCE

HISTORIC UST SYSTEM LAYOUT
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE008 OCT 1/2013

LEGEND

- ● PMW-3 PERMANENT PERIMETER MONITORING WELL LOCATION
- 940.0 GROUNDWATER CONTOURS
- 942.94 GROUNDWATER ELEVATIONS
- ← GROUNDWATER FLOW DIRECTION

NOTE: GROUNDWATER ELEVATIONS COLLECTED ON 10/8/12

Nº	Revision	Date	Initial

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

SITEWIDE GROUNDWATER CONTOUR MAP
REC 2 EXECUTIVE GARAGE AREA

Wixom, Michigan

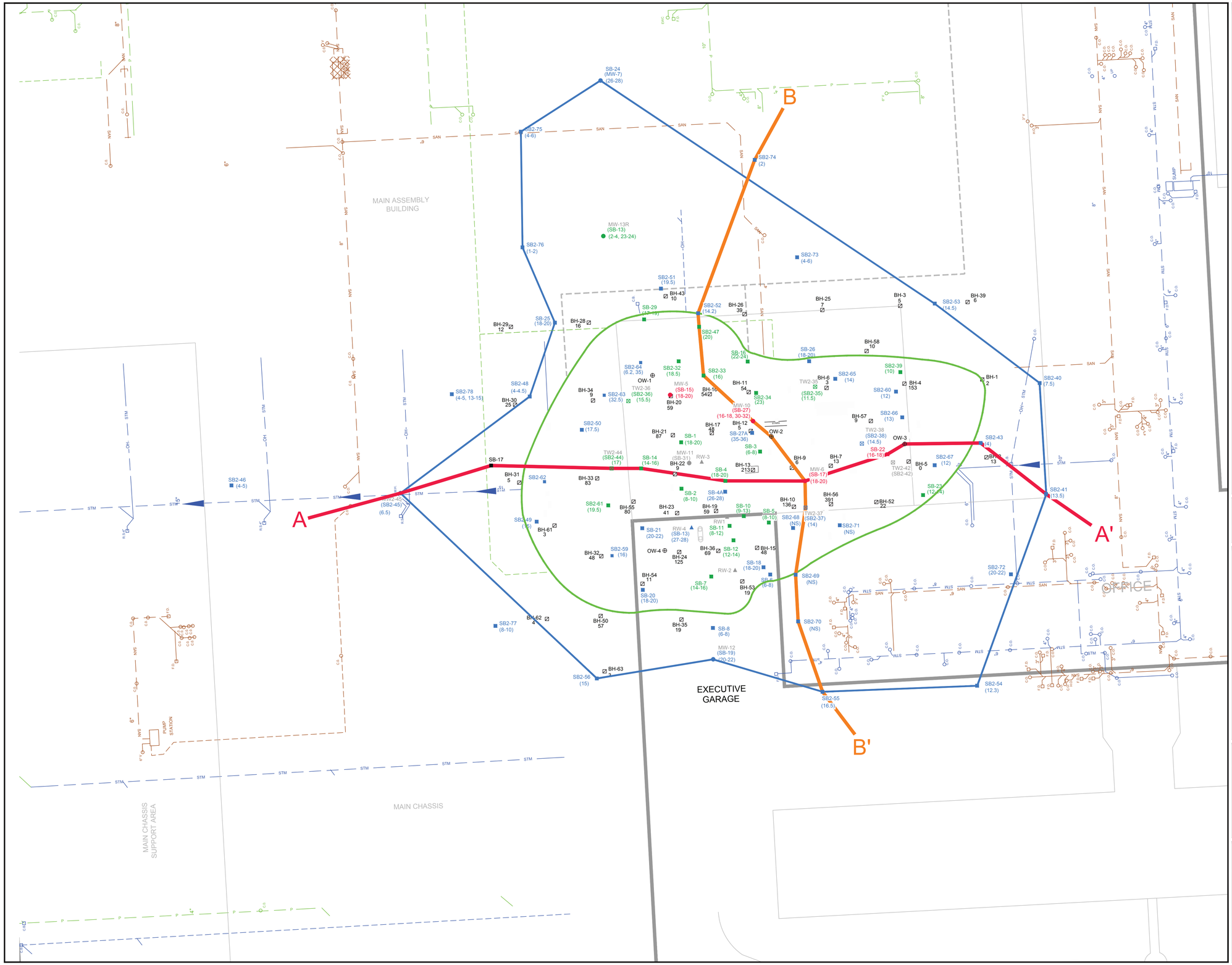
FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale: 1:250	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 2.3

048891-32(046)GN-DE025 OCT 1/2013



Nº	Revision	Date	Initial

LEGEND

- ■ SB2-48 SOIL BORING LOCATION
- ⊕ OW-1 OBSERVATION WELL LOCATION
- ● MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- ▲ RW-2 RECOVERY WELL LOCATION
- ⊠ TW2-36 TEMPORARY WELL LOCATION
- ⊘ 4 LIF LOCATIONS AND MAXIMUM LIF RESULT (% RE)
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- EXTENT OF RESIDENTIAL CRITERIA EXCEEDANCES
- HISTORIC EXTERIOR WALL OF PLANT
- A A' CROSS SECTION LOCATION LINE
- ■ VOCs IN SOIL HAVE NOT BEEN DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- ■ VOCs IN SOIL DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- ■ VOCs IN SOIL DETECTED ABOVE GROUNDWATER CONTACT PROTECTION, SOIL VOLATILIZATION TO INDOOR AIR INHALATION AND/OR DIRECT CONTACT CRITERIA
- (18-20) SAMPLE DEPTH - ft BGS
- (NS) NOT SAMPLED

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

CROSS-SECTION LOCATIONS
REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

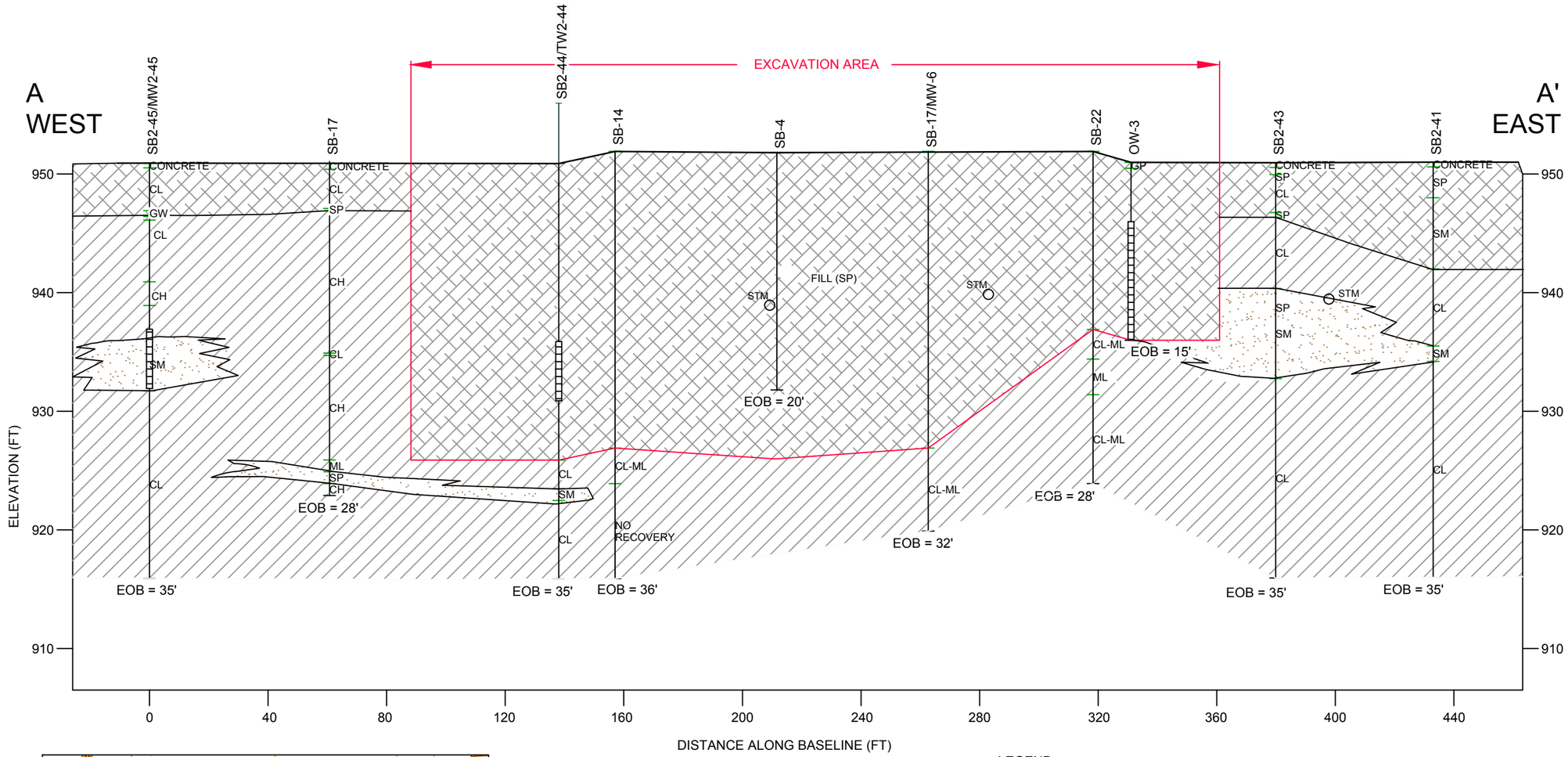
FORMER WIXOM ASSEMBLY PLANT

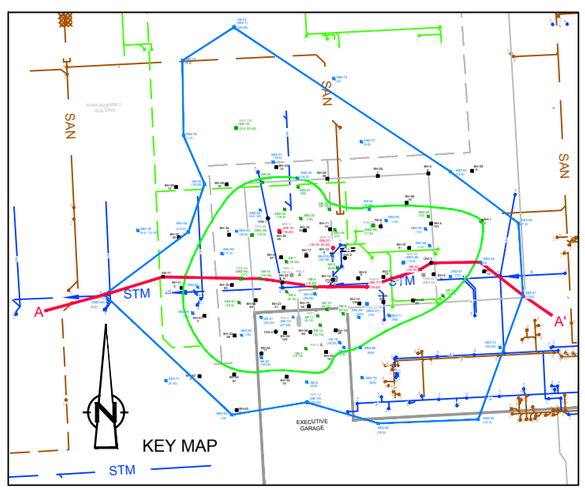
CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale:	Project Nº:	Report Nº:	Drawing Nº:
1:30	048891-32	046	2.4

048891-32(046)GN-DE009 OCT 1/2013





LEGEND
HORIZONTAL 1" = 40
VERTICAL 1" = 10

— WELL

— SCREEN

EOB = END OF BORING

GW/GP	- GRAVEL
SP	- SAND
SM	- SILTY SAND
SC	- CLAYEY SAND
ML	- SILT
CL	- SILTY CLAY
CH	- CLAY
STM	STORM SEWER

ML, CL, CH

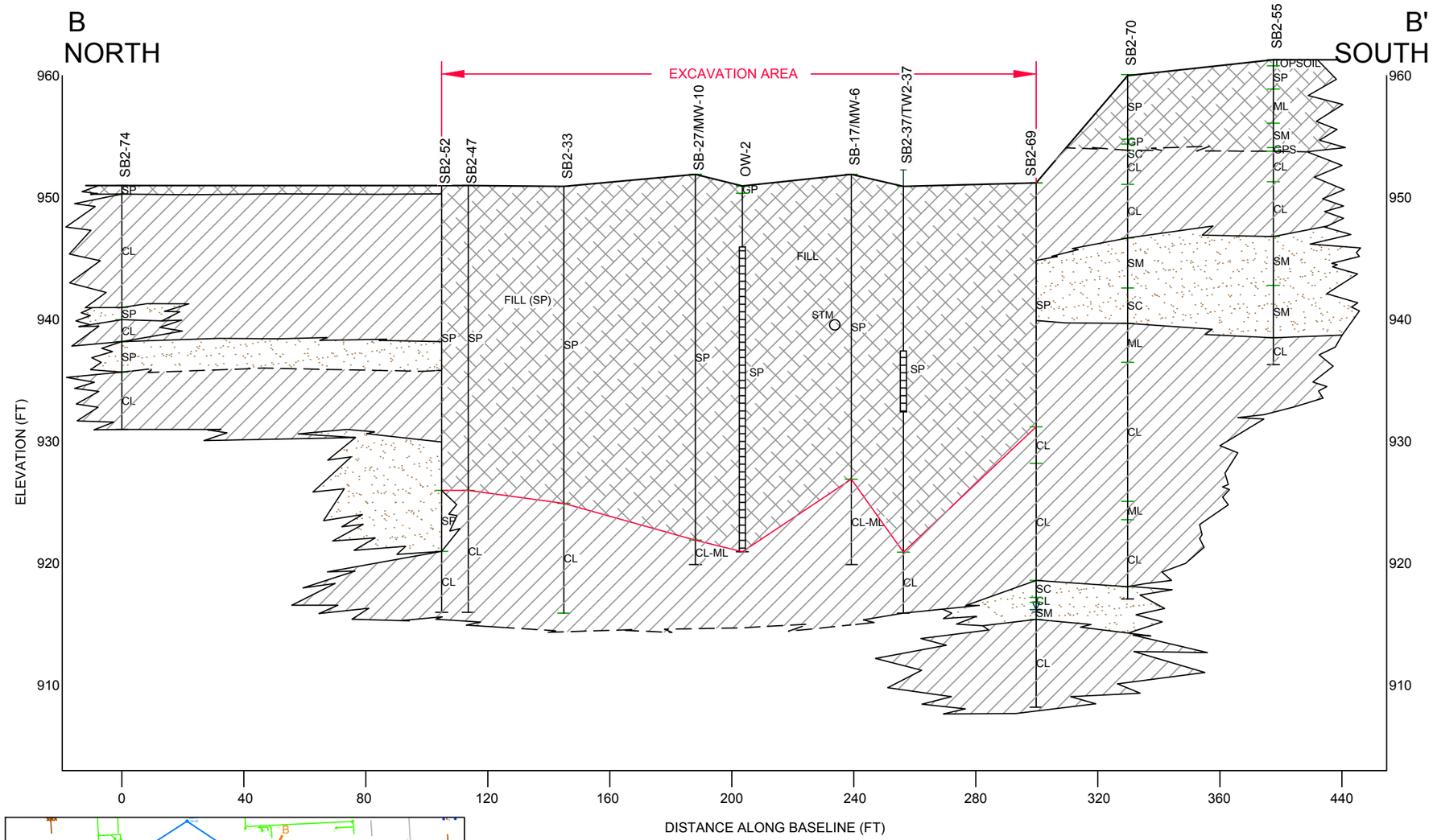
GW, SP, SM, SC

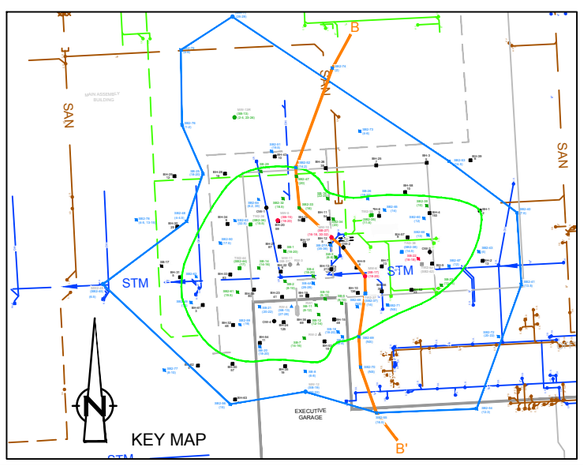
FILL/EXCAVATED AREA

figure 2.5

GEOLOGIC CROSS-SECTION A-A'
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE023 OCT 1/2013





LEGEND
HORIZONTAL 1" = 40
VERTICAL 1" = 10

— WELL

— SCREEN

EOB = END OF BORING

GW/GP	- GRAVEL
SP	- SAND
SM	- SILTY SAND
ML	- SANDY SILT
CL	- SILTY CLAY
CH	- CLAY
STM	STORM SEWER

ML, CL, CH

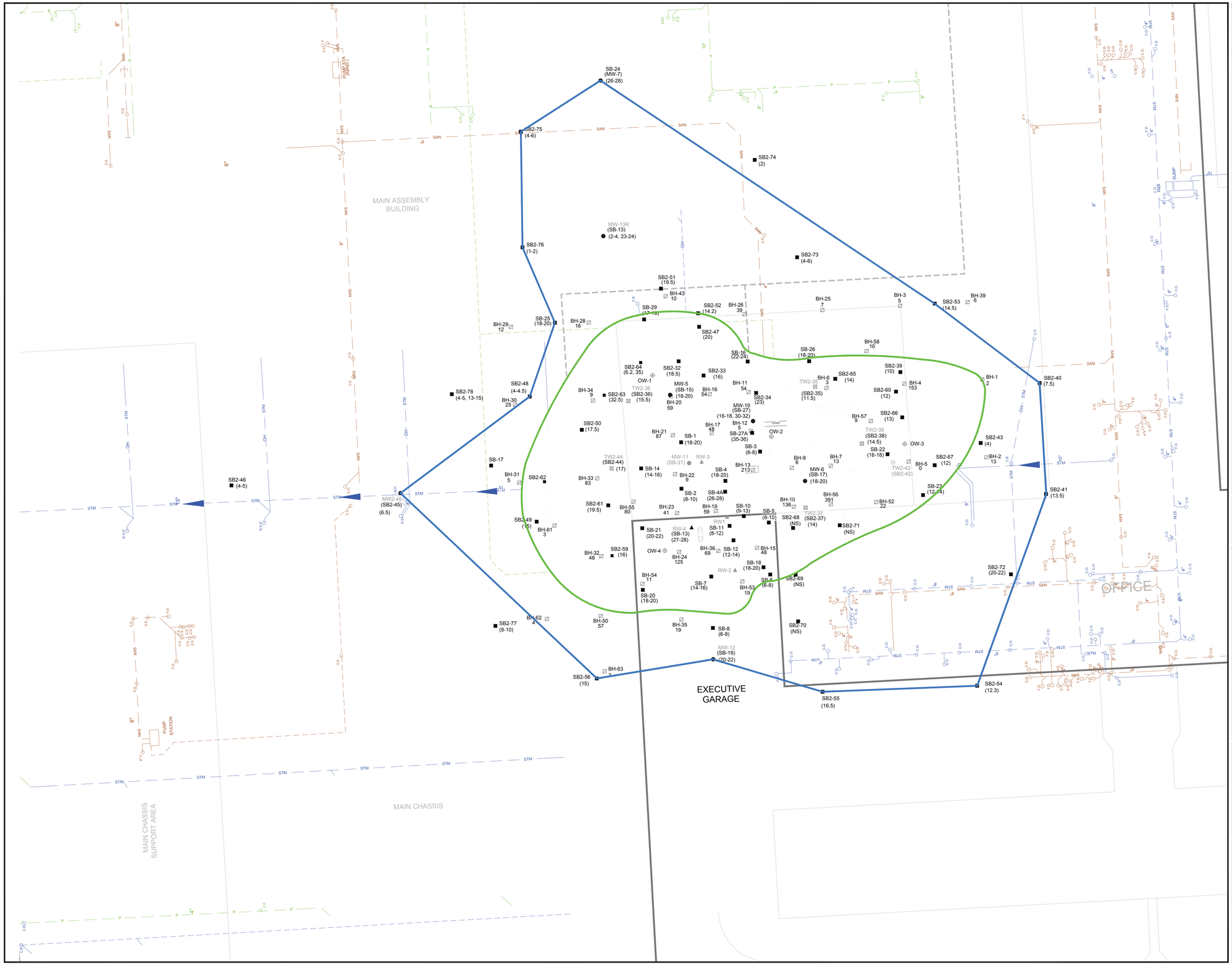
GW, SP, SM, SC

FILL/EXCAVATED AREA

figure 2.6

GEOLOGIC CROSS-SECTION B-B'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE023 OCT 1/2013



Nº	Revision	Date	Initial

N

0 15 30ft

LEGEND

- ■ SB2-48 SOIL BORING LOCATION
- ⊕ OW-1 OBSERVATION WELL LOCATION
- ● MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- ▲ RW-2 RECOVERY WELL LOCATION
- ⊠ TW2-36 TEMPORARY WELL LOCATION
- ⊘ 4 LIF LOCATIONS AND MAXIMUM LIF RESULT (% RE)
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- EXTENT OF RESIDENTIAL CRITERIA EXCEEDANCES
- HISTORIC EXTERIOR WALL OF PLANT
- (18-20) SAMPLE DEPTH - ft BGS
- (NS) NOT SAMPLED

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

SOIL BORING AND MONITORING WELL LOCATIONS
REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

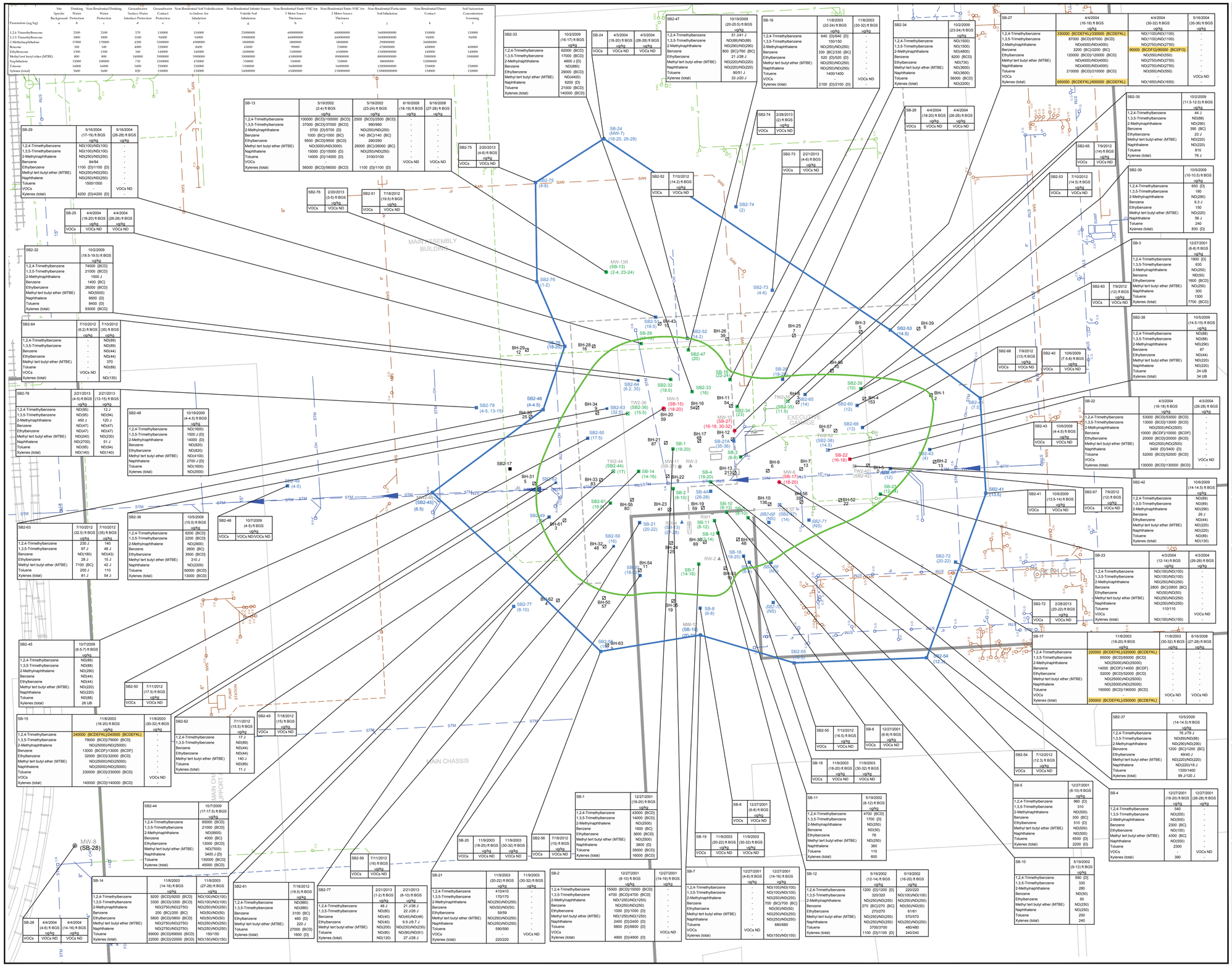
FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale: 1:30	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 4.1

048891-32(046)GN-DE024 OCT 1/2013



Parameters (ug/kg)	Site Specific Background a	Drinking Protection b	Non-Residential Drinking Water Protection c	Groundwater Surface Water Interface Protection d	Groundwater Contact Protection e	Non-Residential Soil Volatilization to Indoor Air Inhalation f	Non-Residential Intrusion Source Volatile Soil Inhalation g	Non-Residential Finite VSIC for 3 Meter Source Thickness h	Non-Residential Finite VSIC for 2 Meter Source Thickness i	Non-Residential Particulate Soil Inhalation j	Non-Residential Direct Contact k	Soil Saturation Concentration Screening l
1,2,4-Trimethylbenzene	2100	2100	570	1100000	110000	2300000	600000000	600000000	5600000000	110000	110000	-
1,3,5-Trimethylbenzene	1800	1800	1100	94000	94000	19000000	460000000	460000000	5600000000	94000	94000	-
2-Methylnaphthalene	57000	170000	4200	3300000	4900000	1800000	1800000	1800000	29000000	26000000	-	-
Benzene	100	100	4000	220000	8400	43000	99000	250000	4700000000	400000	400000	-
Ethylbenzene	1500	1500	360	140000	110000	2400000	3100000	6300000	13000000000	140000	140000	-
Methyl tert butyl ether (MTBE)	800	800	140000	3900000	3900000	30000000	41000000	89000000	88000000000	3900000	3900000	-
Naphthalene	35000	100000	730	2100000	420000	350000	350000	350000	88000000	52000000	-	-
Toluene	36000	36000	5400	250000	250000	3300000	36000000	36000000	13000000000	250000	250000	-
Xylenes (total)	5600	5600	820	150000	150000	54000000	65000000	1300000000	13000000000	150000	150000	-

SB2-33	10/2/2009 (16-17) ft BGS ug/kg
1,2,4-Trimethylbenzene	62000 (BCD)
1,3,5-Trimethylbenzene	17000 (BCD)
2-Methylnaphthalene	4900 J (D)
Benzene	ND(880)
Ethylbenzene	29000 (BCD)
Methyl tert butyl ether (MTBE)	ND(4400)
Naphthalene	6200 (D)
Toluene	21000 (BCD)
Xylenes (total)	140000 (BCD)

SB-24	4/3/2004 (18-20) ft BGS ug/kg	4/3/2004 (26-28) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB2-47	10/19/2009 (20-20.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	51 J/41 J
1,3,5-Trimethylbenzene	ND(88/ND(88)
2-Methylnaphthalene	ND(290)/ND(290)
Benzene	800 (BC)/760 (BC)
Ethylbenzene	21 J/28 J
Methyl tert butyl ether (MTBE)	ND(220)/ND(220)
Naphthalene	ND(220)/ND(220)
Toluene	90/51 J
Xylenes (total)	33 J/20 J

SB-16	11/8/2003 (22-24) ft BGS ug/kg	11/8/2003 (30-32) ft BGS ug/kg
1,2,4-Trimethylbenzene	640 (D)/640 (D)	-
1,3,5-Trimethylbenzene	150/150	-
2-Methylnaphthalene	ND(250)/ND(250)	-
Benzene	330 (BC)/330 (BC)	-
Ethylbenzene	520 (D)/520 (D)	-
Methyl tert butyl ether (MTBE)	ND(250)/ND(250)	-
Naphthalene	ND(250)/ND(250)	-
Toluene	1400/1400	-
VOCs	-	VOCs ND
Xylenes (total)	2100 (D)/2100 (D)	-

SB-34	10/2/2009 (23-24) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(1500)
1,3,5-Trimethylbenzene	ND(1500)
2-Methylnaphthalene	ND(4800)
Benzene	8200 (BCD)
Ethylbenzene	ND(730)
Methyl tert butyl ether (MTBE)	ND(3600)
Naphthalene	ND(3600)
Toluene	56000 (BCD)
Xylenes (total)	ND(2200)

SB-27	4/4/2004 (16-18) ft BGS ug/kg	4/4/2004 (30-32) ft BGS ug/kg	5/16/2004 (35-36) ft BGS ug/kg
1,2,4-Trimethylbenzene	330000 (BCDEFKL)/330000 (BCDEFKL)	ND(1100)/ND(1100)	-
1,3,5-Trimethylbenzene	87000 (BCD)/87000 (BCD)	ND(1100)/ND(1100)	-
2-Methylnaphthalene	ND(4000)/ND(4000)	ND(2750)/ND(2750)	-
Benzene	2200 (BC)/2200 (BC)	90000 (BCDFG)/90000 (BCDFG)	-
Ethylbenzene	120000 (BCD)/120000 (BCD)	ND(550)/ND(550)	-
Methyl tert butyl ether (MTBE)	ND(4000)/ND(4000)	ND(2750)/ND(2750)	-
Naphthalene	ND(4000)/ND(4000)	ND(2750)/ND(2750)	-
Toluene	210000 (BCD)/210000 (BCD)	ND(550)/ND(550)	-
VOCs	-	-	VOCs ND
Xylenes (total)	650000 (BCDEFKL)/650000 (BCDEFKL)	ND(1650)/ND(1650)	-

SB-13	5/19/2002 (2-4) ft BGS ug/kg	5/19/2002 (23-24) ft BGS ug/kg	5/16/2008 (18-19) ft BGS ug/kg	6/16/2008 (27-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	100000 (BCD)/100000 (BCD)	2500 (BCD)/2500 (BCD)	-	-
1,3,5-Trimethylbenzene	37000 (BCD)/37000 (BCD)	990/990	-	-
2-Methylnaphthalene	5700 (D)/5700 (D)	ND(250)/ND(250)	-	-
Benzene	1000 (BC)/1000 (BC)	140 (BC)/140 (BC)	-	-
Ethylbenzene	9500 (BCD)/9500 (BCD)	290/290	-	-
Methyl tert butyl ether (MTBE)	ND(3000)/ND(3000)	26000 (BC)/26000 (BC)	-	-
Naphthalene	15000 (D)/15000 (D)	ND(250)/ND(250)	-	-
Toluene	14000 (D)/14000 (D)	3100/3100	-	-
VOCs	-	-	VOCs ND	VOCs ND
Xylenes (total)	56000 (BCD)/56000 (BCD)	1100 (D)/1100 (D)	-	-

SB2-75	2/20/2013 (4-6) ft BGS ug/kg
VOCs	VOCs ND

SB2-74	2/28/2013 (2) ft BGS ug/kg
VOCs	VOCs ND

SB-26	4/4/2004 (18-20) ft BGS ug/kg	4/4/2004 (26-28) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB2-73	2/21/2013 (4-6) ft BGS ug/kg
VOCs	VOCs ND

SB2-35	10/2/2009 (11.5-12.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	44 J
1,3,5-Trimethylbenzene	ND(88)
2-Methylnaphthalene	ND(290)
Benzene	390 (BC)
Ethylbenzene	23 J
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(220)
Toluene	810
Xylenes (total)	76 J

SB2-66	7/9/2012 (14) ft BGS ug/kg
VOCs	VOCs ND

SB2-53	7/10/2012 (14.5) ft BGS ug/kg
VOCs	VOCs ND

SB2-39	10/5/2009 (10-10.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	650 (D)
1,3,5-Trimethylbenzene	180
2-Methylnaphthalene	ND(290)
Benzene	9.3 J
Ethylbenzene	150
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	56 J
Toluene	240
Xylenes (total)	830 (D)

SB-3	12/27/2001 (6-8) ft BGS ug/kg
1,2,4-Trimethylbenzene	1900 (D)
1,3,5-Trimethylbenzene	630
2-Methylnaphthalene	ND(250)
Benzene	ND(50)
Ethylbenzene	1600 (BCD)
Methyl tert butyl ether (MTBE)	ND(250)
Naphthalene	300
Toluene	1300
Xylenes (total)	7700 (BCD)

SB2-60	7/9/2012 (12) ft BGS ug/kg
VOCs	VOCs ND

SB2-38	10/5/2009 (14.5-15) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(58)
1,3,5-Trimethylbenzene	ND(88)
2-Methylnaphthalene	ND(290)
Benzene	87
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(220)
Toluene	24 UB
Xylenes (total)	34 UB

SB2-32	10/2/2009 (18.5-19.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	74000 (BCD)
1,3,5-Trimethylbenzene	21000 (BCD)
2-Methylnaphthalene	1500 J
Benzene	1400 (BC)
Ethylbenzene	26000 (BCD)
Methyl tert butyl ether (MTBE)	ND(5500)
Naphthalene	6600 (D)
Toluene	8400 (D)
Xylenes (total)	93000 (BCD)

SB2-64	7/10/2012 (6.2) ft BGS ug/kg	7/10/2012 (35) ft BGS ug/kg
1,2,4-Trimethylbenzene	-	ND(89)
1,3,5-Trimethylbenzene	-	ND(89)
Benzene	-	ND(44)
Ethylbenzene	-	ND(44)
Methyl tert butyl ether (MTBE)	-	370
Toluene	-	ND(89)
VOCs	VOCs ND	-
Xylenes (total)	-	ND(130)

SB2-78	2/21/2013 (4-5) ft BGS ug/kg	2/21/2013 (13-15) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(95)	12 J
1,3,5-Trimethylbenzene	ND(95)	ND(94)
2-Methylnaphthalene	450 J	120 J
Benzene	ND(47)	ND(47)
Ethylbenzene	ND(47)	ND(47)
Methyl tert butyl ether (MTBE)	ND(240)	ND(230)
Naphthalene	ND(2700)	51 J
Toluene	ND(95)	ND(94)
Xylenes (total)	ND(140)	ND(140)

SB2-48	10/19/2009 (4-4.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(1600)
1,3,5-Trimethylbenzene	1500 J (D)
2-Methylnaphthalene	14000 (D)
Benzene	ND(920)
Ethylbenzene	ND(920)
Methyl tert butyl ether (MTBE)	ND(4100)
Naphthalene	2700 J (D)
Toluene	ND(1600)
Xylenes (total)	ND(2500)

SB2-76	2/20/2013 (3-5) ft BGS ug/kg
VOCs	VOCs ND

SB2-51	7/18/2012 (19.5) ft BGS ug/kg
VOCs	VOCs ND

SB-29	5/16/2004 (17-19) ft BGS ug/kg	5/16/2004 (26-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(100)/ND(100)	-
1,3,5-Trimethylbenzene	ND(100)/ND(100)	-
2-Methylnaphthalene	ND(250)/ND(250)	-
Benzene	84/84	-
Ethylbenzene	1100 (D)/1100 (D)	-
Methyl tert butyl ether (MTBE)	ND(250)/ND(250)	-
Naphthalene	ND(250)/ND(250)	-
Toluene	1500/1500	-
VOCs	-	VOCs ND
Xylenes (total)	4200 (D)/4200 (D)	-

SB-25	4/4/2004 (18-20) ft BGS ug/kg	4/4/2004 (26-28) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB2-66	7/9/2012 (13) ft BGS ug/kg
VOCs	VOCs ND

SB2-40	10/6/2009 (7.5-8) ft BGS ug/kg
VOCs	VOCs ND

SB-22	4/3/2004 (16-18) ft BGS ug/kg	4/3/2004 (26-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	53000 (BCD)/53000 (BCD)	-
1,3,5-Trimethylbenzene	13000 (BCD)/13000 (BCD)	-
2-Methylnaphthalene	ND(2500)/ND(2500)	-
Benzene	10000 (BCDF)/10000 (BCDF)	-
Ethylbenzene	20000 (BCD)/20000 (BCD)	-
Methyl tert butyl ether (MTBE)	ND(2500)/ND(2500)	-
Naphthalene	3400 (D)/3400 (D)	-
Toluene	52000 (BCD)/52000 (BCD)	-
VOCs	-	VOCs ND
Xylenes (total)	130000 (BCD)/130000 (BCD)	-

SB2-43	10/6/2009 (4-4.5) ft BGS ug/kg
VOCs	VOCs ND

SB2-42	10/6/2009 (14-14.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(89)
1,3,5-Trimethylbenzene	ND(89)
2-Methylnaphthalene	ND(290)
Benzene	29 J
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(220)
Toluene	ND(89)
Xylenes (total)	ND(130)

SB2-41	10/6/2009 (13.5-14) ft BGS ug/kg
VOCs	VOCs ND

SB2-67	7/9/2012 (12) ft BGS ug/kg
VOCs	VOCs ND

SB-23	4/3/2004 (12-14) ft BGS ug/kg	4/3/2004 (26-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(100)/ND(100)	-
1,3,5-Trimethylbenzene	ND(100)/ND(100)	-
2-Methylnaphthalene	ND(250)/ND(250)	-
Benzene	2800 (BC)/2800 (BC)	-
Ethylbenzene	ND(50)/ND(50)	-
Methyl tert butyl ether (MTBE)	ND(250)/ND(250)	-
Naphthalene	ND(250)/ND(250)	-
Toluene	110/110	-
VOCs	-	VOCs ND
Xylenes (total)	ND(150)/ND(150)	-

SB2-72	2/28/2013 (20-22) ft BGS ug/kg
VOCs	VOCs ND

SB-17	11/8/2003 (18-20) ft BGS ug/kg	11/8/2003 (30-32) ft BGS ug/kg	6/16/2008 (27-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	220000 (BCDEFKL)/220000 (BCDEFKL)	-	-
1,3,5-Trimethylbenzene	65000 (BCD)/65000 (BCD)	-	-
2-Methylnaphthalene	ND(25000)/ND(25000)	-	-
Benzene	14000 (BCDF)/14000 (BCDF)	-	-
Ethylbenzene	52000 (BCD)/52000 (BCD)	-	-
Methyl tert butyl ether (MTBE)	ND(25000)/ND(25000)	-	-
Naphthalene	ND(25000)/ND(25000)	-	-
Toluene	190000 (BCD)/190000 (BCD)	-	-
VOCs	-	VOCs ND	VOCs ND
Xylenes (total)	250000 (BCDEFKL)/250000 (BCDEFKL)	-	-

SB2-37	10/5/2009 (14-14.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	76 J/78 J
1,3,5-Trimethylbenzene	ND(89)/ND(88)
2-Methylnaphthalene	ND(290)/ND(290)
Benzene	1200 (BC)/1200 (BC)
Ethylbenzene	49/40 J
Methyl tert butyl ether (MTBE)	ND(220)/ND(220)
Naphthalene	ND(220)/18 J
Toluene	1300/1400
Xylenes (total)	99 J/120 J

SB2-45	10/7/2009 (6.5-7) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(88)
1,3,5-Trimethylbenzene	ND(88)
2-Methylnaphthalene	ND(290)
Benzene	ND(44)
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(220)
Toluene	ND(88)
Xylenes (total)	26 UB

SB2-50	7/11/2012 (17.5) ft BGS ug/kg
VOCs	VOCs ND

SB-15	11/8/2003 (18-20) ft BGS ug/kg	11/8/2003 (30-32) ft BGS ug/kg
1,2,4-Trimethylbenzene	240000 (BCDEFKL)/240000 (BCDEFKL)	-
1,3,5-Trimethylbenzene	79000 (BCD)/79000 (BCD)	-
2-Methylnaphthalene	ND(25000)/ND(25000)	-
Benzene	13000 (BCDF)/13000 (BCDF)	-
Ethylbenzene	32000 (BCD)/32000 (BCD)	-
Methyl tert butyl ether (MTBE)	ND(25000)/ND(25000)	-
Naphthalene	ND(25000)/ND(25000)	-
Toluene	230000 (BCD)/230000 (BCD)	-
VOCs	-	VOCs ND
Xylenes (total)	140000 (BCD)/140000 (BCD)	-

SB2-62	7/11/2012 (15.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	17 J
1,3,5-Trimethylbenzene	ND(89)
Benzene	ND(44)
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	140 J
Toluene	ND(89)
Xylenes (total)	11 J

SB2-49	7/18/2012 (15) ft BGS ug/kg
VOCs	VOCs ND

SB2-65	7/12/2012 (16.5) ft BGS ug/kg
VOCs	VOCs ND

SB-6	12/27/2001 (6-8) ft BGS ug/kg
VOCs	VOCs ND

SB2-54	7/12/2012 (12.3) ft BGS ug/kg
VOCs	VOCs ND

SB-18	11/9/2003 (18-20) ft BGS ug/kg	11/9/2003 (30-32) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB-5	12/27/2001 (8-10) ft BGS ug/kg
1,2,4-Trimethylbenzene	990 (D)
1,3,5-Trimethylbenzene	310
2-Methylnaphthalene	ND(500)
Benzene	300 (BC)
Ethylbenzene	510 (D)
Methyl tert butyl ether (MTBE)	ND(500)
Naphthalene	ND(500)
Toluene	6500 (D)
Xylenes (total)	2200 (D)

SB-4	12/27/2001 (18-20) ft BGS ug/kg	12/27/2001 (26-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	540	-
1,3,5-Trimethylbenzene	ND(200)	-
2-Methylnaphthalene	ND(500)	-
Benzene	2200 (BC)	-
Ethylbenzene	ND(100)	-
Methyl tert butyl ether (MTBE)	4300 (BC)	-
Naphthalene	ND(500)	-
Toluene	2300	-
VOCs	-	VOCs ND
Xylenes (total)	390	-

SB-1	12/27/2001 (18-20) ft BGS ug/kg
1,2,4-Trimethylbenzene	43000 (BCD)
1,3,5-Trimethylbenzene	14000 (BCD)
2-Methylnaphthalene	ND(2500)
Benzene	1600 (BC)
Ethylbenzene	3600 (BCD)
Methyl tert butyl ether (MTBE)	ND(2500)
Naphthalene	3800 (D)
Toluene	35000 (BCD)
Xylenes (total)	16000 (BCD)

SB-8	12/27/2001 (6-8) ft BGS ug/kg
VOCs	VOCs ND

SB-11	5/19/2002 (8-12) ft BGS ug/kg
1,2,4-Trimethylbenzene	4700 (BCD)
1,3,5-Trimethylbenzene	1700 (D)
2-Methylnaphthalene	ND(250)
Benzene	ND(50)
Ethylbenzene	78
Methyl tert butyl ether (MTBE)	ND(250)
Naphthalene	360
Toluene	110
Xylenes (total)	600

SB-19	11/9/2003 (20-22) ft BGS ug/kg	11/9/2003 (30-32) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB-10	5/19/2002 (9-13) ft BGS ug/kg
1,2,4-Trimethylbenzene	590 (D)
1,3,5-Trimethylbenzene	330
2-Methylnaphthalene	280
Benzene	ND(50)
Ethylbenzene	50
Methyl tert butyl ether (MTBE)	ND(250)
Naphthalene	ND(250)
Toluene	250
Xylenes (total)	240

SB-20	11/9/2003 (18-20) ft BGS ug/kg	11/9/2003 (30-32) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB2-56	7/18/2012 (15) ft BGS ug/kg
VOCs	VOCs ND

SB2-59	7/11/2012 (16) ft BGS ug/kg
VOCs	VOCs ND

SB2-44	10/7/2009 (17-17.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	65000 (BCD)
1,3,5-Trimethylbenzene	21000 (BCD)
2-Methylnaphthalene	ND(9900)
Benzene	4000 (BC)
Ethylbenzene	13000 (BCD)
Methyl tert butyl ether (MTBE)	ND(7500)
Naphthalene	3400 J (D)
Toluene	130000 (BCD)
Xylenes (total)	45000 (BCD)

SB-14	11/8/2003 (14-16) ft BGS ug/kg	11/8/2003 (27-28) ft BGS ug/kg
1,2,4-Trimethylbenzene	9200 (BCD)/9200 (BCD)	ND(100)/ND(100)
1,3,5-Trimethylbenzene	3300 (BCD)/3300 (BCD)	ND(100)/ND(100)
2-Methylnaphthalene	ND(2750)/ND(2750)	ND(250)/ND(250)
Benzene	200 (BC)/200 (BC)	ND(50)/ND(50)
Ethylbenzene	5800 (BCD)/5800 (BCD)	ND(50)/ND(50)
Methyl tert butyl ether (MTBE)	ND(2750)/ND(2750)	ND(250)/ND(250)
Naphthalene	ND(2750)/ND(2750)	ND(250)/ND(250)
Toluene	69000 (BCD)/69000 (BCD)	150/150
Xylenes (total)	22000 (BCD)/22000 (BCD)	ND(150)/ND(150)

SB-28	4/4/2004 (4-6) ft BGS ug/kg	4/4/2004 (14-16) ft BGS ug/kg
VOCs	VOCs ND	VOCs ND

SB2-61	7/18/2012 (19.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(880)
1,3,5-Trimethylbenzene	ND(880)
Benzene	3100 (BC)
Ethylbenzene	460 (D)
Methyl tert butyl ether (MTBE)	220 J
Toluene	27000 (BCD)
Xylenes (total)	1600 (D)

SB2-77	2/21/2013 (1-2) ft BGS ug/kg	2/21/2013 (8-10) ft BGS ug/kg
1,2,4-Trimethylbenzene	46 J	21 J/36 J
1,3,5-Trimethylbenzene	ND(80)	22 J/28 J
Benzene	ND(40)	ND(45)/ND(46)
Ethylbenzene	ND(40)	9.9 J/8.7 J
Methyl tert butyl ether (MTBE)	ND(200)	ND(230)/ND(230)
Toluene	ND(80)	ND(90)/ND(91)
Xylenes (total)	ND(120)	27 J/28 J

SB-21	11/9/2003 (20-22) ft BGS ug/kg	11/9/2003 (30-32) ft BGS ug/kg
1,2,4-Trimethylbenzene	410/410	-
1,3,5-Trimethylbenzene	170/170	-
2-Methylnaphthalene	ND(250)/ND(250)	-
Benzene	ND(50)/ND(50)	-
Ethylbenzene	55/59	-
Methyl tert butyl ether (MTBE)	ND(250)/ND(250)	-
Naphthalene	ND(250)/ND(250)	-
Toluene	590/590	-
VOCs	-	VOCs ND
Xylenes (total)	220/220	-

SB-2	12/27/2001 (8-10) ft BGS ug/kg	12/27/2001 (14-16) ft BGS ug/kg
1,2,4-Trimethylbenzene	15000 (BCD)/15000 (BCD)	-
1,3,5-Trimethylbenzene	4700 (BCD)/4700 (BCD)	-
2-Methylnaphthalene	ND(1250)/ND(1250)	-
Benzene	ND(250)/ND(250)	-
Ethylbenzene	1000 (D)/1000 (D)	-
Methyl tert butyl ether (MTBE)	ND(1250)/ND(1250)	-
Naphthalene	2400 (D)/2400 (D)	-
Toluene	6800 (D)/6800 (D)	-
VOCs	-	VOCs ND
Xylenes (total)	4900 (D)/4900 (D)	-

SB-7	12/27/2001 (4-6) ft BGS ug/kg	12/27/2001 (14-16) ft BGS ug/kg
1,2,4-Trimethylbenzene	-	ND(100)/ND(100)
1,3,5-Trimethylbenzene	-	ND(100)/ND(100)
2-Methylnaphthalene	-	ND(250)/ND(250)
Benzene	-	700 (BC)/700 (BC)
Ethylbenzene	-	ND(50)/ND(50)
Methyl tert butyl ether (MTBE)	-	ND(250)/ND(250)
Naphthalene	-	ND(250)/ND(250)
Toluene	-	680/680
VOCs	VOCs ND	-
Xylenes (total)	-	ND(150)/ND(150)

SB-12	5/19/2002 (12-14) ft BGS ug/kg	5/19/2002 (16-20) ft BGS ug/kg
1,2,4-Trimethylbenzene	1200 (D)/1200 (D)	220/220
1,3,5-Trimethylbenzene	320/320	ND(100)/ND(100)
2-Methylnaphthalene	ND(250)/ND(250)	ND(250)/ND(250)
Benzene	270 (BC)/270 (BC)	ND(50)/ND(50)
Ethylbenzene	270/270	61/61
Methyl tert butyl ether (MTBE)	ND(250)/ND(250)	570/570
Naphthalene	ND(250)/ND(250)	ND(250)/ND(250)
Toluene	3700/3700	480/480
Xylenes (total)	1100 (D)/1100 (D)	240/240

SB2-77	2/21/2013 (1-2) ft BGS ug/kg	2/21/2013 (8-10) ft BGS ug/kg
1,2,4-Trimethylbenzene	46 J	21 J/36 J
1,3,5-Trimethylbenzene	ND(80)	22 J/28 J
Benzene	ND(40)	ND(45)/ND(46)
Ethylbenzene	ND(40)	9.9 J/8.7 J
Methyl tert butyl ether (MTBE)	ND(200)	ND(230)/ND(230)
Toluene	ND(80)	ND(90)/ND(91)
Xylenes (total)	ND(120)	27 J/28 J

N°	Revision	Date	Initial

LEGEND

- ■ SB2-48 SOIL BORING LOCATION
- ● MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- ▲ RW-2 RECOVERY WELL LOCATION
- ⊠ TW2-36 TEMPORARY WELL LOCATION
- ⊠ 4 **LIF LOCATIONS**
- ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- EXTENT OF RESIDENTIAL CRITERIA EXCEEDANCES
- HISTORIC EXTERIOR WALL OF PLANT
- FORMER UST NOT FOUND DURING LIF/AIRKNIFE WORK
- VOCs IN SOIL HAVE NOT BEEN DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE GROUNDWATER CONTACT PROTECTION; SOIL VOLATILIZATION TO INDOOR AIR INHALATION AND/OR DIRECT CONTACT CRITERIA
- (18-20) SAMPLE DEPTH - ft BGS
- (NS) NOT SAMPLED

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

PRE-EXCAVATION SOIL ANALYTICAL RESULTS
REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

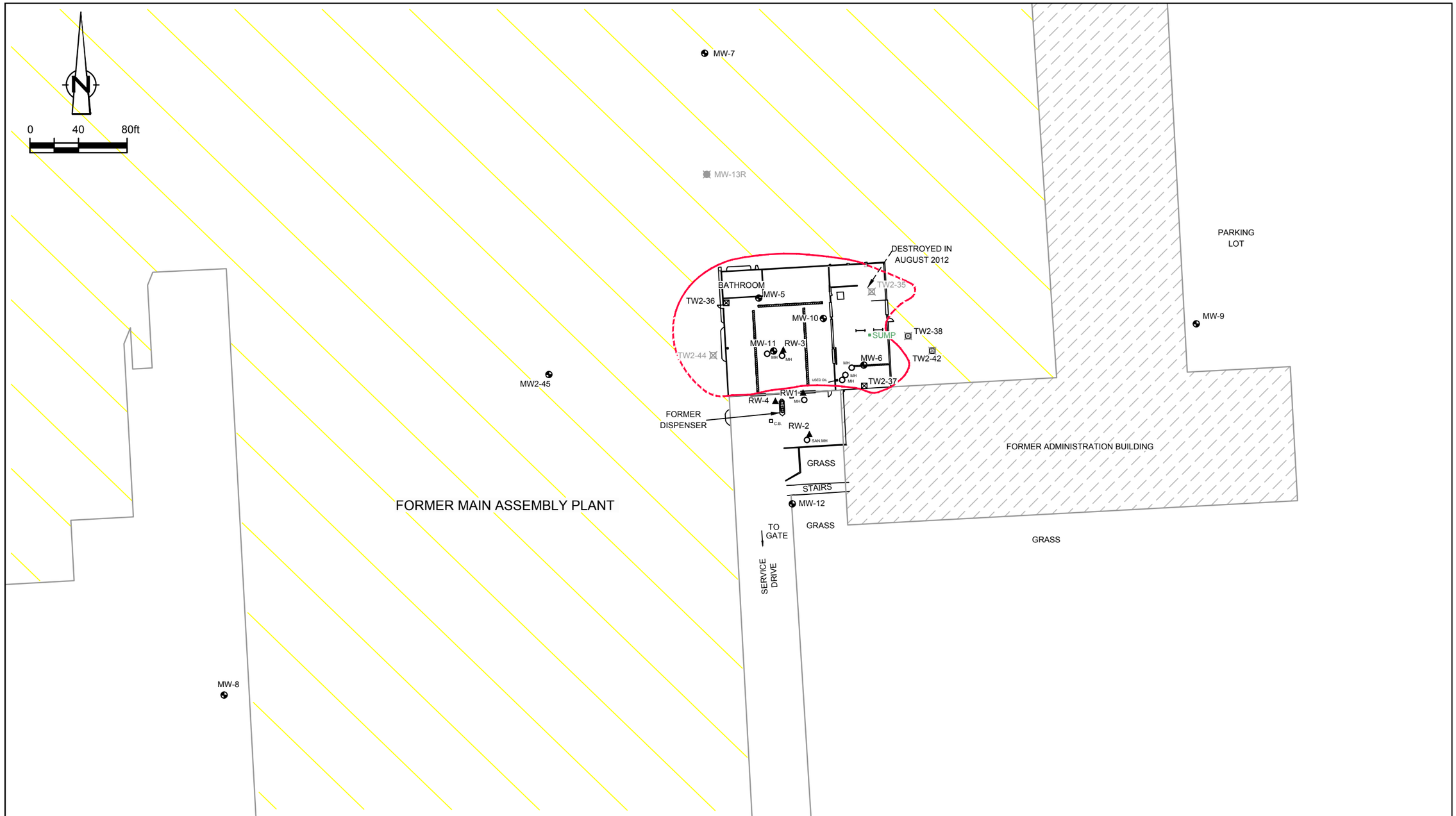
FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale: 1:35	Project N°: 048891-32	Report N°: 046	Drawing N°: figure 4.2

048891-32(046)GN-DE022 SEP 17/2013



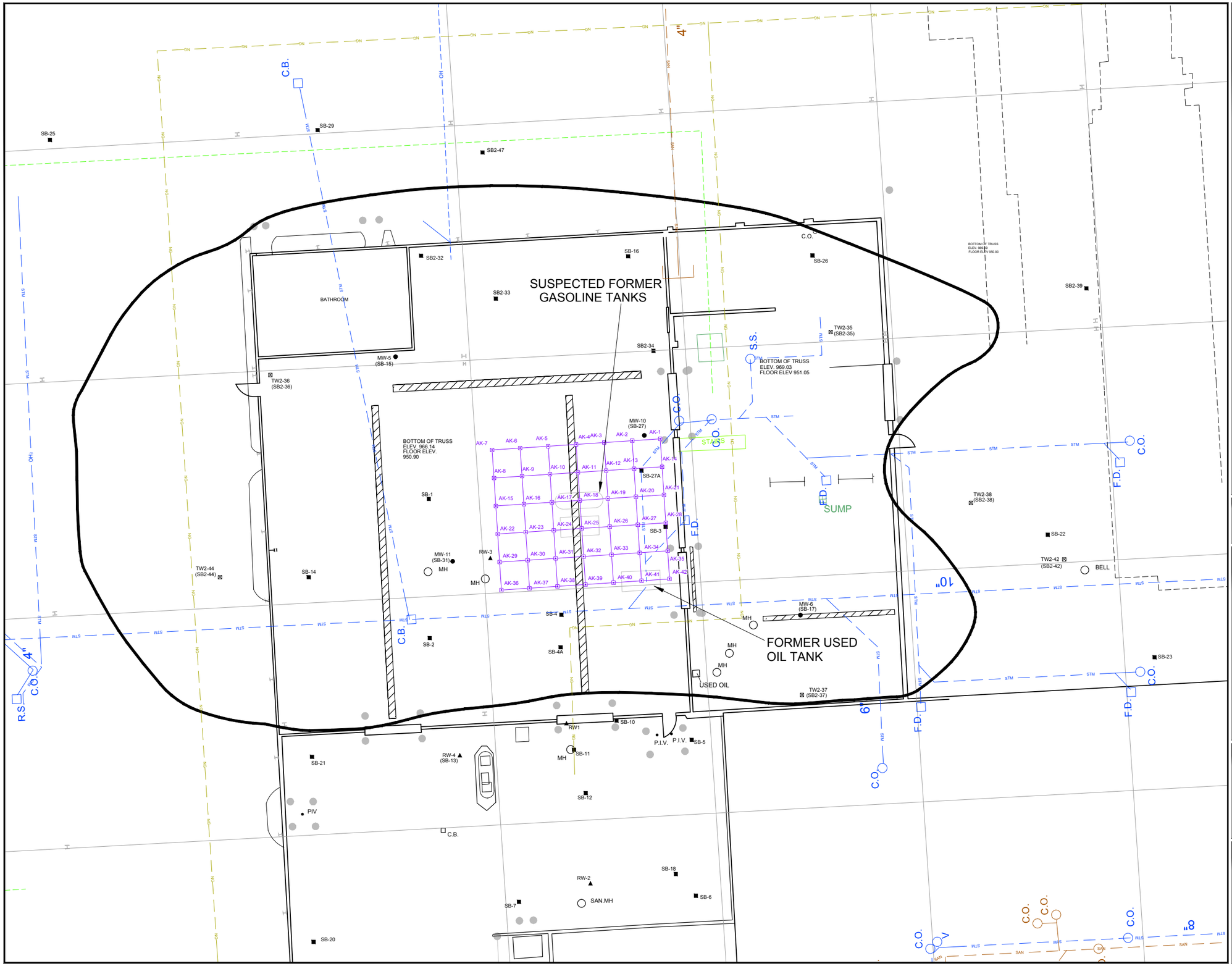
LEGEND

- MW-12 MONITORING WELL
- RW-2 RECOVERY WELL LOCATION
- TW2-36 TEMPORARY WELL LOCATION
- TRENCH DRAIN
- ABANDONED MONITORING WELL LOCATION
- DESTROYED TEMPORARY WELL LOCATION
- ESTIMATED EXTENT OF FREE PRODUCT (AS OF 09/20/12)

figure 4.3

PRE-EXCAVATION ESTIMATED EXTENT OF FREE PRODUCT
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE011 SEP 16/2013



Nº	Revision	Date	Initial

0 5 10ft

LEGEND

- AK-7 AIR KNIFE LOCATION
- SB2-48 SOIL BORING LOCATION
- MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- RW-2 RECOVERY WELL LOCATION
- TW2-36 TEMPORARY WELL LOCATION
- BOLLARDS
- TRENCH DRAIN
- STM STORM
- SAN SANITARY
- P PROCESS
- NG OVERHEAD GAS
- ESTIMATED EXTENT OF FREE PRODUCT (AS OF 11/23/09)

NOTE: AIR-KNIFE INVESTIGATION COMPLETED IN SEPT. 2010

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

AIR-KNIFE INVESTIGATION LOCATIONS
REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

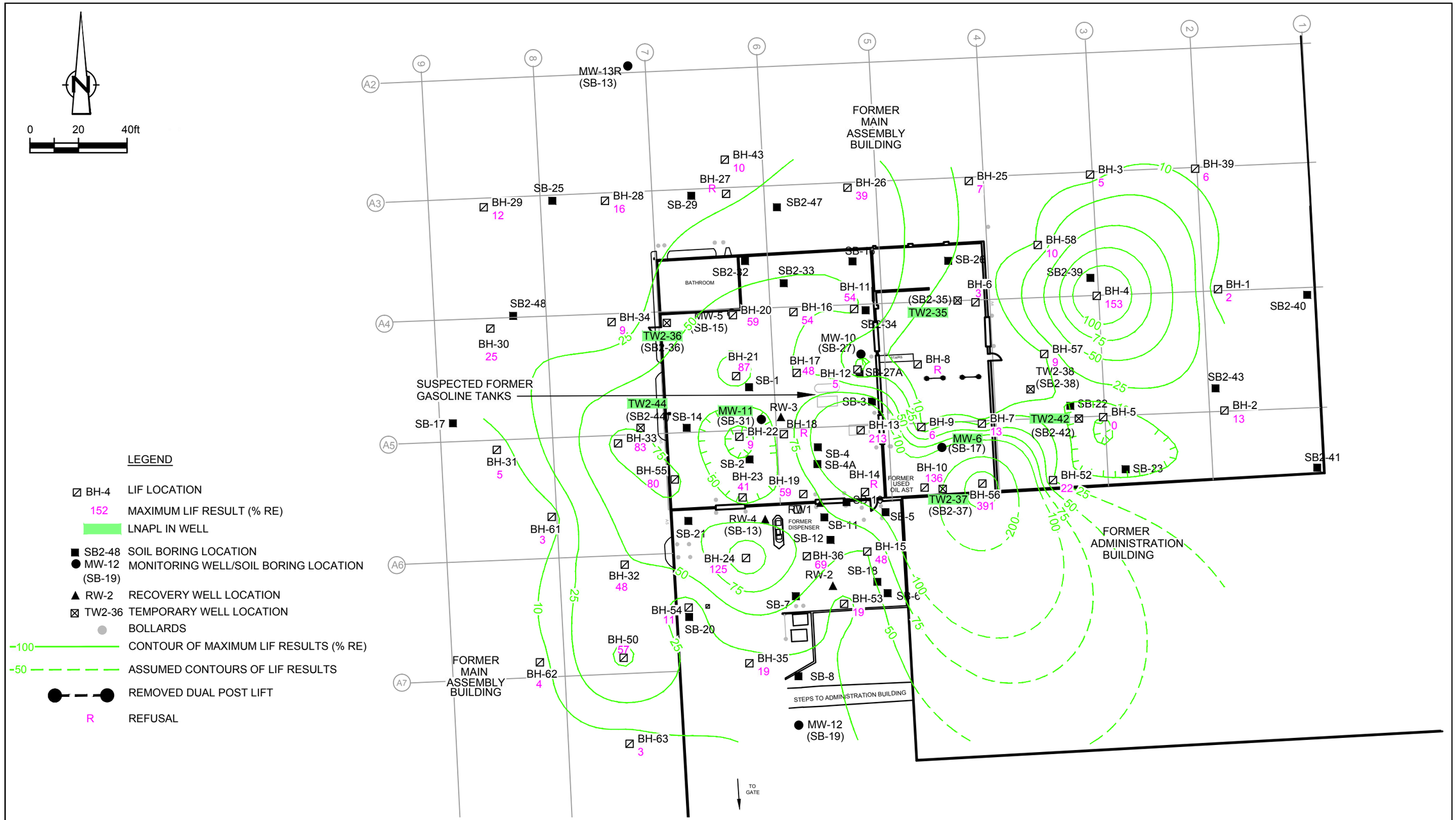
FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale: 1:10	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 4.4

048891-32(046)GN-DE012 SEP 16/2013



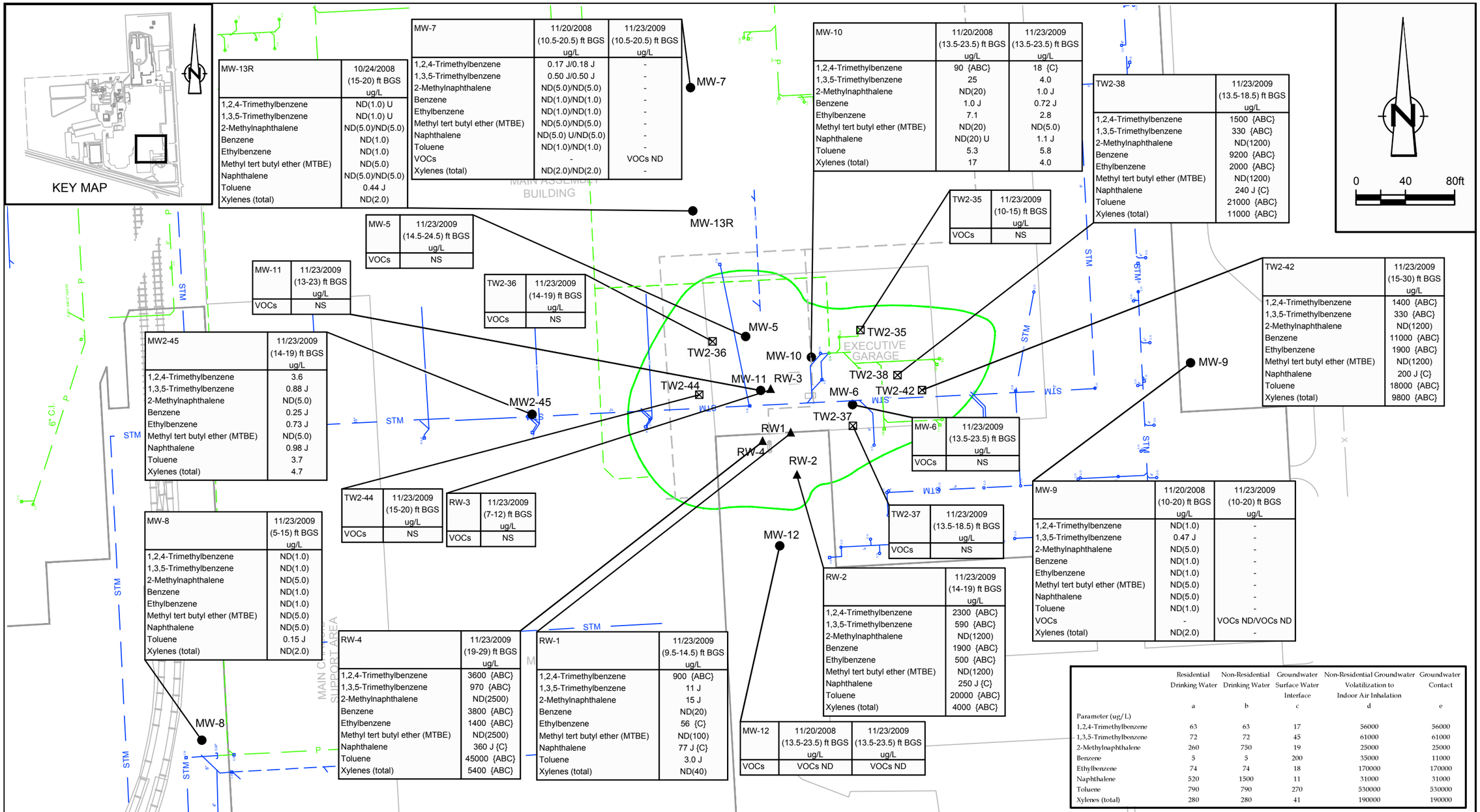
NOTE: RESULTS PRESENTED ARE THE MAXIMUM VALUE DETECTED AND ARE OF VARIABLE DEPTHS AND THICKNESS. RESULTS LESS THAN 10% RE ARE EITHER BACKGROUND OR DEMINIMUS IMPACTS.

RESULTS ARE IN PERCENT OF THE FLUORSCENCE INTENSITY OF A "REFERENCE EMITTER" (% RE)

figure 4.5

LIF SURVEY RESULTS - MAXIMUM DETECTION
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE013 SEP 17/2013



MW-13R	10/24/2008 (15-20) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0) U
1,3,5-Trimethylbenzene	ND(1.0) U
2-Methylnaphthalene	ND(5.0)/ND(5.0)
Benzene	ND(1.0)
Ethylbenzene	ND(1.0)
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	ND(5.0)/ND(5.0)
Toluene	0.44 J
Xylenes (total)	ND(2.0)

MW-7	11/20/2008 (10.5-20.5) ft BGS ug/L	11/23/2009 (10.5-20.5) ft BGS ug/L
1,2,4-Trimethylbenzene	0.17 J/0.18 J	-
1,3,5-Trimethylbenzene	0.50 J/0.50 J	-
2-Methylnaphthalene	ND(5.0)/ND(5.0)	-
Benzene	ND(1.0)/ND(1.0)	-
Ethylbenzene	ND(1.0)/ND(1.0)	-
Methyl tert butyl ether (MTBE)	ND(5.0)/ND(5.0)	-
Naphthalene	ND(5.0) U/ND(5.0)	-
Toluene	ND(1.0)/ND(1.0)	-
VOCs	-	VOCs ND
Xylenes (total)	ND(2.0)/ND(2.0)	-

MW-10	11/20/2008 (13.5-23.5) ft BGS ug/L	11/23/2009 (13.5-23.5) ft BGS ug/L
1,2,4-Trimethylbenzene	90 {ABC}	18 {C}
1,3,5-Trimethylbenzene	25	4.0
2-Methylnaphthalene	ND(20)	1.0 J
Benzene	1.0 J	0.72 J
Ethylbenzene	7.1	2.8
Methyl tert butyl ether (MTBE)	ND(20)	ND(5.0)
Naphthalene	ND(20) U	1.1 J
Toluene	5.3	5.8
Xylenes (total)	17	4.0

TW2-38	11/23/2009 (13.5-18.5) ft BGS ug/L
1,2,4-Trimethylbenzene	1500 {ABC}
1,3,5-Trimethylbenzene	330 {ABC}
2-Methylnaphthalene	ND(1200)
Benzene	9200 {ABC}
Ethylbenzene	2000 {ABC}
Methyl tert butyl ether (MTBE)	ND(1200)
Naphthalene	240 J {C}
Toluene	21000 {ABC}
Xylenes (total)	11000 {ABC}

TW2-35	11/23/2009 (10-15) ft BGS ug/L
VOCs	NS

MW-5	11/23/2009 (14.5-24.5) ft BGS ug/L
VOCs	NS

MW-11	11/23/2009 (13-23) ft BGS ug/L
VOCs	NS

TW2-36	11/23/2009 (14-19) ft BGS ug/L
VOCs	NS

TW2-42	11/23/2009 (15-30) ft BGS ug/L
1,2,4-Trimethylbenzene	1400 {ABC}
1,3,5-Trimethylbenzene	330 {ABC}
2-Methylnaphthalene	ND(1200)
Benzene	11000 {ABC}
Ethylbenzene	1900 {ABC}
Methyl tert butyl ether (MTBE)	ND(1200)
Naphthalene	200 J {C}
Toluene	18000 {ABC}
Xylenes (total)	9800 {ABC}

MW2-45	11/23/2009 (14-19) ft BGS ug/L
1,2,4-Trimethylbenzene	3.6
1,3,5-Trimethylbenzene	0.88 J
2-Methylnaphthalene	ND(5.0)
Benzene	0.25 J
Ethylbenzene	0.73 J
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	0.98 J
Toluene	3.7
Xylenes (total)	4.7

MW-6	11/23/2009 (13.5-23.5) ft BGS ug/L
VOCs	NS

TW2-44	11/23/2009 (15-20) ft BGS ug/L
VOCs	NS

RW-3	11/23/2009 (7-12) ft BGS ug/L
VOCs	NS

TW2-37	11/23/2009 (13.5-18.5) ft BGS ug/L
VOCs	NS

MW-9	11/20/2008 (10-20) ft BGS ug/L	11/23/2009 (10-20) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0)	-
1,3,5-Trimethylbenzene	0.47 J	-
2-Methylnaphthalene	ND(5.0)	-
Benzene	ND(1.0)	-
Ethylbenzene	ND(1.0)	-
Methyl tert butyl ether (MTBE)	ND(5.0)	-
Naphthalene	ND(5.0)	-
Toluene	ND(1.0)	-
VOCs	-	VOCs ND/VOCs ND
Xylenes (total)	ND(2.0)	-

MW-8	11/23/2009 (5-15) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0)
1,3,5-Trimethylbenzene	ND(1.0)
2-Methylnaphthalene	ND(5.0)
Benzene	ND(1.0)
Ethylbenzene	ND(1.0)
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	ND(5.0)
Toluene	0.15 J
Xylenes (total)	ND(2.0)

RW-2	11/23/2009 (14-19) ft BGS ug/L
1,2,4-Trimethylbenzene	2300 {ABC}
1,3,5-Trimethylbenzene	590 {ABC}
2-Methylnaphthalene	ND(1200)
Benzene	1900 {ABC}
Ethylbenzene	500 {ABC}
Methyl tert butyl ether (MTBE)	ND(1200)
Naphthalene	250 J {C}
Toluene	20000 {ABC}
Xylenes (total)	4000 {ABC}

RW-4	11/23/2009 (19-29) ft BGS ug/L
1,2,4-Trimethylbenzene	3600 {ABC}
1,3,5-Trimethylbenzene	970 {ABC}
2-Methylnaphthalene	ND(2500)
Benzene	3800 {ABC}
Ethylbenzene	1400 {ABC}
Methyl tert butyl ether (MTBE)	ND(2500)
Naphthalene	360 J {C}
Toluene	45000 {ABC}
Xylenes (total)	5400 {ABC}

RW-1	11/23/2009 (9.5-14.5) ft BGS ug/L
1,2,4-Trimethylbenzene	900 {ABC}
1,3,5-Trimethylbenzene	11 J
2-Methylnaphthalene	15 J
Benzene	ND(20)
Ethylbenzene	56 {C}
Methyl tert butyl ether (MTBE)	ND(100)
Naphthalene	77 J {C}
Toluene	3.0 J
Xylenes (total)	ND(40)

MW-12	11/20/2008 (13.5-23.5) ft BGS ug/L	11/23/2009 (13.5-23.5) ft BGS ug/L
VOCs	VOCs ND	VOCs ND

Parameter (ug/L)	Residential Drinking Water a	Non-Residential Drinking Water b	Groundwater Surface Water Interface c	Non-Residential Groundwater Volatilization to Indoor Air Inhalation d	Groundwater Contact e
1,2,4-Trimethylbenzene	63	63	17	56000	56000
1,3,5-Trimethylbenzene	72	72	45	61000	61000
2-Methylnaphthalene	260	750	19	25000	25000
Benzene	5	5	200	35000	11000
Ethylbenzene	74	74	18	170000	170000
Naphthalene	520	1500	11	31000	31000
Toluene	790	790	270	530000	530000
Xylenes (total)	280	280	41	190000	190000

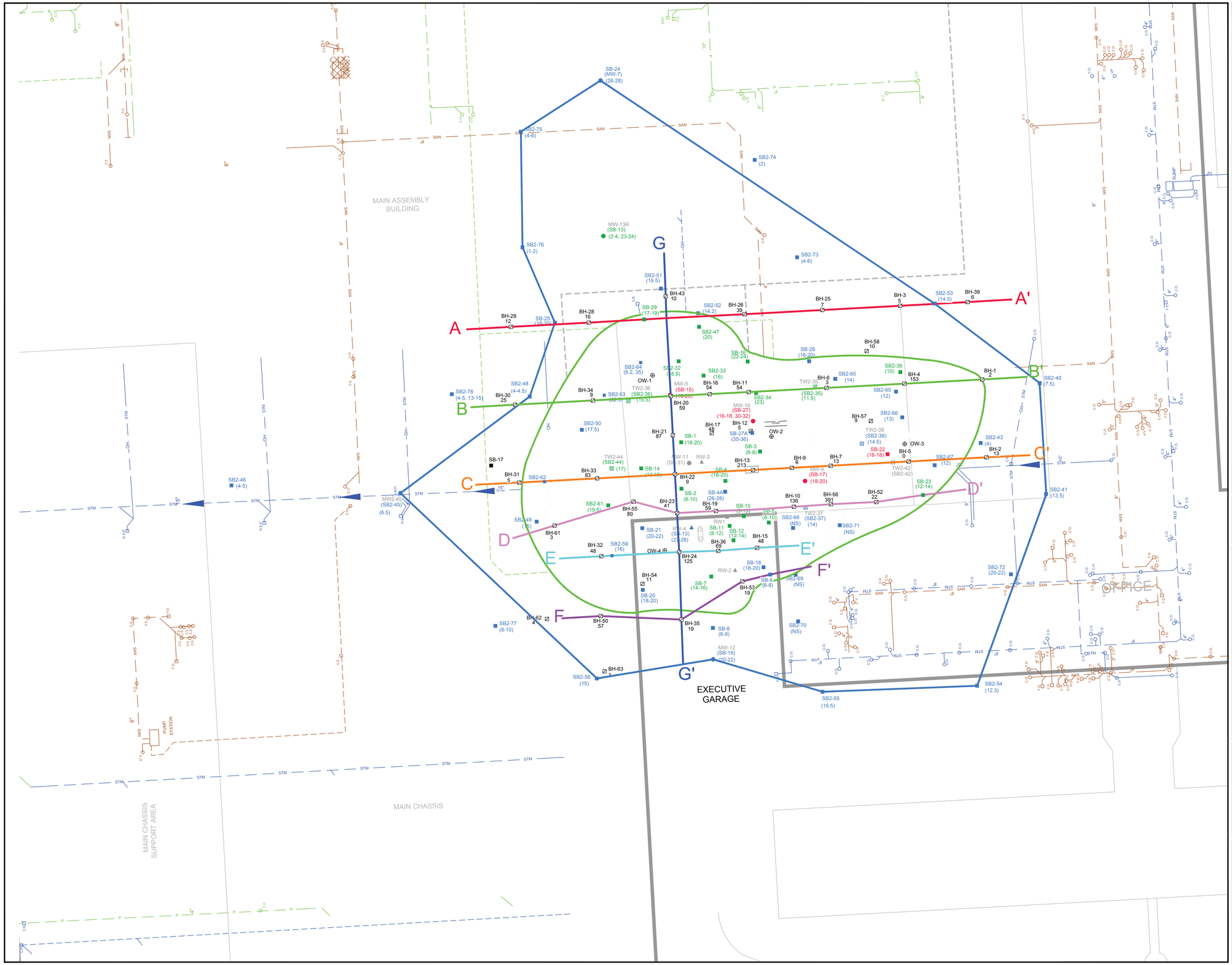
LEGEND

- ⊠ TW2-35 TEMPORARY MONITORING WELL LOCATION
- ● MW-12 MONITORING WELL
- ▲ RW-2 RECOVERY WELL LOCATION
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STM STORM SEWER
- OH OVERHEAD
- EXTENT OF EXCAVATION
- HISTORIC EXTERIOR WALL OF PLANT

figure 4.6

PRE-EXCAVATION GROUNDWATER ANALYTICAL RESULTS
REC 2 - EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE004 OCT 1/2013



NO	Revision	Date	Initial

LEGEND

- ■ SB2-48 SOIL BORING LOCATION
- ⊕ OW-1 OBSERVATION WELL LOCATION
- ● MW-12 (SB-19) MONITORING WELL/SOIL BORING LOCATION
- ▲ RW-2 RECOVERY WELL LOCATION
- ⊠ TW2-36 TEMPORARY WELL LOCATION
- ⊘ 4 LIF LOCATIONS AND MAXIMUM LIF RESULT (% RE)
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- EXTENT OF RESIDENTIAL CRITERIA EXCEEDANCES
- HISTORIC EXTERIOR WALL OF PLANT
- A — A' CROSS-SECTION LOCATION
- VOCs IN SOIL HAVE NOT BEEN DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE RESIDENTIAL DRINKING WATER PROTECTION AND/OR GROUNDWATER - SURFACE WATER INTERFACE PROTECTION CRITERIA
- VOCs IN SOIL DETECTED ABOVE GROUNDWATER CONTACT PROTECTION, SOIL VOLATILIZATION TO INDOOR AIR INHALATION AND/OR DIRECT CONTACT CRITERIA
- (18-20) SAMPLE DEPTH - ft BGS
- (NS) NOT SAMPLED

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

LIF CROSS-SECTION LOCATIONS
REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	SEPTEMBER 2013	
Scale: 1:30	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 6.1

048891-32(046)GN-DE014 OCT 1/2013

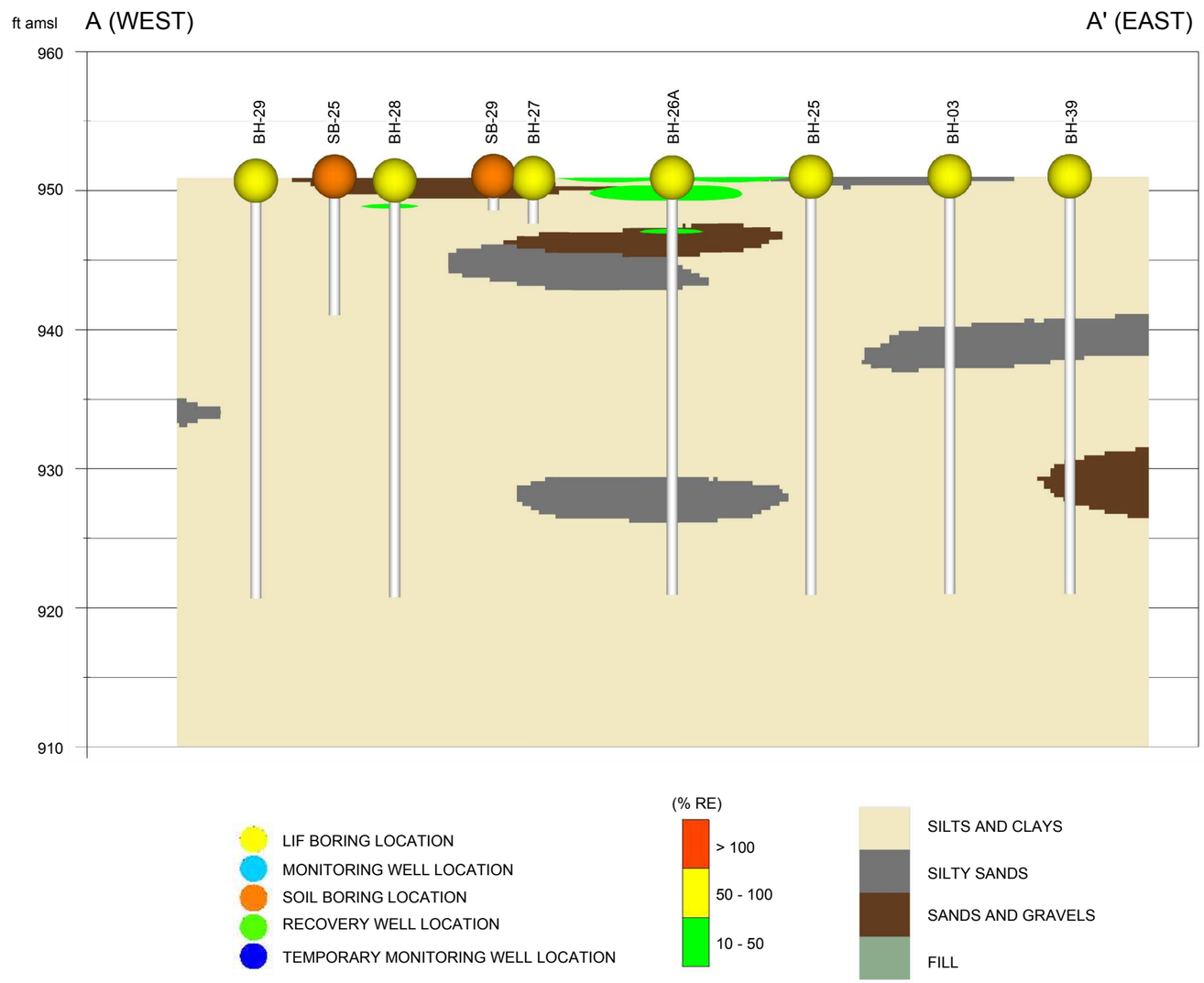
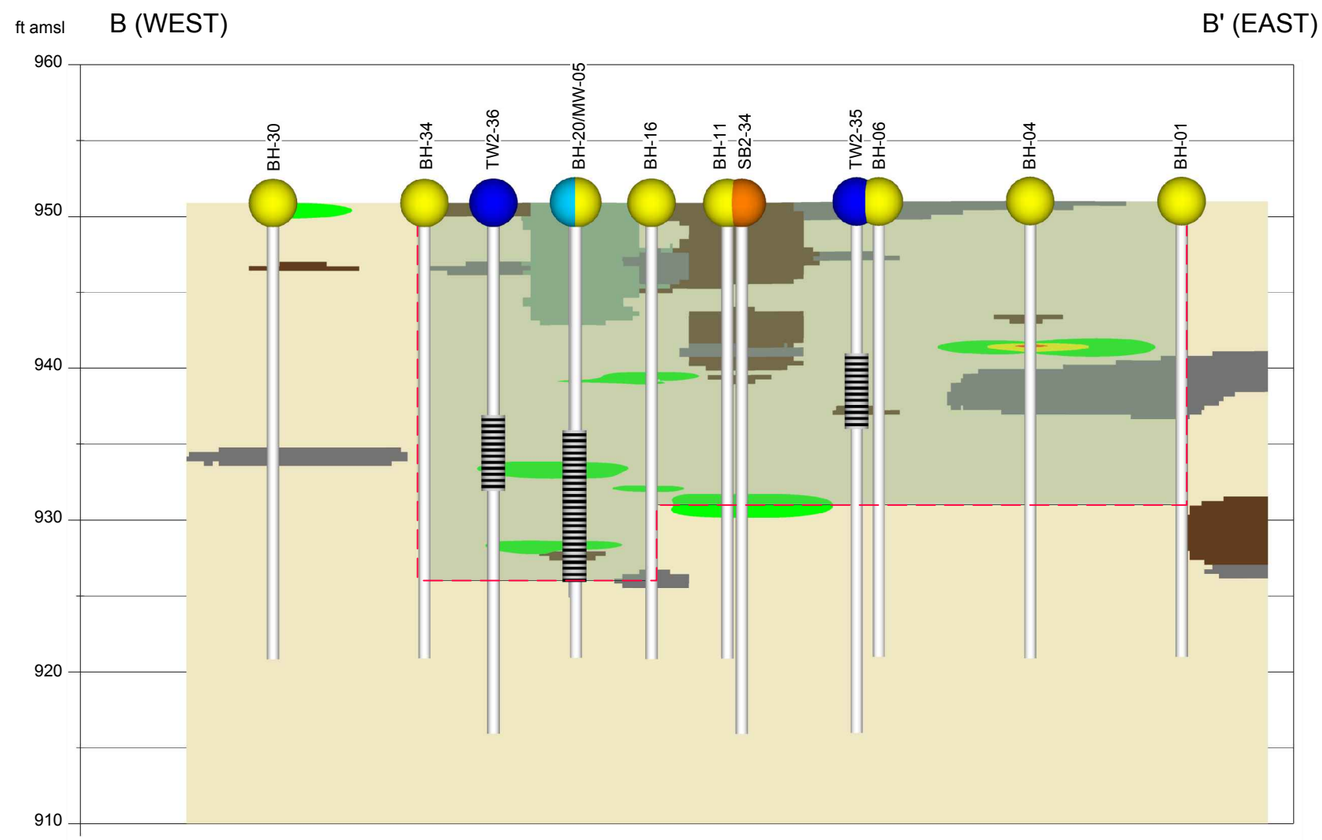


figure 6.2

LIF CROSS-SECTION A-A'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE015 SEP 16/2013



LIF BORING LOCATION
MONITORING WELL LOCATION
SOIL BORING LOCATION
RECOVERY WELL LOCATION
TEMPORARY MONITORING WELL LOCATION
PROPOSED EXTENT OF EXCAVATION (SHADED AREA REPRESENTS AREA TO BE EXCAVATED)

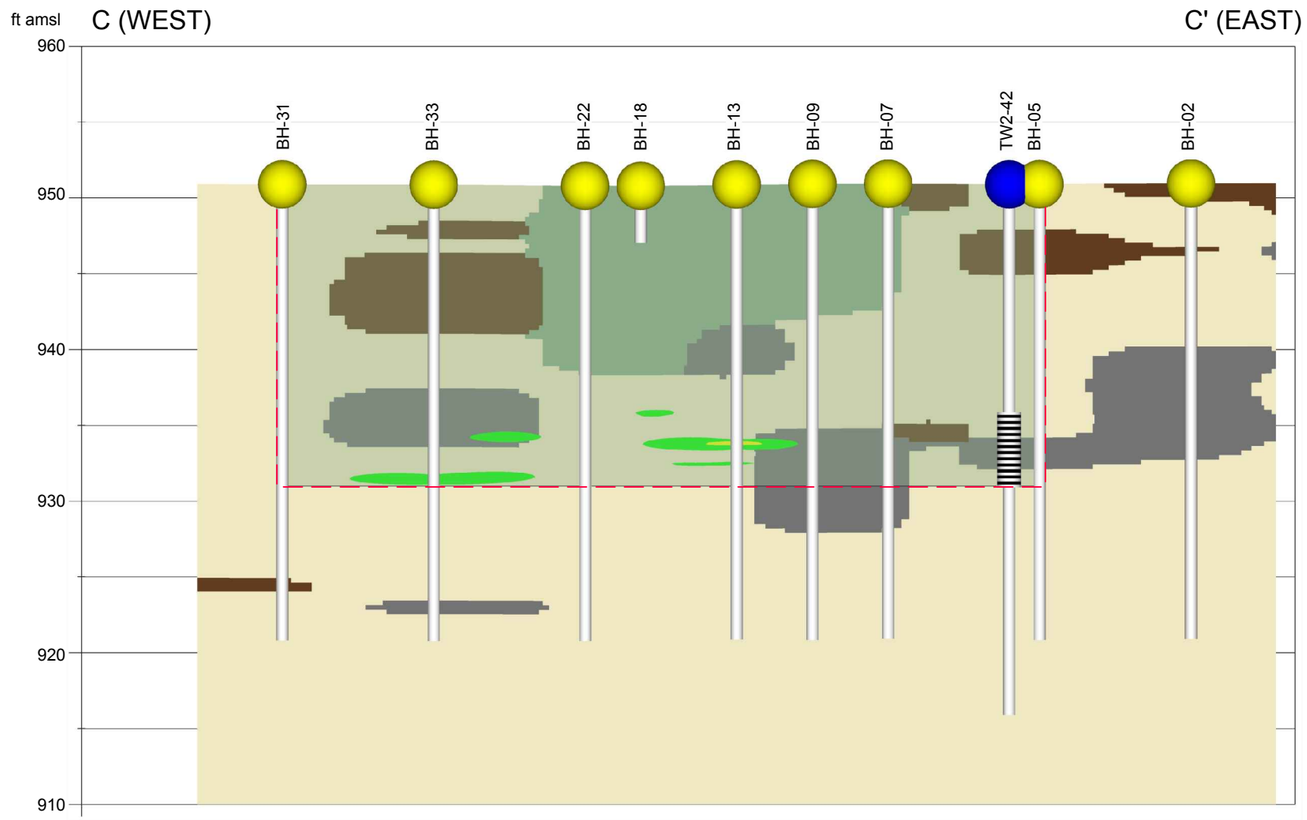
(% RE)
> 100
50 - 100
10 - 50

SILTS AND CLAYS
SILTY SANDS
SANDS AND GRAVELS
FILL

figure 6.3

LIF CROSS-SECTION B-B'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE016 SEP 16/2013



LIF BORING LOCATION
MONITORING WELL LOCATION
SOIL BORING LOCATION
RECOVERY WELL LOCATION
TEMPORARY MONITORING WELL LOCATION
PROPOSED EXTENT OF EXCAVATION (SHADED AREA REPRESENTS AREA TO BE EXCAVATED)

(% RE)
> 100
50 - 100
10 - 50

SILTS AND CLAYS
SILTY SANDS
SANDS AND GRAVELS
FILL

figure 6.4

LIF CROSS-SECTION C-C'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE017 SEP 16/2013

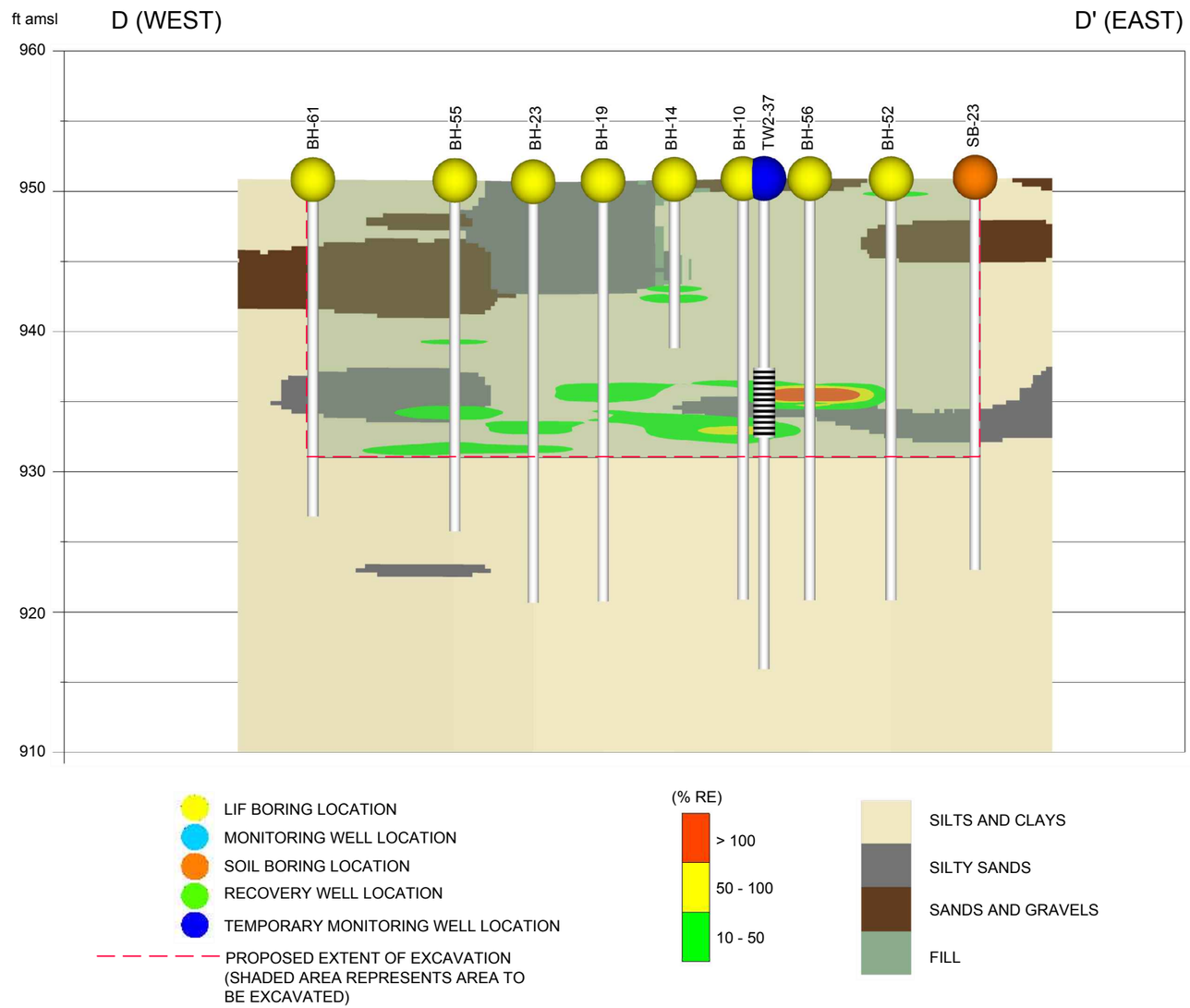


figure 6.5

LIF CROSS-SECTION D-D'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE018 SEP 16/2013

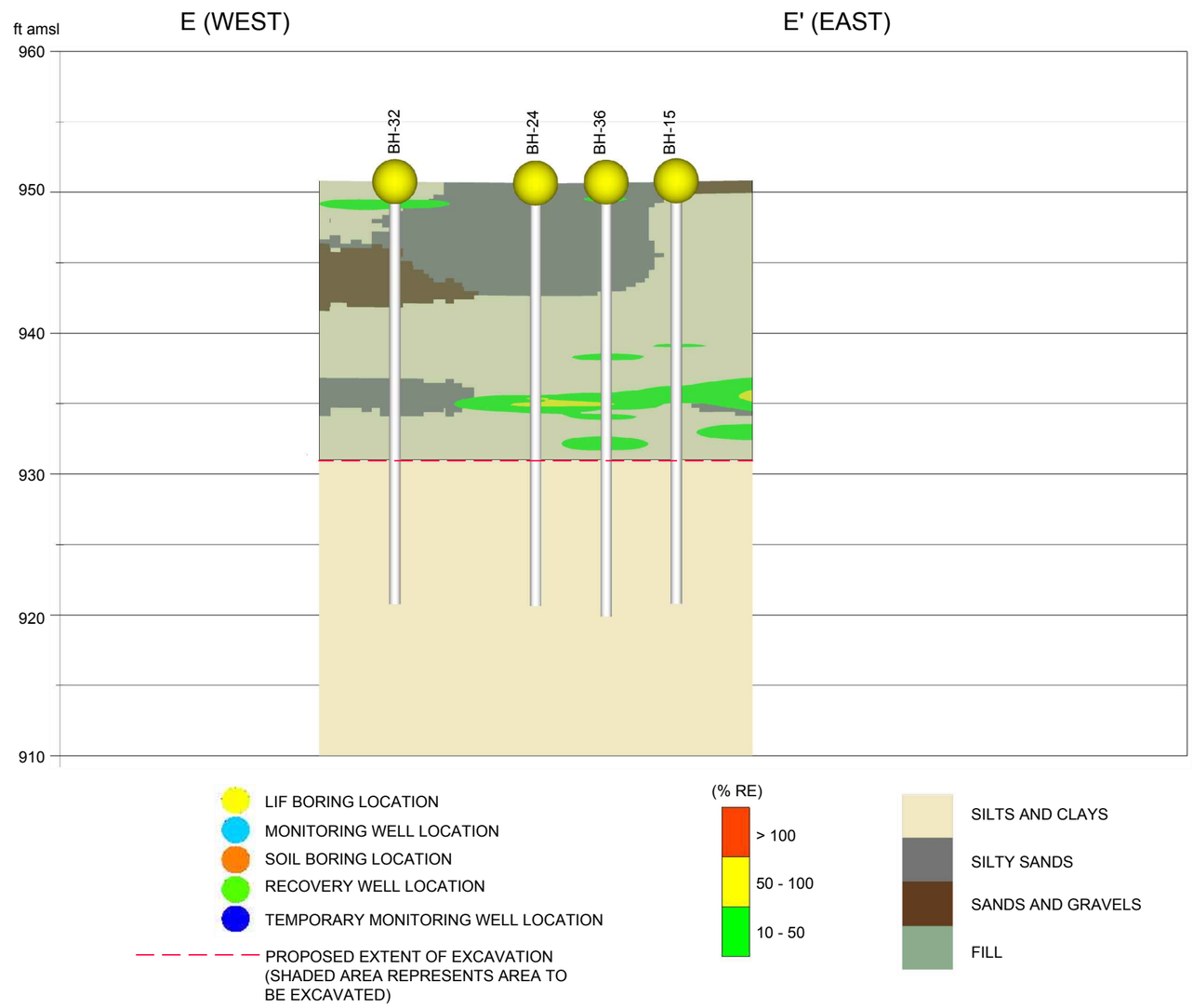
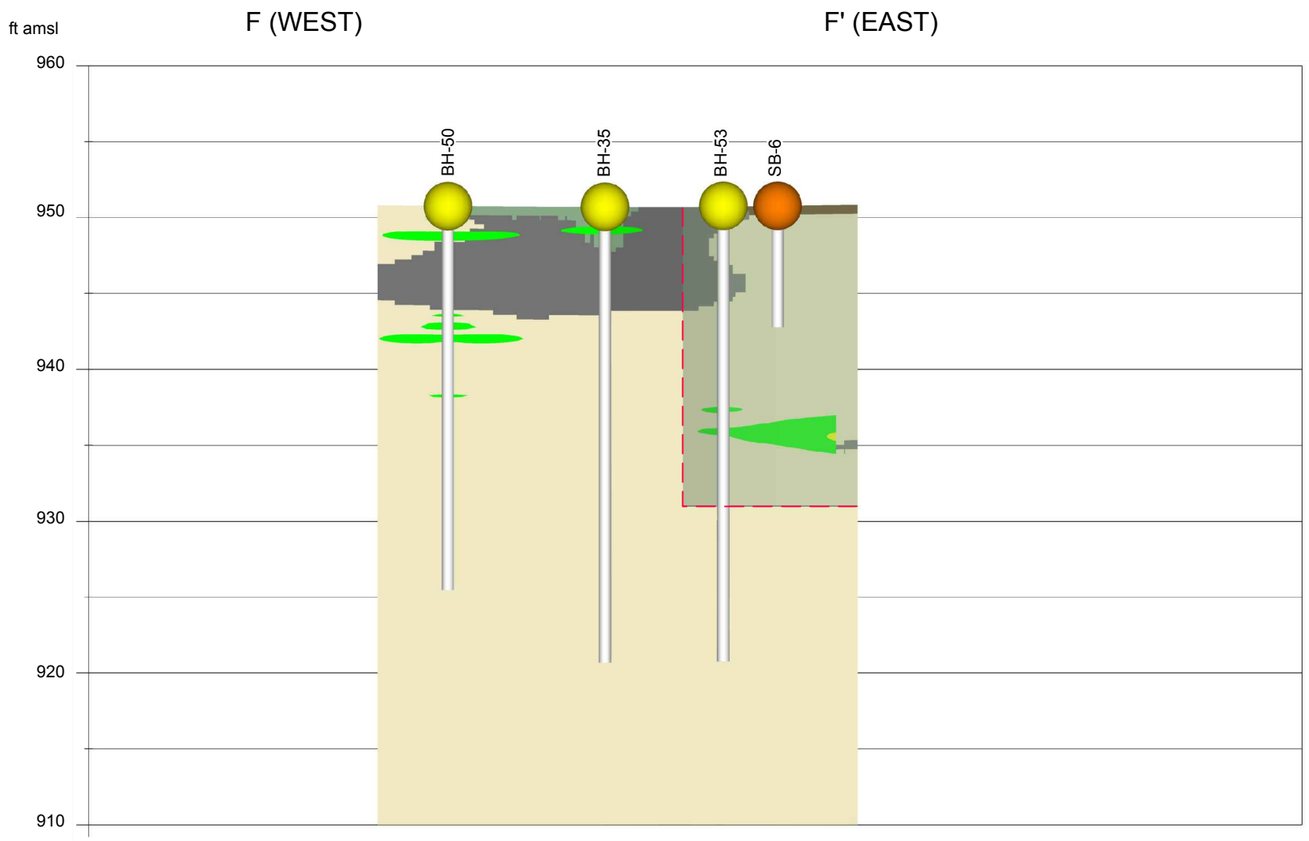


figure 6.6

LIF CROSS-SECTION E-E'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE019 SEP 16/2013



LIF BORING LOCATION
MONITORING WELL LOCATION
SOIL BORING LOCATION
RECOVERY WELL LOCATION
TEMPORARY MONITORING WELL LOCATION

PROPOSED EXTENT OF EXCAVATION (SHADED AREA REPRESENTS AREA TO BE EXCAVATED)

(% RE)
> 100
50 - 100
10 - 50

SILTS AND CLAYS
SILTY SANDS
SANDS AND GRAVELS
FILL

figure 6.7

LIF CROSS-SECTION F-F'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE020 SEP 16/2013

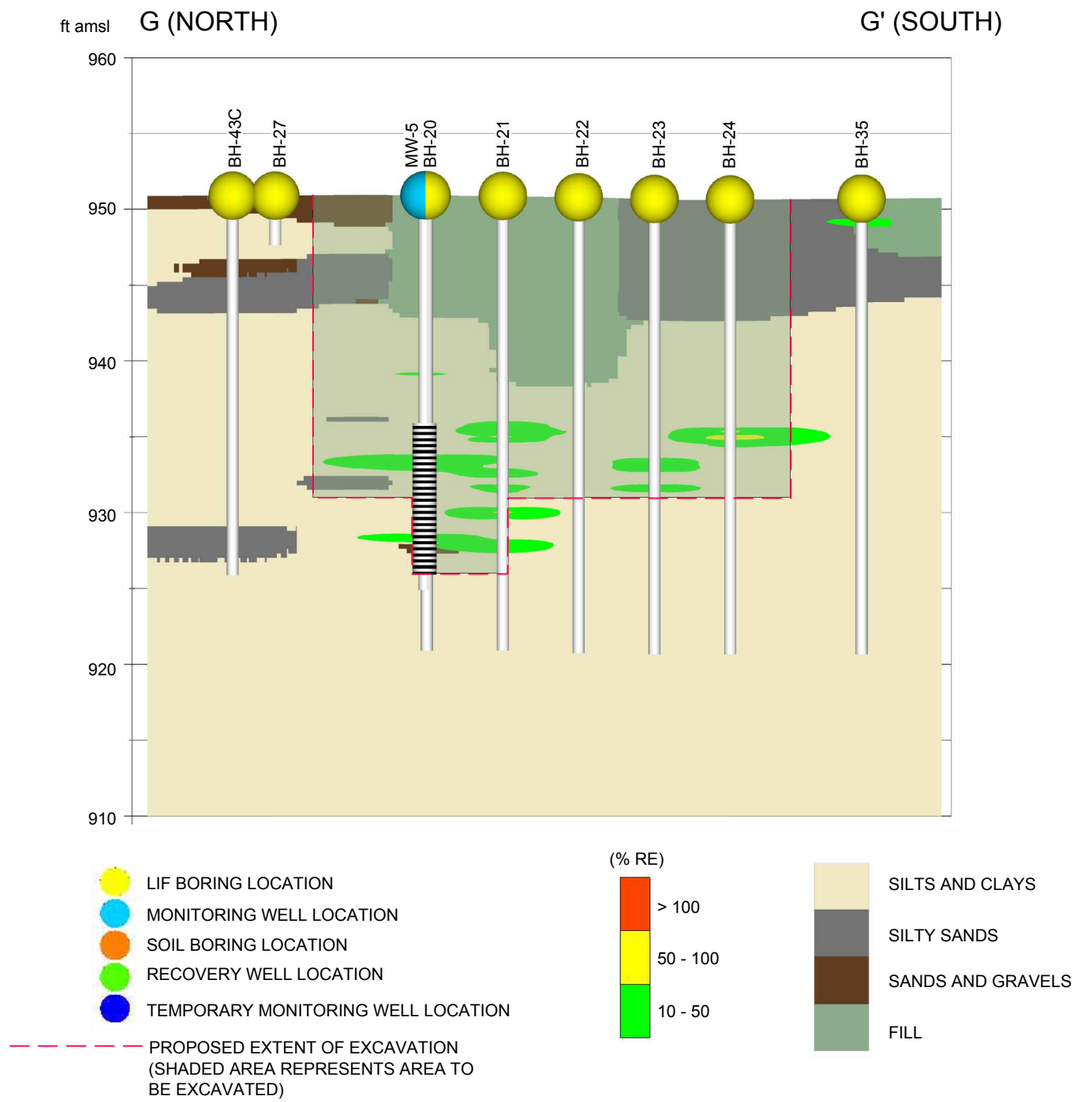
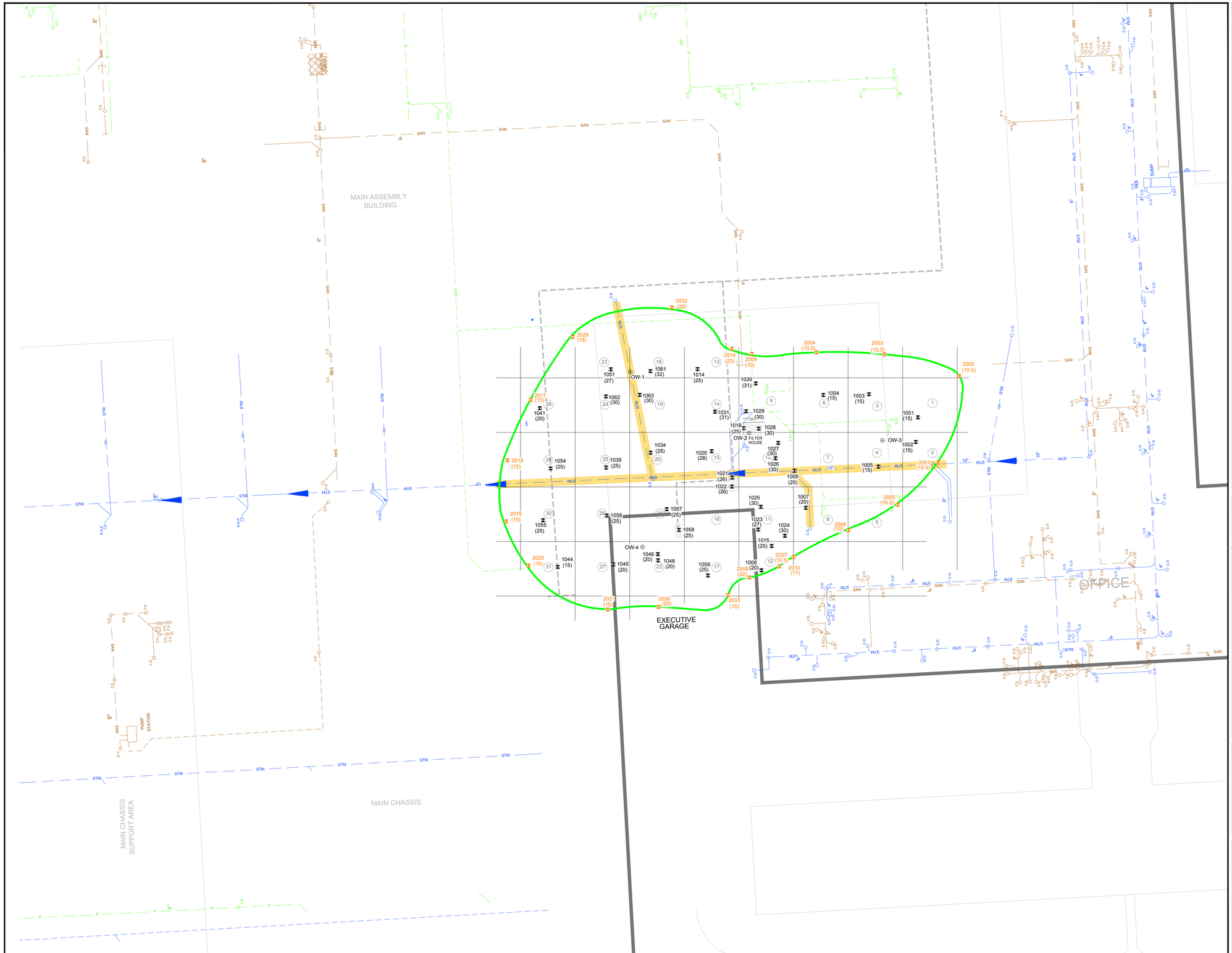


figure 6.8

LIF CROSS-SECTION G-G'
REC 2 EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

048891-32(046)GN-DE021 SEP 16/2013



Nº	Revision	Date	Initial

0 15 30ft

LEGEND

- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- HISTORIC EXTERIOR WALL OF PLANT
- STORM SEWER REMOVED DURING EXCAVATION
- OH OVERHEAD
- (12) GRID NUMBER
- 1001 FLOOR VERIFICATION SAMPLE
- 2002 SIDEWALL VERIFICATION SAMPLE
- (25) SAMPLE DEPTH (ft. bgs)
- OW-1 OBSERVATION WELL (INSTALLED POST EXCAVATION)
- FORMER UST PAD/CONCRETE SADDLE LOCATION (15'bgs)
- SAMPLING GRID (40' x 40') SIDEWALL SAMPLES COLLECTED APPROXIMATELY EVERY 45 LINEAL FEET

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

SOIL VERIFICATION SAMPLE LOCATIONS REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

FORMER WIXOM ASSEMBLY PLANT

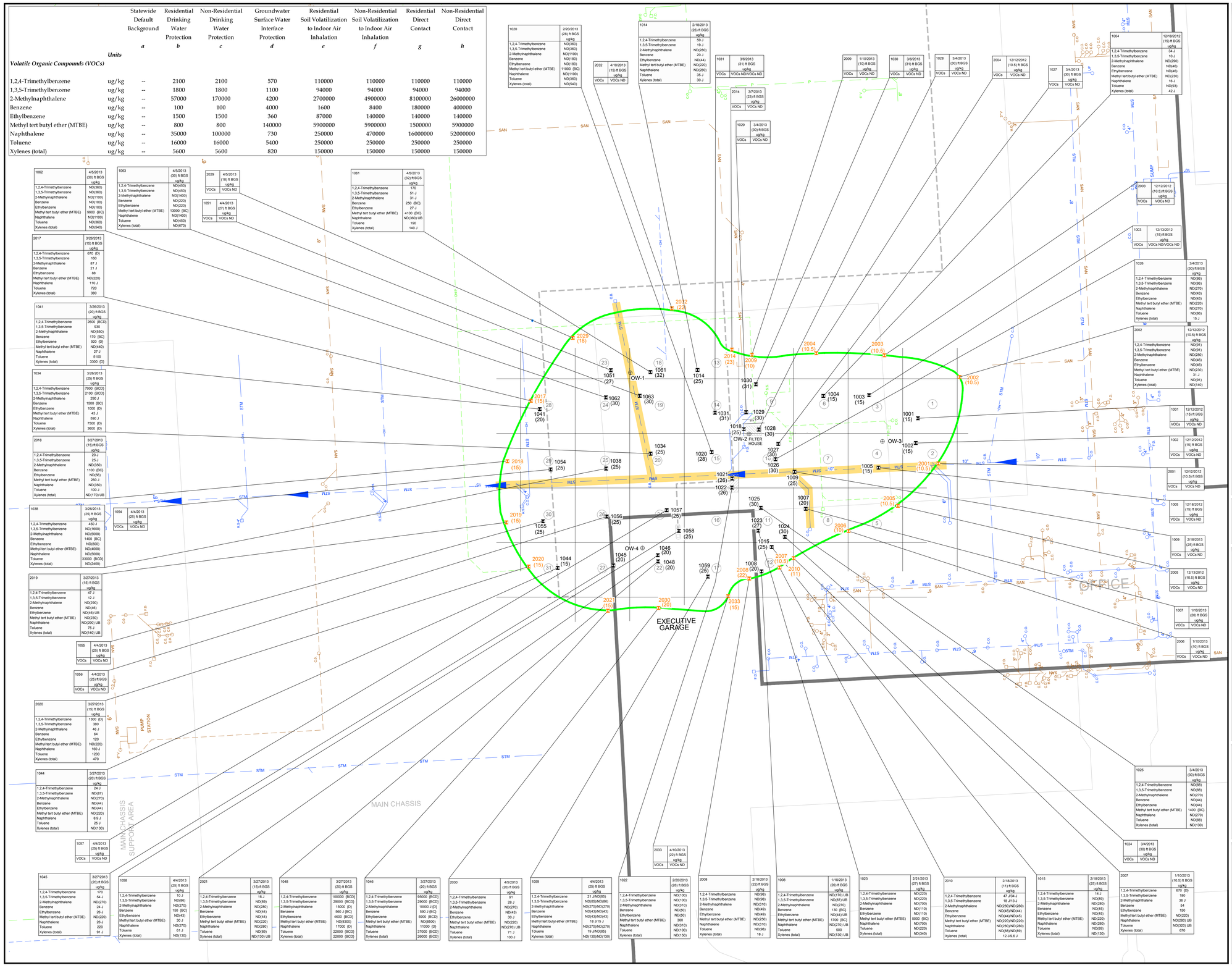
CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. K.	K. A.	SEPTEMBER 2013	
Scale: 1:30	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 6.9

048891-32(046)GN-DE027 OCT 2/2013

	Units	Statewide Default Background	Residential Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Residential Soil Volatilization to Indoor Air Inhalation	Non-Residential Soil Volatilization to Indoor Air Inhalation	Residential Direct Contact	Non-Residential Direct Contact
		a	*b*	*c*	*d*	*e*	*f*	*g*	*h*
Volatile Organic Compounds (VOCs)									
1,2,4-Trimethylbenzene	ug/kg	--	2100	2100	570	110000	110000	110000	110000
1,3,5-Trimethylbenzene	ug/kg	--	1800	1800	1100	94000	94000	94000	94000
2-Methylnaphthalene	ug/kg	--	57000	170000	4200	2700000	4900000	8100000	26000000
Benzene	ug/kg	--	100	100	4000	1600	8400	180000	400000
Ethylbenzene	ug/kg	--	1500	1500	360	87000	140000	140000	140000
Methyl tert butyl ether (MTBE)	ug/kg	--	800	800	140000	5900000	5900000	1500000	5900000
Naphthalene	ug/kg	--	35000	100000	730	250000	470000	16000000	52000000
Toluene	ug/kg	--	16000	16000	5400	250000	250000	250000	250000
Xylenes (total)	ug/kg	--	5600	5600	820	150000	150000	150000	150000



1020	2/20/2013 (28) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(360)
1,3,5-Trimethylbenzene	ND(360)
2-Methylnaphthalene	ND(1100)
Benzene	ND(180)
Ethylbenzene	ND(180)
Methyl tert butyl ether (MTBE)	11000 (BC)
Naphthalene	ND(1100)
Toluene	ND(360)
Xylenes (total)	ND(540)

1014	2/18/2013 (25) ft BGS ug/kg
1,2,4-Trimethylbenzene	59 J
1,3,5-Trimethylbenzene	19 J
2-Methylnaphthalene	ND(280)
Benzene	20 J
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(280)
Toluene	35 J
Xylenes (total)	30 J

2032	4/10/2013 (15) ft BGS ug/kg
VOCs	VOCs ND

1031	3/6/2013 (31) ft BGS ug/kg
VOCs	VOCs ND/VOCs ND

2014	3/7/2013 (23) ft BGS ug/kg
VOCs	VOCs ND

1029	3/4/2013 (30) ft BGS ug/kg
VOCs	VOCs ND

2009	1/10/2013 (10) ft BGS ug/kg
VOCs	VOCs ND

1030	3/6/2013 (31) ft BGS ug/kg
VOCs	VOCs ND

1028	3/4/2013 (30) ft BGS ug/kg
VOCs	VOCs ND

2004	12/12/2012 (10.5) ft BGS ug/kg
VOCs	VOCs ND

1027	3/4/2013 (30) ft BGS ug/kg
VOCs	VOCs ND

1004	12/18/2012 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	34 J
1,3,5-Trimethylbenzene	10 J
2-Methylnaphthalene	ND(290)
Benzene	ND(46)
Ethylbenzene	ND(46)
Methyl tert butyl ether (MTBE)	ND(230)
Naphthalene	16 J
Toluene	ND(93)
Xylenes (total)	42 J

1062	4/5/2013 (30) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(360)
1,3,5-Trimethylbenzene	ND(360)
2-Methylnaphthalene	ND(1100)
Benzene	ND(180)
Ethylbenzene	ND(180)
Methyl tert butyl ether (MTBE)	9900 (BC)
Naphthalene	ND(1100)
Toluene	ND(360)
Xylenes (total)	ND(540)

1063	4/5/2013 (30) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(450)
1,3,5-Trimethylbenzene	ND(450)
2-Methylnaphthalene	ND(1400)
Benzene	ND(220)
Ethylbenzene	ND(220)
Methyl tert butyl ether (MTBE)	13000 (BC)
Naphthalene	ND(1400)
Toluene	ND(450)
Xylenes (total)	ND(670)

2029	4/5/2013 (18) ft BGS ug/kg
VOCs	VOCs ND

1051	4/4/2013 (27) ft BGS ug/kg
VOCs	VOCs ND

1061	4/5/2013 (32) ft BGS ug/kg
1,2,4-Trimethylbenzene	170
1,3,5-Trimethylbenzene	51 J
2-Methylnaphthalene	31 J
Benzene	250 (BC)
Ethylbenzene	27 J
Methyl tert butyl ether (MTBE)	4100 (BC)
Naphthalene	ND(360) UB
Toluene	190
Xylenes (total)	140 J

2017	3/26/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	670 (D)
1,3,5-Trimethylbenzene	160
2-Methylnaphthalene	87 J
Benzene	21 J
Ethylbenzene	88
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	110 J
Toluene	720
Xylenes (total)	380

1041	3/26/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	2600 (BCD)
1,3,5-Trimethylbenzene	930
2-Methylnaphthalene	ND(550)
Benzene	170 (BC)
Ethylbenzene	920 (D)
Methyl tert butyl ether (MTBE)	ND(440)
Naphthalene	27 J
Toluene	5100
Xylenes (total)	3300 (D)

1034	3/26/2013 (25) ft BGS ug/kg
1,2,4-Trimethylbenzene	7000 (BCD)
1,3,5-Trimethylbenzene	2100 (BCD)
2-Methylnaphthalene	290 J
Benzene	1500 (BC)
Ethylbenzene	1000 (D)
Methyl tert butyl ether (MTBE)	43 J
Naphthalene	590 J
Toluene	7500 (D)
Xylenes (total)	3600 (D)

2018	3/27/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	20 J
1,3,5-Trimethylbenzene	25 J
2-Methylnaphthalene	ND(350)
Benzene	1100 (BC)
Ethylbenzene	ND(56)
Methyl tert butyl ether (MTBE)	260 J
Naphthalene	ND(350)
Toluene	100 J
Xylenes (total)	ND(170) UB

1038	3/26/2013 (25) ft BGS ug/kg
1,2,4-Trimethylbenzene	450 J
1,3,5-Trimethylbenzene	ND(1600)
2-Methylnaphthalene	ND(5000)
Benzene	1400 (BC)
Ethylbenzene	ND(800)
Methyl tert butyl ether (MTBE)	ND(4000)
Naphthalene	ND(5000)
Toluene	33000 (BCD)
Xylenes (total)	ND(2400)

1054	4/4/2013 (25) ft BGS ug/kg
VOCs	VOCs ND

2019	3/27/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	47 J
1,3,5-Trimethylbenzene	12 J
2-Methylnaphthalene	ND(290)
Benzene	ND(46)
Ethylbenzene	ND(46) UB
Methyl tert butyl ether (MTBE)	ND(230)
Naphthalene	ND(290) UB
Toluene	75 J
Xylenes (total)	ND(140) UB

1055	4/4/2013 (25) ft BGS ug/kg
VOCs	VOCs ND

1056	4/4/2013 (25) ft BGS ug/kg
VOCs	VOCs ND

2020	3/27/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	1300 (D)
1,3,5-Trimethylbenzene	380
2-Methylnaphthalene	46 J
Benzene	64
Ethylbenzene	120
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	160 J
Toluene	1200
Xylenes (total)	470

1044	3/27/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	24 J
1,3,5-Trimethylbenzene	ND(87)
2-Methylnaphthalene	ND(270)
Benzene	ND(44)
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	8.9 J
Toluene	25 J
Xylenes (total)	ND(130)

1057	4/4/2013 (25) ft BGS ug/kg
VOCs	VOCs ND

1025	3/4/2013 (30) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(88)
1,3,5-Trimethylbenzene	ND(88)
2-Methylnaphthalene	ND(270)
Benzene	ND(44)
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	1400 (BC)
Naphthalene	ND(270)
Toluene	ND(88)
Xylenes (total)	ND(130)

1024	3/4/2013 (30) ft BGS ug/kg
VOCs	VOCs ND

2033	4/10/2013 (22) ft BGS ug/kg
VOCs	VOCs ND

1003	12/13/2012 (15) ft BGS ug/kg
VOCs	VOCs ND/VOCs ND

1026	3/4/2013 (30) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(86)
1,3,5-Trimethylbenzene	ND(86)
2-Methylnaphthalene	ND(270)
Benzene	ND(43)
Ethylbenzene	ND(43)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(270)
Toluene	ND(86)
Xylenes (total)	15 J

2002	12/12/2012 (10.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(91)
1,3,5-Trimethylbenzene	ND(91)
2-Methylnaphthalene	ND(280)
Benzene	ND(46)
Ethylbenzene	ND(46)
Methyl tert butyl ether (MTBE)	ND(230)
Naphthalene	31 J
Toluene	ND(91)
Xylenes (total)	ND(140)

1001	12/12/2012 (15) ft BGS ug/kg
VOCs	VOCs ND

1002	12/12/2012 (15) ft BGS ug/kg
VOCs	VOCs ND

2001	12/12/2012 (10.5) ft BGS ug/kg
VOCs	VOCs ND

1005	12/18/2012 (15) ft BGS ug/kg
VOCs	VOCs ND

1009	2/18/2013 (25) ft BGS ug/kg
VOCs	VOCs ND

2005	12/13/2012 (10.5) ft BGS ug/kg
VOCs	VOCs ND

1007	1/10/2013 (20) ft BGS ug/kg
VOCs	VOCs ND

2006	1/10/2013 (10) ft BGS ug/kg
VOCs	VOCs ND

1045	3/27/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	170
1,3,5-Trimethylbenzene	54 J
2-Methylnaphthalene	ND(270)
Benzene	24 J
Ethylbenzene	28 J
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	26 J
Toluene	220
Xylenes (total)	91 J

1058	4/4/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	10 J
1,3,5-Trimethylbenzene	ND(86)
2-Methylnaphthalene	ND(270)
Benzene	150 (BC)
Ethylbenzene	ND(43)
Methyl tert butyl ether (MTBE)	30 J
Naphthalene	ND(270)
Toluene	61 J
Xylenes (total)	ND(130)

2021	3/27/2013 (15) ft BGS ug/kg
1,2,4-Trimethylbenzene	16 J
1,3,5-Trimethylbenzene	ND(89)
2-Methylnaphthalene	ND(280)
Benzene	ND(44)
Ethylbenzene	ND(44)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(280)
Toluene	ND(89)
Xylenes (total)	ND(130) UB

1048	3/27/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	100000 (BCD)
1,3,5-Trimethylbenzene	29000 (BCD)
2-Methylnaphthalene	15000 (D)
Benzene	560 J (BC)
Ethylbenzene	4600 (BCD)
Methyl tert butyl ether (MTBE)	ND(8300)
Naphthalene	17000 (D)
Toluene	22000 (BCD)
Xylenes (total)	22000 (BCD)

1046	3/27/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	95000 (BCD)
1,3,5-Trimethylbenzene	29000 (BCD)
2-Methylnaphthalene	10000 J (D)
Benzene	590 J (BC)
Ethylbenzene	5900 (BCD)
Methyl tert butyl ether (MTBE)	ND(8500)
Naphthalene	11000 (D)
Toluene	37000 (BCD)
Xylenes (total)	28000 (BCD)

2030	4/5/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	91
1,3,5-Trimethylbenzene	28 J
2-Methylnaphthalene	ND(270)
Benzene	ND(43)
Ethylbenzene	30 J
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(270) UB
Toluene	71 J
Xylenes (total)	100 J

1059	4/4/2013 (25) ft BGS ug/kg
1,2,4-Trimethylbenzene	21 J(ND(88)
1,3,5-Trimethylbenzene	ND(88)(ND(86)
2-Methylnaphthalene	ND(270)(ND(270)
Benzene	ND(43)(ND(43)
Ethylbenzene	ND(43)(ND(43)
Methyl tert butyl ether (MTBE)	18 J/15 J
Naphthalene	ND(270)(ND(270)
Toluene	19 J(ND(86)
Xylenes (total)	ND(130)(ND(130)

1022	2/20/2013 (26) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(100)
1,3,5-Trimethylbenzene	ND(100)
2-Methylnaphthalene	ND(310)
Benzene	ND(50)
Ethylbenzene	ND(50)
Methyl tert butyl ether (MTBE)	390
Naphthalene	ND(310)
Toluene	ND(100)
Xylenes (total)	ND(150)

2008	2/18/2013 (22) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(98)
1,3,5-Trimethylbenzene	ND(98)
2-Methylnaphthalene	ND(310)
Benzene	ND(49)
Ethylbenzene	ND(250)
Methyl tert butyl ether (MTBE)	ND(310)
Naphthalene	ND(98)
Toluene	18 J
Xylenes (total)	

1008	1/10/2013 (20) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(170) UB
1,3,5-Trimethylbenzene	ND(87) UB
2-Methylnaphthalene	ND(270)
Benzene	130 (BC)
Ethylbenzene	ND(44) UB
Methyl tert butyl ether (MTBE)	1700 (BC)
Naphthalene	ND(270) UB
Toluene	500
Xylenes (total)	ND(130) UB

1023	2/21/2013 (27) ft BGS ug/kg
1,2,4-Trimethylbenzene	ND(220)
1,3,5-Trimethylbenzene	ND(220)
2-Methylnaphthalene	ND(700)
Benzene	ND(110)
Ethylbenzene	ND(110)
Methyl tert butyl ether (MTBE)	5000 (BC)
Naphthalene	ND(700)
Toluene	ND(220)
Xylenes (total)	ND(340)

2010	2/18/2013 (11) ft BGS ug/kg
1,2,4-Trimethylbenzene	47 J/34 J
1,3,5-Trimethylbenzene	18 J/13 J
2-Methylnaphthalene	ND(280)(ND(280)
Benzene	ND(45)(ND(44)
Ethylbenzene	ND(44)(ND(45)
Methyl tert butyl ether (MTBE)	ND(220)(ND(220)
Naphthalene	ND(280)(ND(280)
Toluene	ND(88)(ND(89)
Xylenes (total)	12 J/9.6 J

1015	2/18/2013 (25) ft BGS ug/kg
1,2,4-Trimethylbenzene	14 J
1,3,5-Trimethylbenzene	ND(89)
2-Methylnaphthalene	ND(280)
Benzene	ND(45)
Ethylbenzene	ND(45)
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(280)
Toluene	ND(89)
Xylenes (total)	ND(130)

2007	1/10/2013 (10.5) ft BGS ug/kg
1,2,4-Trimethylbenzene	670 (D)
1,3,5-Trimethylbenzene	180
2-Methylnaphthalene	36 J
Benzene	54
Ethylbenzene	150
Methyl tert butyl ether (MTBE)	ND(220)
Naphthalene	ND(320) UB
Toluene	ND(320) UB
Xylenes (total)	670

Nº	Revision	Date	Initial

0 15 30ft

LEGEND

- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STORM SEWER
- SANITARY
- PROCESS
- EXTENT OF EXCAVATION
- HISTORIC EXTERIOR WALL OF PLANT
- STORM SEWER REMOVED DURING EXCAVATION
- OH OVERHEAD
- (12) GRID NUMBER
- 1001 FLOOR VERIFICATION SAMPLE
- 2002 SIDEWALL VERIFICATION SAMPLE
- (25) SAMPLE DEPTH (ft. bgs)
- OW-1 OBSERVATION WELL (INSTALLED POST EXCAVATION)
- FORMER UST PAD/CONCRETE SADDLE LOCATION (15'bgs)
- SAMPLING GRID (40' x 40')
  SIDEWALL SAMPLES COLLECTED APPROXIMATELY EVERY 45 LINEAL FEET

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

SOIL VERIFICATION ANALYTICAL RESULTS REC 2 EXECUTIVE GARAGE AREA

WIXOM, MICHIGAN

FORMER WIXOM ASSEMBLY PLANT

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:			
Project Manager: T. K.	Reviewed By: K. A.	Date: SEPTEMBER 2013	
Scale: 1:30	Project Nº: 048891-32	Report Nº: 046	Drawing Nº: figure 6.10

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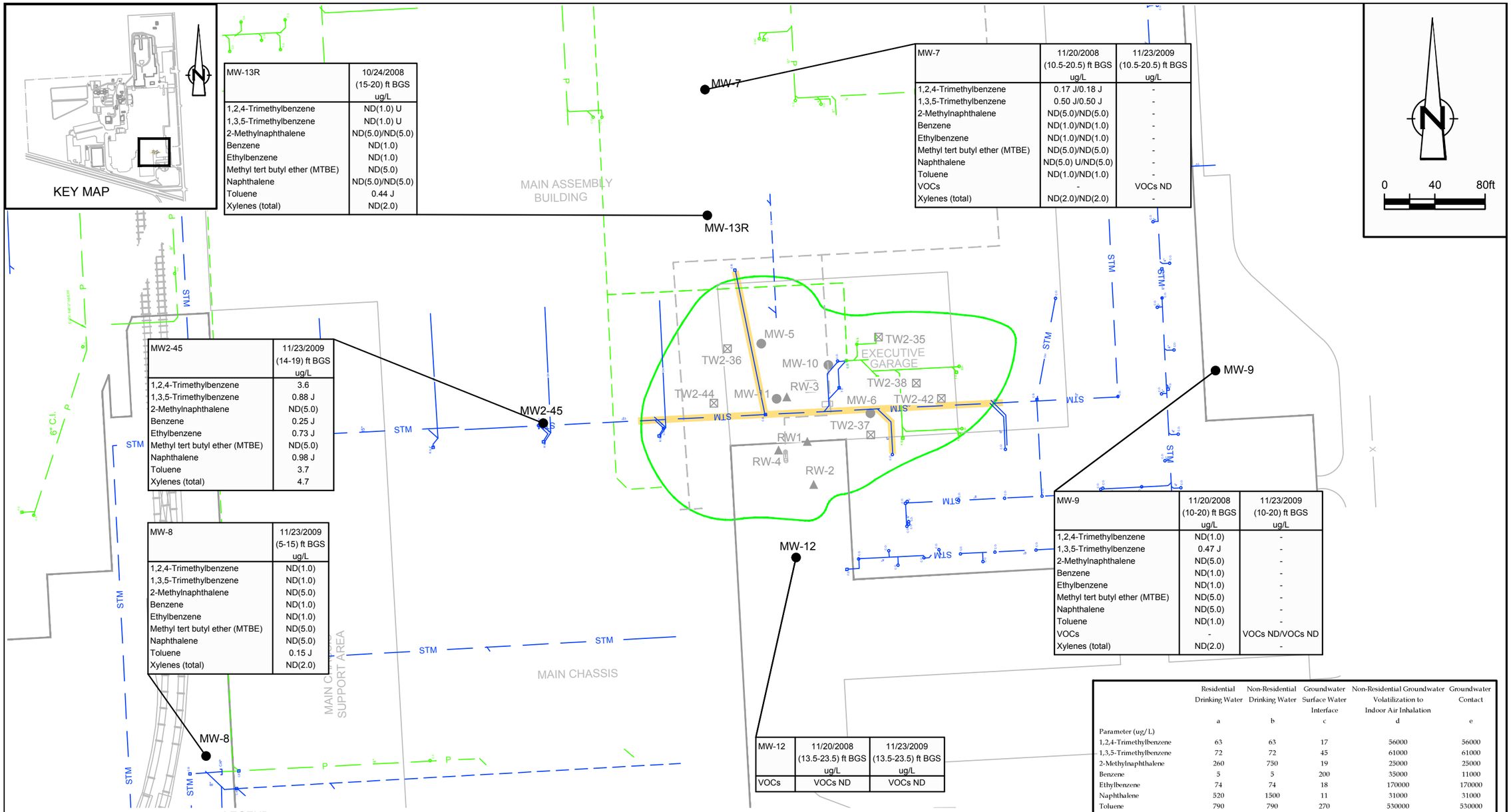

MW-13R	10/24/2008 (15-20) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0) U
1,3,5-Trimethylbenzene	ND(1.0) U
2-Methylnaphthalene	ND(5.0)/ND(5.0)
Benzene	ND(1.0)
Ethylbenzene	ND(1.0)
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	ND(5.0)/ND(5.0)
Toluene	0.44 J
Xylenes (total)	ND(2.0)

MW-7	11/20/2008 (10.5-20.5) ft BGS ug/L	11/23/2009 (10.5-20.5) ft BGS ug/L
1,2,4-Trimethylbenzene	0.17 J/0.18 J	-
1,3,5-Trimethylbenzene	0.50 J/0.50 J	-
2-Methylnaphthalene	ND(5.0)/ND(5.0)	-
Benzene	ND(1.0)/ND(1.0)	-
Ethylbenzene	ND(1.0)/ND(1.0)	-
Methyl tert butyl ether (MTBE)	ND(5.0)/ND(5.0)	-
Naphthalene	ND(5.0) U/ND(5.0)	-
Toluene	ND(1.0)/ND(1.0)	-
VOCs	-	VOCs ND
Xylenes (total)	ND(2.0)/ND(2.0)	-

MW2-45	11/23/2009 (14-19) ft BGS ug/L
1,2,4-Trimethylbenzene	3.6
1,3,5-Trimethylbenzene	0.88 J
2-Methylnaphthalene	ND(5.0)
Benzene	0.25 J
Ethylbenzene	0.73 J
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	0.98 J
Toluene	3.7
Xylenes (total)	4.7

MW-8	11/23/2009 (5-15) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0)
1,3,5-Trimethylbenzene	ND(1.0)
2-Methylnaphthalene	ND(5.0)
Benzene	ND(1.0)
Ethylbenzene	ND(1.0)
Methyl tert butyl ether (MTBE)	ND(5.0)
Naphthalene	ND(5.0)
Toluene	0.15 J
Xylenes (total)	ND(2.0)

MW-9	11/20/2008 (10-20) ft BGS ug/L	11/23/2009 (10-20) ft BGS ug/L
1,2,4-Trimethylbenzene	ND(1.0)	-
1,3,5-Trimethylbenzene	0.47 J	-
2-Methylnaphthalene	ND(5.0)	-
Benzene	ND(1.0)	-
Ethylbenzene	ND(1.0)	-
Methyl tert butyl ether (MTBE)	ND(5.0)	-
Naphthalene	ND(5.0)	-
Toluene	ND(1.0)	-
VOCs	-	VOCs ND/VOCs ND
Xylenes (total)	ND(2.0)	-

MW-12	11/20/2008 (13.5-23.5) ft BGS ug/L	11/23/2009 (13.5-23.5) ft BGS ug/L
VOCs	VOCs ND	VOCs ND

	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	Non-Residential Groundwater Volatilization to Indoor Air Inhalation	Groundwater Contact
	a	b	c	d	e
Parameter (ug/L)					
1,2,4-Trimethylbenzene	63	63	17	56000	56000
1,3,5-Trimethylbenzene	72	72	45	61000	61000
2-Methylnaphthalene	260	750	19	25000	25000
Benzene	5	5	200	35000	11000
Ethylbenzene	74	74	18	170000	170000
Naphthalene	520	1500	11	31000	31000
Toluene	790	790	270	530000	530000
Xylenes (total)	280	280	41	190000	190000

LEGEND

- ⊠ TW2-35 TEMPORARY MONITORING WELL LOCATION
- ● MW-12 MONITORING WELL
- ▲ RW-2 RECOVERY WELL LOCATION
- HISTORIC ABOVEGROUND GASOLINE PIPELINE
- STM STORM SEWER
- OH OVERHEAD
- EXTENT OF EXCAVATION
- HISTORIC EXTERIOR WALL OF PLANT
- STORM SEWER REMOVED DURING EXCAVATION

figure 6.11

MONITORING WELLS OUTSIDE EXCAVATION LIMITS
GROUNDWATER ANALYTICAL RESULTS
REC 2 - EXECUTIVE GARAGE AREA
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

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Tables

TABLE 4.1

SOIL BORING AND MONITORING WELL COMPLETION SUMMARY
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Soil Boring ID	*Monitoring Well ID*	*Northing*	*Easting*	*Borehole or Well Completion Date*	*Completed By (Consultant)*	*Total Borehole Depth (feet)*	*Ground Surface Elevation (ft. AMSL)*	*Top of Casing (TOC) Elevation (ft. AMSL)*	*Screened Interval (ft bgs)*	*Screened Elevation (ft. AMSL)*	*Well Material*	*Well Diameter (in)*	*Screen Length (feet)*	*Slot Size (in)*	*Final Construction*	*Well Abandonment Date*
SB-13	*	366335.4315	13346420.1012	6/16/2008	CRA	28	950.90	--	--	--	--	--	--	--	--	NA
*	MW-13R	366335.4315	13346420.1012	10/15/2008	CRA	20	950.90	955.17	15 - 20	935.90 - 930.90	PVC	1	5	0.010	ST	2/9/2010
SB-17	*	366188.3356	13346348.1386	6/16/2008	CRA	28	950.90	--	--	--	--	--	--	--	--	NA
SB2-32	*	366255.1900	13346468.3900	10/2/2009	CRA	35	950.97	--	--	--	--	--	--	--	--	NA
SB2-33	*	366246.0200	13346484.3500	10/2/2009	CRA	35	950.92	--	--	--	--	--	--	--	--	NA
SB2-33A[1]	*	366244.3600	13346484.7100	10/2/2009	CRA	35	950.92	--	--	--	--	--	--	--	--	NA
SB2-34	*	366234.8800	13346518.0500	10/2/2009	CRA	35	950.90	--	--	--	--	--	--	--	--	NA
SB2-35	TW2-35	366238.9200	13346555.9200	10/2/2009	CRA	35	950.99	955.95	10 - 15	940.99 - 935.99	PVC	1	5	0.010	ST	Destroyed
SB2-36	TW2-36	366229.7200	13346436.1800	10/5/2009	CRA	35	950.91	951.96	14 - 19	936.91 - 931.91	PVC	1	5	0.010	ST	Destroyed
SB2-37	TW2-37	366161.3600	13346549.7800	10/5/2009	CRA	35	950.92	952.27	13.5 - 18.5	937.42 - 932.42	PVC	1	5	0.010	ST	Destroyed
SB2-38	TW2-38	366202.4100	13346585.8900	10/5/2009	CRA	40	950.94	952.32	13.5 - 18.5	937.44 - 932.44	PVC	1	5	0.010	ST	Destroyed
SB2-39	*	366248.2300	13346610.5800	10/5/2009	CRA	35	951.04	--	--	--	--	--	--	--	--	NA
SB2-40	*	366241.2500	13346699.8400	10/6/2009	CRA	35	951.01	--	--	--	--	--	--	--	--	NA
SB2-41	*	366170.0800	13346703.9800	10/6/2009	CRA	35	951.00	--	--	--	--	--	--	--	--	NA
SB2-42	TW2-42	366190.3300	13346605.8200	10/6/2009	CRA	35	950.89	955.97	15 - 20	935.89 - 930.89	PVC	1	5	0.010	ST	Destroyed
SB2-43	*	366202.7915	13346662.0800	10/6/2009	CRA	35	950.95	--	--	--	--	--	--	--	--	NA
SB2-44	TW2-44	366186.5000	13346425.4200	10/7/2009	CRA	35	950.89	955.97	15 - 20	935.89 - 930.89	PVC	1	5	0.010	ST	Destroyed
SB2-45A[4]	*	*NA*	*NA*	10/7/2009	CRA	15	*NA*	--	--	--	--	--	--	--	--	NA
SB2-45	MW2-45	366170.6200	13346290.0600	10/7/2009	CRA	35	950.92	950.90	14 - 19	936.92 - 931.92	PVC	1	5	0.010	FM	Destroyed
SB2-46	*	366175.6100	13346181.6600	10/7/2009	CRA	35	950.89	--	--	--	--	--	--	--	--	NA
SB2-47	*	366277.2627	13346481.5200	10/19/2009	CRA	35	950.98	--	--	--	--	--	--	--	--	NA
SB2-48	*	366232.5900	13346372.9100	10/19/2009	CRA	35	950.89	--	--	--	--	--	--	--	--	NA
SB2-49	*	366152.3300	13346377.3700	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-50	*	366211.2300	13346406.3100	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-51	*	366301.7900	13346457.0900	7/18/2012	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-52	*	366285.9600	13346480.8400	7/10/2012	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-53	*	366292.2000	13346632.6100	7/10/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-54	*	366047.1300	13346659.7300	7/12/2012	CRA	30	961.8	--	--	--	--	--	--	--	--	NA
SB2-55	*	366043.2300	13346560.6700	7/12/2012	CRA	25	961.3	--	--	--	--	--	--	--	--	NA
SB2-56	*	366051.8200	13346415.9400	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-59	*	366130.5000	13346425.7000	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-60	*	366235.7300	13346607.7600	7/9/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-61	*	366162.7700	13346423.2600	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-62	*	366177.9800	13346382.4000	7/11/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-63	*	366233.4000	13346420.7100	7/10/2012	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-64	*	366254.3800	13346444.0400	7/10/2012	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-65	*	366243.9100	13346568.8200	7/9/2012	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-66	*	366219.2200	13346611.7700	7/9/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-67	*	366188.5400	13346632.5400	7/9/2012	CRA	30	--	--	--	--	--	--	--	--	--	NA
SB2-68	*	366148.2900	13346541.7800	11/27/2012	CRA	43	--	--	--	--	--	--	--	--	--	NA
SB2-69	*	366118.3400	13346543.4000	11/28/2012	CRA	43	951.2	--	--	--	--	--	--	--	--	NA
SB2-70	*	366088.3800	13346545.0200	11/28/2012	CRA	43	960.08	--	--	--	--	--	--	--	--	NA
SB2-71	*	366150.0200	13346571.7300	11/28/2012	CRA	43	--	--	--	--	--	--	--	--	--	NA
SB2-72	*	366118.5882	13346681.4448	2/28/2013	CRA	35	962.67	--	--	--	--	--	--	--	--	NA
SB2-73	*	366321.8746	13346544.3543	2/28/2013	CRA	35	--	--	--	--	--	--	--	--	--	NA
SB2-74	*	366384.3290	13346517.1551	2/21/2013	CRA	20	--	--	--	--	--	--	--	--	--	NA
SB2-75	*	366402.4387	13346367.2208	2/20/2013	CRA	20	--	--	--	--	--	--	--	--	--	NA
SB2-76	*	366328.2291	13346368.2879	2/20/2013	CRA	20	--	--	--	--	--	--	--	--	--	NA
SB2-77	*	366085.5046	13346350.8952	2/21/2013	CRA	20	--	--	--	--	--	--	--	--	--	NA
SB2-78	*	366234.1027	13346322.9790	2/21/2013	CRA	20	--	--	--	--	--	--	--	--	--	NA
*	OW-1	366246.13	13346451.63	5/1/2013	CRA	30	951.02	950.67	5	30	--	--	PVC	2	25	0.010	FM	Existing
*	OW-2	366206.90	13346527.83	5/1/2013	CRA	30	950.96	950.49	5	30	--	--	PVC	2	25	0.010	FM	Existing
*	OW-3	366202.18	13346613.32	5/1/2013	CRA	15	950.98	950.65	5	15	--	--	PVC	2	10	0.010	FM	Existing
*	OW-4	366133.81	13346459.49	5/1/2013	CRA	20	951.15	950.68	5	20	--	--	PVC	2	15	0.010	FM	Existing
SB-1	*	366203.23	13346470.03	12/27/2001	NTH	20	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-2	*	366173.51	13346470.22	12/27/2001	NTH	16	951.8	--	--	--	--	--	--	--	--	--	--	NA
SB-3	*	366197.27	13346520.63	12/27/2001	NTH	16	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-4	*	366178.49	13346498.38	12/27/2001	NTH	20	951.8	--	--	--	--	--	--	--	--	--	--	NA
SB-4A	*	366171.54	13346498.21	5/19/2002	NTH	32	951.8	--	--	--	--	--	--	--	--	--	--	NA
SB-5	*	366151.77	13346526.22	12/27/2001	NTH	20	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-6	*	366118.46	13346527.12	12/27/2001	NTH	16	952	--	--	--	--	--	--	--	--	--	--	NA
SB-7	*	366117.16	13346489.30	12/27/2001	NTH	16	952	--	--	--	--	--	--	--	--	--	--	NA
SB-8	*	366084.21	13346490.37	12/27/2001	NTH	12	951.7	--	--	--	--	--	--	--	--	--	--	NA
SB-10	*	366155.88	13346510.15	5/19/2002	NTH	13	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-11	*	366149.64	13346501.08	5/19/2002	NTH	13	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-12	*	366140.37	13346503.58	5/19/2002	NTH	20	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-13	*	366148.37	13346476.67	5/19/2002	NTH	24	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-14	*	366186.50	13346444.37	11/8/2003	NTH	36	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-15	MW-5	366233.61	13346462.92	11/8/2003	NTH	32	951.9	951.48	14.5	24.5	--	--	PVC	2	10	0.01	FM	11/29/2012
SB-16	*	366255.06	13346512.64	11/8/2003	NTH	32	951.9	--			--	--	--	--	--	--	--	NA
SB-17	MW-6	366178.41	13346549.43	11/8/2003	NTH	32	951.9	951.56	13.5	23.5	--	--	PVC	2	10	0.01	FM	Destroyed
SB-18	*	366123.10	13346522.82	11/9/2003	NTH	32	952	--			--	--	--	--	--	--	--	NA
SB-19	MW-12	366064.05	13346490.52	11/9/2003	NTH	32	951.4	950.75	14	24	--	--	PVC	2	10	0.01	FM	11/27/2012

TABLE 4.1

SOIL BORING AND MONITORING WELL COMPLETION SUMMARY
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Soil Boring ID	*Monitoring Well ID*	*Northing*	*Easting*	*Borehole or Well Completion Date*	*Completed By (Consultant)*	*Total Borehole Depth (feet)*	*Ground Surface Elevation (ft. AMSL)*	*Top of Casing (TOC) Elevation (ft. AMSL)*	*Screened Interval (ft bgs)*		*Screened Elevation (ft. AMSL)*		*Well Material*	*Well Diameter (in)*	*Screen Length (feet)*	*Slot Size (in)*	*Final Construction*	*Well Abandonment Date*
SB-20	*	366108.60	13346445.41	11/9/2003	NTH	32	951.7	--	--	--	--	--	--	--	--	--	--	NA
SB-21	*	366148.15	13346445.08	11/9/2003	NTH	32	951.6	--	--	--	--	--	--	--	--	--	--	NA
SB-22	*	366195.58	13346602.31	4/3/2004	NTH	28	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-23	*	366169.40	13346625.13	4/3/2004	NTH	28	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-24	MW-7	366435.18	13346418.31	4/3/2004	NTH	28	952	951.36	10.5	20.5	--	--	PVC	2	10	0.01	FM	Destroyed
SB-25	*	366279.94	13346389.07	4/4/2004	NTH	28	952	--	--	--	--	--	--	--	--	--	--	NA
SB-26	*	366255.23	13346552.04	4/4/2004	NTH	28	951.9	--	--	--	--	--	--	--	--	--	--	NA
SB-27	MW-10	366216.80	13346516.07	4/4/2004	NTH	32	951.9	951.42	13.5	23.5	--	--	PVC	2	10	0.01	FM	11/29/2012
SB-27A	*	366209.29	13346515.49	5/16/2004	NTH	36	951.9	--	--		--	--	--	--	--	--	--	NA
SB-28	MW-8	365906.62	13346022.61	4/4/2004	NTH	28	947.7	947.27	5	15	--	--	PVC	2	10	0.01	FM	8/22/2013
SB-29	*	366282.02	13346446.27	5/16/2004	NTH	28	952	--	--	--	--	--	--	--	--	--	--	NA
SB-30	MW-9	366212.32	13346823.17	5/16/2004	NTH	24	954.7	954.32	9	19	--	--	PVC	2	10	0.01	FM	Destroyed
SB-31	MW-11	366189.91	13346475.12	6/27/2004	NTH	24	951.8	951.45	13	23	--	--	PVC	2	10	0.01	FM	11/27/2012
*	RW-1	366155.20	13346499.46	6/30/1998	McLaren/Hart	17	--	--	10	15	--	--	--	--	--	--	--	Destroyed
*	RW-2	366121.01	13346504.58	6/30/1998	McLaren/Hart	22	--	--	14	19	--	--	--	--	--	--	--	11/29/2012
*	RW-3	366190.49	13346483.19	6/30/1998	McLaren/Hart	12	--	--	7	12	--	--	--	--	--	--	--	11/29/2012
*	RW-4	366148.37	13346476.67	12/7/2002	McLaren/Hart	23.5	951.9	--	18	23	--	--	PVC	4	5	0.02	FM	11/27/2012

Notes:
FM - flushmount
ST - standpipe
PVC - polyvinyl chloride
ft bgs - feet below ground surface
ft AMSL - feet above mean sea level
ft BTOC - feet below top of casing
* - monitoring well not installed at soil boring location
(1) - no log created due to shallow nature and difficulty of accurately logging hand auger soil
(2) - Location not surveyed. Unable to locate during survey activities.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC	Units	Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria [1]																		*02*	*02*	*02*	*02*	*02*
Sample Location		Site	Residential	Non-Residential	Groundwater	Groundwater	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential	Soil Saturation	*SB-1*	*SB-2*	*SB-2*	*SB-3*	*SB-4*
Sample Identification		Specific	Drinking	Drinking	Surface Water	Contact	Soil Volatilization	Soil Volatilization	Infinite Source	Infinite Source	Finite VSIC for	Finite VSIC for	Finite VSIC for	Finite VSIC for	Particulate	Particulate	Direct	Direct	Concentration	*SB-1*	*SB-2*	*SB-2*	*SB-3*	*SB-4*
Sample Date		Background	Water	Water	Interface	Protection	to Indoor Air	to Indoor Air	Volatile Soil	Volatile Soil	5 Meter Source	5 Meter Source	2 Meter Source	2 Meter Source	Soil Inhalation	Soil Inhalation	Contact	Contact	Screening	*12/27/2001*	*12/27/2001*	*12/27/2001*	*12/27/2001*	*12/27/2001*
Sample Depth			Protection	Protection	Protection		Inhalation	Inhalation	Inhalation	Inhalation	Thickness	Thickness	Thickness	Thickness						*(18-20) ft BGS*	*(8-10) ft BGS*	*(14-16) ft BGS*	*(6-8) ft BGS*	*(18-20) ft BGS*
Sample Type		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r					
	Units																							
Volatile Organic Compounds (VOCs)																								
1,1,1-Trichloroethane	ug/kg	--	4000	4000	1800	460000	250000	460000	3800000	4500000	12000000	15000000	28000000	31000000	67000000000	29000000000	460000	460000	460000	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/kg	--	170	700	1600	94000	4300	23000	10000	34000	10000	34000	14000	34000	54000000	68000000	53000	240000	870000	-	-	-	-	-
1,1,2-Trichloroethane	ug/kg	--	100	100	6600	420000	4600	24000	17000	57000	21000	57000	44000	120000	190000000	250000000	180000	840000	920000	-	-	-	-	-
1,1-Dichloroethane	ug/kg	--	18000	50000	15000	890000	230000	430000	2100000	2500000	5900000	6000000	14000000	14000000	33000000000	15000000000	890000	890000	890000	-	-	-	-	-
1,1-Dichloroethene	ug/kg	--	140	140	2600	220000	62	330	1100	3700	5300	15000	13000	37000	62000000	78000000	200000	570000	570000	-	-	-	-	-
1,2,4-Trichlorobenzene	ug/kg	--	4200	4200	5900	1100000	1100000	1100000	28000000	34000000	28000000	34000000	28000000	34000000	25000000000	11000000000	990000	1100000	1100000	-	-	-	-	-
1,2,4-Trimethylbenzene	ug/kg	--	2100	2100	570	110000	110000	110000	21000000	25000000	500000000	600000000	500000000	600000000	82000000000	36000000000	110000	110000	110000	**43000**[bcd]	**15000**[bcd]	ND(100)	**1900**[d]	540
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	--	10	10	ID	1200	220	1200	260	900	260	900	260	900	560000	700000	1200	1200	1200	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	--	20	20	110	500	670	3600	1700	5800	1700	5800	3300	9800	14000000	18000000	92	430	890000	-	-	-	-	-
1,2-Dichlorobenzene	ug/kg	--	14000	14000	280	210000	210000	210000	39000000	46000000	39000000	46000000	52000000	55000000	100000000000	44000000000	210000	210000	210000	-	-	-	-	-
1,2-Dichloroethane	ug/kg	--	100	100	7200	380000	2100	11000	6200	21000	11000	33000	26000	74000	120000000	150000000	91000	420000	1200000	-	-	-	-	-
1,2-Dichloropropane	ug/kg	--	100	100	4600	320000	4000	7400	25000	30000	50000	51000	110000	120000	270000000	120000000	140000	550000	550000	-	-	-	-	-
1,3,5-Trimethylbenzene	ug/kg	--	1800	1800	1100	94000	94000	94000	16000000	19000000	380000000	460000000	380000000	460000000	82000000000	36000000000	94000	94000	94000	**14000**[bcd]	**4700**[bcd]	ND(100)	630	ND(200)
1,3-Dichlorobenzene	ug/kg	--	170	480	680	51000	26000	48000	79000	94000	79000	94000	110000	110000	200000000	8800000	170000	170000	170000	-	-	-	-	-
1,4-Dichlorobenzene	ug/kg	--	1700	1700	360	140000	19000	100000	77000	260000	77000	260000	110000	340000	450000000	570000000	400000	1900000	--	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	--	260000	760000	44000	27000000	27000000	27000000	29000000	35000000	29000000	35000000	35000000	36000000	67000000000	29000000000	27000000	27000000	27000000	-	-	-	-	-
2-Hexanone	ug/kg	--	20000	58000	ID	2500000	990000	1800000	1100000	1300000	1100000	1300000	1400000	1500000	2700000000	1200000000	2500000	2500000	2500000	-	-	-	-	-
2-Methylnaphthalene	ug/kg	--	57000	170000	4200	5500000	2700000	4900000	1500000	1800000	1500000	1800000	1500000	1800000	670000000	290000000	8100000	26000000	--	ND(2500)	ND(1250)	ND(250)	ND(250)	ND(500)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	--	36000	100000	ID	2700000	2700000	2700000	45000000	53000000	45000000	53000000	67000000	70000000	140000000000	60000000000	2700000	2700000	2700000	-	-	-	-	-
Acetone	ug/kg	--	15000	42000	34000	110000000	110000000	110000000	130000000	160000000	130000000	160000000	190000000	200000000	390000000000	170000000000	23000000	73000000	110000000	-	-	-	-	-
Benzene	ug/kg	--	100	100	4000	220000	1600	8400	13000	45000	34000	99000	79000	230000	380000000	470000000	180000	400000	400000	**1600**[bc]	ND(250)	ND(50)	ND(50)	**2300**[bcr]
Bromodichloromethane	ug/kg	--	1600	1600	ID	280000	1200	6400	9100	31000	9700	31000	19000	57000	84000000	110000000	110000	490000	1500000	-	-	-	-	-
Bromoform	ug/kg	--	1600	1600	ID	870000	150000	770000	900000	3100000	900000	3100000	900000	3100000	2800000000	3600000000	820000	870000	870000	-	-	-	-	-
Bromomethane (Methyl bromide)	ug/kg	--	200	580	700	1400000	860	1600	11000	13000	57000	57000	140000	140000	330000000	150000000	320000	1000000	2200000	-	-	-	-	-
Carbon disulfide	ug/kg	--	16000	46000	ID	280000	76000	140000	1300000	1600000	7900000	8000000	19000000	19000000	47000000000	21000000000	280000	280000	280000	-	-	-	-	-
Carbon tetrachloride	ug/kg	--	100	100	900	92000	190	990	3500	12000	12000	34000	28000	79000	130000000	170000000	96000	390000	390000	-	-	-	-	-
Chlorobenzene	ug/kg	--	2000	2000	500	260000	120000	220000	770000	920000	990000	1100000	2100000	2100000	4700000000	2100000000	260000	260000	260000	-	-	-	-	-
Chloroethane	ug/kg	--	8600	34000	22000	950000	950000	950000	30000000	36000000	120000000	120000000	280000000	280000000	670000000000	290000000000	950000	950000	950000	-	-	-	-	-
Chloroform (Trichloromethane)	ug/kg	--	1600	1600	7000	1500000	7200	38000	45000	150000	120000	340000	270000	790000	1300000000	1600000000	1200000	1500000	1500000	-	-	-	-	-
Chloromethane (Methyl chloride)	ug/kg	--	5200	22000	ID	1100000	2300	10000	40000	120000	410000	1000000	1000000	2500000	4900000000	2600000000	1100000	1100000	1100000	-	-	-	-	-
cis-1,2-Dichloroethene	ug/kg	--	1400	1400	12000	640000	22000	41000	180000	210000	420000	430000	990000	1000000	2300000000	1000000000	640000	640000	640000	-	-	-	-	-
cis-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Cyclohexane	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Dibromochloromethane	ug/kg	--	1600	1600	ID	360000	3900	21000	24000	80000	24000	80000	33000	98000	130000000	160000000	110000	500000	610000	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	--	95000	270000	ID	1000000	900000	1700000	53000000	63000000	550000000	550000000	1400000000	1400000000	3300000000000	1500000000000	1000000	1000000	1000000	-	-	-	-	-
Ethylbenzene	ug/kg	--	1500	1500	360	140000	87000	140000	720000	2400000	1000000	3100000	2200000	6500000	10000000000	13000000000	140000	140000	140000	**3600**[bcd]	**1000**[d]	ND(50)	**1600**[bcd]	ND(100)
Isopropyl benzene	ug/kg	--	91000	260000	3200	390000	390000	390000	1700000	2000000	1700000	2000000	2800000	3000000	5800000000	2600000000	390000	390000	390000	-	-	-	-	-
Methyl acetate	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Methyl cyclohexane	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Methyl tert butyl ether (MTBE)	ug/kg	--	800	800	140000	5900000	5900000	5900000	25000000	30000000	39000000	41000000	87000000	89000000	200000000000	88000000000	1500000	5900000	5900000	ND(2500)	ND(1250)	ND(250)	ND(250)	**4300**[bc]
Methylene chloride	ug/kg	--	100	100	30000	2300000	45000	240000	210000	700000	590000	1700000	1400000	4000000	6600000000	8300000000	1300000	2300000	2300000	-	-	-	-	-
Naphthalene	ug/kg	--	35000	100000	730	2100000	250000	470000	300000	350000	300000	350000	300000	350000	200000000	88000000	16000000	52000000	--	**3800**[d]	**2400**[d]	ND(250)	300	ND(500)
Styrene	ug/kg	--	2700	2700	2100	270000	250000	520000	970000	3300000	970000	3300000	1400000	4200000	5500000000	6900000000	400000	520000	520000	-	-	-	-	-
Tetrachloroethene	ug/kg	--	100	100	1200	88000	11000	21000	170000	210000	480000	490000	1100000	1100000	2700000000	1200000000	88000	88000	88000	-	-	-	-	-
Toluene	ug/kg	--	16000	16000	5400	250000	250000	250000	2800000	3300000	5100000	36000000	12000000	36000000	27000000000	12000000000	250000	250000	250000	**35000**[bcd]	**6800**[d]	ND(50)	1300	2300
trans-1,2-Dichloroethene	ug/kg	--	2000	2000	30000	1400000	23000	43000	280000	330000	830000	840000	2000000	2000000	4700000000	2100000000	1400000	1400000	1400000	-	-	-	-	-
trans-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Trichloroethene	ug/kg	--	100	100	4000	440000	1000	1900	11000	14000	25000	25000	57000	58000	130000000	59000000	500000	500000	500000	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	--	52000	150000		560000	560000	560000	92000000	110000000	630000000	140000000000	1500000000	140000000000	3800000000000	1700000000000	560000	560000	560000	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	--	550000	550000	1700	550000	550000	550000	180000000	210000000	880000000	890000000	2100000000	2100000000	5100000000000	2300000000000	550000	550000	550000	-	-	-	-	-
Vinyl chloride	ug/kg	--	40	40	260	20000	270	2800	4200	29000	30000	170000	73000	420000	350000000	890000000	3800	34000	490000	-	-	-	-	-
Xylenes (total)	ug/kg	--	5600	5600	820	150000	150000	150000	46000000	54000000	61000000	65000000	130000000	130000000	290000000000	130000000000	150000	150000	150000	**16000**[bcd]	**4900**[d]	ND(150)	**7700**[bcd]	390
Metals																								
Lead	ug/kg	48800	700000	700000	2800000	ID	NLV	NLV	NLV	NLV	NLV	NLV	NLV	NLV	100000000	44000000	400000	900000	--	-	-	-	-	-
Petroleum Hydrocarbons																								
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-	-

Notes:

[1] Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

[box] Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
Sample Location		SB-4	SB-5	SB-6	SB-7	SB-7	SB-8	SB-10	SB-11	SB-12	SB-12	SB-13	SB-13	SB-14	SB-14	SB-15	SB-15	SB-16	SB-16	SB-17	SB-17	SB-18	SB-18	SB-19	SB-19	SB-20
Sample Identification		SB-4A	SB-5	SB-6	SB-7	SB-7	SB-8	SB-10	SB-11	SB-12	SB-12	SB-13	SB-13	SB-14	SB-14	SB-15	SB-15	SB-16	SB-16	SB-17	SB-17	SB-18	SB-18	SB-19	SB-19	SB-20
Sample Date		12/27/2001	12/27/2001	12/27/2001	12/27/2001	12/27/2001	12/27/2001	5/19/2002	5/19/2002	5/19/2002	5/19/2002	5/19/2002	5/19/2002	11/8/2003	11/8/2003	11/8/2003	11/8/2003	11/8/2003	11/8/2003	11/8/2003	11/8/2003	11/9/2003	11/9/2003	11/9/2003	11/9/2003	11/9/2003
Sample Depth		(26-28) ft BGS	(8-10) ft BGS	(6-8) ft BGS	(4-6) ft BGS	(14-16) ft BGS	(6-8) ft BGS	(9-13) ft BGS	(8-12) ft BGS	(12-14) ft BGS	(16-20) ft BGS	(2-4) ft BGS	(23-24) ft BGS	(14-16) ft BGS	(27-28) ft BGS	(18-20) ft BGS	(30-32) ft BGS	(22-24) ft BGS	(30-32) ft BGS	(18-20) ft BGS	(30-32) ft BGS	(18-20) ft BGS	(30-32) ft BGS	(20-22) ft BGS	(30-32) ft BGS	(18-20) ft BGS
Sample Type																										
	Units																									
Volatile Organic Compounds (VOCs)																										
1,1,1-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	ug/kg	ND(100)	960[P]	ND(100)	ND(100)	ND(100)	ND(100)	590[P]	4700[NA]	1200[P]	220	100000[NA]	2500[NA]	9200[NA]	ND(100)	240000[NA,HQ]	ND(100)	640[P]	ND(100)	220000[NA,HQ]	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	ug/kg	ND(100)	310	ND(100)	ND(100)	ND(100)	ND(100)	330	1700[P]	320	ND(100)	37000[NA]	990	3300[NA]	ND(100)	79000[NA]	ND(100)	150	ND(100)	65000[NA]	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)
1,3-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	ug/kg	ND(250)	ND(500)	ND(250)	ND(250)	ND(250)	ND(250)	280	ND(250)	ND(250)	ND(250)	5700[P]	ND(250)	ND(2750)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/kg	ND(50)	300[NA]	ND(50)	ND(50)	700[NA]	ND(50)	ND(50)	ND(50)	270[NA]	ND(50)	1000[NA]	140[NA]	200[NA]	ND(50)	13000[NA,HQ]	ND(50)	330[NA]	ND(50)	14000[NA,HQ]	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Bromodichloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl chloride)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/kg	ND(50)	510[P]	ND(50)	ND(50)	ND(50)	ND(50)	50	78	270	61	9500[NA]	290	5800[NA]	ND(50)	32000[NA]	ND(50)	520[P]	ND(50)	52000[NA]	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
Isopropyl benzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert butyl ether (MTBE)	ug/kg	ND(250)	ND(500)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	570	ND(3000)	26000[NA]	ND(2750)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)
Methylene chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ug/kg	ND(250)	ND(500)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	360	ND(250)	ND(250)	15000[P]	ND(250)	ND(2750)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(25000)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)
Styrene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/kg	ND(50)	6500[P]	ND(50)	ND(50)	680	ND(50)	250	110	3700	480	14000[P]	3100	69000[NA]	150	230000[NA]	ND(50)	1400	ND(50)	190000[NA]	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)
trans-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/kg	ND(150)	2200[P]	ND(150)	ND(150)	ND(150)	ND(150)	240	600	1100[P]	240	56000[NA]	1100[P]	22000[NA]	ND(150)	140000[NA]	ND(150)	2100[P]	ND(150)	250000[NA,HQ]	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)
Metals																										
Lead	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons																										
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*
Sample Location		*SB-20*	*SB-21*	*SB-21*	*SB-22*	*SB-22*	*SB-23*	*SB-23*	*SB-24*	*SB-24*	*SB-25*	*SB-25*	*SB-26*	*SB-26*	*SB-27*	*SB-27*	*SB-27*	*SB-28*	*SB-28*	*SB-29*	*SB-29*	*SB-30*	*SB-30*	*SB2-32*	*SB2-33*
Sample Identification		*SB-20*	*SB-21*	*SB-21*	*SB-22*	*SB-22*	*SB-23*	*SB-23*	*SB-24*	*SB-24*	*SB-25*	*SB-25*	*SB-26*	*SB-26*	*SB-27*	*SB-27*	*SB-27A*	*SB-28*	*SB-28*	*SB-29*	*SB-29*	*SB-30*	*SB-30*	*S-48891-100209-EV-001*	*S-48891-100209-EV-002*
Sample Date		*11/9/2003*	*11/9/2003*	*11/9/2003*	*4/3/2004*	*4/3/2004*	*4/3/2004*	*4/3/2004*	*4/3/2004*	*4/3/2004*	*4/4/2004*	*4/4/2004*	*4/4/2004*	*4/4/2004*	*4/4/2004*	*4/4/2004*	*5/16/2004*	*4/4/2004*	*4/4/2004*	*5/16/2004*	*5/16/2004*	*5/16/2004*	*5/16/2004*	*10/2/2009*	*10/2/2009*
Sample Depth		*(30-32) ft BGS*	*(20-22) ft BGS*	*(30-32) ft BGS*	*(16-18) ft BGS*	*(26-28) ft BGS*	*(12-14) ft BGS*	*(26-28) ft BGS*	*(18-20) ft BGS*	*(26-28) ft BGS*	*(18-20) ft BGS*	*(26-28) ft BGS*	*(18-20) ft BGS*	*(26-28) ft BGS*	*(16-18) ft BGS*	*(30-32) ft BGS*	*(35-36) ft BGS*	*(4-6) ft BGS*	*(14-16) ft BGS*	*(17-19) ft BGS*	*(26-28) ft BGS*	*(8-10) ft BGS*	*(22-24) ft BGS*	*(18.5-19.5) ft BGS*	*(16-17) ft BGS*
Sample Type																									
	Units																								
Volatile Organic Compounds (VOCs)																									
1,1,1-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	ug/kg	ND(100)	410	ND(100)	**53000[bcd]**	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	**330000[bcdefgpqr]**	ND(1100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	**74000[bcd]**	**62000[bcd]**
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	ug/kg	ND(100)	170	ND(100)	**13000[bcd]**	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	**87000[bcd]**	ND(1100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	ND(100)	**21000[bcd]**	**17000[bcd]**
1,3-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	ug/kg	ND(250)	ND(250)	ND(250)	ND(2500)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(4000)	ND(2750)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	1500 J	**4900 J[d]**
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/kg	ND(50)	ND(50)	ND(50)	**10000[bcdfg]**	ND(50)	**2800[bcf]**	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	**2200[bcf]**	**90000[bcdfghijr]**	ND(50)	ND(50)	ND(50)	84	ND(50)	ND(50)	ND(50)	**1400[bc]**	ND(880)
Bromodichloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl chloride)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/kg	ND(50)	59	ND(50)	**20000[bcd]**	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	**120000[bcdr]**	ND(550)	ND(50)	ND(50)	ND(50)	**1100[d]**	ND(50)	ND(50)	ND(50)	**26000[bcd]**	**29000[bcd]**
Isopropyl benzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert butyl ether (MTBE)	ug/kg	ND(250)	ND(250)	ND(250)	ND(2500)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(4000)	ND(2750)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(5500)	ND(4400)
Methylene chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ug/kg	ND(250)	ND(250)	ND(250)	**3400[d]**	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(4000)	ND(2750)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	ND(250)	**6600[d]**	**6200[d]**
Styrene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/kg	ND(50)	590	ND(50)	**52000[bcd]**	ND(50)	110	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	**210000[bcd]**	ND(550)	ND(50)	ND(50)	ND(50)	1500	ND(50)	ND(50)	ND(50)	**8400[d]**	**21000[bcd]**
trans-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/kg	ND(150)	220	ND(150)	**130000[bcd]**	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	ND(150)	**650000[bcdefgpqr]**	ND(1650)	ND(150)	ND(150)	ND(150)	**4200[d]**	ND(150)	ND(150)	ND(150)	**93000[bcd]**	**140000[bcd]**
Metals																									
Lead	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons																									
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

[1] Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

[box] Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		02	02	02	02	02	02	02	02	02	02	02	02	02	02
Sample Location		SB2-34	SB2-35	SB2-36	SB2-37	SB2-37	SB2-38	SB2-39	SB2-40	SB2-41	SB2-42	SB2-43	SB2-44	SB2-45	SB2-46	SB2-46
Sample Identification		S-48891-100209-EV-003	S-48891-100209-EV-004	S-48891-100509-EV-006	S-48891-100509-EV-007	S-48891-100509-EV-008	S-48891-100509-EV-009	S-48891-100509-EV-010	S-48891-100609-EV-019	S-48891-100609-EV-020	S-48891-100609-EV-021	S-48891-100609-EV-022	S-48891-100709-EV-024	S-48891-100709-EV-025	S-48891-100709-EV-026	S-48891-100709-EV-027
Sample Date		10/2/2009	10/2/2009	10/5/2009	10/5/2009	10/5/2009	10/5/2009	10/5/2009	10/6/2009	10/6/2009	10/6/2009	10/6/2009	10/7/2009	10/7/2009	10/7/2009	10/7/2009
Sample Depth		(23-24) ft BGS	(11.5-12.5) ft BGS	(15.5-) ft BGS	(14-14.5) ft BGS	(14-14.5) ft BGS	(14.5-15) ft BGS	(10-10.5) ft BGS	(7.5-8) ft BGS	(13.5-14) ft BGS	(14-14.5) ft BGS	(4-4.5) ft BGS	(17-17.5) ft BGS	(6.5-7) ft BGS	(4-5) ft BGS	(4-5) ft BGS
Sample Type						Duplicate										Duplicate
	Units															
Volatile Organic Compounds (VOCs)																
1,1,1-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	ug/kg	ND(1500)	44 J	6200[a,(1)]	76 J	78 J	ND(88)	650[a]	ND(89)	ND(87)	ND(89)	ND(77)	65000[a,(1)]	ND(88)	ND(87)	ND(92)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	ug/kg	ND(1500)	ND(88)	2200[a,(1)]	ND(88)	ND(89)	ND(88)	180	ND(89)	ND(87)	ND(89)	ND(77)	21000[a,(1)]	ND(88)	ND(87)	ND(92)
1,3-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	ug/kg	ND(4800)	ND(290)	ND(2900)	ND(290)	ND(290)	ND(290)	ND(290)	ND(290)	ND(290)	ND(290)	ND(250)	ND(9900)	ND(290)	ND(290)	ND(300)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/kg	8200[a,(1)]	390[a]	2600[a,(1)]	1200[a]	1200[a]	87	9.3 J	ND(45)	ND(44)	29 J	ND(38)	4000[a,(1)]	ND(44)	ND(43)	ND(46)
Bromodichloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl chloride)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/kg	ND(730)	23 J	3500[a,(1)]	49	40 J	ND(44)	150	ND(45)	ND(44)	ND(44)	ND(38)	13000[a,(1)]	ND(44)	ND(43)	ND(46)
Isopropyl benzene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert butyl ether (MTBE)	ug/kg	ND(3600)	ND(220)	310 J	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(190)	ND(7500)	ND(220)	ND(220)	ND(230)
Methylene chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	ug/kg	ND(3600)	ND(220)	ND(2200)	ND(220)	18 J	ND(220)	56 J	ND(220)	ND(220)	ND(220)	ND(190)	3400 J[a]	ND(220)	ND(220)	ND(230)
Styrene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/kg	56000[a,(1)]	810	50000[a,(1)]	1400	1300	24 UB	240	ND(89)	ND(87)	ND(89)	ND(77)	130000[a,(1)]	ND(88)	ND(87)	ND(92)
trans-1,2-Dichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	ug/kg	ND(2200)	76 J	13000[a,(1)]	120 J	99 J	34 UB	830[a]	ND(130)	ND(130)	ND(130)	ND(120)	45000[a,(1)]	26 UB	ND(130)	ND(140)
Metals																
Lead	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons																
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
Sample Location		SB2-47	SB2-47	SB2-48	SB2-49	SB2-49	SB2-50	SB2-51	SB2-52	SB2-53	SB2-54	SB2-55	SB2-56	SB2-56	SB2-59	SB2-60
Sample Identification		S-48891-101909-EV-049	S-48891-101909-EV-050	S-48891-101909-EV-051	S-48891-071112-SK-015	S-48891-071812-SK-015	S-48891-071112-SK-013	S-48891-071812-SK-041	S-48891-071012-SK-006	S-48891-071012-SK-005	S-48891-071212-SK-020	S-48891-071212-SK-019	S-48891-071112-SK-018	S-48891-071812-SK-018	S-48891-071112-SK-017	S-48891-070912-SK-002
Sample Date		10/19/2009	10/19/2009	10/19/2009	7/11/2012	7/18/2012	7/11/2012	7/18/2012	7/10/2012	7/10/2012	7/12/2012	7/12/2012	7/11/2012	7/18/2012	7/11/2012	7/9/2012
Sample Depth		(20-20.5) ft BGS	(20-20.5) ft BGS	(4-4.5) ft BGS	(15-) ft BGS	(15-) ft BGS	(17.5-) ft BGS	(19.5-) ft BGS	(14.2-) ft BGS	(14.5-) ft BGS	(12.3-) ft BGS	(16.5-) ft BGS	(15.4-) ft BGS	(15-) ft BGS	(16-) ft BGS	(12-) ft BGS
Sample Type			Duplicate													
	Units															
Volatile Organic Compounds (VOCs)																
1,1,1-Trichloroethane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,1,2,2-Tetrachloroethane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,1,2-Trichloroethane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,1-Dichloroethane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,1-Dichloroethene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,2,4-Trichlorobenzene	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	18 J	ND(230)	-	-	ND(220)	-	-
1,2,4-Trimethylbenzene	ug/kg	51 J	41 J	ND(1600)	-	-	ND(87)	ND(88)	ND(89)	ND(88)	-	ND(100)	-	-	ND(89)	ND(88)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	-	-	-	-	ND(230)	ND(220)	ND(220)	ND(220)	ND(220)	ND(230)	ND(260)	-	ND(220)	ND(220)	ND(220)
1,2-Dichlorobenzene	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
1,2-Dichloroethane	ug/kg	-	-	-	-	ND(45)	ND(43)	ND(44)	ND(44)	ND(44)	ND(45)	ND(52)	-	ND(44)	ND(44)	ND(44)
1,2-Dichloropropane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
1,3,5-Trimethylbenzene	ug/kg	ND(88)	ND(88)	**1500 J**[a]	-	-	ND(87)	ND(88)	ND(89)	ND(88)	-	ND(100)	-	-	ND(89)	ND(88)
1,3-Dichlorobenzene	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
1,4-Dichlorobenzene	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	-	-	-	-	ND(680)	-	ND(660)	-	ND(660)	ND(680)	-	-	ND(660)	-	-
2-Hexanone	ug/kg	-	-	-	-	ND(2300)	-	ND(2200)	-	ND(2200)	ND(2300)	-	-	ND(2200)	-	-
2-Methylnaphthalene	ug/kg	ND(290)	ND(290)	**14000**[a]	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	-	-	-	-	ND(2300)	-	ND(2200)	-	ND(2200)	ND(2300)	-	-	ND(2200)	-	-
Acetone	ug/kg	-	-	-	-	ND(680)	-	ND(660)	-	ND(660)	ND(680)	-	-	ND(660)	-	-
Benzene	ug/kg	**760**[a,b]	**800**[a,b]	ND(820)	-	ND(45)	ND(43)	ND(44)	ND(44)	ND(44)	ND(45)	ND(52)	-	ND(44)	ND(44)	ND(44)
Bromodichloromethane	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
Bromoform	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
Bromomethane (Methyl bromide)	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Carbon disulfide	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Carbon tetrachloride	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Chlorobenzene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Chloroethane	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Chloroform (Trichloromethane)	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Chloromethane (Methyl chloride)	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
cis-1,2-Dichloroethene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
cis-1,3-Dichloropropene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Cyclohexane	ug/kg	-	-	-	-	ND(1100)	-	ND(1100)	-	ND(1100)	ND(1100)	-	-	ND(1100)	-	-
Dibromochloromethane	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
Ethylbenzene	ug/kg	21 J	38 J	ND(820)	-	ND(45) UB	ND(43)	ND(44)	ND(44)	ND(44)	ND(45)	ND(52)	-	ND(44)	ND(44)	ND(44)
Isopropyl benzene	ug/kg	-	-	-	-	36 J	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Methyl acetate	ug/kg	-	-	-	-	ND(1100)	-	ND(1100)	-	ND(1100)	ND(1100)	-	-	ND(1100)	-	-
Methyl cyclohexane	ug/kg	-	-	-	-	400 J	-	ND(1100)	-	ND(1100)	ND(1100)	-	-	ND(1100)	-	-
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(220)	ND(4100)	-	ND(230)	ND(220)	ND(220)	ND(220)	ND(220)	ND(230)	ND(260)	-	ND(220)	ND(220)	ND(220)
Methylene chloride	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Naphthalene	ug/kg	ND(220)	ND(220)	**2700 J**[a]	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Tetrachloroethene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Toluene	ug/kg	90	51 J	ND(1600)	-	ND(91)	ND(87)	ND(88)	ND(89)	ND(88)	ND(90)	ND(100)	-	ND(88)	ND(89)	ND(88)
trans-1,2-Dichloroethene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
trans-1,3-Dichloropropene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Trichloroethene	ug/kg	-	-	-	-	ND(45)	-	ND(44)	-	ND(44)	ND(45)	-	-	ND(44)	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	-	-	-	-	ND(91)	-	ND(88)	-	ND(88)	ND(90)	-	-	ND(88)	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	-	-	-	-	ND(230)	-	ND(220)	-	ND(220)	ND(230)	-	-	ND(220)	-	-
Vinyl chloride	ug/kg	-	-	-	-	ND(36)	-	ND(35)	-	ND(35)	ND(36)	-	-	ND(35)	-	-
Xylenes (total)	ug/kg	20 J	33 J	ND(2500)	-	ND(140) UB	ND(130)	ND(130)	ND(130)	ND(130)	ND(140)	ND(150)	-	ND(130)	ND(130)	ND(130)
Metals																
Lead	ug/kg	-	-	-	4800	-	-	4800	-	15000	-	-	4100	-	-	-
Petroleum Hydrocarbons																
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	32000	31000
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	56000	55000
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	85 J	2900 J

Notes:

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SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
Sample Location		SB2-61	SB2-62	SB2-63	SB2-63	SB2-63	SB2-63	SB2-64	SB2-64	SB2-65	SB2-66	SB2-67	SB2-72	SB2-73	SB2-74	SB2-75
Sample Identification		S-48891-071812-SK-016	S-48891-071112-SK-014	S-48891-071012-SK-007	S-48891-071012-SK-010	S-48891-071112-SK-011	S-48891-071112-SK-012	S-48891-071012-SK-008	S-48891-071012-SK-009	S-48891-070912-SK-003	S-48891-070912-SK-001	S-48891-070912-SK-004	SO-48891-022813-DR-022	SO-48891-022113-DR-016	SO-48891-022813-DR-023	SO-48891-022013-DR-014
Sample Date		7/18/2012	7/11/2012	7/10/2012	7/10/2012	7/11/2012	7/11/2012	7/10/2012	7/10/2012	7/9/2012	7/9/2012	7/9/2012	2/28/2013	2/21/2013	2/28/2013	2/20/2013
Sample Depth		(19.5-) ft BGS	(15.5-) ft BGS	(32.5-) ft BGS	(35-) ft BGS	(32.5-) ft BGS	(35-) ft BGS	(6.2-) ft BGS	(35-) ft BGS	(14-) ft BGS	(13-) ft BGS	(12-) ft BGS	(20-22) ft BGS	(4-6) ft BGS	(2-) ft BGS	(4-6) ft BGS
Sample Type																
	Units															
Volatile Organic Compounds (VOCs)																
1,1,1-Trichloroethane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,1,2,2-Tetrachloroethane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,1,2-Trichloroethane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,1-Dichloroethane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,1-Dichloroethene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,2,4-Trichlorobenzene	ug/kg	-	-	73 J	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
1,2,4-Trimethylbenzene	ug/kg	ND(880)	17 J	230 J	140	-	-	ND(93)	ND(89)	ND(89)	ND(88)	ND(88)	ND(86)	ND(99)	ND(88)	ND(89)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(2200)	ND(220)	ND(890)	ND(210)	-	-	ND(230)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(250)	ND(220)	ND(220)
1,2-Dichlorobenzene	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
1,2-Dichloroethane	ug/kg	ND(440)	ND(44)	ND(180)	ND(43)	-	-	ND(47)	ND(44)	ND(44)	ND(44)	ND(44)	ND(43)	ND(50)	ND(44)	ND(45)
1,2-Dichloropropane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
1,3,5-Trimethylbenzene	ug/kg	ND(880)	ND(89)	97 J	48 J	-	-	ND(93)	ND(89)	ND(89)	ND(88)	ND(88)	ND(86)	ND(99)	ND(88)	ND(89)
1,3-Dichlorobenzene	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
1,4-Dichlorobenzene	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	-	-	ND(2700)	ND(640)	-	-	-	-	-	ND(660)	-	ND(650)	ND(740)	ND(660)	ND(670)
2-Hexanone	ug/kg	-	-	ND(8900)	ND(2100)	-	-	-	-	-	ND(2200)	-	ND(2200)	ND(2500)	ND(2200)	ND(2200)
2-Methylnaphthalene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	-	-	ND(8900)	ND(2100)	-	-	-	-	-	ND(2200)	-	ND(2200)	ND(2500)	ND(2200)	ND(2200)
Acetone	ug/kg	-	-	ND(2700)	ND(640)	-	-	-	-	-	ND(660)	-	ND(650)	ND(740)	ND(660)	ND(670)
Benzene	ug/kg	3100 (a)	ND(44)	ND(180)	ND(43)	-	-	ND(47)	ND(44)	ND(44)	ND(44)	ND(44)	ND(43)	ND(50)	ND(44)	ND(45)
Bromodichloromethane	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
Bromoform	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
Bromomethane (Methyl bromide)	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Carbon disulfide	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Carbon tetrachloride	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Chlorobenzene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Chloroethane	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Chloroform (Trichloromethane)	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Chloromethane (Methyl chloride)	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
cis-1,2-Dichloroethene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
cis-1,3-Dichloropropene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Cyclohexane	ug/kg	-	-	ND(4300)	ND(1000)	-	-	-	-	-	ND(1100)	-	ND(1000)	ND(1200)	ND(1100)	ND(1100)
Dibromochloromethane	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Dichlorodifluoromethane (CFC-12)	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
Ethylbenzene	ug/kg	460 (a)	ND(44)	28 J	15 J	-	-	ND(47)	ND(44)	ND(44)	ND(44)	ND(44)	ND(43)	ND(50)	ND(44)	ND(45)
Isopropyl benzene	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Methyl acetate	ug/kg	-	-	ND(4300)	ND(1000)	-	-	-	-	-	ND(1100)	-	27 J	53 J	ND(1100)	ND(1100)
Methyl cyclohexane	ug/kg	-	-	ND(4300)	ND(1000)	-	-	-	-	-	ND(1100)	-	ND(1000)	ND(1200)	ND(1100)	ND(1100)
Methyl tert butyl ether (MTBE)	ug/kg	220 J	140 J	7100 (a)	42 J	-	-	ND(230)	370	ND(220)	ND(220)	ND(220)	ND(220)	ND(250)	ND(220)	ND(220)
Methylene chloride	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Naphthalene	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Tetrachloroethene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Toluene	ug/kg	27000 (a)	ND(89)	200 J	110	-	-	ND(93)	ND(89)	ND(89)	ND(88)	ND(88)	ND(86)	ND(99)	ND(88)	ND(89)
trans-1,2-Dichloroethene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
trans-1,3-Dichloropropene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Trichloroethene	ug/kg	-	-	ND(180)	ND(43)	-	-	-	-	-	ND(44)	-	ND(43)	ND(50)	ND(44)	ND(45)
Trichlorofluoromethane (CFC-11)	ug/kg	-	-	ND(360)	ND(85)	-	-	-	-	-	ND(88)	-	ND(86)	ND(99)	ND(88)	ND(89)
Trifluorotrichloroethane (Freon 113)	ug/kg	-	-	ND(890)	ND(210)	-	-	-	-	-	ND(220)	-	ND(220)	ND(250)	ND(220)	ND(220)
Vinyl chloride	ug/kg	-	-	ND(140)	ND(34)	-	-	-	-	-	ND(35)	-	ND(35)	ND(40)	ND(35)	ND(36)
Xylenes (total)	ug/kg	1600 (a)	11 J	81 J	54 J	-	-	ND(140)	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)	ND(150)	ND(130)	ND(130)
Metals																
Lead	ug/kg	-	-	-	-	4700	4300	-	-	-	5300	-	-	-	-	-
Petroleum Hydrocarbons																
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.2

SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*	*02*
Sample Location		*SB2-76*	*SB2-77*	*SB2-77*	*SB2-77*	*SB2-78*	*SB2-78*	*SB-13*	*SB-13*	*SB-17*
Sample Identification		*SO-48891-022013-DR-015*	*SO-48891-022113-DR-019*	*SO-48891-022113-DR-020*	*SO-48891-022113-DR-021*	*SO-48891-022113-DR-017*	*SO-48891-022113-DR-018*	*S-48891-061608-NRS-0141*	*S-48891-061608-NRS-0142*	*S-48891-061608-NRS-0144*
Sample Date		*2/20/2013*	*2/21/2013*	*2/21/2013*	*2/21/2013*	*2/21/2013*	*2/21/2013*	*6/16/2008*	*6/16/2008*	*6/16/2008*
Sample Depth		*(3-5) ft BGS*	*(1-2) ft BGS*	*(8-10) ft BGS*	*(8-10) ft BGS*	*(4-5) ft BGS*	*(13-15) ft BGS*	*(18-19) ft BGS*	*(27-28) ft BGS*	*(27-28) ft BGS*
Sample Type					*Duplicate*					
	Units									
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane	ug/kg	ND(44)	45	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,1,2,2-Tetrachloroethane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,1,2-Trichloroethane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,1-Dichloroethane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,1-Dichloroethene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,2,4-Trichlorobenzene	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
1,2,4-Trimethylbenzene	ug/kg	ND(88)	46 J	21 J	36 J	ND(95)	12 J	ND(89)	ND(90)	ND(88)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
1,2-Dichlorobenzene	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
1,2-Dichloroethane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,2-Dichloropropane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
1,3,5-Trimethylbenzene	ug/kg	ND(88)	ND(80)	22 J	26 J	ND(95)	ND(94)	ND(89)	ND(90)	ND(88)
1,3-Dichlorobenzene	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
1,4-Dichlorobenzene	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	ND(660)	ND(600)	ND(680)	ND(680)	ND(710)	ND(700)	-	-	-
2-Hexanone	ug/kg	ND(2200)	ND(2000)	ND(2300)	ND(2300)	ND(2400)	ND(2300)	-	-	-
2-Methylnaphthalene	ug/kg	-	-	-	-	-	-	ND(290)	ND(300)	ND(290)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(2200)	ND(2000)	ND(2300)	ND(2300)	ND(2400)	ND(2300)	-	-	-
Acetone	ug/kg	ND(660)	ND(600)	ND(680)	ND(680)	ND(710)	ND(700)	-	-	-
Benzene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	ND(45)	ND(45)	ND(44)
Bromodichloromethane	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
Bromoform	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
Bromomethane (Methyl bromide)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
Carbon disulfide	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
Carbon tetrachloride	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Chlorobenzene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Chloroethane	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
Chloroform (Trichloromethane)	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Chloromethane (Methyl chloride)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
cis-1,2-Dichloroethene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
cis-1,3-Dichloropropene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Cyclohexane	ug/kg	ND(1100)	ND(960)	ND(1100)	ND(1100)	74 J	ND(1100)	-	-	-
Dibromochloromethane	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
Ethylbenzene	ug/kg	ND(44)	ND(40)	9.9 J	9.7 J	ND(47)	ND(47)	ND(45)	ND(45)	ND(44)
Isopropyl benzene	ug/kg	ND(220)	ND(200)	18 J	21 J	ND(240)	ND(230)	-	-	-
Methyl acetate	ug/kg	ND(1100)	56 J	39 J	38 J	70 J	63 J	-	-	-
Methyl cyclohexane	ug/kg	ND(1100)	ND(960)	ND(1100)	ND(1100)	450 J	ND(1100)	-	-	-
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	ND(220)	ND(220)	ND(220)
Methylene chloride	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
Naphthalene	ug/kg	-	-	-	-	-	-	ND(220)	ND(220)	ND(220)
Styrene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Tetrachloroethene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Toluene	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	ND(89)	ND(90)	ND(88)
trans-1,2-Dichloroethene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
trans-1,3-Dichloropropene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Trichloroethene	ug/kg	ND(44)	ND(40)	ND(45)	ND(46)	ND(47)	ND(47)	-	-	-
Trichlorofluoromethane (CFC-11)	ug/kg	ND(88)	ND(80)	ND(90)	ND(91)	ND(95)	ND(94)	-	-	-
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(220)	ND(200)	ND(230)	ND(230)	ND(240)	ND(230)	-	-	-
Vinyl chloride	ug/kg	ND(35)	ND(32)	ND(36)	ND(36)	ND(38)	ND(37)	-	-	-
Xylenes (total)	ug/kg	ND(130)	ND(120)	28 J	27 J	ND(140)	ND(140)	ND(130)	ND(130)	ND(130)
Metals										
Lead	ug/kg	-	-	-	-	-	-	-	-	-
Petroleum Hydrocarbons										
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	-	-	-	-	-	-	-	-	-

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

Exceeds Part 201 Generic Cleanup Criteria. Superscript notes the criterion exceeded.

Highlighted boring indicates location was within the limits of excavation (i.e. impacts were completely removed)

U - Not detected at the associated reporting limit.

J - Estimated concentration.

TABLE 4.3

AIR-KNIFE INVESTIGATION DETAILS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

AIR-KNIFE LOCATION	DEPTH EVACUATED (ft bgs)
AK-1	--
AK-2	5.0
AK-3	5.0
AK-4	5.0
AK-5	8.0
AK-6	5.0
AK-7	5.0
AK-8	6.0
AK-9	5.0
AK-10	6.0
AK-11	5.0
AK-12	5.0
AK-13	5.0
AK-14	5.0
AK-15	5.0
AK-16	5.0
AK-17	2.5
AK-18	5.0
AK-19	5.0
AK-20	5.0
AK-21	5.0
AK-22	2.5
AK-23	2.0
AK-24	3.0
AK-25	5.0
AK-26	5.0
AK-27	5.0
AK-28	5.0
AK-29	5.0
AK-30	3.0
AK-31	2.5
AK-32	5.0
AK-33	5.0
AK-34	5.0
AK-35	5.0
AK-36	5.0
AK-37	2.0
AK-38	2.5
AK-39	5.0
AK-40	5.0
AK-41	5.0
AK-42	5.0

Notes:
Location AK-1 was not investigated, same location as MW-10, used as the grid starting point

TABLE 4.4

GROUNDWATER SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels [1]					02	02	02	02	02	02	02	02	02
Sample Location		Residential	Non-Residential	Groundwater	Non-Residential	Groundwater	MW-13R	MW2-45	MW-7	MW-7	MW-7	MW-8	MW-9	MW-9	MW-9
Sample Identification		Drinking	Drinking	Surface Water	Groundwater	Contact	GW-48891-102408-NRS-063	GW-48891-112309-EM-009	GW-48891-112008-DR-002	GW-48891-112008-DR-003	GW-48891-112309-EM-012	GW-48891-112309-EM-003	GW-48891-112008-DR-007	GW-48891-112309-EM-005	GW-48891-112309-EM-006
Sample Date		Water	Water	Interface	Volatilization to Indoor Air Inhalation		10/24/2008	11/23/2009	11/20/2008	11/20/2008	11/23/2009	11/23/2009	11/20/2008	11/23/2009	11/23/2009
Sample Type										Duplicate					Duplicate
	Units	a	b	c	d	e									
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	ug/L	200	200	89	1300000	1300000	ND(1.0)	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	7	7	130	1300	11000	ND(1.0)	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	ug/L	63	63	17	56000	56000	ND(1.0) U	3.6	0.18 J	0.17 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	72	72	45	61000	61000	ND(1.0) U	0.88 J	0.50 J	0.50 J	ND(1.0)	ND(1.0)	0.47 J	ND(1.0)	ND(1.0)
2-Methylnaphthalene	ug/L	260	750	19	25000	25000	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Benzene	ug/L	5	5	200	35000	11000	ND(1.0)	0.25 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	430	1700	1100	5700000	440000	ND(1.0)	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	70	70	620	210000	200000	ND(1.0)	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	74	74	18	170000	170000	ND(1.0)	0.73 J	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropyl benzene	ug/L	800	2300	28	56000	56000	ND(5.0)	--	--	--	--	--	--	--	--
Naphthalene	ug/L	520	1500	11	31000	31000	ND(5.0)	0.98 J	ND(5.0)	ND(5.0) U	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Tetrachloroethene	ug/L	5	5	60	170000	12000	ND(1.0)	--	--	--	--	--	--	--	--
Toluene	ug/L	790	790	270	530000	530000	0.44 J	3.7	ND(1.0)	ND(1.0)	ND(1.0)	0.15 J	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	2	2	13	13000	1000	ND(1.0)	--	--	--	--	--	--	--	--
Xylenes (total)	ug/L	280	280	41	190000	190000	ND(2.0)	4.7	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)
Semi-Volatile Organic Compounds (SVOCs)															
2-Methylnaphthalene	ug/L	260	750	19	25000	25000	ND(5.0)	--	--	--	--	--	--	--	--
Naphthalene	ug/L	520	1500	11	31000	31000	ND(5.0)	--	--	--	--	--	--	--	--
PCBs															
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	45	3.3	ND(0.10)	--	--	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	45	3.3	ND(0.10)	--	--	--	--	--	--	--	--

See Notes on Page 2

TABLE 4.4

GROUNDWATER SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC		02	02	02	02	02	02	02	02	02
Sample Location		MW-10	MW-10	MW-12	MW-12	RW-1	RW-2	RW-4	TW2-38	TW2-42
Sample Identification		GW-48891-112008-DR-001	GW-48891-112309-EM-004	GW-48891-112008-DR-004	GW-48891-112309-EM-001	GW-48891-112309-EM-010	GW-48891-112309-EM-011	GW-48891-112309-EM-002	GW-48891-112309-EM-008	GW-48891-112309-EM-007
Sample Date		11/20/2008	11/23/2009	11/20/2008	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009	11/23/2009
Sample Type										
	Units									
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane	ug/L	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	ug/L	**90[abc]**	**18[c]**	ND(1.0)	ND(1.0)	**900[abc]**	**2300[abc]**	**3600[abc]**	**1500[abc]**	**1400[abc]**
1,3,5-Trimethylbenzene	ug/L	25	4.0	ND(1.0)	ND(1.0)	11 J	**590[abc]**	**970[abc]**	**330[abc]**	**330[abc]**
2-Methylnaphthalene	ug/L	ND(20)	1.0 J	ND(5.0)	ND(5.0)	15 J	ND(1200)	ND(2500)	ND(1200)	ND(1200)
Benzene	ug/L	1.0 J	0.72 J	ND(1.0)	ND(1.0)	ND(20)	**1900[abc]**	**3800[abc]**	**9200[abc]**	**11000[abc]**
Chloroethane	ug/L	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	7.1	2.8	ND(1.0)	ND(1.0)	**56[c]**	**500[abc]**	**1400[abc]**	**2000[abc]**	**1900[abc]**
Isopropyl benzene	ug/L	--	--	--	--	--	--	--	--	--
Naphthalene	ug/L	ND(20) U	1.1 J	ND(5.0)	ND(5.0)	**77 J[c]**	**250 J[c]**	**360 J[c]**	**240 J[c]**	**200 J[c]**
Tetrachloroethene	ug/L	--	--	--	--	--	--	--	--	--
Toluene	ug/L	5.3	5.8	ND(1.0)	ND(1.0)	3.0 J	**20000[abc]**	**45000[abc]**	**21000[abc]**	**18000[abc]**
Vinyl chloride	ug/L	--	--	--	--	--	--	--	--	--
Xylenes (total)	ug/L	17	4.0	ND(2.0)	ND(2.0)	ND(40)	**4000[abc]**	**5400[abc]**	**11000[abc]**	**9800[abc]**
Semi-Volatile Organic Compounds (SVOCs)										
2-Methylnaphthalene	ug/L	--	--	--	--	--	--	--	--	--
Naphthalene	ug/L	--	--	--	--	--	--	--	--	--
PCBs										
Aroclor-1254 (PCB-1254)	ug/L	--	--	--	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	--	--	--	--	--	--	--	--	--

See Notes on Page 2

Notes:
ND ( ) - Not present at or above the associated value.
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
Highlighted well indicates location was within the limits of excavation (i.e. water bearing unit that the wells were screened in were completely removed)

ENOVIS Quals:
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The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL
For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.

TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: NonResidential Generic Cleanup Criteria (1)								*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*
Sample Identification		Statewide	Residential	Non-Residential	Groundwater	Residential	Non-Residential	Residential	Non-Residential	*SO-048891-121212-DS-1001*	*SO-048891-121212-DS-1002*	*SO-048891-121312-DS-1003*	*SO-048891-121312-DS-1003DUP*	*SO-048891-121812-DS-1004*	*SO-048891-121812-DS-1005*	*SO-48891-121912-DS-1006*
Sample Date		Default	Drinking	Drinking	Surface Water	Soil Volatilization	Soil Volatilization	Direct	Direct	*12/12/2012*	*12/12/2012*	*12/13/2012*	*12/13/2012*	*12/18/2012*	*12/18/2012*	*12/19/2012*
Sample Depth		Background	Water	Water	Interface Protection	to Indoor Air	to Indoor Air	Contact	Contact	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(21) ft BGS*
Sample Type			Protection	Protection		Inhalation	Inhalation						*Duplicate*			
	Units	*a*	*b*	*c*	*d*	*e*	*f*	*g*	*h*							
Volatile Organic Compounds (VOCs)																
1,2,4-Trimethylbenzene	ug/kg	--	2100	2100	570	110000	110000	110000	110000	ND(89)	ND(90)	ND(89)	ND(88)	34 J	ND(89)	ND(440)
1,3,5-Trimethylbenzene	ug/kg	--	1800	1800	1100	94000	94000	94000	94000	ND(89)	ND(90)	ND(89)	ND(88)	10 J	ND(89)	ND(440)
2-Methylnaphthalene	ug/kg	--	57000	170000	4200	2700000	4900000	8100000	26000000	ND(280)	ND(280)	ND(280)	ND(270)	ND(290)	ND(280)	ND(1400)
Benzene	ug/kg	--	100	100	4000	1600	8400	180000	400000	ND(44)	ND(45)	ND(44)	ND(44)	ND(46)	ND(44)	8700 [NOAH]
Ethylbenzene	ug/kg	--	1500	1500	360	87000	140000	140000	140000	ND(44)	ND(45)	ND(44)	ND(44)	ND(46)	ND(44)	120 J
Methyl tert butyl ether (MTBE)	ug/kg	--	800	800	140000	5900000	5900000	1500000	5900000	ND(220)	ND(220)	ND(220)	ND(220)	ND(230)	ND(220)	ND(1100)
Naphthalene	ug/kg	--	35000	100000	730	250000	470000	16000000	52000000	ND(280)	ND(280)	ND(280)	ND(270)	16 J	ND(280)	ND(1400)
Toluene	ug/kg	--	16000	16000	5400	250000	250000	250000	250000	ND(89)	ND(90)	ND(89)	ND(88)	ND(93)	ND(89)	9800 [P]
Xylenes (total)	ug/kg	--	5600	5600	820	150000	150000	150000	150000	ND(130)	ND(130)	ND(130)	ND(130)	42 J	ND(130)	310 J
Metals																
Lead	ug/kg	21000	700000	700000	2800000	NLV	NLV	400000	900000	--	--	--	--	--	--	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor	Floor
Sample Identification		48891-011013-DS-1007	48891-011013-DS-1008	48891-011013-DS-1010	48891-011013-DS-1011	48891-011013-DS-1012	48891-011013-DS-1013	48891-021813-CT-1009	48891-021813-CT-1014	48891-021813-CT-1015	48891-021813-CT-1016	48891-022013-CT-1018	48891-022013-CT-1019	48891-022013-CT-1017
Sample Date		1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	1/10/2013	2/18/2013	2/18/2013	2/18/2013	2/18/2013	2/20/2013	2/20/2013	2/20/2013
Sample Depth		(20) ft BGS	(20) ft BGS	(20) ft BGS	(20) ft BGS	(20) ft BGS	(20) ft BGS	(25) ft BGS	(25) ft BGS	(25) ft BGS	(25) ft BGS	(25) ft BGS	(25) ft BGS	(26) ft BGS
Sample Type														
	Units													
Volatile Organic Compounds (VOCs)														
1,2,4-Trimethylbenzene	ug/kg	ND(92) UB	ND(170) UB	ND(440) UB	27000[ecu]	25000[ecu]	37000[ecu]	ND(89)	59 J	14 J	ND(89)	--	540 J	ND(4500)
1,3,5-Trimethylbenzene	ug/kg	ND(92) UB	ND(87) UB	ND(440) UB	11000[ecu]	7600[ecu]	9700[ecu]	ND(89)	19 J	ND(89)	ND(89)	--	140 J	ND(4500)
2-Methylnaphthalene	ug/kg	ND(290)	ND(270)	ND(1400)	1600 J	710 J	930 J	ND(280)	ND(280)	ND(280)	ND(280)	--	ND(2800)	ND(14000)
Benzene	ug/kg	ND(46)	130[ec]	9100[ecdef]	5100[ecdef]	11000[ecdef]	2800[ecd]	ND(44)	20 J	ND(45)	ND(45)	--	24000[ecdef]	12000[ecdef]
Ethylbenzene	ug/kg	ND(64) UB	ND(44) UB	ND(220)	2200[ecu]	13000[ecu]	11000[ecu]	ND(44)	ND(44)	ND(45)	ND(45)	--	1200[u]	2700[ecu]
Methyl tert butyl ether (MTBE)	ug/kg	ND(230)	1700[ec]	3200[ec]	ND(2200)	ND(4400)	ND(2200)	ND(220)	ND(220)	ND(220)	4400[ec]	--	ND(2200)	ND(11000)
Naphthalene	ug/kg	ND(290)	ND(270) UB	ND(1400)	ND(2800) UB	4200 J[u]	2600 J[u]	ND(280)	ND(280)	ND(280)	ND(280)	--	ND(2800)	ND(14000)
Toluene	ug/kg	ND(92) UB	500	ND(440) UB	23000[ecu]	46000[ecu]	18000[ecu]	ND(89)	35 J	ND(89)	ND(89)	--	7400[u]	87000[ecu]
Xylenes (total)	ug/kg	ND(140) UB	ND(130) UB	ND(660) UB	10000[ecu]	72000[ecu]	57000[ecu]	ND(130)	30 J	ND(130)	ND(130)	--	5800[ecu]	10000[ecu]
Metals														
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	7000	6500	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*
Sample Identification		*48891-022013-CT-1021*	*48891-022013-CT-1022*	*48891-022013-CT-1020*	*SO-48891-022113-DS-1023*	*SO-48891-030413-DS-1024*	*SO-48891-030413-DS-1025*	*SO-48891-030413-DS-1026*	*SO-48891-030413-DS-1027*	*SO-48891-030413-DS-1028*	*SO-48891-030413-DS-1029*	*SO-48891-030613-DS-1030*	*SO-48891-030613-DS-1031*
Sample Date		*2/20/2013*	*2/20/2013*	*2/20/2013*	*2/21/2013*	*3/4/2013*	*3/4/2013*	*3/4/2013*	*3/4/2013*	*3/4/2013*	*3/4/2013*	*3/6/2013*	*3/6/2013*
Sample Depth		*(26) ft BGS*	*(26) ft BGS*	*(28) ft BGS*	*(27) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(31) ft BGS*	*(31) ft BGS*
Sample Type													
	Units												
Volatile Organic Compounds (VOCs)													
1,2,4-Trimethylbenzene	ug/kg	--	ND(100)	ND(360)	ND(220)	ND(87)	ND(88)	ND(86)	ND(88)	ND(88)	ND(88)	ND(88)	ND(88)
1,3,5-Trimethylbenzene	ug/kg	--	ND(100)	ND(360)	ND(220)	ND(87)	ND(88)	ND(86)	ND(88)	ND(88)	ND(88)	ND(88)	ND(88)
2-Methylnaphthalene	ug/kg	--	ND(310)	ND(1100)	ND(700)	ND(270)	ND(270)	ND(270)	ND(280)	ND(280)	ND(280)	ND(280)	ND(270)
Benzene	ug/kg	--	ND(50)	ND(180)	ND(110)	ND(44)	ND(44)	ND(43)	ND(44)	ND(44)	ND(44)	ND(44)	ND(44)
Ethylbenzene	ug/kg	--	ND(50)	ND(180)	ND(110)	ND(44)	ND(44)	ND(43)	ND(44)	ND(44)	ND(44)	ND(44)	ND(44)
Methyl tert butyl ether (MTBE)	ug/kg	--	360	**11000**[x]	**5000**[x]	ND(220)	**1400**[x]	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)	ND(220)
Naphthalene	ug/kg	--	ND(310)	ND(1100)	ND(700)	ND(270)	ND(270)	ND(270)	ND(280)	ND(280)	ND(280)	ND(280) UB	ND(270)
Toluene	ug/kg	--	ND(100)	ND(360)	ND(220)	ND(87)	ND(88)	ND(86)	ND(88)	ND(88)	ND(88)	ND(88)	ND(88)
Xylenes (total)	ug/kg	--	ND(150)	ND(540)	ND(340)	ND(130)	ND(130)	15 J	ND(130)	ND(130)	ND(130)	ND(130)	ND(130)
Metals													
Lead	ug/kg	2300	2300	4900	--	--	--	--	--	--	--	--	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*
Sample Identification		*SO-48891-030613-DS-1032*	*SO-48891-032613-DS-1041*	*SO-48891-032613-DS-1033*	*SO-48891-032613-DS-1034*	*SO-48891-032613-DS-1038*	*SO-48891-032613-DS-1039*	*SO-48891-032613-DS-1040*	*SO-48891-032613-DS-1049*	*SO-48891-032713-DS-1035*	*SO-48891-032713-DS-1036*	*SO-48891-032713-DS-1037*
Sample Date		*3/6/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*
Sample Depth		*(31) ft BGS*	*(20) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(10) ft BGS*	*(10) ft BGS*	*(10) ft BGS*
Sample Type		*Duplicate*										
	Units											
Volatile Organic Compounds (VOCs)												
1,2,4-Trimethylbenzene	ug/kg	ND(89)	**2600**^{NCU}	**4700**^{NCU}	**7000**^{NCU}	450 J	**4700**^{NCU}	**6300**^{NCU}	**490000**$^{NCU,UB(GP)}$	**2800 J**^{NCU}	**8000000**$^{NCU,UB(GP)}$	**9900**^{NCU}
1,3,5-Trimethylbenzene	ug/kg	ND(89)	930	**1500 J**^{U}	**2100**^{NCU}	ND(1600)	**1300**^{U}	**1400 J**^{U}	**140000**$^{NCU,UB(GP)}$	890 J	**2300000**$^{NCU,UB(GP)}$	**2700**^{NCU}
2-Methylnaphthalene	ug/kg	ND(280)	ND(550)	2700 J	290 J	ND(5000)	220 J	ND(5900)	**28000 J**^{U}	ND(14000)	**380000 J**^{NCU}	750 J
Benzene	ug/kg	ND(45)	**170**^{NC}	**23000**$^{NCU(1)}$	**1500**^{NC}	**1400**^{NC}	**7000**$^{NCU(1)}$	**1700**^{NCU}	**5800 J**^{NCU}	**3500**^{NCU}	**120000**$^{NCU(1)}$	**11000**$^{NCU(1)}$
Ethylbenzene	ug/kg	ND(45)	**920**^{U}	ND(890)	**1000**^{U}	ND(800)	**520**^{U}	**2400**^{NCU}	**24000**^{NCU}	**400 J**^{U}	**490000**$^{NCU,UB(GP)}$	**780**^{U}
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(440)	**6200**^{NC}	43 J	ND(4000)	**3700**^{NC}	420 J	ND(55000)	ND(11000)	ND(530000)	**1400**^{NC}
Naphthalene	ug/kg	ND(280)	27 J	720 J	590 J	ND(5000)	440 J	500 J	**49000 J**^{NCU}	ND(14000)	**800000**$^{NCU(1)}$	**1500**^{U}
Toluene	ug/kg	ND(89)	5100	890 J	**7500**^{U}	**33000**^{NCU}	**13000**^{U}	**26000**^{NCU}	**160000**^{NCU}	**100000**^{NCU}	**3400000**$^{NCU,UB(GP)}$	**9900**^{U}
Xylenes (total)	ug/kg	ND(130)	**3300**^{U}	490 J	**3600**^{U}	ND(2400)	**2000**^{U}	**10000**^{NCU}	**110000**^{NCU}	**2200 J**^{U}	**2100000**$^{NCU,UB(GP)}$	**2600**^{U}
Metals												
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.

For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.

TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*
Sample Identification		*SO-48891-032713-DS-1042*	*SO-48891-032713-DS-1043*	*SO-48891-032713-DS-1044*	*SO-48891-032713-DS-1045*	*SO-48891-032713-DS-1046*	*SO-48891-032713-DS-1047*	*SO-48891-032713-DS-1048*	*SO-48891-040413-DS-1054*	*SO-48891-040413-DS-1055*	*SO-48891-040413-DS-1056*	*SO-48891-040413-DS-1057*
Sample Date		*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*
Sample Depth		*(20) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*
Sample Type												
	Units											
Volatile Organic Compounds (VOCs)												
1,2,4-Trimethylbenzene	ug/kg	**1700000**[Rcu,Rgs]	330 J	24 J	170	**95000**[Rcu]	130 J	**100000**[Rcu]	ND(86)	ND(86)	ND(87)	ND(87)
1,3,5-Trimethylbenzene	ug/kg	**490000**[Rcu,Rgs]	100 J	ND(87)	54 J	**29000**[Rcu]	200 J	**29000**[Rcu]	ND(86)	ND(86)	ND(87)	ND(87)
2-Methylnaphthalene	ug/kg	**36000 J**[ur]	ND(1200)	ND(270)	ND(270)	**10000 J**[ur]	100 J	**15000**[ur]	ND(270)	ND(270)	ND(270)	ND(270)
Benzene	ug/kg	**40000 J**[Rcu,ur]	**2100**[Rcu]	ND(44)	24 J	**590 J**[Rc]	**7700**[Rcu]	**560 J**[Rc]	ND(43)	ND(43)	ND(44)	ND(44)
Ethylbenzene	ug/kg	**170000**[Rcu,Rgs]	62 J	ND(44)	26 J	**5900**[Rcu]	ND(230)	**4600**[Rcu]	ND(43)	ND(43)	ND(44)	ND(44)
Methyl tert butyl ether (MTBE)	ug/kg	ND(220000)	550 J	ND(220)	ND(220)	ND(8500)	ND(1100)	ND(8300)	ND(220)	ND(210)	ND(220)	ND(220)
Naphthalene	ug/kg	**100000 J**[ur]	ND(1200)	8.9 J	26 J	**11000**[ur]	ND(1400)	**17000**[ur]	ND(270)	ND(270)	ND(270)	ND(270)
Toluene	ug/kg	**1800000**[Rcu,Rgs]	**11000**[ur]	25 J	220	**37000**[Rcu]	**13000**[ur]	**22000**[Rcu]	ND(86)	ND(86)	ND(87)	ND(87)
Xylenes (total)	ug/kg	**710000**[Rcu,Rgs]	210 J	ND(130)	91 J	**26000**[Rcu]	ND(680)	**22000**[Rcu]	ND(130)	ND(130)	ND(130)	ND(130)
Metals												
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.

TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Floor*	*Sidewall*
Sample Identification		*SO-48891-040413-DS-1058*	*SO-48891-040413-DS-1059*	*SO-48891-040413-DS-1060*	*SO-48891-040413-DS-1050*	*SO-48891-040413-DS-1051*	*SO-48891-040413-DS-1052*	*SO-48891-040413-DS-1053*	*SO-48891-040513-DS-1062*	*SO-48891-040513-DS-1063*	*SO-48891-040513-DS-1061*	*SO-048891-121212-DS-2001*
Sample Date		*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/5/2013*	*4/5/2013*	*4/5/2013*	*12/12/2012*
Sample Depth		*(25) ft BGS*	*(25) ft BGS*	*(25) ft BGS*	*(27) ft BGS*	*(27) ft BGS*	*(27) ft BGS*	*(27) ft BGS*	*(30) ft BGS*	*(30) ft BGS*	*(32) ft BGS*	*(10.5) ft BGS*
Sample Type				*Duplicate*								
	Units											
Volatile Organic Compounds (VOCs)												
1,2,4-Trimethylbenzene	ug/kg	10 J	ND(85)	21 J	ND(870)	ND(86)	**2300**[ecd]	ND(220)	ND(360)	ND(450)	170	ND(89)
1,3,5-Trimethylbenzene	ug/kg	ND(86)	ND(85)	ND(86)	ND(870)	ND(86)	730 J	ND(220)	ND(360)	ND(450)	51 J	ND(89)
2-Methylnaphthalene	ug/kg	ND(270)	ND(270)	ND(270)	ND(2700)	ND(270)	ND(2700)	ND(700)	ND(1100)	ND(1400)	31 J	ND(280)
Benzene	ug/kg	**150**[ec]	ND(43)	ND(43)	**10000**[ecdef]	ND(43)	**2000**[ecd]	**6300**[ecdf]	ND(180)	ND(220)	**250**[ec]	ND(44)
Ethylbenzene	ug/kg	ND(43)	ND(43)	ND(43)	ND(430)	ND(43)	160 J	ND(110)	ND(180)	ND(220)	27 J	ND(44)
Methyl tert butyl ether (MTBE)	ug/kg	30 J	18 J	15 J	140 J	ND(210)	**3500**[ec]	**6700**[ec]	**9900**[ec]	**13000**[ec]	**4100**[ec]	ND(220)
Naphthalene	ug/kg	ND(270)	ND(270)	ND(270)	ND(2700)	ND(270)	270 J	ND(700)	ND(1100)	ND(1400)	ND(360) UB	ND(280)
Toluene	ug/kg	61 J	ND(85)	19 J	**32000**[ecd]	ND(86)	**31000**[ecd]	ND(220)	ND(360)	ND(450)	190	ND(89)
Xylenes (total)	ug/kg	ND(130)	ND(130)	ND(130)	ND(1300)	ND(130)	730 J	ND(340)	ND(540)	ND(670)	140 J	ND(130)
Metals												
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	--

Notes:

ND ( ) - Not present at or above the associated value.

Highlighted samples indicate result exceeded inhalation and/or contact criteria and sample location was over-excavated

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*
Sample Identification		*SO-048891-121212-DS-2002*	*SO-048891-121212-DS-2003*	*SO-048891-121212-DS-2004*	*SO-048891-121312-DS-2005*	*48891-011013-DS-2006*	*48891-011013-DS-2009*	*48891-011013-DS-2007*	*48891-021813-CT-2010*	*48891-021813-CT-2011*	*48891-021813-CT-2008*	*48891-022013-CT-2013*	*48891-022013-CT-2012*
Sample Date		*12/12/2012*	*12/12/2012*	*12/12/2012*	*12/13/2012*	*1/10/2013*	*1/10/2013*	*1/10/2013*	*2/18/2013*	*2/18/2013*	*2/18/2013*	*2/20/2013*	*2/20/2013*
Sample Depth		*(10.5) ft BGS*	*(10.5) ft BGS*	*(10.5) ft BGS*	*(10.5) ft BGS*	*(10) ft BGS*	*(10) ft BGS*	*(10.5) ft BGS*	*(11) ft BGS*	*(11) ft BGS*	*(22) ft BGS*	*(10.5) ft BGS*	*(23) ft BGS*
Sample Type										*Duplicate*			
	Units												
Volatile Organic Compounds (VOCs)													
1,2,4-Trimethylbenzene	ug/kg	ND(91)	ND(90)	ND(89)	ND(88)	ND(120) UB	ND(120) UB	**670[a]**	47 J	34 J	ND(98)	150 J	**30000[a,c]**
1,3,5-Trimethylbenzene	ug/kg	ND(91)	ND(90)	ND(89)	ND(88)	ND(87) UB	ND(85) UB	180	18 J	13 J	ND(98)	41 J	**7500[a,c]**
2-Methylnaphthalene	ug/kg	ND(280)	ND(280)	ND(280)	ND(270)	ND(270)	ND(270)	36 J	ND(280)	ND(280)	ND(310)	ND(1100) UB	ND(7000)
Benzene	ug/kg	ND(46)	ND(45)	ND(44)	ND(44)	ND(44)	ND(43)	54	ND(44)	ND(45)	ND(49)	**9200[a,c,d]**	**2900[a,c]**
Ethylbenzene	ug/kg	ND(46)	ND(45)	ND(44)	ND(44)	ND(44) UB	ND(43) UB	150	ND(44)	ND(45)	ND(49)	ND(180)	**13000[a,c]**
Methyl tert butyl ether (MTBE)	ug/kg	ND(230)	ND(220)	ND(220)	ND(220)	ND(220)	ND(210)	ND(220)	ND(220)	ND(220)	ND(250)	**9400[a,c]**	ND(5600)
Naphthalene	ug/kg	31 J	ND(280)	ND(280)	ND(270)	ND(270) UB	ND(270) UB	ND(280) UB	ND(280)	ND(280)	ND(310)	ND(1100)	**4800 J[a,c]**
Toluene	ug/kg	ND(91)	ND(90)	ND(89)	ND(88)	ND(130) UB	ND(87) UB	ND(320) UB	ND(88)	ND(89)	ND(98)	680	**20000[a,c]**
Xylenes (total)	ug/kg	ND(140)	ND(130)	ND(130)	ND(130)	ND(170) UB	ND(170) UB	670	12 J	9.6 J	18 J	93 J	**39000[a,c]**
Metals													
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	--	--

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*
Sample Identification		*SO-48891-030713-DS-2014*	*SO-48891-032613-DS-2017*	*SO-48891-032613-DS-2015*	*SO-48891-032613-DS-2016*	*SO-48891-032713-DS-2018*	*SO-48891-032713-DS-2019*	*SO-48891-032713-DS-2020*	*SO-48891-032713-DS-2021*	*SO-48891-032713-DS-2022*	*SO-48891-032713-DS-2023*	*SO-48891-040413-DS-2026*
Sample Date		*3/7/2013*	*3/26/2013*	*3/26/2013*	*3/26/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*3/27/2013*	*4/4/2013*
Sample Depth		*(23) ft BGS*	*(15) ft BGS*	*(20) ft BGS*	*(20) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*	*(15) ft BGS*
Sample Type												
	Units											
Volatile Organic Compounds (VOCs)												
1,2,4-Trimethylbenzene	ug/kg	ND(88)	**670**[a]	**86000**[bcd]	**630000**[bcdefgh]	20 J	47 J	**1300**[a]	16 J	**170000**[bcdefgh]	**1400000**[bcdefgh]	**1500**[a]
1,3,5-Trimethylbenzene	ug/kg	ND(88)	160	**24000**[bcd]	**200000**[bcdefgh]	25 J	12 J	380	ND(89)	**53000**[bcd]	**440000**[bcdefgh]	460
2-Methylnaphthalene	ug/kg	ND(280)	87 J	4200 J	**7600 J**[a]	ND(350)	ND(290)	46 J	ND(280)	2300 J	**23000 J**[a]	ND(270) UB
Benzene	ug/kg	ND(44)	21 J	**3600**[bcd]	**17000**[bcdef]	**1100**[bc]	ND(46)	64	ND(44)	**1600 J**[bc]	ND(23000)	**280**[bc]
Ethylbenzene	ug/kg	ND(44)	88	**14000**[bcd]	**54000**[bcd]	ND(56)	ND(46) UB	120	ND(44)	**16000**[bcd]	**160000**[bcdefgh]	340
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(220)	ND(8700)	ND(55000)	260 J	ND(230)	ND(220)	ND(220)	ND(22000)	ND(120000)	68 J
Naphthalene	ug/kg	ND(280) UB	110 J	**7900 J**[a]	**29000 J**[a]	ND(350)	ND(290) UB	160 J	ND(280)	**10000 J**[a]	**99000 J**[bcd]	200 J
Toluene	ug/kg	ND(88)	720	**49000**[bcd]	**540000**[bcdefgh]	100 J	75 J	1200	ND(89)	**100000**[bcd]	**860000**[bcdefgh]	1900
Xylenes (total)	ug/kg	ND(130)	380	**86000**[bcd]	**220000**[bcdefgh]	ND(170) UB	ND(140) UB	470	ND(130) UB	**70000**[bcd]	**680000**[bcdefgh]	**1200**[a]
Metals												
Lead	ug/kg	--	--	--	--	--	--	--	--	--	--	--

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TABLE 6.1

VERIFICATION SOIL SAMPLE ANALYTICAL RESULTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*	*Sidewall*
Sample Identification		*SO-48891-040413-DS-2027*	*SO-48891-040413-DS-2024*	*SO-48891-040413-DS-2025*	*SO-48891-040513-DS-2031*	*SO-48891-040513-DS-2029*	*SO-48891-040513-DS-2030*	*SO-48891-040513-DS-2028*	*SO-48891-041013-DS-2033*	*SO-48891-041013-DS-2032*
Sample Date		*4/4/2013*	*4/4/2013*	*4/4/2013*	*4/5/2013*	*4/5/2013*	*4/5/2013*	*4/5/2013*	*4/10/2013*	*4/10/2013*
Sample Depth		*(15) ft BGS*	*(18) ft BGS*	*(20) ft BGS*	*(15) ft BGS*	*(18) ft BGS*	*(20) ft BGS*	*(22) ft BGS*	*(15) ft BGS*	*(22) ft BGS*
Sample Type										
	Units									
Volatile Organic Compounds (VOCs)										
1,2,4-Trimethylbenzene	ug/kg	180 J	**35000**[NA]	**4000**[NA]	ND(830)	ND(88)	91	**30000**[NA]	ND(90)	ND(92)
1,3,5-Trimethylbenzene	ug/kg	65 J	**11000**[NA]	1100	ND(830)	ND(88)	28 J	**7700**[NA]	ND(90)	ND(92)
2-Methylnaphthalene	ug/kg	ND(1100)	ND(2900) UB	170 J	ND(2600)	ND(270)	ND(270)	ND(11000)	ND(280)	ND(290)
Benzene	ug/kg	**1300**[NA]	**2500**[NA]	**130**[NA]	**7900**[NA]	ND(44)	ND(43)	**4400**[NA]	ND(45)	ND(46)
Ethylbenzene	ug/kg	200	**2100**[NA]	360	ND(410)	ND(44)	30 J	**5000**[NA]	ND(45)	ND(46)
Methyl tert butyl ether (MTBE)	ug/kg	ND(890)	660 J	96 J	ND(2100)	ND(220)	ND(220)	ND(8800)	ND(230)	ND(230)
Naphthalene	ug/kg	ND(1100)	**1400 J**[a]	380	ND(2600)	ND(270)	ND(270) UB	**3100 J**[a]	ND(280)	ND(290)
Toluene	ug/kg	**12000**[a]	**29000**[NA]	2800	**29000**[NA]	ND(88)	71 J	**70000**[NA]	ND(90)	ND(92)
Xylenes (total)	ug/kg	760	**8500**[NA]	**1500**[a]	ND(1200)	ND(130)	100 J	**20000**[NA]	ND(140)	ND(140)
Metals										
Lead	ug/kg	--	--	--	--	--	--	--	--	--

Notes:
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TABLE 6.2

OBSERVATION WELL MEASUREMENTS
REC 2 CLOSURE REPORT
FORMER FORD WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Observation Well ID	*Screened Interval (ft bgs)*	*Date*	*DTP*	*DTW*	*LNAPL Thickness*
OW-1	4.80 - 29.80	5/1/2013	NP	20.45	NP
OW-1		6/5/2013	NP	15.00	NP
OW-1		7/2/2013	NP	10.97	NP
OW-1		8/1/2013	NP	9.29	NP
OW-1		9/5/2013	NP	8.99	NP
OW-1		10/2/2013	NP	9.29	NP
OW-2	4.95 - 29.95	5/1/2013	NP	20.91	NP
OW-2		6/5/2013	NP	15.02	NP
OW-2		7/2/2013	NP	10.79	NP
OW-2		8/1/2013	NP	9.00	NP
OW-2		9/5/2013	NP	8.66	NP
OW-2		10/2/2013	NP	8.94	NP
OW-3	5.00-15.00	5/1/2013	NP	11.78	NP
OW-3		6/5/2013	NP	12.61	NP
OW-3		7/2/2013	NP	9.33	NP
OW-3		8/1/2013	NP	8.30	NP
OW-3		9/5/2013	NP	8.26	NP
OW-3		10/2/2013	NP	8.61	NP
OW-4	4.75 - 19.75	5/1/2013	NP	NP	NP
OW-4		6/5/2013	NP	14.62	NP
OW-4		7/2/2013	NP	11.14	NP
OW-4		8/1/2013	NP	9.23	NP
OW-4		9/5/2013	NP	9.02	NP
OW-4		10/2/2013	NP	9.31	NP

Notes:
NP - Not present

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INVESTIGATION AND REMEDIATION REPORT

MENARDS PROPERTY
FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Prepared for: Ford Motor Company

Conestoga-Rovers & Associates
14496 Sheldon Road, Suite 200
Plymouth, Michigan 48170

December 2013 • 048891 • Report No. 45

Partners in Sustainability

Executive Summary

Conestoga-Rovers & Associates, Inc. (CRA) was retained by Ford Motor Company (Ford) Environmental Quality Office (EQO) to compile an Investigation and Remediation Report for the 45-acre parcel referred to as the "Menards Property" at the Former Wixom Assembly Plant located in Wixom, Michigan. For purposes of this Report, the 45-acre parcel purchased by Menard, Inc. (Menards) is referred to as the Menards Property.

The Former Wixom Assembly Plant property (Site) is located in Wixom, Michigan and encompasses approximately 320 acres of land. The major production processes at the Former Wixom Assembly Plant included metal working and welding associated with body and component fabrication, vehicle assembly, vehicle painting, quality assurance/quality control testing, and administration. The Menards Property is a 45-acre parcel located on the southeast portion of the Former Wixom Assembly Plant property. Located on the Menards Property were the Main Chassis Building, Administrative Buildings, Executive Garage, and parking lots.

Since 2008, CRA has completed numerous investigations at the Former Wixom Assembly Plant to assess whether release(s) of hazardous wastes, hazardous constituents, hazardous substances, or petroleum products occurred at any of the Recognized Environmental Conditions (RECs) identified in the Phase I (ESA) (CRA; September, 2007). Investigation work has been completed in 2008, 2009, 2010, 2012, and 2013.

The primary objective of this Report was to evaluate the area of the Former Wixom Assembly Plant property purchased by Menards. Specifically, the investigation activities within the Menards Property Boundary since 2008 consisted of the advancement and field screening of 64 soil borings, collection of 37 soil samples, installation of 14 monitoring wells, and collection of 30 groundwater samples. Soil and groundwater samples were submitted for constituents including ethylene glycol, herbicides and pesticides, mercury, polychlorinated biphenyls (PCBs), Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs) (or a subset, polynuclear aromatic hydrocarbons [PAHs]), Target Analyte List (TAL) metals including hexavalent and trivalent chromium (and fine/coarse lead for soil), and Total Petroleum Hydrocarbons (TPH) - Diesel Range Organics (DRO), Gasoline Range Organics (GRO), and Oil Range Organics (ORO).

In order to consider all potential exposure pathways for future development of the Menards Property, the analytical data collected during the investigation were compared against all Generic Cleanup Criteria and Screening Levels (Residential and Non-Residential) promulgated under Part 201, Environmental Remediation, of Michigan Public Act 451, Natural Resources and Environmental Protection Act (NREPA), as amended, and Site Specific Background Screening Levels for metals. A Restrictive Covenant (RC) is currently in place for the Menards Property which limits the use to Non-Residential use only and

restricts groundwater use for drinking water. The RC also prohibits the construction of new storm water utilities (storm sewers) below the measured depth of the groundwater table, eliminating potential migration via storm sewers and rendering the Groundwater Surface Water Interface (GSI) pathway as not applicable. Therefore, the objectives of the investigation and remediation are based primarily on Non-Residential Criteria for soil protective of direct contact and inhalation (Applicable Part 201 Non-Residential Cleanup Criteria). For soil and groundwater delineation purposes, delineation samples were compared against the most restrictive criteria (Residential Drinking Water Protection Criteria [DWPC], Residential Drinking Water Criteria [DWC], Groundwater Surface Water Interface Protection Criteria [GSIPC], and Groundwater Surface Water Criteria [GSIC]).

Eighteen RECs, including AOC 1 (Northwest Corner of Menards Property Boundary) and AOC 3 (Dual-Post In-ground Hydraulic Lift [IHVL] Location), were identified within the Menards Property Boundary. Of these 18, the discussion of four is included in the November 2013 Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (RECs 2, 16, 34, and 41). Impacts above Applicable Part 201 Non-Residential Cleanup Criteria were discovered at SB8-13, but were excavated as part of the AOC 1 soil excavation. There were no detections of VOCs, SVOCs, PCBs, or metals above Applicable Part 201 Non-Residential Cleanup Criteria in the remaining RECs.

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Section 1.0 Introduction

Conestoga-Rovers & Associates, Inc. (CRA) was retained by Ford Motor Company (Ford) Environmental Quality Office (EQO) to compile an Investigation and Remediation Report (Report) for the 45-acre parcel located on the southeast corner of the Former Wixom Assembly Plant located in Wixom, Michigan (Site). For purposes of this Report, the 45-acre parcel purchased by Menard, Inc. (Menards) on October 11, 2013, is referred to as the Menards Property.

1.1 General

Since 2008, CRA has completed numerous investigations at the Former Wixom Assembly Plant including the Menards Property to determine if release(s) of hazardous wastes, hazardous constituents, hazardous substances, or petroleum products occurred at any of the Recognized Environmental Conditions (RECs) identified in the Phase I Environmental Site Assessment (ESA) (CRA; September, 2007). Investigation work has been completed as part of the Phase II ESA (Phase II ESAs) completed between 2008 and 2010 and additional sampling completed in 2013.

A Site Location Map depicting the Menards Property in relation to the Former Wixom Assembly Plant is provided on Figure 1.1. A Site Plan, including depictions of the RECs identified in the Phase I ESA, is provided on Figure 1.2.

1.2 Objectives and Scope of Investigations

The primary objective of this Report was to evaluate the 45-acre parcel area of the Former Wixom Assembly Plant property proposed to be purchased by Menards. Specifically, this Report summarizes the soil and groundwater data for the Menards Property which was collected as part of the Phase II ESAs and additional sampling activities, and documents the decommissioning activities of the Former Wixom Assembly Plant (which previously was located on a portion of the Menards Property). To date, the investigations conducted have consisted of the advancement and photoionization (PID) screening of 64 soil borings, collection of 37 soil samples, installation of 14 monitoring wells, collection of 30 groundwater samples, and abandonment of 10 monitoring wells. Location of soil borings and monitoring wells are presented on Figure 1.3.

CRA subcontracted the following companies to assist with completion of the investigation activities:

1. Utility clearance – Power Plus of Wixom, Michigan.
2. Sonic drilling services - Boart Longyear of Flint, Michigan.
3. Geoprobe drilling services - Terra Probe Environmental, Inc. of Ottawa Lake, Michigan and CRA Services of Livonia, Michigan.
4. Analytical laboratory - TestAmerica Laboratories, Inc. of North Canton, Ohio.

5. Data validation services – Enovis, Inc. of Dearborn, Michigan.
6. Investigation Derived Waste (IDW) transportation and disposal – The Environmental Quality Company of Belleville, Michigan.

Surveying and geophysical surveying tasks were completed in-house by CRA.

1.3 Methodologies Used and Limiting Conditions

While conducting the field work, CRA followed its standard operating procedures included in the Phase II Environmental Site Assessment Work Plan (CRA; September 2007) and customary industry protocols. A discussion of the field investigation methods is provided in Section 4.3.

Section 2.0 Site Background

This section presents Site background information including property location and description; Site history and land use; regional and Site-specific hydrogeology, geology, and hydrology; and a summary of previous environmental investigations.

2.1 Property Location and Description

The Former Wixom Assembly Plant was located at 28801 Wixom Road in Wixom, Michigan and encompassed approximately 320 acres of land. The major production processes at the former Plant included metal working and welding associated with body and component fabrication, vehicle assembly, vehicle painting, quality assurance/quality control testing, and administration. The Menards Property is a 45-acre parcel located on the southeast portion of the Former Wixom Assembly Plant Property (Figure 1.1).

2.2 Site History and Land Use

Prior to initial construction of the Wixom Plant by Ford, the property was undeveloped and generally used for agricultural purposes. The property was originally developed in 1955 by Ford. Since the original construction in 1955, the Former Wixom Assembly Plant underwent several major expansions/renovations between 1963 and 1996. The former Plant operated for the manufacture and assembly of finished automobiles. The primary production processes involved several operations, including: metal working, sealing and welding associated with body and component fabrication, vehicle engine and chassis assembly, vehicle metal preparation activities (sanding and surface preparation, electro-coating, and phosphating), vehicle painting, final vehicle assembly, quality assurance/quality control testing, and administration. Ancillary operations conducted included: the receipt and storage of raw materials, hazardous and non-hazardous waste management, equipment and vehicle maintenance

activities, product and materials testing, wastewater treatment, power generation, the shipment of final goods, and administrative activities.

Production operations were shut down in June 2007. All of the former buildings (Administration Building and a portion of the Main Assembly Building) within the Menards Property have been demolished and the slab for the entire area has been removed by Ford. Decommissioning of the Plant began in 2008 and demolition of the Plant within the Menards Property boundaries was completed between September 2012 and March 2013.

2.3 Physical Setting

This subsection provides information on the topography, surface drainage, and regional and Site-specific geology and hydrogeology.

2.3.1 Topography and Surface Drainage

The topography of the 320-acre Former Wixom Assembly Plant property is a result of several periods of glaciations and over 50 years of construction activities. Based on the United States Geological Survey (USGS) topographic map and information provided in the database search, the Site is located at approximately 948 feet above mean sea level (AMSL), with general topographic gradient to the west-northwest.

Historically, the Site contained natural surface water drainage channels with regional surface water flow toward the northwest. These drainage channels included Congdon Drain and former tributaries of Congdon Drain. One of its tributaries that formerly bisected the plant Body Shop and Trim Shop in the southeastern portion of the Former Wixom Assembly Plant property was graded for plant construction.

Congdon Drain discharges to Norton Creek and eventually the Huron River, both of which are located to the northwest and north of the Former Wixom Assembly Plant property, respectively.

Based on information provided in the National Wetlands Inventory (NWI) map for the Milford, Michigan quadrangle at http://wetlandsfws.er.usgs.gov/wtlnds/launch.html, state wetlands are located in areas located adjacent to the west and north of the Former Wixom Assembly Plant Property. Based on information provided in the NWI, the Menards Property is not located in the 100-year or 500-year flood plains.

2.3.2 Regional Geology and Hydrogeology

Regional Geology

Based on information provided in the database search results, regional surficial soil types consist of loamy sand, sandy loam, silt loam, and muck with deeper soil types consisting of fine sand and muck. The glacial drift ranges in thickness from 20 to 350 feet below ground surface (bgs). Based on a review of the Soil Survey of Oakland County, Michigan (United States Department of Agriculture, Soil Conservation Service, March 1982), regional soils consist of Marlette sandy loam (1 to 6 percent slopes), Houghton and Adrian mucks, Sebewa loam, Capac sandy loam (0 to 4 percent slopes), Aquents sandy and loamy undulating, Gilford sandy loam, and Urban Land. Sebewa loam, Houghton and Adrian mucks, Aquents sandy and loamy undulating, and Gilford sandy loam are listed as hydric soils on the Oakland County, Michigan Comprehensive Hydric Soils List (United States Department of Agriculture, Soil Conservation Service, March 1, 1993). Capac sandy loam (0 to 4 percent slopes) may be hydric if it includes Brookston or Colwood inclusions.

Bedrock in Oakland County consists of Antrim shale, Bedford shale, Berea sandstone, Sunbury shale, and Coldwater shale, with the Wixom area primarily consisting of Sunbury shale.

Regional Hydrogeology

The Former Wixom Assembly Plant property is within the Huron River watershed, which encompasses approximately 900 square miles in southeastern Michigan and ultimately drains to Lake Erie. The area surrounding the Former Wixom Assembly Plant has several outwash plain glacial lakes, such as Loon Lake and Walled Lake. Regional hydrogeology consists of interlayered aquifers and confining layers within the overburden. It is unknown if the unconfined, semi-confined, and confined aquifers identified at the Former Wixom Assembly Plant property (see Section 2.2.3) are laterally extensive throughout the region.

2.3.3 Site-Specific Geology and Hydrogeology

This geology and hydrogeology summary for the Menards Property is based on information obtained from drilling and REC 2 and AOC 1 excavation activities.

Site Geology

Geologic conditions consist of 3 to 8 feet of surficial fill (i.e., sand, gravel and/or clay fill). Fill sand is present to a maximum depth of approximately 30 feet within the recently excavated area (REC 2). A silty clay unit is encountered below the fill and extends to depths of at least 43 feet below grade. The silty clay unit contains thin (0.5 to 2 feet) interbedded sand seams.

Site Hydrogeology

Groundwater was identified in four different saturated zones at the Former Wixom Assembly Plant (Site):

- An unconfined perched zone
- A semi-unconfined shallow zone
- A semi-confined intermediate zone
- A semi-confined deep zone

Perched groundwater was encountered at the base of the fill unit at approximate depths of 7 to 10 feet below grade within the REC 2 area. Groundwater was also encountered within the interbedded sand seams at approximate depths of 10 to 15 feet below grade. Depth-to-water measurements were collected on October 8, 2012 from the perimeter monitoring wells located throughout the Site. Groundwater was encountered within the perched, shallow, and intermediate zones at the Menards Property. The semi-confined deep zone was not encountered during the Menards Property investigations. A Site-wide shallow groundwater contour map is presented on Figure 2.1. As shown on the figure, groundwater flow within the Menards Property is to the northwest.

2.4 Summary of Previous Environmental Site Assessments

CRA has prepared the following assessment and/or investigation reports for the entire Site, and these reports contain information relevant to the Menards Property:

- *Phase I Environmental Site Assessment* dated June 2007
- *Phase II Environmental Site Assessment* dated September 2008
- *Phase II Environmental Site Assessment Supplement No. 1* dated May 2009
- *Phase II ESA Report - Supplement No. 2 Site Assessment* dated June 2010

Section 3.0 Exposure Pathway Evaluation

3.1 Pathway Analysis

To determine applicable Part 201, Environmental Remediation, of Michigan Public Act 451, Natural Resources and Environmental Protection Act (NREPA), as amended, Generic Cleanup Criteria, and Part 213 Risk-Based Screening Levels (RBSLs) consideration is given to REC-specific characteristics, including the nature and extent of criteria exceedances, current and future intended use of the Menards Property, and existing exposure controls such as the use of a municipal supply of drinking water and the

potential for surface water impacts. These REC-specific characteristics determine whether a given exposure pathway is *relevant* (i.e., the pathway is present and a potential exists for human exposure, absent exposure controls that are or will be in place). If a pathway is *relevant*, the associated criteria are *applicable* (i.e., the pathway is complete and exposures may occur, unless reliably controlled).

A Restrictive Covenant (RC) has been recorded with the Oakland County Register of Deeds (dated October 16, 2013). The RC filed for the southeast 45-acre parcel limits the use to Non-Residential only and does not allow for the usage of groundwater for drinking water. Therefore, this Exposure Pathway Evaluation will only address the Non-Residential exposure pathways, and will not include the drinking water pathway. A copy of the RC is presented in Appendix A.

The 15-inch storm sewer which bisected the Executive Garage area (and was the only storm sewer within the excavation area) was removed during the excavation activities and was not replaced. The remaining storm sewer was capped at the edges of the excavation area. Furthermore, the RC filed for the 45-acre parcel prohibits the installation of new storm sewer utilities below the groundwater table and/or must be lined per industry standards. In addition, the soil impacts remaining that are above Groundwater Surface Water Interface Protection Criteria (GSIPC) are not located near any storm sewers and/or there exists a clean soil sample between that location and the storm sewer. Exceedances above GSIPC and Groundwater Surface Water Interface Criteria (GSIC) currently exist on the Site. Figures 3.1 and 3.2 specifically show the GSIP and GSI Criteria exceedances for soil and groundwater, respectively. As shown on Figure 3.1, VOCs (1,2,4-TMB, 1,3,5-TMB, ethylbenzene and xylenes) were detected above GSIP criteria in soil boring SB38-23 at 1 to 1.5 feet bgs. This location has been delineated horizontally and vertically by locations SB38-4, SB38-35, SB38-36, SB38-37and SB38-38. The nearest storm sewer utility is approximately 200 feet south (depth of storm sewer is estimated at 10 to 11 feet bgs) of SB38-23 and based on the shallow soil exceedances (<2 feet bgs) and presence of clean soil samples between SB38-23 and the storm sewer (SB38-37 at 3 to 6 feet bgs), the GSI pathway is not complete and does not require further evaluation. Additionally, arsenic has been detected above GSIPC in soil borings SB31-1, SB31-9 and SB31-7. The nearest storm sewer utility is approximately 630 feet south of these locations and again, based on the shallow soil exceedances (<8 feet bgs) and presence of clean soil samples between these locations and the storm sewer (SB31-5 at 2 to 5 feet bgs and SB31-6 at 5 feet bgs), the GSI pathway is not complete and does not require further evaluation.

As shown on Figure 3.2, metals (selenium and arsenic) were detected above generic GSI criteria in monitoring wells MW-3M and PMW-3, respectively. There have been no known releases from previous operations in these areas. These naturally occurring metals were detected at levels just above the calculated Site-specific background values and GSI criteria. PMW-3 is an upgradient well location and not near any storm sewer utilities. From MW-3M, the nearest storm sewer utility is located approximately 90 feet west. The GSI pathway is not considered to be complete and does not require further evaluation.

The nearest surface water body, Congdon Drain, is present on the furthest northwest corner of the Site, approximately 3,300 feet northwest of the Menards Property. Congdon Drain discharges to Norton creek and eventually the Huron River. Natural groundwater transport from the Menards Property area to this surface water body is not expected based on the large distance between. Therefore, the groundwater surface water pathway has been eliminated and is not relevant.

Based on the Menards Property restrictions and utilities discussed above, the following have been identified in developing an exposure pathway characterization:

- Potential sources – impacted soils and dissolved groundwater impacts
- Potential transport mechanisms – volatilization, leaching and groundwater transport
- Potential receptors – on-Site employees within future buildings, construction or utility worker

The following are possible exposure pathways:

- Inhalation/absorption/ingestion of or direct contact with impacted soils and/or groundwater by an on-Site construction or utility worker
- Inhalation of vapors resulting from soil or groundwater volatilization by on-Site employees, construction or utility worker

Based on this exposure pathway analysis, the following criteria are applicable for the Menards Property:

Applicable Soil Exposure Pathways and Criteria:

- Groundwater Contact Protection Criteria (GCPC)
- Non-Residential Soil Volatilization to Indoor Air Inhalation Criteria(SVIIC)
- Non-Residential Particulate Soil Inhalation Criteria (PSIC)
- Non-Residential Direct Contact Criteria (DCC)
- Soil Saturation Concentration Screening Levels (Csat)

Applicable Groundwater Exposure Pathways and Criteria:

- Non-Residential Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIIC)
- Groundwater Contact Criteria (GCC)
- Water Solubility Limits (WSLs)
- Flammability and Explosivity Screening Levels (FESLs)
- Acute Inhalation Screening Levels (AISLs)

The Applicable Part 201 Generic Cleanup Criteria can therefore be summarized as Non-Residential criteria, not including Drinking Water Criteria/Drinking Water Protection Criteria (DWC/DWPC) and GSI/GSIPC. The "applicable criteria" will hereafter be referred to as Applicable Part 201 Non-Residential Cleanup Criteria. Although DWC/DWPC and GSI/GSIPC are not considered applicable criteria, any exceedances of these criteria are identified in the tables and figures of this report. Additionally, the extent of impacts was delineated to the most restrictive criteria (including DWC/DWPC and GSI/GSIPC). Soil Cleanup Criteria are presented in Table 3.1 and Groundwater Cleanup Criteria area presented in Table 3.2.

3.2 Site-Specific Background Values for Metals

Statistical evaluations of concentrations of inorganics (metals) found in soil and groundwater samples were completed for the Site. Evaluations were completed in accordance with the requirements presented in the Michigan Department of Environmental Quality (MDEQ) document *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (Michigan, 2002, referred to as the "S^3TM"). Facility-Specific Background Concentrations (as defined in Section 4.3 of Tab 7 of the S^3TM) have been determined for naturally-occurring inorganics in local soil and groundwater. These background values have been calculated using analytical data from soil samples collected from non-impacted locations/intervals and groundwater samples collected from upgradient (background) wells at the Site. The complete statistical evaluations and procedures are used are documented in the memorandums included in Appendix B.

The calculated background values for metals in soil and groundwater were used in evaluating the analytical results presented in Section 4.0. A metal detection was only considered an exceedance of criteria if it exceeded both the Site-specific background value and a Generic Cleanup Criteria.

Section 4.0 Overview of Phase II Investigations

This section presents an overview of the sampling plan including the parameters analyzed and a brief discussion of the field investigation methods followed.

4.1 Sampling Plan

Prior to each investigation conducted, sampling plans were developed which included the collection of soil and groundwater samples at each REC in locations based on the information obtained during the Phase I ESA and adjusted in the field, as necessary, based on access limitations and above and below-ground utilities, comments provided by the MDEQ in their previous Audit Letters, and with input and approval from Ford. The samples were collected by installing soil borings and temporary or

permanent monitoring wells. Soil samples were collected based on visual, olfactory, or organic vapor evidence of impact. When no organic vapor, visual, or incidental olfactory evidence of impacts was observed/identified, the stratigraphy, any observed impact from adjacent soil borings, and the nature of the REC were considered in determining the soil sample interval. Monitoring well screens were placed based on the elevation of the groundwater table or the elevation of the encountered saturated zones. Further details of the field investigation methods are presented in Section 4.3.

4.2 Analytical Parameters

The type of soil and groundwater sample analyses varied on a REC-specific basis and was based on information provided in the previous environmental reports and field screening observations. Specific parameters analyzed for each sample are listed in Tables 4.1 and 4.2 for soil and groundwater, respectively. In summary, soil and groundwater sample analyses included one or more of the following parameters lists:

- Target Compound List (TCL) volatile organic compounds (VOCs)
- TCL Semi-Volatile Organic Compounds (SVOCs) (or a subset, polynuclear aromatic hydrocarbons [PAHs])
- Polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL) metals including hexavalent and trivalent chromium (and fine/coarse lead for soil)
- Ethylene glycol
- Low level methyl mercury using low-level mercury sampling methods (groundwater only)
- Herbicides and pesticides
- TPH, DRO, GRO and ORO

During the Phase II ESAs, soil samples collected for VOC analysis were collected using the laboratory purified water preservation/low-level method. Based on comments from the MDEQ, since the Phase II ESAs, all soil samples analyzed for VOCs were collected using the field methanol preservation/preparation method (i.e. samples collected since 2010).

Within REC 12, AOC 1, and AOC 3, an analysis of TPH was conducted to assess presence/absence of free product. No free product was observed in soils and no free product was observed or measured in groundwater, and there were no TPH detections above MDEQ, non-promulgated, free-phase evaluation guidance screening levels (2009 MDEQ Part 201 Re-design).

In support of the sampling and analysis activities, approximately 5 percent (1 in 20) of the samples collected for each media (i.e., soil and groundwater) were submitted as quality assurance (QA)/quality

control (QC) samples. The QA/QC samples included blind duplicates, equipment blanks, matrix spike/matrix spike duplicates (MS/MSD), and trip blank samples. A copy of the laboratory's (TestAmerica) QA/QC programs is also available upon request.

Enovis performed a data verification and validation of the laboratory analytical data. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers. The data were found to exhibit acceptable levels of accuracy and precision, based on the provided information, and may be used with the qualifications noted in each table.

4.3 Field Investigation Methods

4.3.1 Soil Boring Installation and Soil Sampling

The subsurface investigation was completed with a direct push Geoprobe or Rotosonic drill rig, depending on the anticipated total depth of the proposed borings. Geoprobe borings were extended to a maximum of 20 feet bgs and continuous soil samples were collected utilizing 5-foot Macrocores with disposable acetate liners. Rotosonic borings, drilled when depths were beyond 35 feet bgs, were continuously sampled using a 5-foot or 10-foot sample barrel (i.e., PMW-3, PMW-4 and SB8-1). Borings not completed as temporary or permanent monitoring wells were properly abandoned with bentonite chips. Soil cuttings from soil borings were containerized, properly labeled, and temporarily staged on-Site. Soil was disposed of by the Environmental Quality Company of Belleville, Michigan.

Soil samples were collected from select soil borings for analytical laboratory analysis. The sampling requirements for each REC were developed based on the type of known or suspected usage of the area as discussed in the Phase I ESA.

Soils were continuously logged from the surface to the bottom of each soil boring. Soil samples were collected from the interval exhibiting the highest PID reading, staining, and/or incidental olfactory evidence or collected just above the water table if no field evidence of impacts were observed.

The soil samples were collected in laboratory-supplied sample containers, placed in shipping coolers with ice to maintain 4° C, and shipped under chain-of-custody protocol to TestAmerica Laboratories of North Canton, Ohio.

4.3.2 Monitoring Well Installation and Groundwater Sampling

Three monitoring wells, including the permanent perimeter wells (PMW-3/3I and PMW-4S/4I) and temporary monitoring well TW8-1 were installed utilizing a Rotosonic drill rig and were constructed of either 1-inch or 2-inch diameter, Schedule 40, polyvinyl chloride (PVC) riser pipe and flush threaded, 0.010-inch slotted, 5-foot long PVC screen. A filter sand pack was installed adjacent to the screen in the

annulus to a height of approximately 2 feet above the top of the screen. Bentonite chips were placed above the filter pack, and hydrated with potable water. The wells were completed at the surface either as a flush-mount well or an aboveground stick-up.

The remaining permanent and temporary monitoring wells were installed utilizing a Geoprobe drill rig and were of the same construction; either 1-inch or 2-inch diameter, Schedule 40, PVC riser pipe and flush threaded, 0.010-inch slotted, 5-foot long PVC screen. The soil boring was allowed to collapse around the screen, and bentonite chips were placed in the annulus up to the ground surface. The wells were completed at the surface either as a flush-mount well or an aboveground stick-up.

Monitoring wells were developed to remove sediments from the well, and to further enhance the hydraulic communication between the well and formation. Development was accomplished using bailing, surging, and/or pumping techniques. Field parameters consisting of pH, specific conductivity, temperature, and turbidity were monitored during development. Development was considered complete once the field parameters stabilized, and the water was clear of sediments.

Prior to groundwater sampling, the monitoring wells were purged in accordance with low-flow sampling protocols. Groundwater field measurements including pH, conductivity, turbidity, temperature, oxidation-reduction potential, and dissolved oxygen were collected during the purging of each monitoring well to ensure stabilization of the groundwater prior to sampling. Upon obtaining stabilization, the groundwater samples were collected using a peristaltic pump and dedicated polyethylene tubing. The groundwater samples were collected in laboratory-supplied sample containers, placed in shipping coolers with ice to maintain 4° C, and shipped under chain-of-custody protocol to TestAmerica Laboratories of North Canton, Ohio.

4.3.3 Geophysical Investigation

The objective of the geophysical investigation was to survey proposed soil boring locations to confirm the presence or absence of buried utilities in conjunction with delineating the presence or absence of suspected former underground storage tanks (USTs) at REC 16, REC 20, REC 34, and REC 41.

A Cartesian coordinate system was adopted and applied to each of the areas of investigation. For each interior soil boring location a 5-foot by 5-foot grid was established. The reference grid consisted of 1-foot spaced survey lines that were read in the north-south and east-west directions. Additional lines of data in various lengths were also collected inside and outside of the facility to gather preliminary data with regards to depth of signal penetration.

The Ground Penetrating Radar (GPR) survey was conducted using a Noggin 250 Smart Cart System, which utilizes high frequency (MHz range) electro-magnetic (EM) signals to investigate subsurface conditions. Pulsed EM waves emitted from a transmitting antenna are propagated into the ground, and

travel at velocities determined by the electrical properties of earth materials. If a wave hits a buried object or boundary with different electrical properties as it moves downward, part of the wave energy is reflected back to the surface and is detected by a receiving antenna. The reflected wave is stored digitally, and processed as a trace of signal versus amplitude. As the antennas are moved along a survey line, a series of traces are recorded at discrete points. When presented collectively, these traces display a profile of the subsurface. Data traces were collected at equidistant intervals specified by the GPR operating system along the survey lines, and tracked by an attached odometer.

Interior Survey Results

Test data was collected inside the Executive Garage (suspected former UST location); however, the floors consisted of reinforced concrete. Review of trace plots for the inside surveyed locations yielded a depth of penetration of approximately 2.5 feet bgs. No distinct responses indicative of USTs were delineated to a depth of 2.5 feet bgs, nor were there any responses indicative of buried pipes, or edges of former excavation observed in the data. The lack of signal penetration can likely be attributed to the conductive nature of the subsurface material, combined with surficial metal interferences. Generally conductive subsurface materials (i.e., wet clay or foundry sand) tend to attenuate GPR signals reducing the depth of signal penetration. Furthermore, numerous surficial metal objects were also observed as sources of interference including overhead piping, trusses, lighting, columns, racking, vents, walls and machinery. High frequency (MHz range) GPR signals travel three times faster in air than in the ground, and as such, the reflection from metal surface objects can appear in the subsurface data traces. For example, if an overhead metal object is 18 feet in the air above the survey, one would expect to see the metal response at an apparent depth of 6 feet bgs in the trace plot. As a result, it is possible that subsurface responses were masked by reflections of GPR signals from sources above ground.

The interior survey results indicated that the poor depth of penetration achieved at each of the surveyed locations was likely attributed to the conductive nature of the subsurface materials. Lack of adequate signal strength at depth combined with the observed metal interference, prevented delineation of buried utilities at inside surveyed locations.

Exterior Survey Results

Preliminary data was also collected at various exterior locations as part of the GPR investigation. Data were collected along the east paved perimeter road (a suspected former UST location), a typical grassed area and the area outside the Executive Garage (suspected former UST location) in order to determine a general range for the depth of signal penetration in the soils outside the facility. Review of the trace plots for the locations surveyed outside the facility yielded depths of penetration ranging from approximately 2 to 4 feet bgs on the east perimeter road, approximately 2 to 4 feet bgs on the grassed area, and approximately 2.5 feet bgs outside the Executive Garage. No distinct arc-shaped responses indicative of USTs were delineated within the observed depths of penetration, nor were there any

responses indicative of buried pipes. Lack of signal penetration was again observed at each of the exterior locations. Lack of signal penetration is mainly attributed to the conductive nature of the soils and the time of year when soils are typically saturated, and also by the use of road salt. Conductive soils attenuate GPR signals, reducing the depth of penetration. Similarly, the use of road salt on all paved and concrete areas was observed throughout the facility which contributes to the reduced depth of signal penetration observed. Furthermore, surficial metal from the metal clad facility walls introduced interference potentially masking subsurface responses.

Surveys at the Site were also conducted over utilities of know depth, however, due to the lack of signal penetration no distinct arc-shaped responses indicative of buried utilities were observed in the collected data plots, indicating the subsurface soils are very conductive.

The exterior survey results indicate that the poor depth of penetration achieved at each of the surveyed locations can likely be attributed to the conductive nature of the subsurface soils. Lack of adequate signal strength at depth combined with observed surficial metal and road salt interferences, prevented delineation of buried utilities or USTs at the outside surveyed locations.

4.3.4 Surveying Soil Boring and Monitoring Well Locations

The horizontal and vertical coordinates for the ground surface for each soil boring and ground surface and top of casing elevations for monitoring wells were surveyed to the NAVD88 coordinate system. The data was imported electronically into CRA's Site base map to facilitate preparation of figures.

4.3.5 Characterization and Disposal of Investigation-Derived Waste

Soil IDW was containerized in 55-gallon drums and roll-off boxes and groundwater IDW was containerized in 55-gallon drums or 1,500-gallon polyethylene tanks. All containers were properly labeled pending characterization. The IDW containers were transported and temporarily stored at a Ford-approved location on Site. Upon completion of the proper waste characterization, CRA coordinated the waste disposal with the Ford-approved subcontracted waste disposal company, the Environmental Quality Company of Belleville, Michigan.

4.3.6 Monitoring Well Abandonment

Wells were decommissioned and abandoned following CRA Standard Operation Procedures. The following wells were abandoned on the Menard's Property: MW-13R, MW-1M, MW-3M, MW-4M, MW-5M, TW8-1, PMW-3, PMW-3I, PMW-4S, and PMW-4I.

Section 5.0 Summary of Investigation Results

This section presents a background of each REC investigated during the Phase II ESAs and subsequent investigations, the REC-specific scope for the field work including number of sample locations and parameters, and a summary of the analytical results.

As stated in Section 3.1, applicable criteria for the Menards Property can be summarized as Non-Residential Criteria, not including DWC/DWPC or GSI/GSIPC. For soil and groundwater delineation purposes, delineation samples were compared against the most restrictive criteria (DWPC/DWC or GSIPC/GSIC).

Complete laboratory analytical reports and the associated data validation memorandums prepared by Enovis, the data validation firm subcontracted by Ford, can be provided upon request.

5.1 REC 2 – Open Leaking Underground Storage Tank (Executive Garage)

5.1.1 Background

The REC 2 – Executive Garage area currently has two open Leaking Underground Storage Tank (LUST) incidents, Release Nos. C-0519-98 and C-0674-00. Based on the review of available documentation, both releases occurred in the same general area. The UST system for this area included USTs #10-2 and #10-3, which were double-walled 30,000-gallon steel tanks used for the storage of unleaded gasoline. These USTs were located approximately 1,600 feet northwest of the Executive Garage area, within a concrete slab containment area known as REC 44. These two USTs were removed in 2008. The USTs were connected via aboveground piping to the dispenser located outside (south) of the Executive Garage door. Release No. C-0519-98 occurred from a release of unleaded gasoline in the underground piping associated with the dispenser (i.e., off of the Menards Property) in 1998. Approximately 60 cubic yards of gasoline saturated soils were excavated from the area immediately surrounding the piping release point in June 1998. Release No. C-0674-00 occurred when a gasket on the dispenser failed and approximately 5 gallons of fuel spilled in 2000.

Free product has been identified in this area since 1998. CRA has performed monthly free product gauging and manual bailing of measurable free product since January 2009. In September 2012, free product was identified in four well locations (MW-5, MW-11, TW2-36, and TW2-35). Wells MW-5 and MW-11 are associated with historical site investigations. These four wells were included within the REC 2 excavation boundaries and have been completely removed.

In September 2012, CRA completed a laser induced fluorescence (LIF) survey of the Executive Garage Area. The objective of the survey was to verify the lateral extent, vertical distribution, relative intensity, and relative type of Light Non-Aqueous Phase Liquid (LNAPL). In addition, the LIF survey was a reliable demonstration to show that free phase was/was not present in the soil, as stated by the MDEQ in their previous Audit Letters. Based on the survey results, the majority of LNAPL identified was characterized as gasoline-range. Results of the LIF Survey were presented in 4th Quarter 2011 Free Product Recovery Status Report dated February 16, 2012.

Excavation was chosen as the most appropriate corrective action for the REC 2 area. Excavation activities were started in November 2012 and completed in April 2013. The objective of the excavation was to remove free phase impacts and those soils impacted above applicable Non-Residential criteria with the exception of DWPC and GSIPC.

The depth of the excavation ranged from approximately 20 feet bgs to 30 feet bgs and approximately 58,400 tons of soil were removed. Floor and sidewall verification soil samples were collected to confirm criteria and objectives of the excavation were met.

Complete details of the REC 2 investigations and excavation activities are presented in the Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (November 2013).

5.2 REC 7 – Additional Areas of Potential Fill

5.2.1 Background

Based on a review of historical area photos and discussions and inspections conducted during the Phase I ESA, areas of construction, demolition, concrete and other miscellaneous debris were noted.

5.2.2 Subsurface Investigation

One soil boring (SB7-8) was completed in the general vicinity of noted potential fill within the Menards Property Boundary. SB7-8 was installed to 12 feet bgs and PID readings were 0 ppm for the entire boring. Fill material was noted between 0 and 5 feet bgs, therefore the soil sample was collected from within this interval. Soil boring details are presented on Table 2.1 and Appendix B.

The soil sample key is presented in Table 4.1. One soil sample was submitted for analysis. The sample was analyzed for Metals, PCBs, VOCs, and SVOCs.

5.2.3 Analytical Results

The soil sample analytical results for SB7-8 are summarized on Figure 5.2.1 and Table 5.2. No constituents were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWPC or GSIPC.

5.3 REC 8 – Former Adjacent Service Station

5.3.1 Background

A former Texaco station is identified in the LUST Database in the orphan summary as being located at the northeast corner of Wixom Road and Interstate-96. No information was given in the orphan listing regarding the status of the LUST at this property. Based on observations during the Site inspection for the Phase I ESA, this property was vacant. The review of historical aerial photographs indicated the presence of a structure on this property and the review of available city directories indicated that a Texaco station was located at 28500 Wixom Road in 1973 (earliest available city directory) and 1977. Based on an assumed groundwater flow direction to the west-northwest in the vicinity of the Site, the former Texaco station was located upgradient of the Menards Property.

5.3.2 Subsurface Investigation

One soil boring (SB8-1) was installed at the eastern property boundary, upgradient of the former adjacent service station, to 36 feet bgs and one temporary monitoring well (TW8-1) was installed in this location. PID readings were 0 ppm for the entire boring and based on the lack of visual or olfactory impact, no soil sample was collected. Temporary well TW8-1 was screened from 34 to 39 feet bgs. Soil boring and monitoring well completion details are presented on Table 2.1 and Appendix B.

The groundwater sample key is presented in Table 4.2. One groundwater sample from TW8-1 was submitted for analysis. The sample was analyzed for BTEX, TMBs, MTBE, and metals.

5.3.3 Analytical Results

The groundwater sample analytical results are summarized on Figure 5.2.2 and Table 5.3. No constituents were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWC and GSIC.

5.4 REC 12 – Below Grade Hydraulic Equipment

5.4.1 Background

Numerous types of below grade hydraulic equipment were formerly utilized at the Site, including: below-ground hydraulic vehicle lifts, Marmac lifts, elevators, and other miscellaneous hydraulic production lift equipment.

Following the decommissioning and removal of the below grade hydraulic equipment, one soil boring was installed adjacent to each former below grade lift and the former elevator that was located in the south portion of the former Administration Building.

5.4.2 Lift Removal

Between 2010 and 2012, the below grade hydraulic equipment was drained, decommissioned and the concrete vaults of each lift were removed. During the lift removals, the condition of the soil below the concrete vaults of each lift was evaluated and documented. No impacts were identified. A summary of lifts which were evaluated during the decommissioning process can be found in Table 5.4.1. This table includes the specific dates of lift removal and subsequent inspections. The location of the below grade hydraulic equipment is shown on Figure 5.4.1. A photo log was created to document lift removal and condition of the soil and is located in Appendix C.

5.4.3 Subsurface Investigation

Eight soil borings (SB12-5 through SB12-12) were completed adjacent to former below grade hydraulic lifts and the former Administration Building elevator. Soil borings were completed to 15 feet bgs (i.e., below the suspected depth of each feature) and PID readings for each boring were all less than 5 ppm. Soil boring and monitoring well completion details are presented in Table 2.1 and Appendix B.

The soil sample key is presented in Table 4.1. Soil samples were analyzed for PCBs, SVOCs, and VOCs. The soil sample collected from SB12-12 (installed near the former Administration Building elevator) was also analyzed for TPH-DRO/GRO/ORO. TPH-GRO samples were also collected at each lift location and put on hold pending the results of the SVOC and VOC analysis.

No monitoring wells were installed as part of the below grade hydraulic equipment investigation therefore no groundwater samples were collected.

5.4.4 Analytical Results

The soil sample analytical results are summarized on Figure 5.4.2 and Table 5.4.2. No VOCs, SVOCs, or PCBs were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWPC and GSIPC. There were no TPH detections above 2009 MDEQ Part 201 Re-design Criteria. TPH-GRO analysis was not completed for the soil samples collected adjacent to the former below grade hydraulic lifts based on the lack of free product and detections of SVOC and VOC in the soil sample.

5.5 REC 16 – Former 10k Gallon Waste Oil UST

5.5.1 Background

A Spill Prevention, Control, and Countermeasure (SPCC) Plan from 1981 indicated a 1,000-gallon waste oil UST was located south of the Executive Garage under the courtyard pavement (i.e., within the REC 2 remediation area). Available information indicated closure activities would include the removal and disposal of the tank contents, cleaning and decontamination of the UST, and the abandonment in place of the UST by filling the tank with sand and capping with concrete.

5.5.2 Subsurface Investigations

In September 2010 a LIF survey was performed in order to define the lateral and vertical extents of LNAPL impacts. There were three LIF borings installed within the REC 16 area (BH-15, BH-36, BH-53). LNAPL impacts were identified at approximately 15 feet bgs in each boring and were vertically delineated at 20 feet bgs. The former waste oil UST was not identified during the LIF survey.

The REC 16 area was excavated in 2013 as part of the REC 2 remediation and is discussed further in the Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (November 2013).

5.6 REC 20 – Former 6k Brake Fluid UST

5.6.1 Background

During the Phase I ESA, it was reported that one 6,000-gallon UST that formerly contained brake fluid was removed from the Site. This UST was located outside of the Main Assembly Plant, approximately 11 feet southeast of column G-2 and was investigated in 1990 by CTI and Associates, Inc. (CTI). Benzene, toluene, ethylbenzene and xylenes (BTEX) compounds were detected in soil above the Michigan Act 451, Part 201 Generic Cleanup Criteria according to CTI Subsoil Investigation Report dated April 19, 1990. No further information regarding the tank was available.

5.6.2 Subsurface Investigation

One soil boring (SB20-1) was installed in the area of the former UST to 15 feet bgs. Based on the presence of fill material to 9 feet bgs, soil boring SB20-1 was presumed to be installed within the former UST cavity. The highest PID reading recorded was 1 ppm at 4 feet bgs. A temporary monitoring well was installed to access the groundwater in the area of this former UST. TW20-1 was screened from 3 to 8 feet bgs. Soil boring and monitoring well completion details are presented in Table 2.1 and Appendix B.

No soil sample was collected based on the lack of visual or olfactory evidence.

The groundwater sample key is presented in Table 4.2. One groundwater sample was collected and analyzed for VOCs.

5.6.3 Analytical Results

The groundwater sample analytical results are summarized on Figure 5.2.2 and Table 5.6. No constituents were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWPC and GSIPC.

5.7 REC 31 – Vehicle Wash Pits

5.7.1 Background

Prior to final shipment, cars which had been fluid filled were washed and/or subjected to water testing. Wastewater generated during washing/soaking activities was discharged to the Wastewater Treatment Plant (WWTP) from sumps in the bays. Due to operational status of the facility, integrity of these units could not be evaluated during the Phase I ESA.

5.7.2 Subsurface Investigation

Seven soil borings (SB31-1, SB31-2R and SB31-5 through SB31-9) were completed near the vehicle wash pit located on the Menards Property. SB31-1 was installed to 20 feet bgs. The highest PID was 8.8 ppm and one sample was collected from this interval. One temporary monitoring well (TW31-1) was installed within soil boring SB31-1 and was screened from 13 to 18 feet bgs and one groundwater sample was collected. Soil borings SB31-2R and SB31-5 through SB31-9 were installed to define the vertical and horizontal extent of arsenic impacts. Soil boring and monitoring well completion details are presented on Table 2.1 and Appendix B.

The soil sample key is presented in Table 4.1. The soil sample from boring SB31-1 was submitted for the analysis for metals, PCBs, SVOCs, and VOCs. The soil samples from SB31-2R and SB31-5 through SB31-9 were analyzed for arsenic.

The groundwater sample key is presented in Table 4.2. The groundwater sample from TW31-1 was submitted for analysis of Metals, PCBs, SVOCs, and VOCs.

5.7.3 Analytical Results

The soil sample analytical results are summarized on Figure 5.7.1 and Table 5.7.1. Arsenic was detected above DWPC and GSIPC in SB31-1, SB31-7 and SB31-9 only. However, no metals, PCBS, SVOCs, or VOCs were detected above Applicable Part 201 Non-Residential Criteria.

The groundwater sample analytical results are summarized on Figure 5.7.2 and Table 5.7.2. Only sodium was detected above Residential DWC. No other metals, PCBs, SVOCs, or VOCs were detected above Applicable Part 201 Non-Residential Cleanup Criteria in TW31-1.

5.8 REC 34 – Used Oil Tank

5.8.1 Background

Based on discussions with Site personnel during the Phase I ESA, one 500-gallon used oil UST was present in a vault in the Executive Garage. No investigations had been conducted in the area of the tank, however, this UST is located within a concrete vault and no evidence of a release was observed on the floor of the vault. Additionally, this UST area was located within the REC 2 remediation area.

REC 34 was excavated in January 2013 during the REC 2 remediation actions. These activities are summarized in the Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (November 2013).

5.9 REC 38 – Misc. Pits, Trenches, and Sumps

5.9.1 Background

Various pits, trenches, and sumps were present throughout the manufacturing areas, secondary containment areas, and exterior areas. These either discharged to the on-Site WWTP or are blind. Petroleum, solvent, and acidic products were utilized throughout the facility and staining was noted around some of these areas, as well as observed deterioration.

5.9.2 Subsurface Investigation

Three borings and two temporary wells were initially advanced adjacent to pits, trenches and sumps located throughout the building within the Menards Property (SB38-4, SB38-5, SB38-11, TW38-4 and TW38-11). Soil borings SB38-4 and SB38-11 were installed to 15 feet bgs, and SB38-5 was installed to 4 feet bgs due to refusal. The highest PID readings were: 2.3 ppm at 1 foot bgs in SB38-4, 0.8 ppm at 1 foot bgs in SB38-5, and 1.7 ppm at 1 foot bgs in SB38-11. TW38-4 was screened from 10 to 15 feet bgs and TW38-11 was screened from 6 to 11 feet bgs.

Five additional soil borings (SB38-22, SB38-23, SB38-24, SB38-25 and SB38-30) were installed to delineate tetrachloroethene (PCE) impacts identified at SB38-4. The highest PID reading from these borings was 6.6 ppm at 10 feet bgs in SB38-25. Soil samples were analyzed for VOCs. Additional soil borings (SB38-35 through SB38-38) were completed at and around SB38-23 for delineation (horizontal and vertical) of VOCs. The highest PID reading from these borings was 5.3 ppm at 7 feet bgs in SB38-35.

The soil sample key is presented in Table 4.1. The groundwater sample key is presented in Table 4.2. Soil samples were submitted for analysis of VOCs and a few samples were also included the analysis of Metals, naphthalene, and PCBs. Groundwater samples were submitted for analysis of VOCs.

5.9.3 Analytical Results

The soil sample analytical results are summarized on Figure 5.9.1 and Table 5.9.1. In soils, no metals, PCBs or SVOCs were detected above Applicable Part 201 Non-Residential Cleanup Criteria. In SB38-4, PCE was detected above DWPC. 1,2,4-TMB, 1,3,5-TMB, ethylbenzene, and xylenes were detected above DWPC and/or GSIPC in boring SB38-23 at 1 to 1.5 feet bgs, located south of SB38-4. These constituents were not detected in SB38-30 which was located further south of SB38-23. VOCs were not detected above criteria in SB38-22, SB38-24, SB38-25 and SB38-30. All results of soil borings SB38-35 through SB38-38 were below Applicable Part 201 Non-Residential Cleanup Criteria, indicating the achievement of horizontal delineation of impacts identified at SB38-23.

The groundwater sample analytical results are summarized on Figure 5.9.2 and Table 5.9.2. No constituents above Applicable Part 201 Non-Residential Cleanup Criteria were detected in groundwater

in TW38-4 and TW38-11. Additionally, no constituents were detected above DWC or GSIC in these wells.

5.10 REC 40 – PCB-Containing Substations

5.10.1 Background

Site PCB inspection logs indicated that minor releases of dielectric fluids have been observed in many of the substations over the years. Site files revealed that PCB electric equipment has been removed from several substations (and thus are no longer identified as housing PCB electrical equipment). According to Site personnel, the floors of the substations were not removed at the time the PCB electrical equipment was removed from service.

Substations 1 and 4 were located on the rooftop. Substations 7A and 7B were located on the ground floor of the Administration Building.

5.10.2 Subsurface Investigation

Investigated as part of the Regulated Materials Survey (RMS), concrete substation floors were sampled in 2008 and results from Subs 1, 4, 7A and 7B exceeded the 40 CFR 761 screening criterion of 1 mg/kg.

Based on the lack of secondary containment, wipe samples were collected from outside the doorways of Subs 7A and 7B. No PCBs were detected in the wipe samples. Concrete core samples were also collected from outside of the doorways of Subs 7A and 7B. PCBs were not detected in these concrete samples.

The concrete slabs for rooftop substations 1 and 4 were removed and disposed of as non-hazardous TSCA waste.

The concrete slabs of Substations 7A and 7B were removed on January 24, 2013 and disposed of as non-hazardous TSCA waste. The soils immediately underlying the slabs were inspected on January 24-25, 2013 and no impacts were identified. No soil sampling was conducted.

5.11 REC 41 – 10k Gallon Gasoline UST

5.11.1 Background

Originally included under REC 2, this 10,000-gallon unleaded gasoline UST was located in the Executive Garage based on the Site's June 2, 1981 SPCC Plan. No further information regarding the tank was available.

5.11.2 Subsurface Investigation

An air-knife investigation was performed in September 2010 as part of a search for this former UST. Investigation revealed no evidence of the presence of this UST.

In September 2010 a LIF survey was performed to characterize and delineate the lateral and vertical extent of LNAPL impacts. LIF borings were installed in a grid pattern throughout REC 2 and were advanced to an average depth of 30 feet bgs. The results delineated the LNAPL horizontally and vertically, as well as approximating the LNAPL saturation profile and LNAPL-type at each location. The exception is the area to the south of BH-56 (Administration Building), which could not be accessed by the equipment.

Evidence of former USTs were found in January 2013 during the REC 2 excavation activities. One UST concrete pad was found north of A5 between columns 4 and 5 and was approximately 12 by 8 feet and 2 inches thick and approximately 15 feet deep. The second UST concrete pad was found south of A5 between columns 5 and 6 and was approximately 12 by 8 feet and 2 inches thick and approximately 15 feet deep.

The concrete pads have been removed and two soil verification samples were collected from below each pad and analyzed for gasoline VOCs and lead.

These activities and analytical results are summarized in the Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (November 2013).

5.12 REC 42 – Historic Farmstead

5.12.1 Background

The Site was a historic farmstead. No information was available regarding the type of heating, UST or AST use, or the presence of a septic system, cesspool or water wells. While no evidence existed to identify this as a REC, insufficient information existed to evaluate potential adverse impact to soil and groundwater at the Site.

5.12.2 Subsurface Investigation

REC 42 was investigated as part of Perimeter Groundwater Evaluation. Twenty-seven monitoring wells installed in 12 soil borings (across the entire Site, two monitoring well clusters (PMW-3/3I and PMW-4/4I) located within Menards Property). Monitoring well completion data is presented in Table 2.1 and Appendix B. A groundwater sample key is presented in Table 4.2.

Notice of Off-Site Migration of Contamination submitted to MDEQ and adjacent property owner to the north in 2008 based on the presence of metals in groundwater above criteria in the perimeter monitoring wells and the direction of groundwater flow for the entire Site.

Since the Phase II investigations, an additional three quarters of groundwater sampling of the perimeter monitoring wells has been completed in order to obtain enough data to complete Site-specific background concentrations for metals in groundwater.

5.12.3 Analytical Results

Groundwater sample results are presented in Figure 5.12 and Table 5.12. Aluminum was detected above DWC in PMW-3I, and aluminum, arsenic and manganese were detected above DWC and/or GSIC in PMW-3.

5.13 REC 45 – Below Grade Process Lines

5.13.1 Background

Process waste from Site operations and outdoor areas where stormwater may have come in contact with contaminated media (i.e., waste or raw material storage areas) was historically conveyed to the on-Site WWTP through a series of below grade sewer lines.

5.13.2 Subsurface Investigation

The subsurface investigation for REC 45 was completed under the REC 38 investigation. Soil borings advanced and groundwater wells installed throughout the Site, including two borings and one well located within the 45-acre parcel (SB38-5 and SB38-11/TW38-11). Refusal was encountered at 4 feet bgs in SB38-5 (at column A-5 adjacent to a process sewer line), PID readings were below 1 ppm for the entire boring. SB38-11 was installed (at column M-10 adjacent to a process sewer line) to 15 feet bgs, highest PID was 1.7 ppm at 1.5 feet bgs, soil sample collected from 1-2 feet bgs. VOCs were not detected in soil samples collected from SB38-5 and SB38-11. The soil sample analytical results are summarized on Figure 5.9.1 and Table 5.9.1.

A sewer investigation was performed on both the underground process industrial and storm sewer lines for Brandenburg. Storm and process industrial lines were cleaned by jetting water through the pipes and then vacuuming it out for subsequent off-Site disposal. CRA was present for oversight of the cleaning and video-scoping of the process industrial lines only. There were approximately 660 feet of underground process sewer lines, in five different pipelines, that were cleaned and video-scoped within the Menards Property. The process sewers that were included in the video-scoping are summarized in Table 5.13 and shown on Figure 5.13. Reports documenting the sewer video-scoping are included in Appendix D. Process sewer lines were cleaned and video-scoped unless they were overhead lines, no cleanouts were present for the lines, or the lines were too small to clean and video.

One of the five pipelines displayed signs of lateral cracking and discoloration. This pipeline is designated as Setup 25 in Table 5.13 and Appendix D. However, based on the pipe material, vitrified clay, the discoloration is a normal factor of the pipe material in contact with the process sewage and the lateral cracking did not appear to penetrate the thickness of the pipe.

5.14 REC 46 – Agricultural Chemicals

5.14.1 Background

Based on the historic use of the Site as cultivated farmland, agricultural chemicals such as pesticides, herbicides and fertilizer would have historically been used on the Site. If the chemicals were applied in accordance with manufacturer recommendations, residuals remaining in Site soils would be expected to be similar to other area properties. Based on the historic use of the Site as an orchard, agricultural chemicals such as organo-chlorides or arsenicals would likely have been used.

5.14.2 Subsurface Investigation

Four soil borings were advanced throughout the Site, including one advanced within the 45-acre parcel, near the southeast corner of the Menards Property (SB46-3). Soil boring details are presented in Table 2.1 and Appendix B.

The soil sample key is presented in Table 4.1. One soil sample (plus one duplicate) was submitted for analysis from soil boring SB46-3 from 2 to 3 feet bgs. The soil samples were analyzed for arsenic, herbicides, and pesticides. The soil samples were also analyzed for metals including hexavalent and trivalent chromium, and fine and coarse grained fractions of lead.

5.14.3 Analytical Results

The soil sample analytical results are summarized on Figure 5.2.1 and Table 5.14. No metals, pesticides or herbicides were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWPC or GSIPC.

5.15 REC 48 – fluid fill area

5.15.1 Background

Vehicles were filled with automatic transmission fluid, gasoline, brake fluid, antifreeze, and windshield washer fluid along the final line. No known releases have occurred to the subsurface along the fluid fill area.

5.15.2 Subsurface Investigation

The fluid fill lines were located overhead and no visual or olfactory impact was identified in the soil borings installed within this area. Soil boring SB48-3 was installed near a fluid fill area to 12 feet bgs (PID readings all were 0 ppm) and one soil sample was collected from 6 to 8 feet bgs. Soil boring completion details are presented on Table 2.1 and Appendix B.

The soil sample key is presented in Table 4.1. One soil sample was submitted from SB48-3. The soil sample was analyzed for ethylene glycol, PAHs, and VOCs.

5.15.3 Analytical Results

The soil sample analytical results are summarized on Figure 5.15 and Table 5.15. No constituents were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWPC or GSIPC.

5.16 AOC 1 – Northwest Corner of Menards Property Boundary

5.16.1 Background

As part of the continuous monitoring of the 45-acre parcel designated as the Menards Property, and parcel boundary assessment was performed during early 2013. The parcel boundary assessment included installing up to 16 soil boring locations along the western and northern parcel boundaries to assess potential impacts from former plant operations and adjacent features (i.e., battery charging areas, pits, lifts, etc.).

The subsequent discussion will include the summary of all soil borings within the parcel boundary assessment, but AOC 1 itself includes only SB8-13 and its delineation borings.

Following the subsurface investigation, a soil excavation was performed at AOC 1 and is described in Section 6.1.

5.16.2 Subsurface Investigation

In January 2013, 16 soil borings (SB1-13 through SB16-13) and four permanent monitoring wells (MW-1M, MW-3M, MW-4M and MW-5M) were installed along the western and northern parcel boundaries. Locations of borings and wells were intended to be in and adjacent to former features (i.e., pits). Boring depths were based on the former feature and extended to at least 4 feet below the bottom of the feature. No evidence of impact was observed or detected in any of the soil borings with the exception of SB8-13.

Soil boring SB8-13 was installed near former pit #229. There was an odor and PID reading of 1,654 ppm at 11 to 12 feet bgs. Following receipt of results, this boring was re-drilled and a soil sample was collected for TPH-GRO based on most recent emails and conversations with the MDEQ to monitor for the potential presence of NAPL.

Horizontal delineation soil borings were installed approximately 20 and 50 feet away in the north, east, and south directions on the Menards Property and also 20 feet away in the west direction on the adjacent property (SB8-13-1 and SB8-13-2). The 50-foot borings (SB8-13-1 through SB8-13-7) were put on hold pending analysis of the 20-foot borings (SB8-13-8, SB8-13-9, and SB8-13-10). Delineation soil samples were only analyzed for VOCs. Soil boring and monitoring well completion details are presented in Table 2.1 and Appendix B. The soil sample key is presented in Table 4.1.

A temporary monitoring well (TW8-13-9) was installed at SB8-13-9. The groundwater sample key is presented in Table 4.2. The groundwater sample at TW8-13-9 was analyzed for metals and VOCs.

5.16.3 Analytical Results

The soil sample analytical results are summarized on Figure 5.2.1 and Table 5.16.1. In SB8-13, VOCs, specifically, 1,2,4-TMB and 1,3,5-TMB were detected at 11 to 12 feet bgs exceeding Non-Residential DWPC, SVIIC, DCC, GSIPC, GCPC and Csat. The impacts were delineated vertically by the 13 to 14 feet bgs sample. Cobalt was also detected in SB8-13 above DWPC and GSIPC. TPH-GRO was not detected.

No evidence of impact (PID or visual) was observed in the delineation borings. Soil samples from SB8-13-1, SB8-13-2, SB8-13-8, SB8-13-9 and SB8-13-10 did not have any detection above Part 201 Non-Residential Criteria. Therefore, the samples from the 50-foot borings (SB8-13-1 through SB8-13-7) were not analyzed.

The groundwater sample analytical results are summarized on Figure 5.2.2 and Table 5.16.2. In AOC 1, delineation monitoring wells TW8-13-2 and TW8-13-9 had no detections above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, no constituents were detected above DWC or GSIC in these wells.

In the wells located along the Menards Boundary Perimeter (MW-1M, MW-3M, MW-4M, and MW-5M), only selenium was detected above DWC and GSIC in MW-3M.

5.17 AOC 3 – Dual-Post IHVL Location

5.17.1 Background

On September 5, 2013, an unknown amount of staining was observed at a left-in-place dual-post in-ground hydraulic vehicle lift (IHVL). The IHVL was removed and the proceeding corrective action was to excavate the area to remove any impacts. Excavation details are provided in the Section 6.2.

Section 6.0 Site Remediation

Two small excavations (AOC 1 and AOC 3) were completed within the Menards Property in addition to the large REC 2 Excavation reported. The REC 2 excavation is described in detail in the Closure Report for Release Nos. C-0519-98 and C-0674-00 for REC 2 (November 2013). Details of the two small excavations are provided below.

6.1 AOC 1 Excavation Activities

Based on the VOC exceedances detected in the soil at SB8-13 and the expected limited volume of impact (based on surrounding delineation samples), this area was excavated and the impacted soils were disposed of off Site. During May 2013, approximately 700 cubic yards of soil were removed from AOC 1 and disposed of at Veolia ES Arbor Hills Landfill in Northville, Michigan. Confirmation soil samples were collected from the excavation floors and sidewalls in accordance with the MDEQ's Sampling Strategies and Statistics Training Materials (S^3TM) Document. Eleven verification samples were collected (four from the floor and seven from the sidewalls) and analyzed for gasoline VOCs. No constituents were detected above Applicable Part 201 Non-Residential Cleanup Criteria. Additionally, there were no constituents detected above DWPC or GSIPC. AOC 1 soil verification results are included in Table 6.1. Figure 6.1 presents the AOC 1 excavation limits and verification soil sample locations. Following receipt of the verification sample results, the perched groundwater/rainwater that had accumulated in the excavation was characterized, pumped out and disposed of at the Environmental Quality Company of Belleville, Michigan. Six hundred sixty-seven cubic yards of certified, clean, material was imported from a quarry to backfill the excavation. Waste manifests for the soil and groundwater from AOC 1 and the certificate of clean fill are included in the AOC 1 Excavation and Verification Sampling Summary Memo dated July 19, 2013 included in Appendix E. Compaction and density testing were completed to meet Ford Section 2200 North American Compaction Specifications and the area was graded to meet applicable Ford standards.

6.2 AOC 3 Excavation Activities

Based on the presence of the IHVL and visual/olfactory evidence, this area was excavated and the IHVL and impacted soils were disposed of off-Site. During August 2013, approximately 912 cubic yards of soil were removed from AOC 3 and disposed of at Veolia ES Arbor Hills Landfill in Northville, Michigan. Confirmation soil samples were collected from the excavation floors and sidewalls in accordance with the MDEQ's S^3TM Document. Six verification samples were collected (two from the floor and four from the sidewalls) and analyzed for TPH-GRO/ORO and PCBs. No constituents were detected above 2009 MDEQ Part 201 Re-design Criteria. AOC 3 soil verification results are included in Table 6.2. Figure 6.2 presents the AOC 3 excavation limits and verification soil sample locations. Following receipt of the verification sample results, the perched groundwater/rainwater that had accumulated in the excavation was characterized, pumped out and disposed of at the Environmental Quality Company of Belleville,

Michigan. Approximately 89.7 tons of certified, clean, material was imported from a quarry to backfill the excavation. Compaction and density testing was not necessary for this excavation due to its small size. Waste manifests, waste load tickets, and clean fill load tickets are included in Appendix F.

Section 7.0 Summary and Conclusions

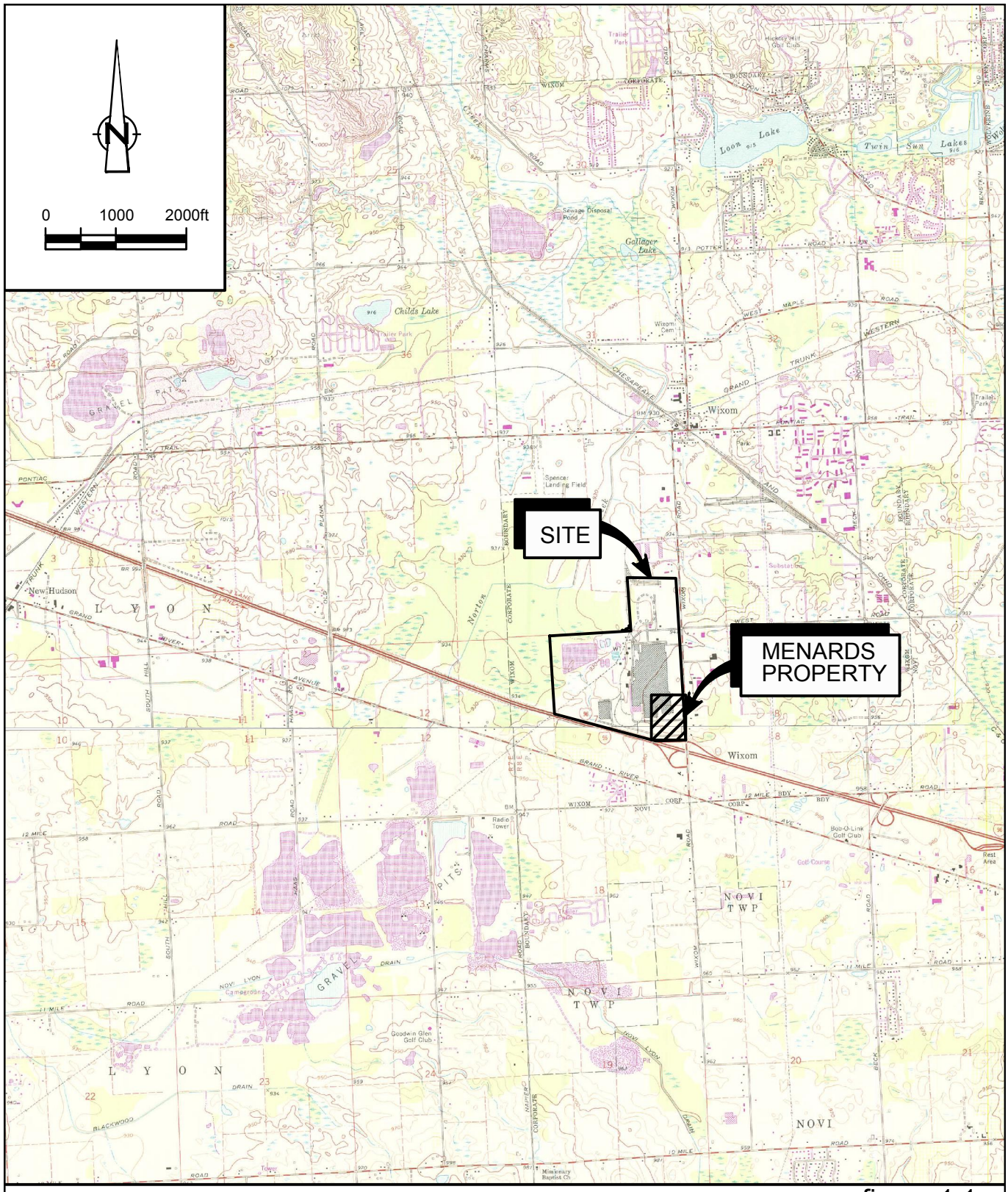
The investigation and remediation activities completed within the Menards Property Boundary at the Former Wixom Assembly Plant were completed between 2008 and 2013.

This investigation was completed to evaluate if release(s) of hazardous wastes, hazardous constituents, hazardous substances, or petroleum products occurred from any of the RECs identified in the Phase I ESA (CRA; September, 2007) and within the Menards Property Boundary. If impacts above the most restrictive Part 201 Criteria were detected, impacts were delineated.

On October 16, 2013, a RC for the southeast 45-acre parcel was recorded with the Oakland County Register of Deeds. The RC restricts the use of the property to Non-Residential use only, restricts the use of groundwater for drinking water purposes and requires that any new storm sewer utilities installed at the property be installed above the groundwater table and/or must be lined per industry standards.

Eighteen RECs, including AOC 1 and AOC 3, were identified within the Menards Property Boundary. Of these, the discussion of four was included in the November 2013 MDEQ Part 213 Closure Report for REC 2 (RECs 2, 16, 34, and 41). Impacts above applicable criteria were discovered at SB8-13, but were excavated as part of the AOC 1 soil excavation. There were no detections of VOCs, SVOCs, PCBs, or metals above Applicable Part 201 Non-Residential Cleanup Criteria in the remaining RECs.

Figures



SOURCE: USGS QUADRANGLE MAP;
MILFORD AND SALEM, MICHIGAN

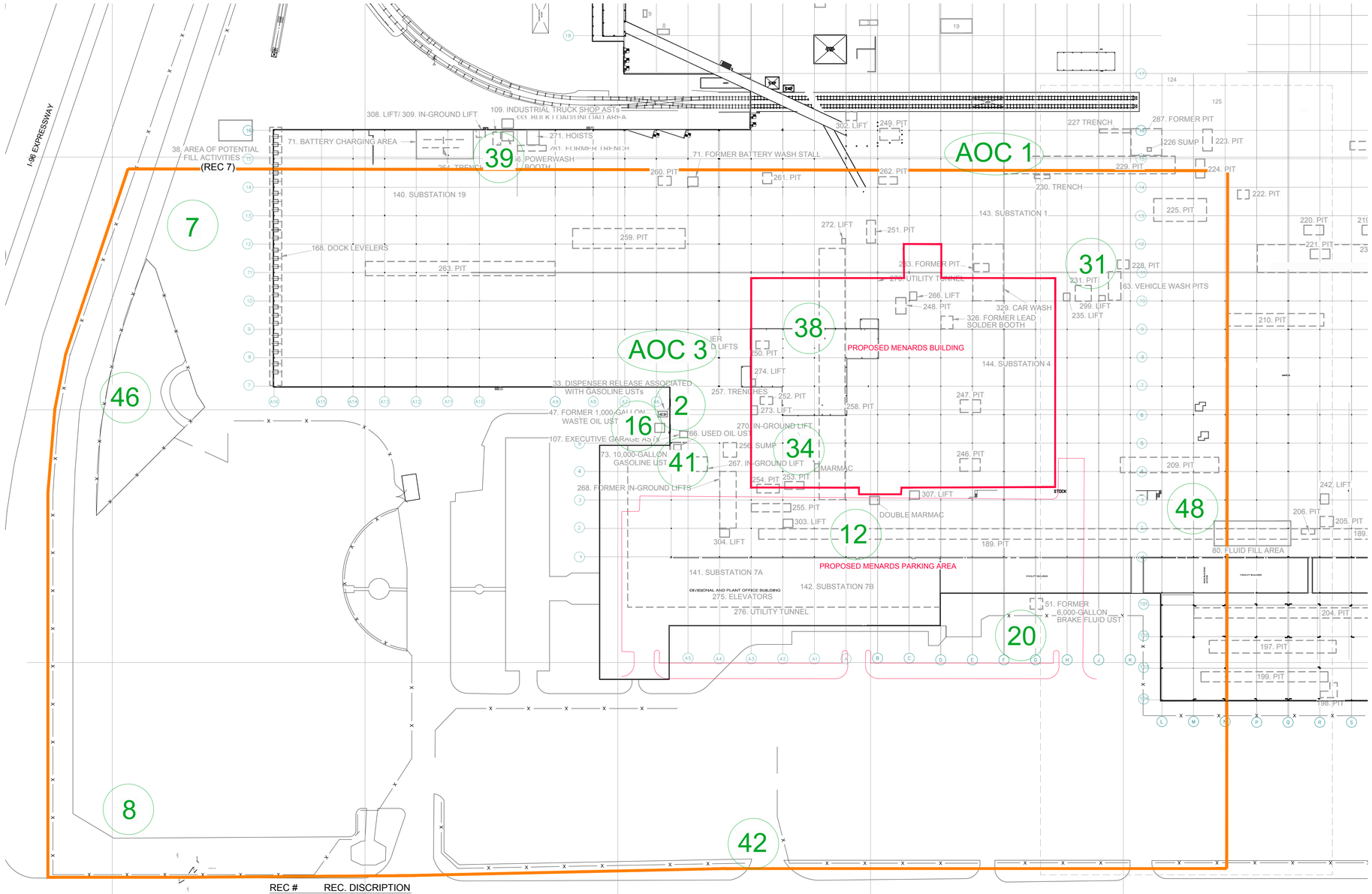
ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

figure 1.1

CRA

SITE LOCATION
FORMER WIXOM ASSEMBLY PLANT
Wixom, Michigan

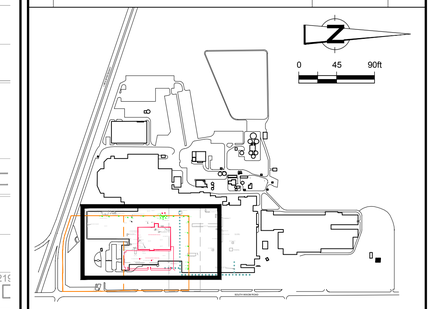
048891-32(045)GN-DE011 DEC 12/2013



REC #	REC. DISCRIPTION
2.	OPEN LEAKING UNDERGROUND STORAGE TANK
7.	ADDITIONAL AREAS OF POTENTIAL FILL ACTIVITES
8.	FORMER ADJACENT SERVICE STATION
12.	BELOW GRADE HYDRAULIC EQUIPMENT
16.	FORMER 1,000 GALLON WASTE OIL UST
20.	FORMER 6K BRAKE FLUID UST (LOCATION UNKNOWN)

REC #	REC. DISCRIPTION
31.	VEHICLE WASH PITS
34.	USED OIL UST
38.	MISC. PITS, TRENCHES AND SUMPS
39.	BATTERY CHARGING AREA
40.	PCB-CONTAINING SUBSTATIONS
41.	10K GAS UST (LOCATION UNKNOWN)
42.	HISTORIC FARMSTEAD
43.	BELOWGRADE INDUSTRIAL PROCESS LINE
46.	AGRICULTURAL CHEMICALS
48.	FLUID FILL AREAS
AOC1.	NW CORNER OF MENARDS PROPERTY
AOC3.	IN-GROUND LIFT EXCAVATION

Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- (2) REC INVESTIGATED

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

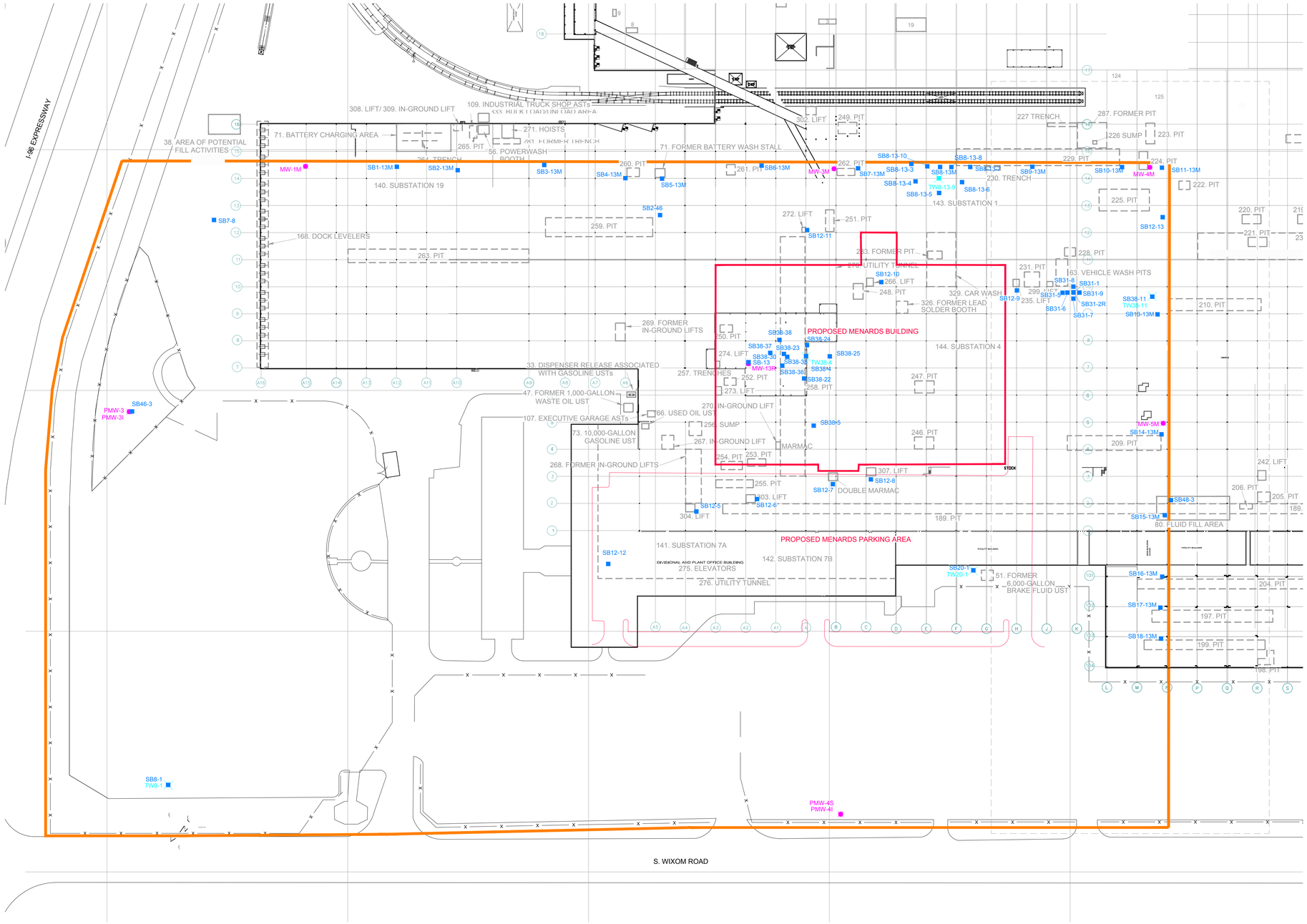
SITE PLAN
MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

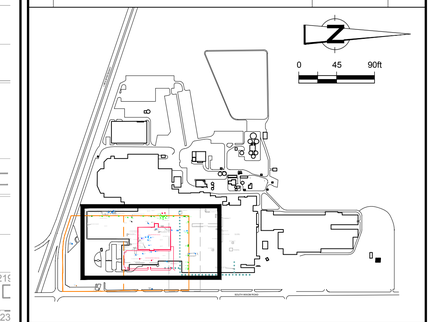
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	JULY 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 1.2

048891-32(045)GN-DE001 SEP 18/2013



Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

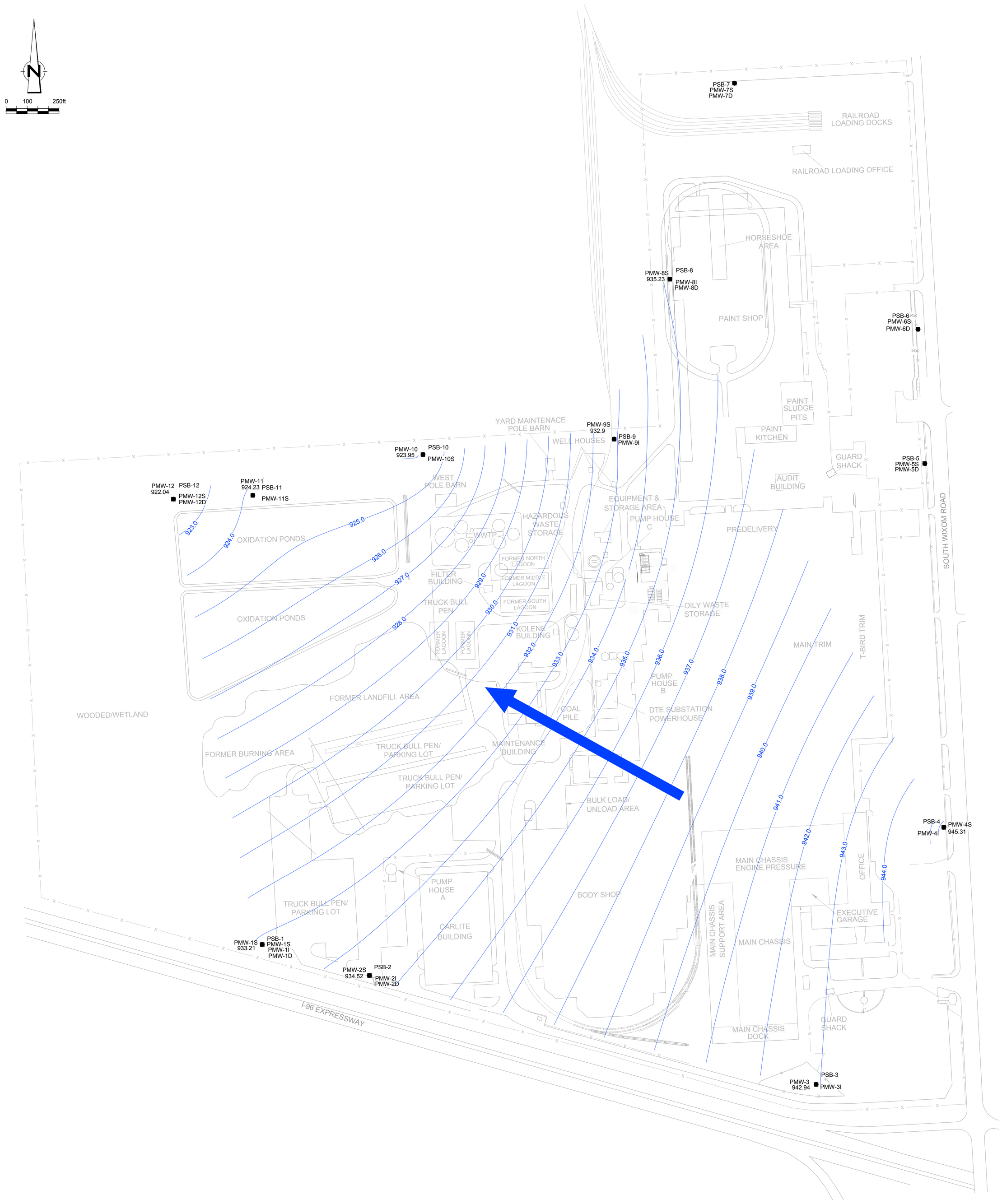
SOIL BORING AND MONITORING WELL LOCATION MAP
MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	JULY 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 1.3

048891-32(045)GN-DE018 NOV 12/2013



LEGEND

- ● PMW-3 PERMANENT PERIMETER MONITORING WELL LOCATION
- 940.0 GROUNDWATER CONTOURS
- 942.94 GROUNDWATER ELEVATIONS
- GROUNDWATER FLOW DIRECTION

NOTE: GROUNDWATER ELEVATIONS COLLECTED ON 10/8/12

Nº	Revision	Date	Initial

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

Wixom, Michigan

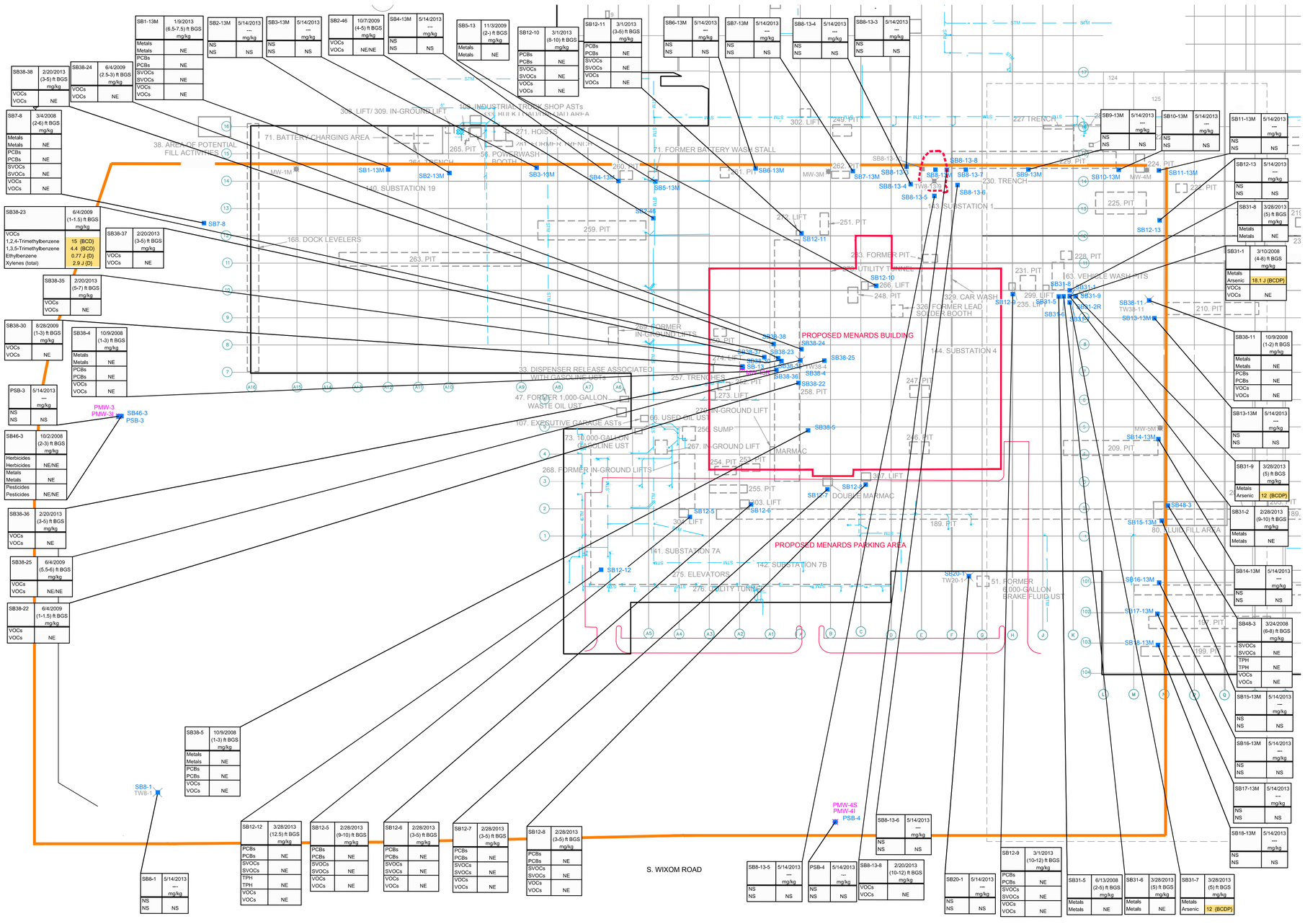
SITEWIDE SHALLOW GROUNDWATER CONTOUR MAP
MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

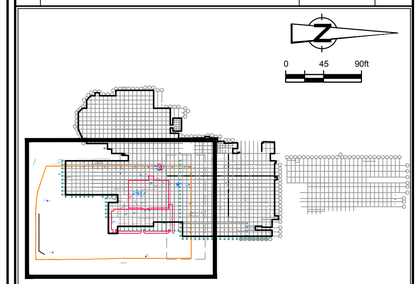
Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.A.	OCTOBER 2013	
Scale: 1:250	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: figure 2.1

048891-32(045)GN-DE029 DEC 16/2013



Nº	Revision	Date	Initial



KEY MAP

LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- STORM SEWER
- MENARDS PROPERTY
- AOC 1 EXCAVATION EXTENT
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- SB8-13M LOCATION REMOVED DURING EXCAVATION ACTIVITIES
- NE NO EXCEEDANCES
- NS NOT SAMPLED

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Volatile Organic Compounds (VOCs)	*Units*	Groundwater Surface Water Interface Protection Criteria
1,2,4-Trimethylbenzene	mg/kg	0.57
1,3,5-Trimethylbenzene	mg/kg	1.1
Ethylbenzene	mg/kg	0.36
Xylenes (total)	mg/kg	0.82

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

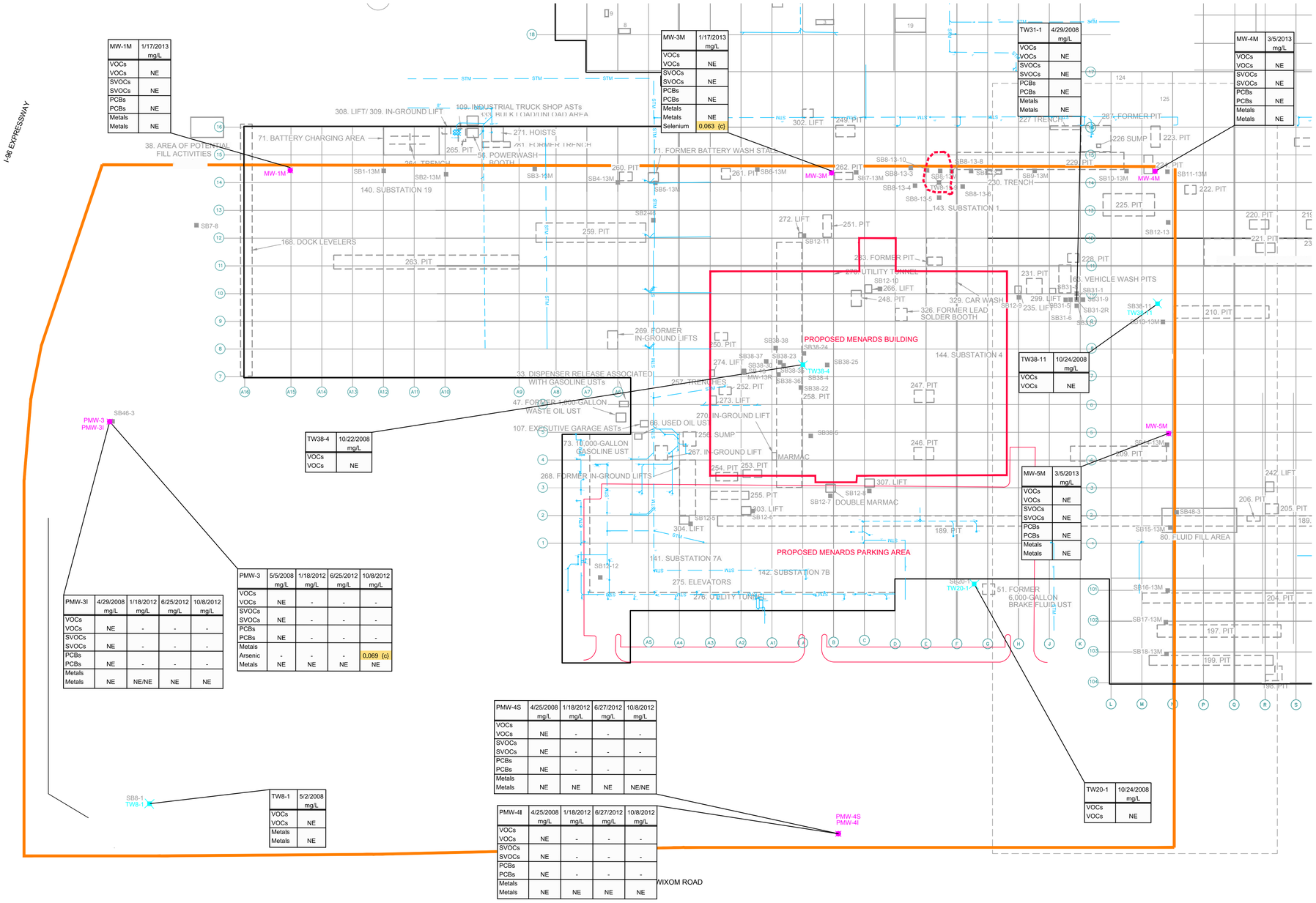
SOIL SAMPLES EXCEEDING GSIP CRITERIA
MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 3.1

048891-32(045)GN-DE025 NOV 12/2013



MW-1M	1/17/2013 mg/L
VOCs	
VOCs	NE
SVOCs	
SVOCs	NE
PCBs	
PCBs	NE
Metals	
Metals	NE

MW-3M	1/17/2013 mg/L
VOCs	
VOCs	NE
SVOCs	
SVOCs	NE
PCBs	
PCBs	NE
Metals	
Metals	NE
Selenium	0.063 (c)

TW31-1	4/29/2008 mg/L
VOCs	
VOCs	NE
SVOCs	
SVOCs	NE
PCBs	
PCBs	NE
Metals	
Metals	NE

MW-4M	3/5/2013 mg/L
VOCs	
VOCs	NE
SVOCs	
SVOCs	NE
PCBs	
PCBs	NE
Metals	
Metals	NE

TW38-11	10/24/2008 mg/L
VOCs	
VOCs	NE

MW-5M	3/5/2013 mg/L
VOCs	
VOCs	NE
SVOCs	
SVOCs	NE
PCBs	
PCBs	NE
Metals	
Metals	NE

TW38-4	10/22/2008 mg/L
VOCs	
VOCs	NE

PMW-3I	4/29/2008 mg/L	1/18/2012 mg/L	6/25/2012 mg/L	10/8/2012 mg/L
VOCs				
VOCs	NE	-	-	-
SVOCs				
SVOCs	NE	-	-	-
PCBs				
PCBs	NE	-	-	-
Metals				
Metals	NE	NE/NE	NE	NE

PMW-3	5/5/2008 mg/L	1/18/2012 mg/L	6/25/2012 mg/L	10/8/2012 mg/L
VOCs				
VOCs	NE	-	-	-
SVOCs				
SVOCs	NE	-	-	-
PCBs				
PCBs	NE	-	-	-
Metals				
Arsenic	-	-	-	0.069 (c)
Metals	NE	NE	NE	NE

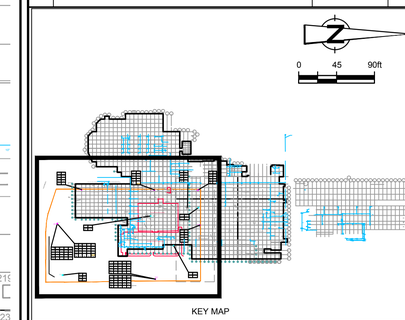
PMW-4S	4/25/2008 mg/L	1/18/2012 mg/L	6/27/2012 mg/L	10/8/2012 mg/L
VOCs				
VOCs	NE	-	-	-
SVOCs				
SVOCs	NE	-	-	-
PCBs				
PCBs	NE	-	-	-
Metals				
Metals	NE	NE	NE	NE/NE

TW8-1	5/2/2008 mg/L
VOCs	
VOCs	NE
Metals	
Metals	NE

PMW-4I	4/25/2008 mg/L	1/18/2012 mg/L	6/27/2012 mg/L	10/8/2012 mg/L
VOCs				
VOCs	NE	-	-	-
SVOCs				
SVOCs	NE	-	-	-
PCBs				
PCBs	NE	-	-	-
Metals				
Metals	NE	NE	NE	NE

TW20-1	10/24/2008 mg/L
VOCs	
VOCs	NE

Nº	Revision	Date	Initial



KEY MAP

LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- STORM SEWER
- MENARDS PROPERTY
- AOC 1 EXCAVATION EXTENT
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- SB8-13M LOCATION REMOVED DURING EXCAVATION ACTIVITIES
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Metals	*Units*	*Shallow Zone Site-Specific Background Value*	*Groundwater Surface Water Interface Criteria c*
Arsenic	mg/L	0.061	0.01
Selenium	mg/L	ND(0.005)	.005

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

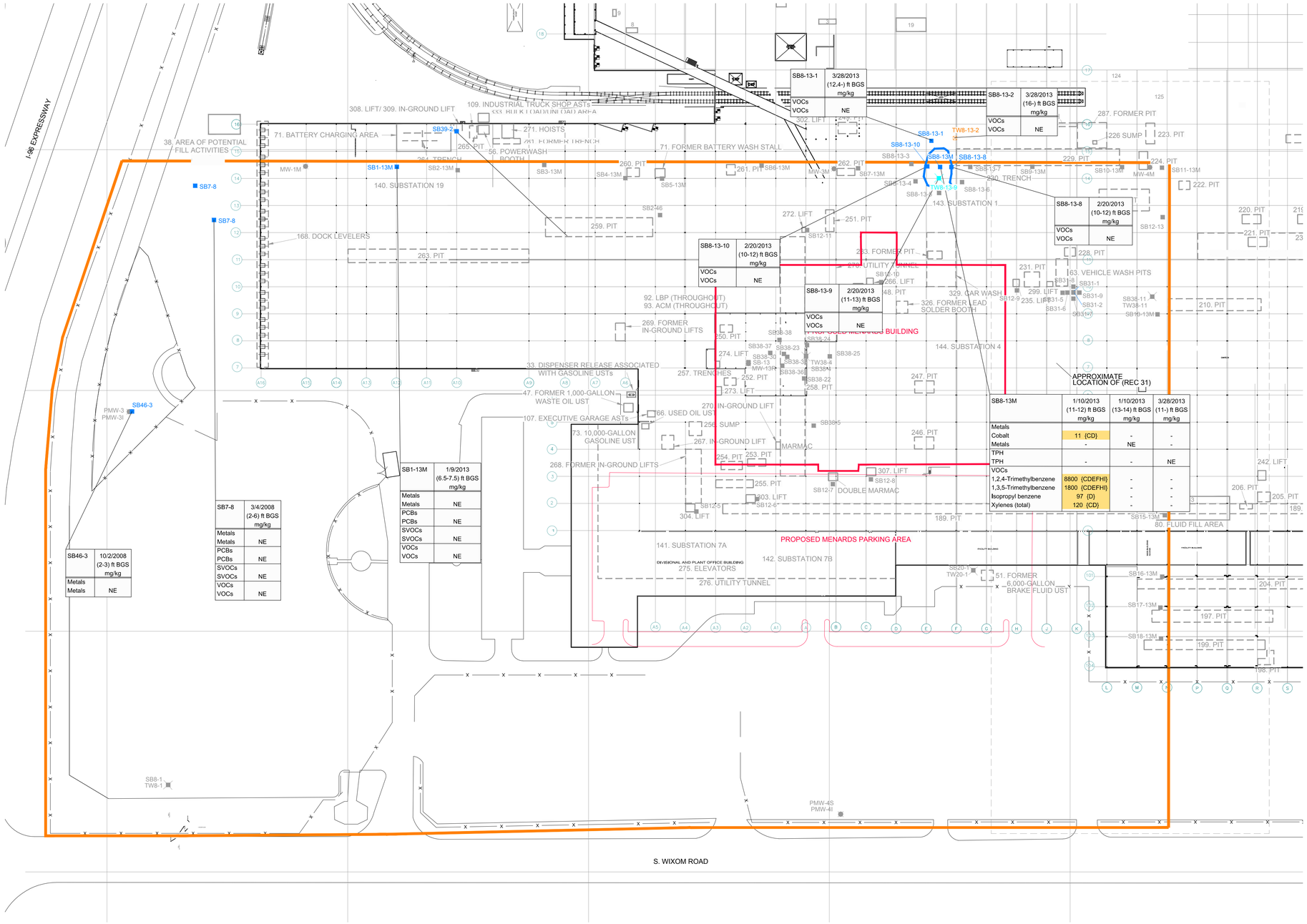
GROUNDWATER SAMPLES EXCEEDING GSI CRITERIA - MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 3.2

048891-32(045)GN-DE026 NOV 12/2013



SB8-13-1	3/28/2013 (12.4-) ft BGS mg/kg
VOCs	
VOCs	NE

SB8-13-2	3/28/2013 (16-) ft BGS mg/kg
VOCs	
VOCs	NE

SB8-13-8	2/20/2013 (10-12) ft BGS mg/kg
VOCs	
VOCs	NE

SB8-13-10	2/20/2013 (10-12) ft BGS mg/kg
VOCs	
VOCs	NE

SB8-13-9	2/20/2013 (11-13) ft BGS mg/kg
VOCs	
VOCs	NE

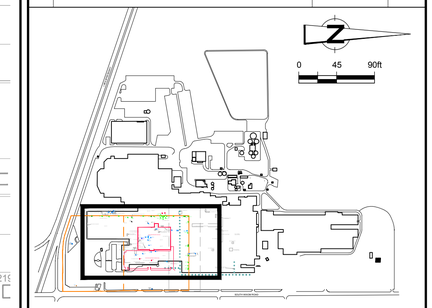
SB8-13M	1/10/2013 (11-12) ft BGS mg/kg	1/10/2013 (13-14) ft BGS mg/kg	3/28/2013 (11-) ft BGS mg/kg
Metals			
Cobalt	11 (CD)	-	-
Metals	-	NE	-
TPH			
TPH	-	-	NE
VOCs			
1,2,4-Trimethylbenzene	8800 (CDEFHI)	-	-
1,3,5-Trimethylbenzene	1800 (CDEFHI)	-	-
Isopropyl benzene	97 (D)	-	-
Xylenes (total)	120 (CD)	-	-

SB1-13M	1/9/2013 (6.5-7.5) ft BGS mg/kg
Metals	
Metals	NE
PCBs	
PCBs	NE
SVOCs	
SVOCs	NE
VOCs	
VOCs	NE

SB7-8	3/4/2008 (2-6) ft BGS mg/kg
Metals	
Metals	NE
PCBs	
PCBs	NE
SVOCs	
SVOCs	NE
VOCs	
VOCs	NE

SB46-3	10/2/2008 (2-3) ft BGS mg/kg
Metals	
Metals	NE

Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES
- AOC 1 EXCAVATION EXTENT

NOTE: IMPACTED SOILS REMOVED, SEE FIGURE 5.17 FOR EXCAVATION DETAILS

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)	
c	Non-Residential Drinking Water Protection
d	Groundwater Surface Water Interface Protection
e	Groundwater Contact Protection
f	Non-Residential Soil Volatilization to Indoor Air Inhalation
h	Non-Residential Particulate Soil Inhalation
i	Non-Residential Direct Contact

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT
SOIL ANALYTICAL RESULTS

WIXOM, MICHIGAN

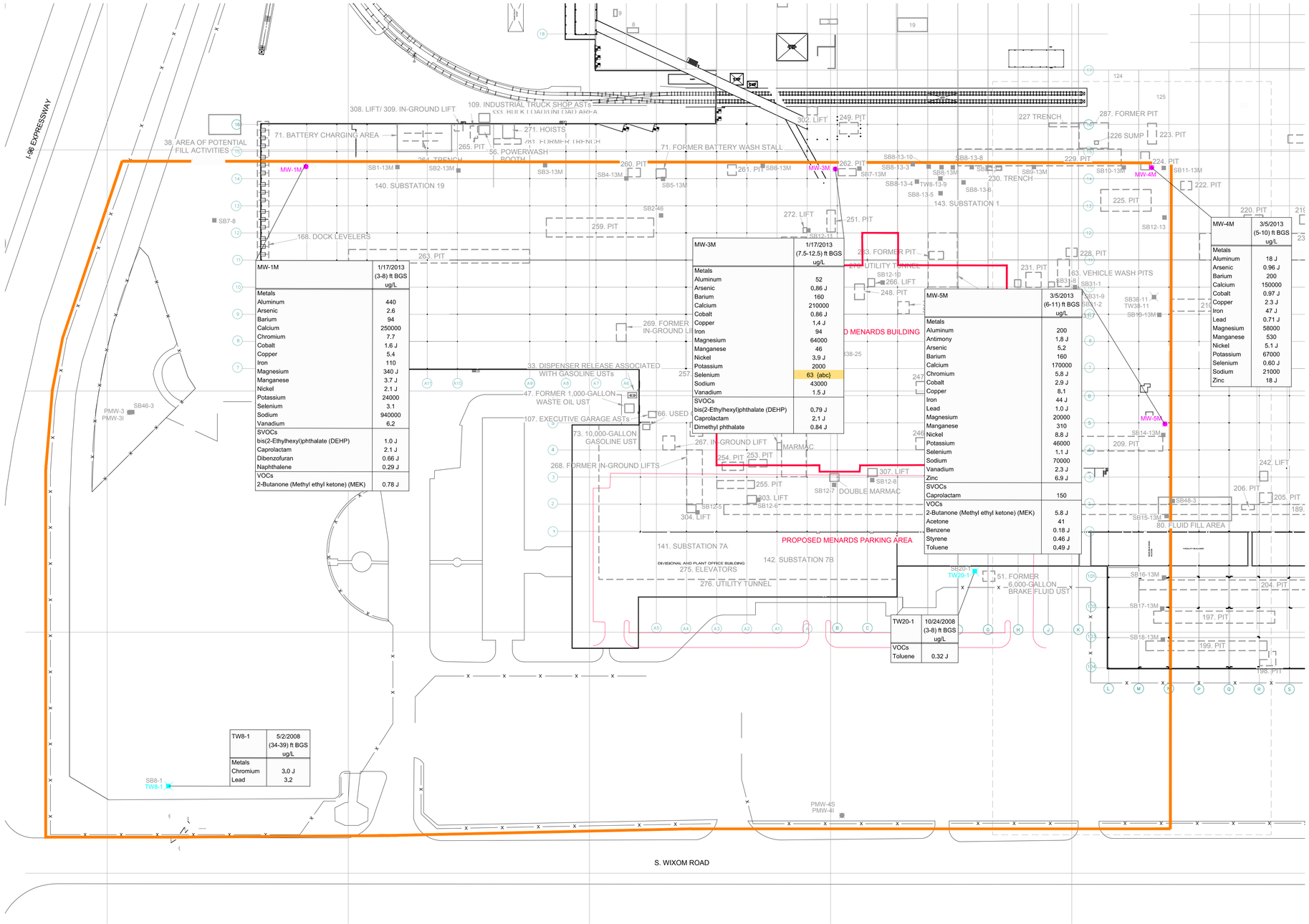
AOC 1 - NORTHWEST CORNER OF MENARDS PROPERTY BOUNDARY (INCLUDES REC 7, REC 8 AND REC 46)

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.2.1

048891-32(045)GN-DE008 NOV 12/2013



MW-1M	1/17/2013 (3-8) ft BGS ug/L
Metals	
Aluminum	440
Arsenic	2.6
Barium	94
Calcium	250000
Chromium	7.7
Cobalt	1.6 J
Copper	5.4
Iron	110
Magnesium	340 J
Manganese	3.7 J
Nickel	2.1 J
Potassium	24000
Selenium	3.1
Sodium	940000
Vanadium	6.2
SVOCs	
bis(2-Ethylhexyl)phthalate (DEHP)	1.0 J
Caprolactam	2.1 J
Dibenzofuran	0.66 J
Naphthalene	0.29 J
VOCs	
2-Butanone (Methyl ethyl ketone) (MEK)	0.78 J

MW-3M	1/17/2013 (7.5-12.5) ft BGS ug/L
Metals	
Aluminum	52
Arsenic	0.86 J
Barium	160
Calcium	210000
Cobalt	0.86 J
Copper	1.4 J
Iron	94
Magnesium	64000
Manganese	46
Nickel	3.9 J
Potassium	2000
Selenium	63 {abc}
Sodium	43000
Vanadium	1.5 J
SVOCs	
bis(2-Ethylhexyl)phthalate (DEHP)	0.79 J
Caprolactam	2.1 J
Dimethyl phthalate	0.84 J

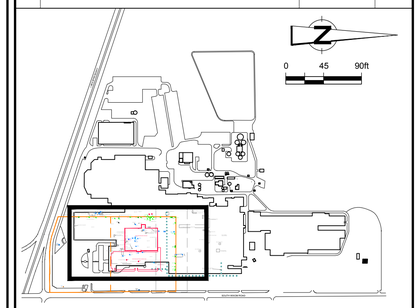
MW-5M	3/5/2013 (6-11) ft BGS ug/L
Metals	
Aluminum	200
Antimony	1.8 J
Arsenic	5.2
Barium	160
Calcium	170000
Chromium	5.8 J
Cobalt	2.9 J
Copper	8.1
Iron	44 J
Lead	1.0 J
Magnesium	20000
Manganese	310
Nickel	8.8 J
Potassium	46000
Selenium	1.1 J
Sodium	70000
Vanadium	2.3 J
Zinc	6.9 J
SVOCs	
Caprolactam	150
VOCs	
2-Butanone (Methyl ethyl ketone) (MEK)	5.8 J
Acetone	41
Benzene	0.18 J
Styrene	0.46 J
Toluene	0.49 J

MW-4M	3/5/2013 (5-10) ft BGS ug/L
Metals	
Aluminum	18 J
Arsenic	0.96 J
Barium	200
Calcium	150000
Cobalt	0.97 J
Copper	2.3 J
Iron	47 J
Lead	0.71 J
Magnesium	58000
Manganese	530
Nickel	5.1 J
Potassium	67000
Selenium	0.60 J
Sodium	21000
Zinc	18 J

TW20-1	10/24/2008 (3-8) ft BGS ug/L
VOCs	
Toluene	0.32 J

TW8-1	5/2/2008 (34-39) ft BGS ug/L
Metals	
Chromium	3.0 J
Lead	3.2

Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria [1]	
a	Residential Drinking Water
b	Non-Residential Drinking Water
c	Groundwater Surface Water Interface
d	Non-Residential Groundwater Volatilization to Indoor Air Inhalation
e	Groundwater Contact
f	Water Solubility
g	Flammability and Explosivity Screening Levels
h	Acute Inhalation Screening Levels

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT
GROUNDWATER ANALYTICAL RESULTS

WIXOM, MICHIGAN

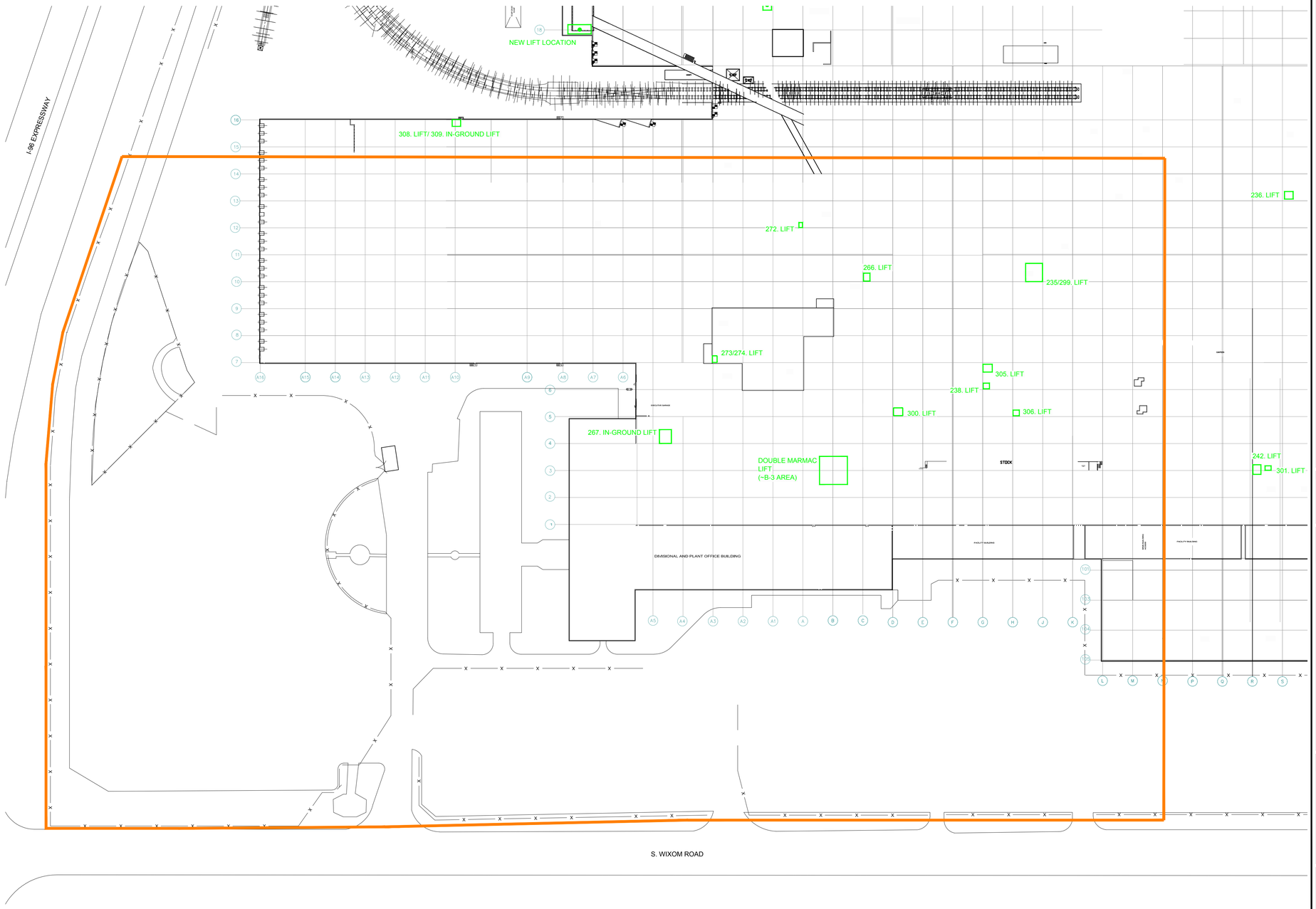
AOC 1 - NORTHWEST CORNER OF MENARDS PROPERTY BOUNDARY
(INCLUDES REC 8, REC 20 AND REC 46)

CONESTOGA-ROVERS & ASSOCIATES

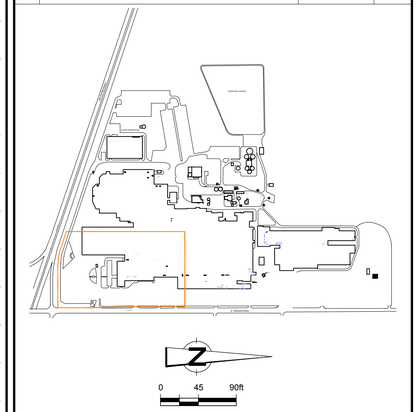
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.2.2

048891-32(045)GN-DE017 NOV 12/2013



Nº	Revision	Date	Initial



LEGEND

- FEATURE #/FORMER SUBSURFACE FEATURE
- FORMER MARMAC PIT w/CAISSON
- MENARDS PROPERTY

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

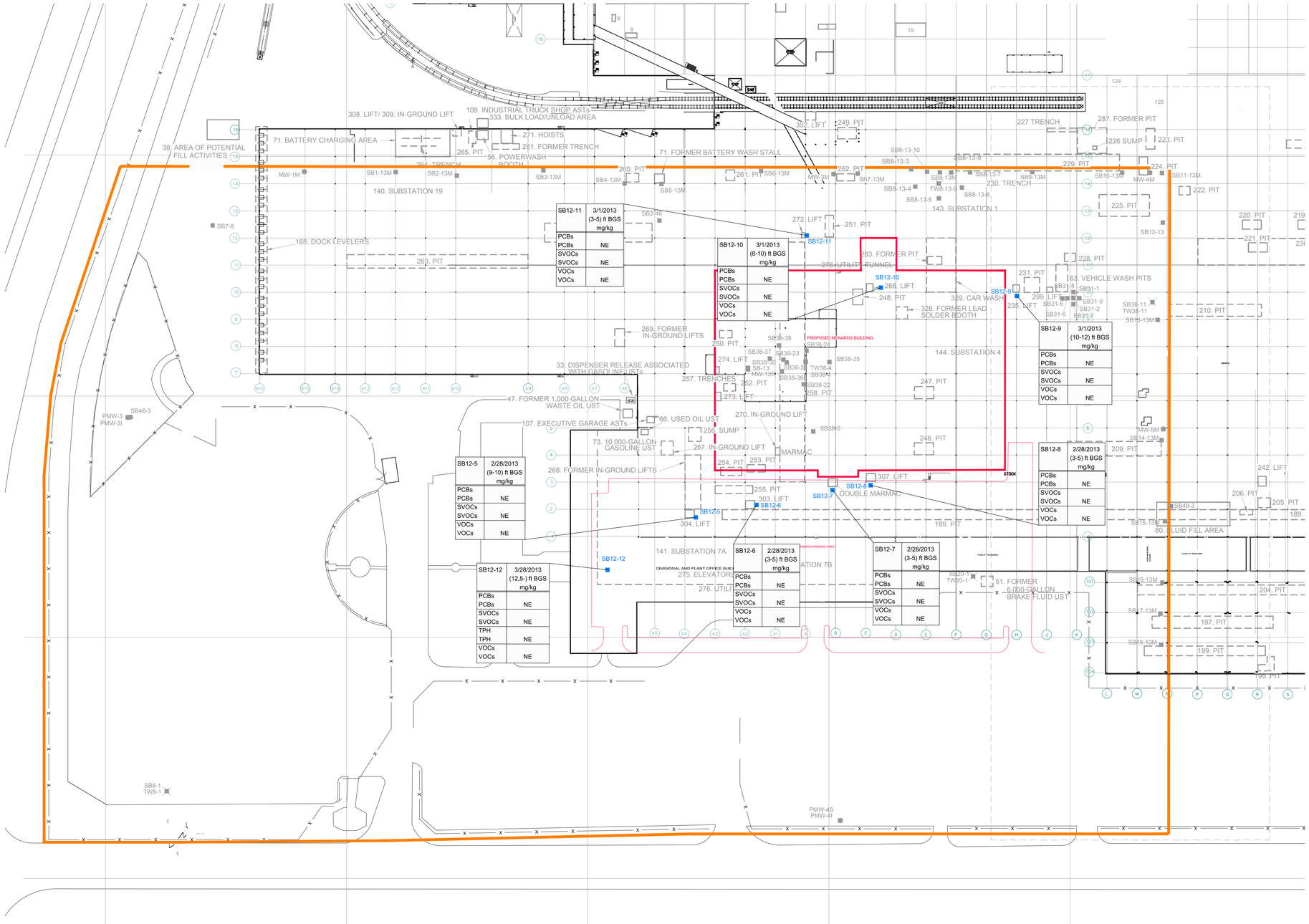
HYDRAULIC LIFT LAYOUT
MENARDS PROPERTY

CONESTOGA-ROVERS & ASSOCIATES

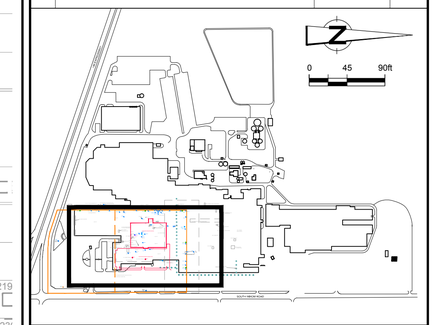
Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	K.T.A.	OCTOBER 2013	
Scale: 1" : 200'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.4.1

048891-32(045)GN-DE012 OCT 7/2013



Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)	
c	Non-Residential Drinking Water Protection
d	Groundw ater Surface Water Interface Protection

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

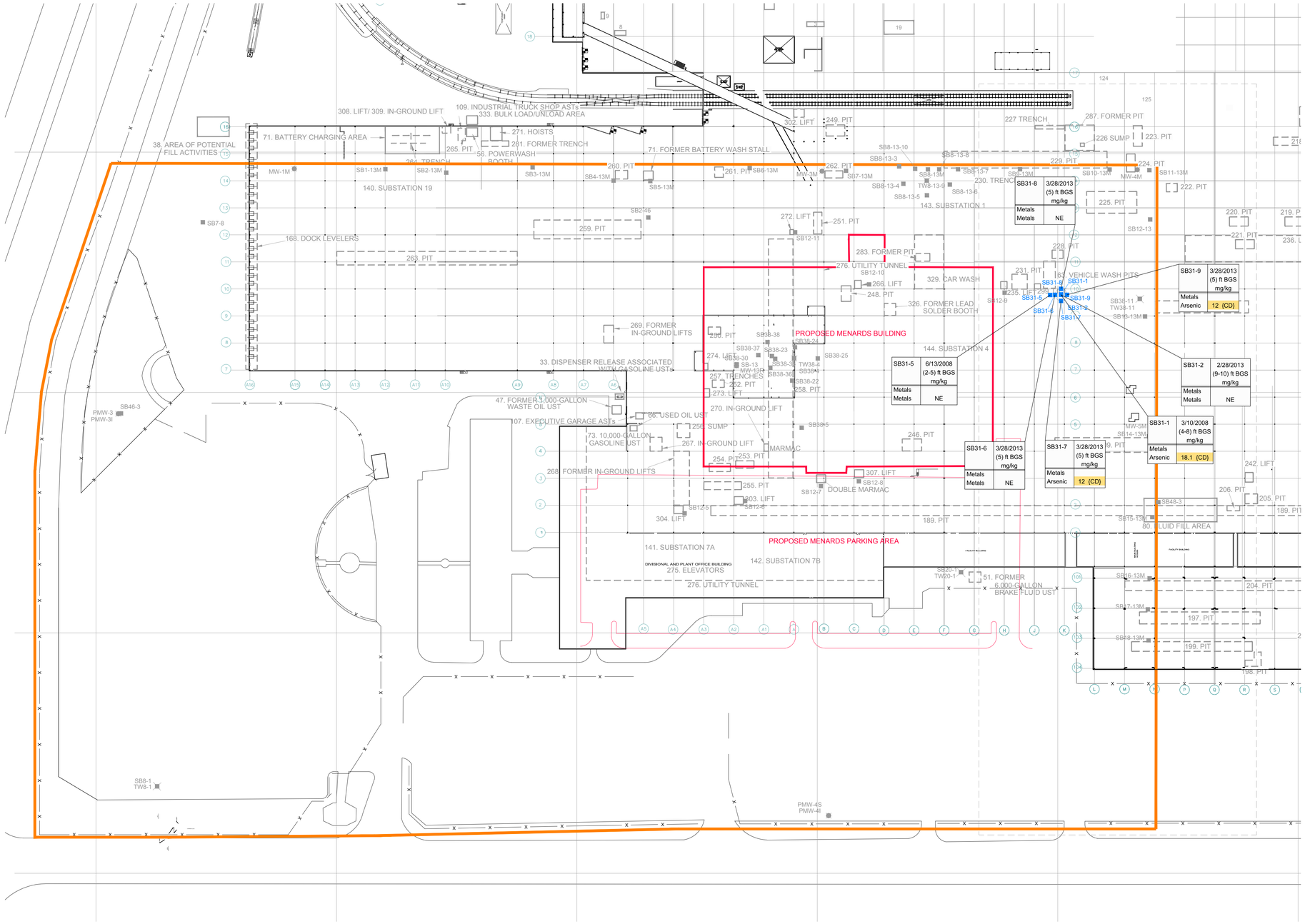
REC 12 - BELOW GRADE HYDRAULIC EQUIPMENT SOIL ANALYTICAL RESULTS (NO DATA FOR REC 20)

CONESTOGA-ROVERS & ASSOCIATES

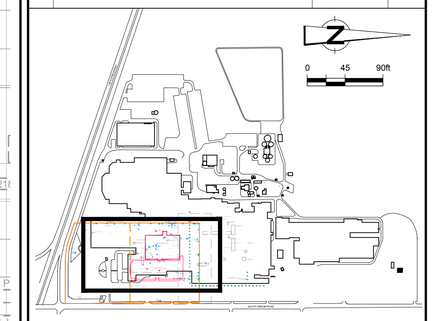
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 40'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.4.2

048891-32(045)GN-DE004 NOV 12/2013



Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- 45-ACRE PARCEL AREA
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW3-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (8)	
c	Non-Residential Drinking Water Protection
d	Groundw ater Surface Water Interface Protection

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

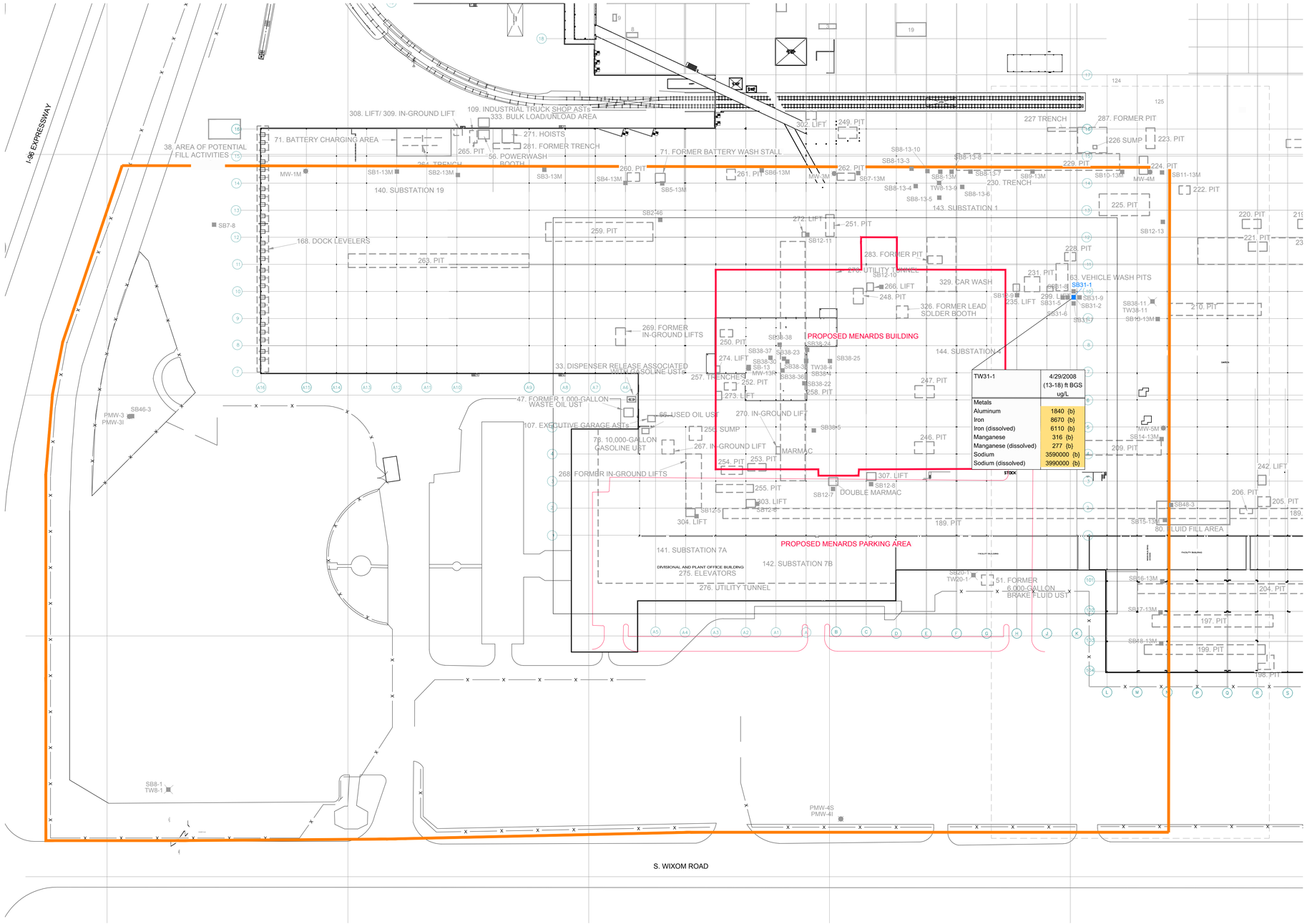
REC 31 - VEHICLE WASH PIT
SOIL ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

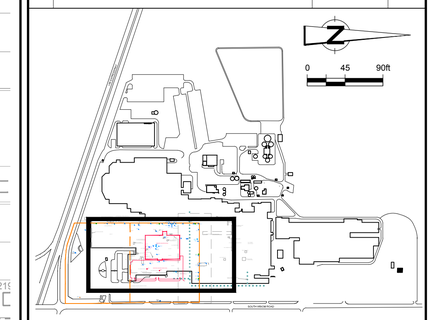
Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 20'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.7.1

048891-32(045)GN-DE005 NOV 12/2013



TW31-1	4/29/2008 (13-18) ft BGS ug/L
Metals	
Aluminum	1840 (b)
Iron	8670 (b)
Iron (dissolved)	6110 (b)
Manganese	316 (b)
Manganese (dissolved)	277 (b)
Sodium	3590000 (b)
Sodium (dissolved)	3990000 (b)

Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria [1]	
a	Residential Drinking Water
b	Non-Residential Drinking Water
c	Groundwater Surface Water Interface
d	Non-Residential Groundwater Volatilization to Indoor Air Inhalation
e	Groundwater Contact
f	Water Solubility
g	Flammability and Explosivity Screening Levels
h	Acute Inhalation Screening Levels

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

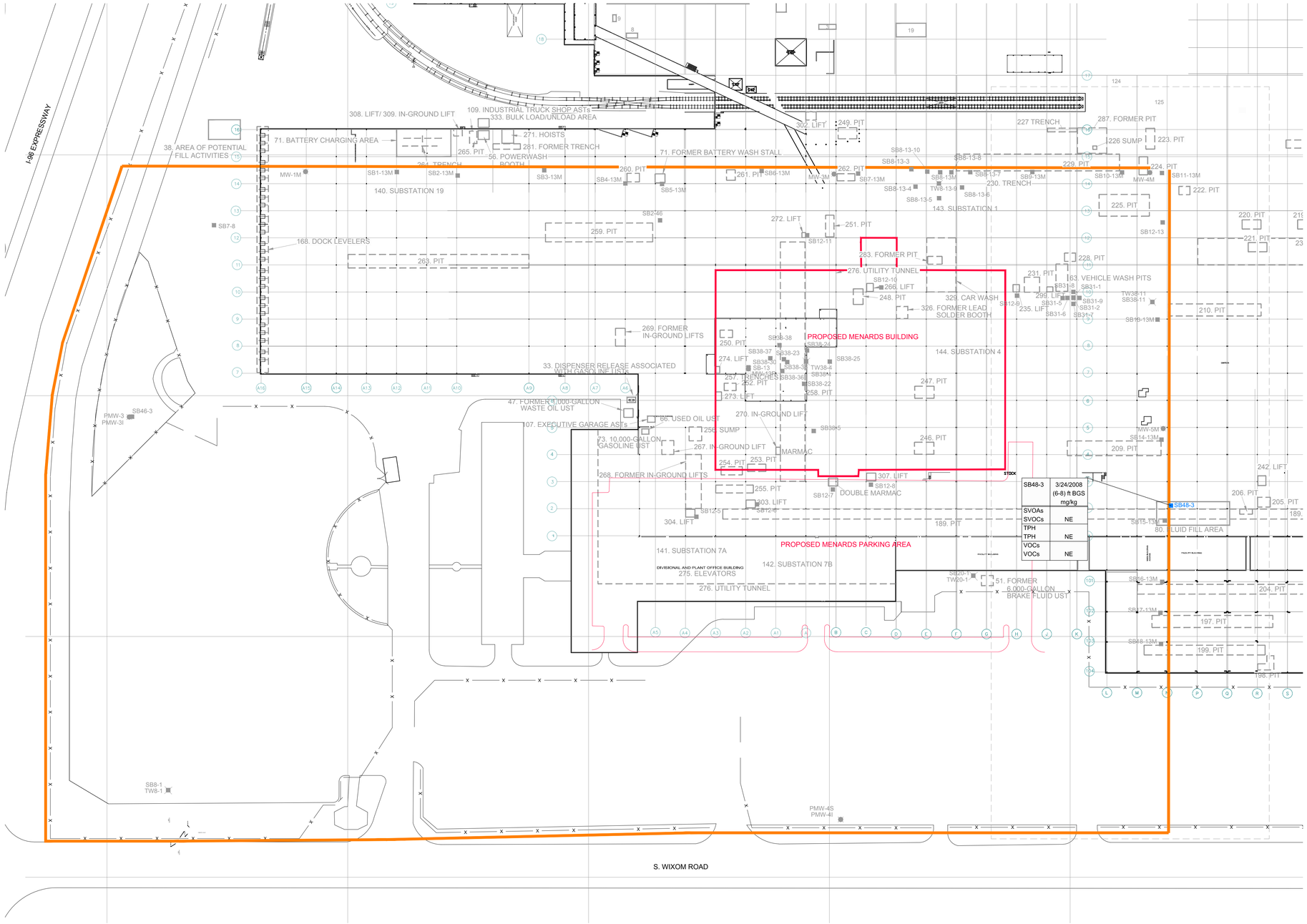
REC 31 - VEHICLE WASH PIT
GROUNDWATER ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 20'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.7.2

048891-32(045)GN-DE014 NOV 12/2013



SB48-3	3/24/2008 (6-8) ft BGS mg/kg
SVOAs	
SVOCs	NE
TPH	
TPH	NE
VOCs	
VOCs	NE

Nº	Revision	Date	Initial

LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- 45-ACRE PARCEL AREA
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)	
c	Non-Residential Drinking Water Protection
d	Groundwater Surface Water Interface Protection

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

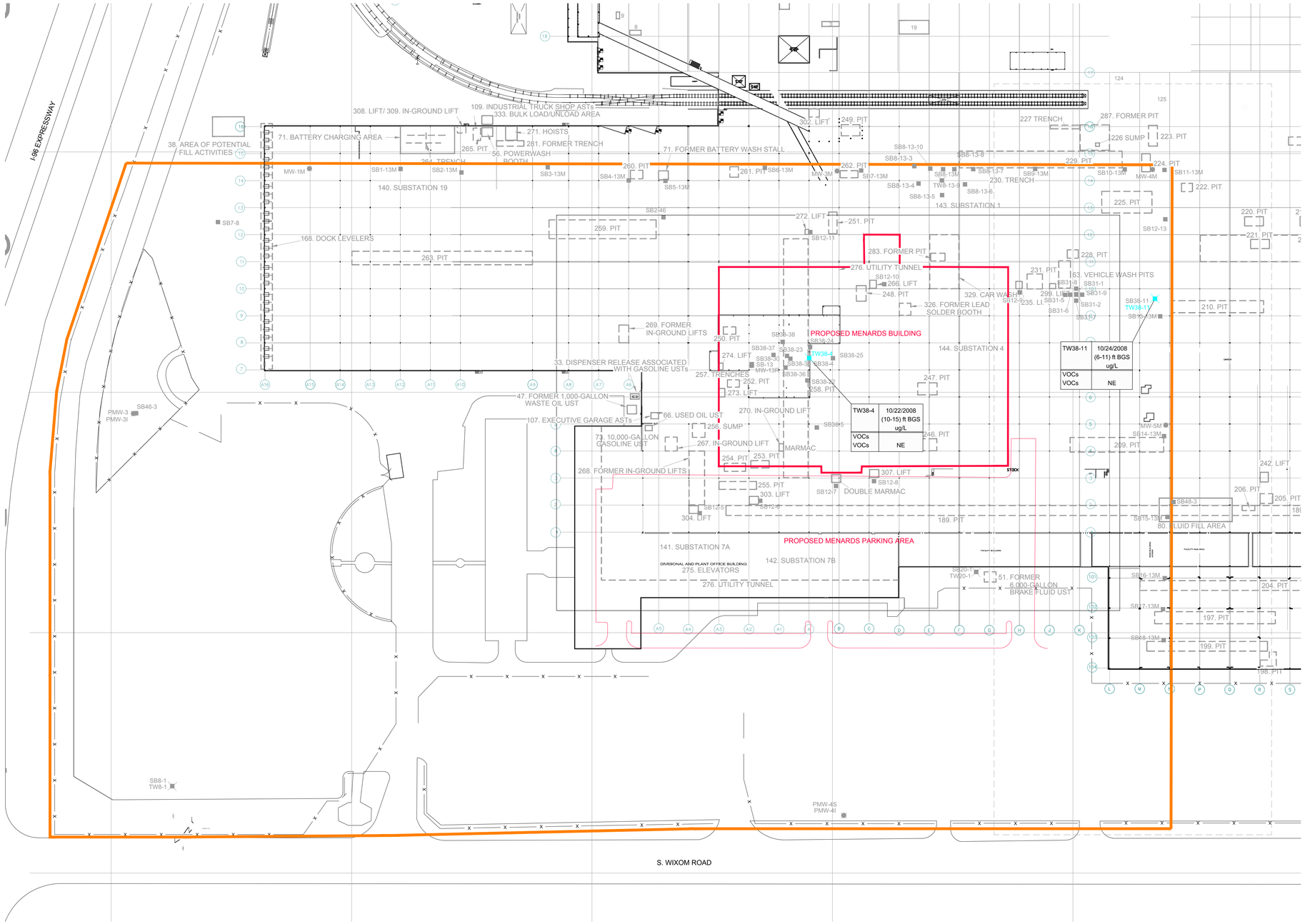
REC 38 - MISC. PITS, TRENCHES, AND SUMPS
SOIL ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

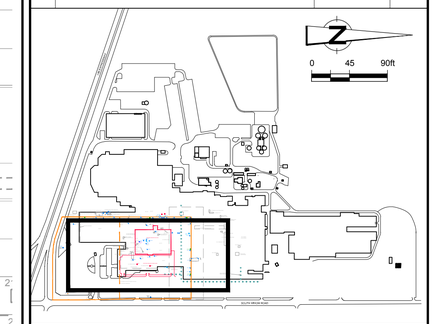
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 30'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.9.1

048891-32(045)GN-DE006 NOV 12/2013



Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NON EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria [1]	
a	Residential Drinking Water
b	Non-Residential Drinking Water
c	Groundwater Surface Water Interface
d	Non-Residential Groundwater Volatilization to Indoor Air Inhalation
e	Groundwater Contact
f	Water Solubility
g	Flammability and Explosivity Screening Levels
h	Acute Inhalation Screening Levels

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

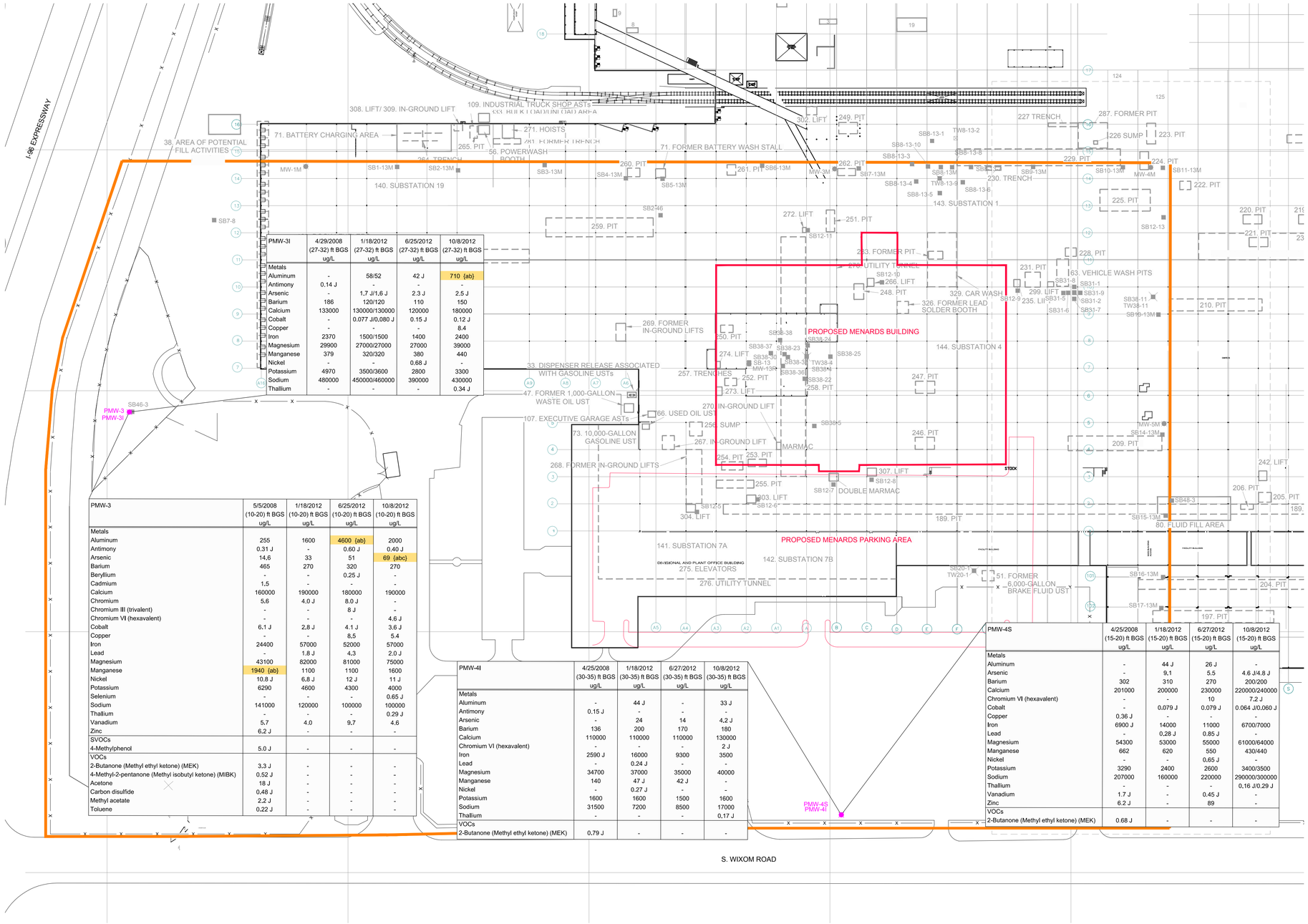
REC 38 - MISC. PITS, TRENCHES, AND SUMPS
GROUNDWATER ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 30'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.9.2

048891-32(045)GN-DE015 NOV 12/2013



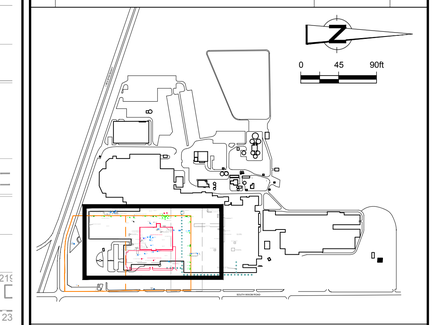
PMW-3I	4/29/2008 (27-32) ft BGS ug/L	1/18/2012 (27-32) ft BGS ug/L	6/25/2012 (27-32) ft BGS ug/L	10/8/2012 (27-32) ft BGS ug/L
Metals				
Aluminum	-	58/52	42 J	710 {ab}
Antimony	0.14 J	-	-	-
Arsenic	-	1.7 J/1.6 J	2.3 J	2.5 J
Barium	186	120/120	110	150
Calcium	133000	130000/130000	120000	180000
Cobalt	-	0.077 J/0.080 J	0.15 J	0.12 J
Copper	-	-	-	8.4
Iron	2370	1500/1500	1400	2400
Magnesium	29900	27000/27000	27000	39000
Manganese	379	320/320	380	440
Nickel	-	-	0.68 J	-
Potassium	4970	3500/3600	2800	3300
Sodium	480000	450000/460000	390000	430000
Thallium	-	-	-	0.34 J

PMW-3	5/5/2008 (10-20) ft BGS ug/L	1/18/2012 (10-20) ft BGS ug/L	6/25/2012 (10-20) ft BGS ug/L	10/8/2012 (10-20) ft BGS ug/L
Metals				
Aluminum	255	1600	4600 {ab}	2000
Antimony	0.31 J	-	0.60 J	0.40 J
Arsenic	14.6	33	51	69 {abc}
Barium	465	270	320	270
Beryllium	-	-	0.25 J	-
Cadmium	1.5	-	-	-
Calcium	160000	190000	180000	190000
Chromium	5.6	4.0 J	8.0 J	-
Chromium III (trivalent)	-	-	8 J	-
Chromium VI (hexavalent)	-	-	-	4.6 J
Cobalt	6.1 J	2.8 J	4.1 J	3.6 J
Copper	-	-	8.5	5.4
Iron	24400	57000	52000	57000
Lead	-	1.8 J	4.3	2.0 J
Magnesium	43100	82000	81000	75000
Manganese	1940 {ab}	1100	1100	1600
Nickel	10.8 J	6.8 J	12 J	11 J
Potassium	6290	4600	4300	4000
Selenium	-	-	-	0.65 J
Sodium	141000	120000	100000	100000
Thallium	-	-	-	0.29 J
Vanadium	5.7	4.0	9.7	4.6
Zinc	6.2 J	-	-	-
SVOCs				
4-Methylphenol	5.0 J	-	-	-
VOCs				
2-Butanone (Methyl ethyl ketone) (MEK)	3.3 J	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	0.52 J	-	-	-
Acetone	18 J	-	-	-
Carbon disulfide	0.48 J	-	-	-
Methyl acetate	2.2 J	-	-	-
Toluene	0.22 J	-	-	-

PMW-4I	4/25/2008 (30-35) ft BGS ug/L	1/18/2012 (30-35) ft BGS ug/L	6/27/2012 (30-35) ft BGS ug/L	10/8/2012 (30-35) ft BGS ug/L
Metals				
Aluminum	-	44 J	-	33 J
Antimony	0.15 J	-	-	-
Arsenic	-	24	14	4.2 J
Barium	136	200	170	180
Calcium	110000	110000	110000	130000
Chromium VI (hexavalent)	-	-	-	2 J
Iron	2590 J	16000	9300	3500
Lead	-	0.24 J	-	-
Magnesium	34700	37000	35000	40000
Manganese	140	47 J	42 J	-
Nickel	-	0.27 J	-	-
Potassium	1600	1600	1500	1600
Sodium	31500	7200	8500	17000
Thallium	-	-	-	0.17 J
VOCs				
2-Butanone (Methyl ethyl ketone) (MEK)	0.79 J	-	-	-

PMW-4S	4/25/2008 (15-20) ft BGS ug/L	1/18/2012 (15-20) ft BGS ug/L	6/27/2012 (15-20) ft BGS ug/L	10/8/2012 (15-20) ft BGS ug/L
Metals				
Aluminum	-	44 J	26 J	-
Arsenic	-	9.1	5.5	4.6 J/4.8 J
Barium	302	310	270	200/200
Calcium	201000	200000	230000	220000/240000
Chromium VI (hexavalent)	-	-	10	7.2 J
Cobalt	-	0.079 J	0.079 J	0.064 J/0.060 J
Copper	0.36 J	-	-	-
Iron	6900 J	14000	11000	6700/7000
Lead	-	0.28 J	0.85 J	-
Magnesium	54300	53000	55000	61000/64000
Manganese	662	620	550	430/440
Nickel	-	-	0.65 J	-
Potassium	3290	2400	2600	3400/3500
Sodium	207000	160000	220000	290000/300000
Thallium	-	-	-	0.16 J/0.29 J
Vanadium	1.7 J	-	0.45 J	-
Zinc	6.2 J	-	89	-
VOCs				
2-Butanone (Methyl ethyl ketone) (MEK)	0.68 J	-	-	-

Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria [1]	
a	Residential Drinking Water
b	Non-Residential Drinking Water
c	Groundwater Surface Water Interface
d	Non-Residential Groundwater Volatilization to Indoor Air Inhalation
e	Groundwater Contact
f	Water Solubility
g	Flammability and Explosivity Screening Levels
h	Acute Inhalation Screening Levels

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT
GROUNDWATER ANALYTICAL RESULTS

WIXOM, MICHIGAN

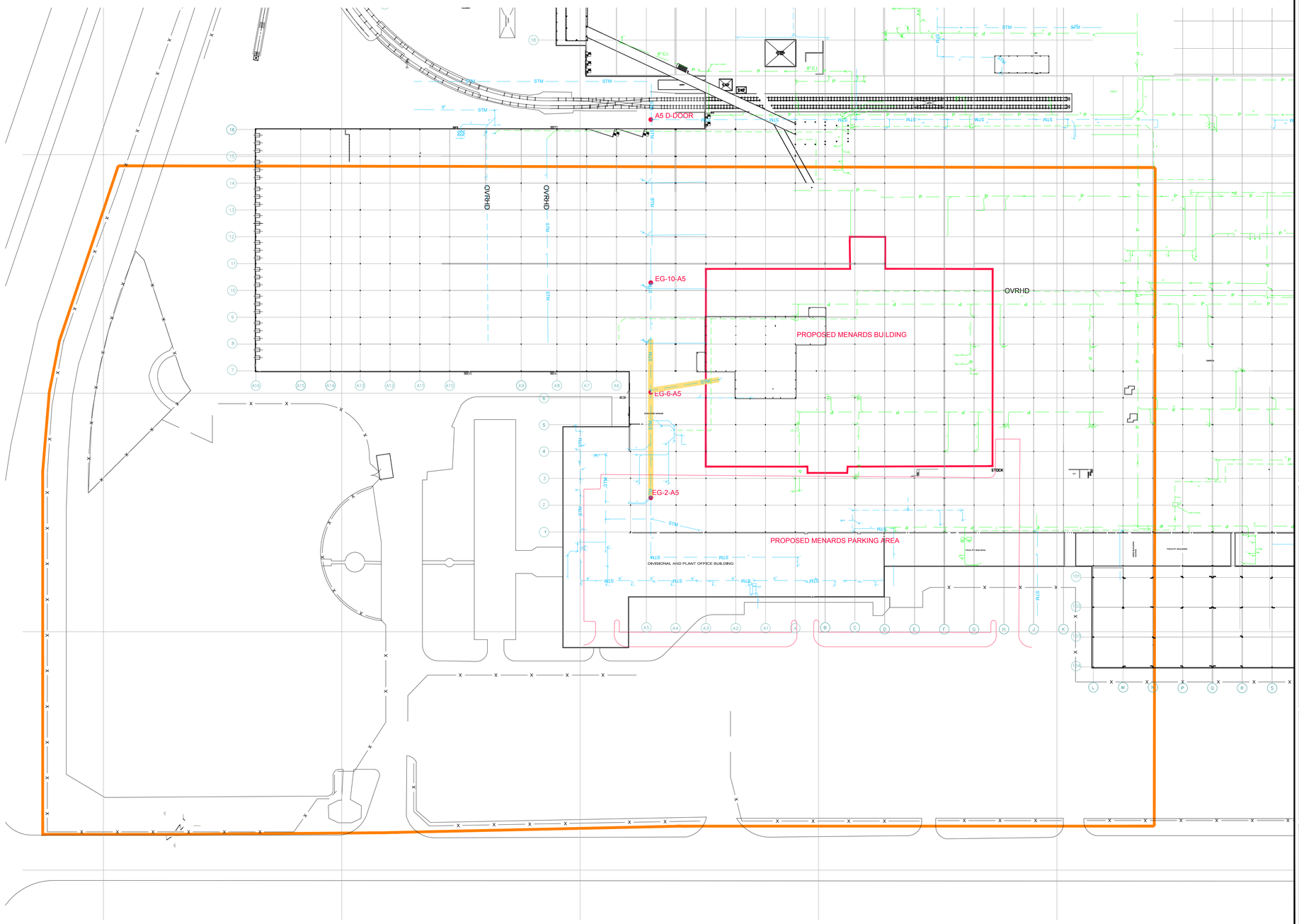
REC 42 - HISTORICAL FARMSTEAD
MENARDS PROPERTY BOUNDARY

CONESTOGA-ROVERS & ASSOCIATES

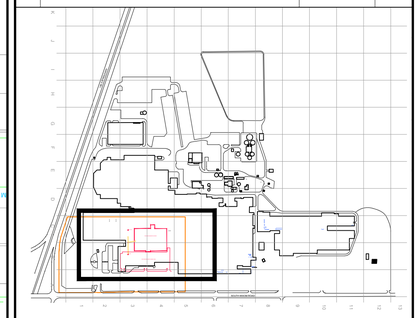
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.13

048891-32(045)GN-DE016 NOV 12/2013



Nº	Revision	Date	Initial



LEGEND

- FENCE
- RAILROAD
- FORMER PROCESS WASTE
- STORM
- BELOW GRADE PIPING
- C.O. — CLEAN OUT
- M.H. — MANHOLE
- C.B. — CATCH BASIN
- V. — VENT
- E.W.C. — ELECTRIC WATER COOLER
- F.D. — FLOOR DRAIN
- S.S. — SAND SUMP
- H.O. — HUB OUTLET
- G.T. — GREASE TRAP
- C — CAP
- SURVEYED MANHOLE
- 45-ACRE PARCEL AREA
- OVERHEAD
- STORM LINE REMOVED DURING REC 2 EXCAVATION

0 45 90ft

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

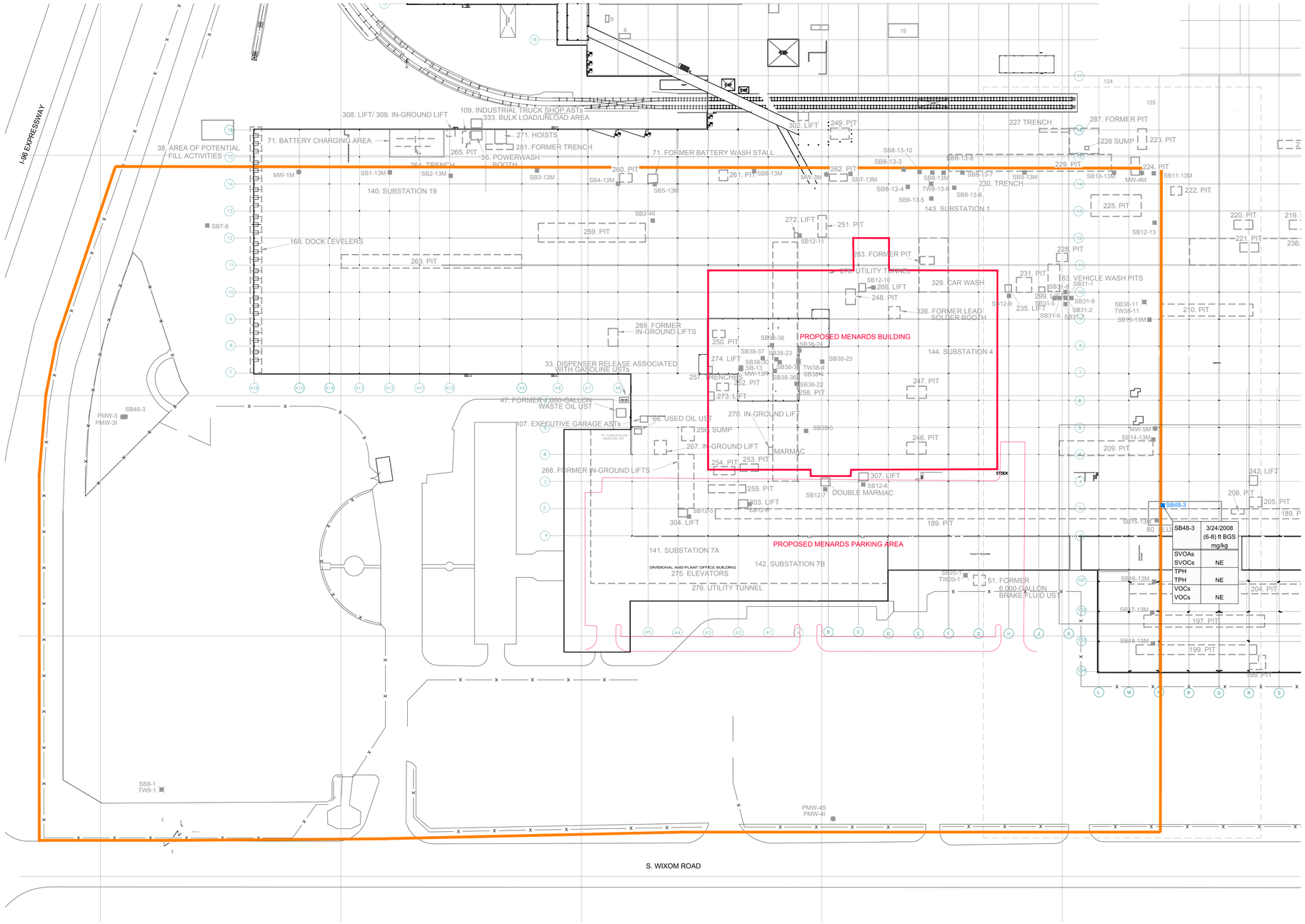
INDUSTRIAL PROCESS SEWERS LAYOUT

CONESTOGA-ROVERS & ASSOCIATES

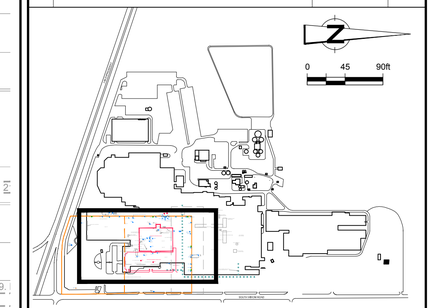
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	B. WOODWARD	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.14

048891-32(045)GN-DE013 OCT 7/2013



Nº	Revision	Date	Initial



LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- 45-ACRE PARCEL AREA
- SB36-5 SOIL BORING LOCATIONS
- MW10-1S ABANDONED MONITORING WELL
- TW53-8 ABANDONED TEMPORARY WELL
- NE NO EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

SB48-3	3/24/2008 (6-8) ft BGS mg/kg
SVOAs	
SVOCs	NE
TPH	
TPH	NE
VOCs	
VOCs	NE

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)

c	Non-Residential Drinking Water Protection
d	Groundw ater Surface Water Interface Protection

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

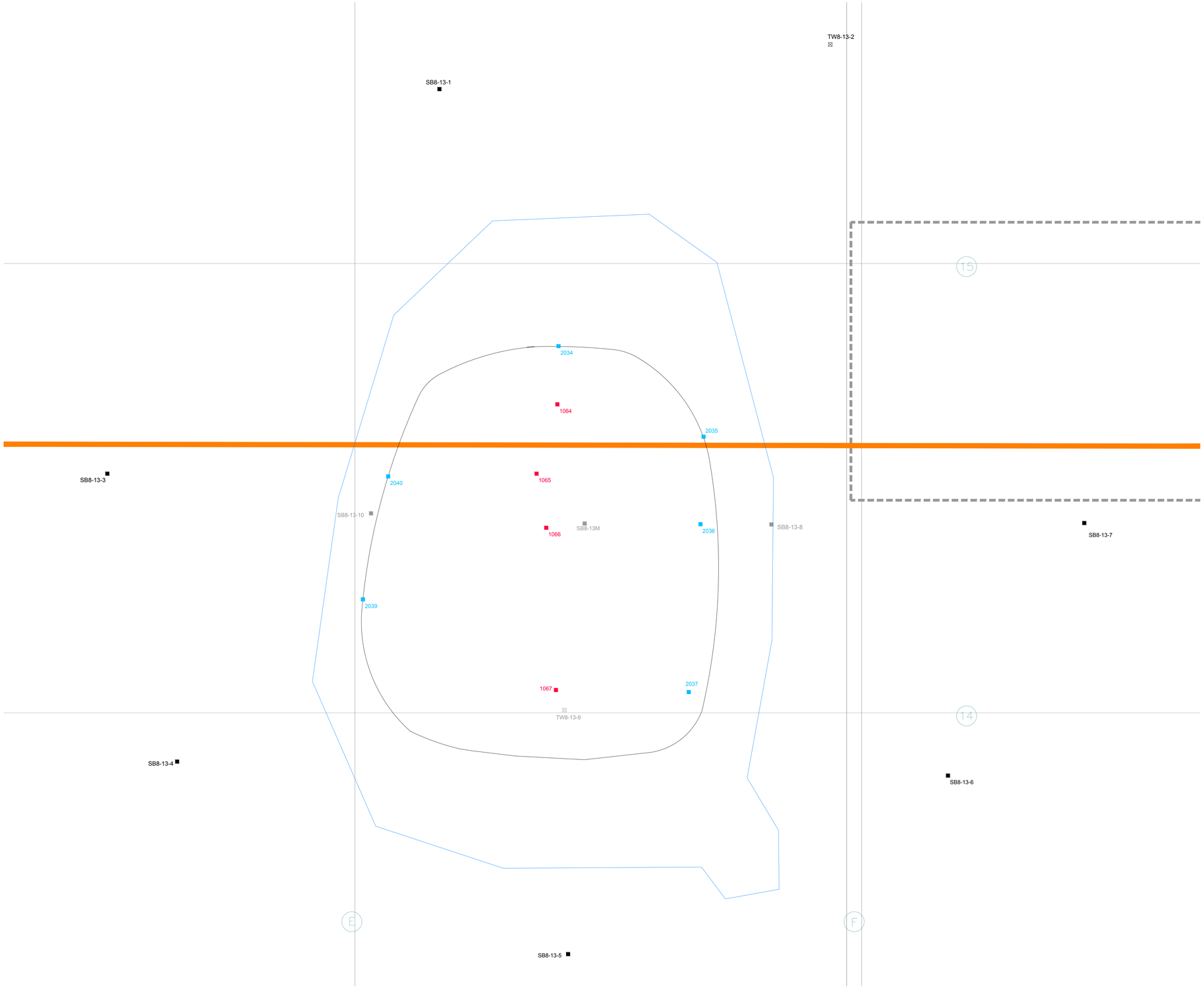
REC 48 - FLUID FILL AREA
SOIL ANALYTICAL RESULTS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 20'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 5.16

048891-32(045)GN-DE007 NOV 12/2013



Nº	Revision	Date	Initial

0 2.5 5ft

LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- PARCEL BOUNDARY
- SB8-13-5 SOIL BORING LOCATIONS
- TW57-5 TEMPORARY WELL LOCATION
- SB36-5 EXCAVATED SOIL SAMPLE/MONITORING WELL LOCATION
- FLOOR VERIFICATION SAMPLE
- SIDEWALL VERIFICATION SAMPLE
- EXCAVATION EXTENT

ENVIRONMENTAL AUDIT REPORT
PRIVILEGED DOCUMENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

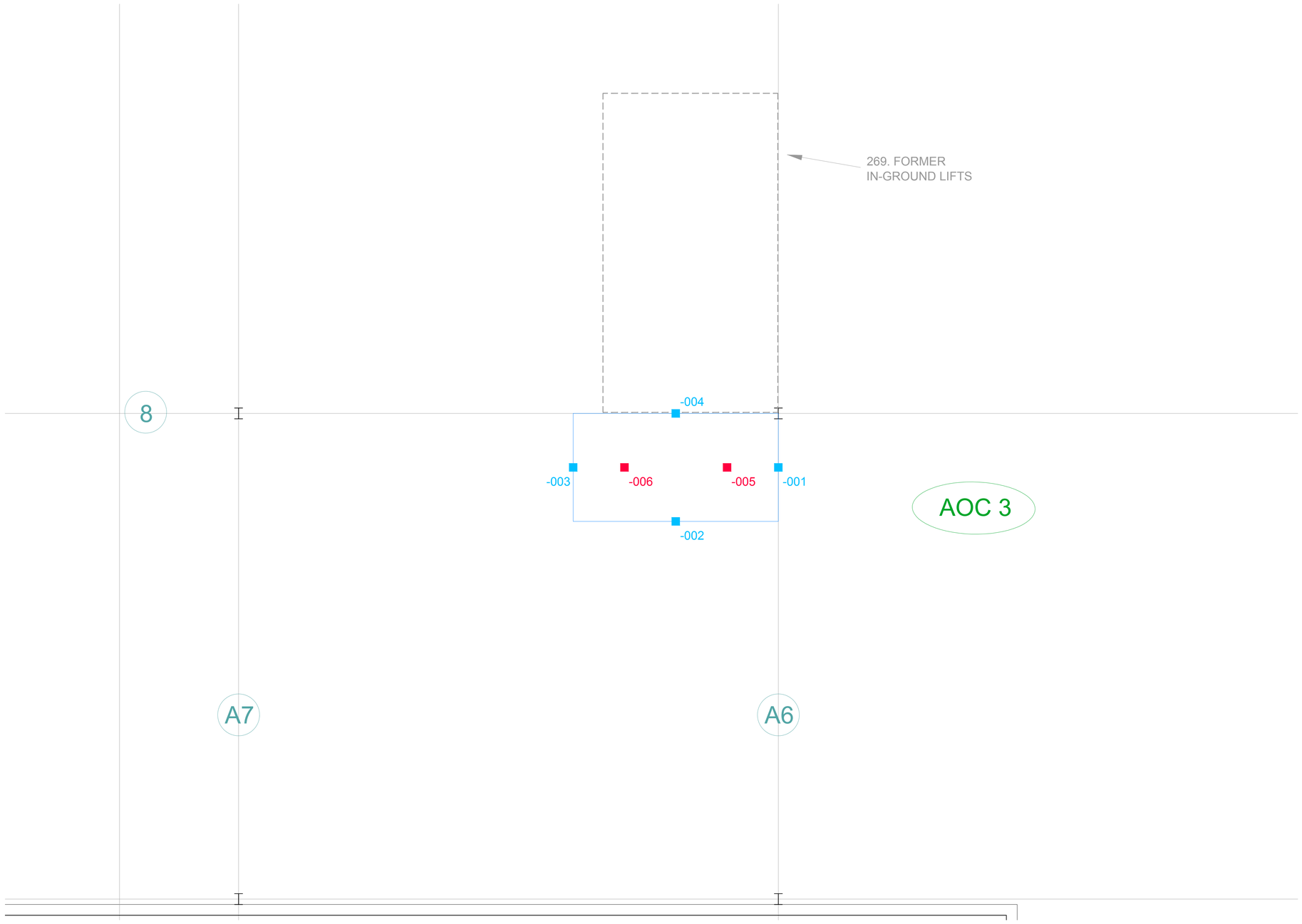
AOC 1 EXCAVATION EXTENT AND
VERIFICATION SAMPLE LOCATIONS

CONESTOGA-ROVERS & ASSOCIATES

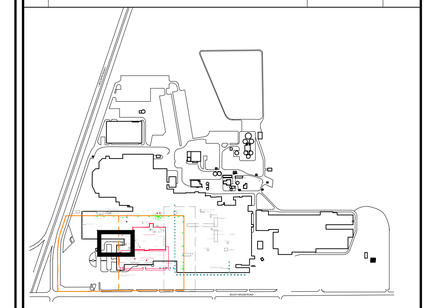
Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 90'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 6.1

048891-32(045)GN-DE027 OCT 8/2013



Nº	Revision	Date	Initial



0 2.5 5ft

LEGEND

- FENCELINE
- RAILROAD
- FORMER SURFACE FEATURE
- FORMER SUBSURFACE FEATURE
- MENARDS PROPERTY
- AOC 3 — AREA OF CONCERN
- FLOOR VERIFICATION SAMPLE
- SIDEWALL VERIFICATION SAMPLE
- EXCAVATION EXTENT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

DRAWING STATUS

Status	Date	Initial

FORD MOTOR COMPANY
FORMER WIXOM ASSEMBLY PLANT

WIXOM, MICHIGAN

AOC 3 EXCAVATION EXTENT AND VERIFICATION SAMPLE LOCATIONS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T. KINNEY	K. ASPINALL	OCTOBER 2013	
Scale: 1" : 5'	Project Nº: 048891-32	Report Nº: 045	Drawing Nº: Figure 6.2

048891-32(045)GN-DE028 OCT 8/2013

Tables

TABLE 2.1

BOREHOLE AND WELL COMPLETION SUMMARY
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Monitoring Well ID		*Northing*	*Easting*	*Borehole or Well Completion Date*	*Total Borehole Depth (feet)*	*Ground Surface Elevation (ft. AMSL)*	*Top of Casing (TOC) Elevation (ft. AMSL)*	*Screened Interval (ft bgs)*	*Screened Elevation (ft. AMSL)*	*Well Material*	*Well Diameter (in)*	*Screen Length (feet)*	*Slot Size (in)*	*Final Construction*	*Total Well Depth (from TOC)*	*Well Abandonment Date*
PSB-3	PMW-3	365313.12	13346555.26	3/20/2008	80	951.83	954.79	10 - 20	941.83 - 931.83	PVC	2	10	0.010	ST	22.90	8/22/2013
	PMW-3I	365313.10	13346555.34	3/20/2008	80	951.83	954.61	27 - 32	924.83 - 919.83	PVC	2	5	0.010	ST	33.00	8/22/2013
PSB-4	PMW-4S	366528.81	13347158.90	3/18/2008	76	956.30	956.00	15 - 20	941.30 - 936.30	PVC	2	5	0.010	FM	19.24	8/22/2013
	PMW-4I	366528.65	13347159.03	3/18/2008	76	956.30	955.95	30 - 35	926.30 - 921.30	PVC	2	5	0.010	FM	34.38	8/22/2013
*	MW-1M	365616.93	13346132.66	1/15/2013	15	950.65	949.86	3 - 8	947.65 - 942.65	PVC	2	5	0.010	FM	7.21	8/22/2013
*	MW-3M	366444.23	13346088.34	1/15/2013	15	950.93	950.57	7.5 - 12.5	943.43 - 938.43	PVC	2	5	0.010	FM	12.14	8/22/2013
*	MW-4M	366951.07	13346059.72	2/18/2013	15	950.45	950.20	5 - 10	945.45 - 940.45	PVC	2	5	0.010	FM	9.75	8/22/2013
*	MW-5M	367025.07	13346478.63	2/18/2013	15	950.72	950.08	6 - 11	944.72 - 939.72	PVC	2	5	0.010	FM	10.36	8/22/2013
SB1-13M	*	365734.76	13346125.12	1/9/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB2-13M	*	365836.07	13346125.40	1/9/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB3-13M	*	365979.04	13346108.94	1/9/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB4-13M	*	366114.72	13346123.52	1/9/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB5-13R	*	366175.64	13346121.01	1/9/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB6-13M	*	366339.60	13346090.56	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB7-13M	*	366499.80	13346086.33	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB7-8	*	365436.40	13346229.67	3/4/2008	12	948.93	--	-- --	-- --	--	--	--	--	--	--	--
SB8-1	TW8-1	365411.09	13347170.57	3/27/2008	38	961.82	962.24	34 - 39	927.82 - 922.82	PVC	1	5	0.010	FM	40.01	8/22/2013
SB8-13M	*	366635.68	13346076.76	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-1	*	366657.65	13346027.55	3/28/113	15		--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-2	TW8-13-2	366655.61	13346040.27	3/28/2013	20	950.98	954.75	14.85 - 19.85	936.13 - 931.13	PVC	1	5	0.010	ST	23.62	--
SB8-13-3	*	366587.47	13346077.78	2/19/2013	15	950.16	--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-4	*	366596.21	13346102.80	2/19/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-5	*	366635.81	13346130.85	2/19/2013	15	950.10	--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-6	*	366673.32	13346100.03	2/19/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-7	*	366683.39	13346074.03	2/20/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-8	*	366654.35	13346075.84	2/20/2013	15	950.45	--	-- --	-- --	--	--	--	--	--	--	--
SB8-13-9	TW8-13-9	366636.42	13346097.43	2/20/2013	15	950.29	955.71	10 - 15	940.29 - 935.29	PVC	1	5	0.010	ST	20.42	--
SB8-13-10	*	366613.95	13346076.69	2/20/2013	15	950.26	--	-- --	-- --	--	--	--	--	--	--	--
SB9-13M	*	366788.53	13346068.17	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB10-13M	*	366937.25	13346060.63	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB11-13M	*	367003.47	13346058.09	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-13M	*	367009.19	13346140.02	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-5	*	366262.50	13346669.88	2/28/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-6	*	366361.81	13346643.88	2/28/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-7	*	366484.30	13346607.11	2/28/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-8	*	366549.04	13346598.85	2/28/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-9	*	366778.41	13346243.26	3/1/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-10	*	366538.63	13346273.25	3/1/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-11	*	366420.84	13346193.14	3/1/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB12-12	*	366120.94	13346764.70	3/28/2013	15	951.82	--	-- --	-- --	--	--	--	--	--	--	--
SB13-13M	*	367009.34	13346301.62	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB14-13M	*	367026.61	13346500.27	1/11/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB15-13M	*	367039.34	13346634.18	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB16-13M	*	367040.59	13346736.15	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB17-13M	*	367040.37	13346787.73	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB18-13M	*	367044.30	13346839.07	1/9/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB18-13R	*	367044.30	13346839.07	1/10/2013	15		--	-- --	-- --	--	--	--	--	--	--	--
SB20-1	TW20-1	366726.84	13346742.71	10/9/2008	15	950.28	952.32	3 - 8	942.28 - 947.28	PVC	1	5	0.010	ST	8.35	3/3/2010
SB31-1	TW31-1	366867.92	13346273.17	3/10/2008	20	951.01	953.67	13 - 18	935.67 - 940.67	PVC	1	5	0.01	ST	19.25	--
SB31-2R	*	366867.92	13346273.17	2/28/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB31-5	*	366849.93	13346274.44	6/13/2008	12	951.01	--	-- --	-- --	--	--	--	--	--	--	--
SB31-6	*	366857.9339	13346273.7097	3/28/2013	5		--	-- -- -- --	-- --	--	--	--	--	--	--	--
SB31-7	*	366868.4590	13346283.1556	3/28/2013	5		--	-- -- -- --	-- --	--	--	--	--	--	--	--
SB31-8	*	366867.3797	13346263.1847	3/28/2013	5		--	-- -- -- --	-- --	--	--	--	--	--	--	--
SB31-9	*	366877.9048	13346272.6305	3/28/2013	5		--	-- -- -- --	-- --	--	--	--	--	--	--	--
SB38-4	TW38-4	366430.29	13346402.37	10/9/2008	15	950.99	955.08	10 - 15	940.99 - 935.99	PVC	1	5	0.010	ST	19.09	2/9/2010
SB38-5	*	366449.20	13346517.08	10/9/2008	4	950.96	--	-- --	-- --	--	--	--	--	--	--	--
SB38-11	TW38-11	366999.13	13346272.84	10/9/2008	15	951.03	955.46	6 - 11	945.03 - 940.03	PVC	1	5	0.010	ST	15.43	2/9/2010
SB38-22	*	366429.14	13346439.71	6/4/2009	10	951.00	--	-- --	-- --	--	--	--	--	--	--	--
SB38-23	*	366393.36	13346400.80	6/4/2009	10	950.98	--	-- --	-- --	--	--	--	--	--	--	--
SB38-24	*	366430.90	13346384.04	6/4/2009	10	950.95	--	-- --	-- --	--	--	--	--	--	--	--
SB38-25	*	366469.72	13346400.63	6/4/2009	10	951.02	--	-- --	-- --	--	--	--	--	--	--	--
SB38-30	*	366335.46	13346417.56	8/28/2009	10	950.24	--	-- --	-- --	--	--	--	--	--	--	--
SB38-35	*	366399.14	13346405.22	2/20/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB38-36	*	366391.73	13346420.32	2/20/2013	10		--	-- --	-- --	--	--	--	--	--	--	--
SB38-37	*	366370.75	13346400.36	2/20/2013	10		--	-- --	-- --	--	--	--	--	--	--	--

TABLE 2.1

BOREHOLE AND WELL COMPLETION SUMMARY
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Monitoring Well ID		*Northing*	*Easting*	*Borehole or Well Completion Date*	*Total Borehole Depth (feet)*	*Ground Surface Elevation (ft. AMSL)*	*Top of Casing (TOC) Elevation (ft. AMSL)*	*Screened Interval (ft bgs)*		*Screened Elevation (ft. AMSL)*		*Well Material*	*Well Diameter (in)*	*Screen Length (feet)*	*Slot Size (in)*	*Final Construction*	*Total Well Depth (from TOC)*	*Well Abandonment Date*
SB38-38	*	366384.77	13346377.95	2/20/2013	10		--	--	--	--	--	--	--	--	--	--	--	--
SB46-3	*	365317.68	13346554.51	10/2/2008	5	952.24	--	--	--	--	--	--	--	--	--	--	--	--
SB48-3	*	367048.21	13346608.77	3/24/2008	12	951.11	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 3.1

SOIL CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

		Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]									
		Site Specific Background	Residential Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Non-Residential Soil Volatilization to Indoor Air Inhalation	Non-Residential Infinite Source Volatile Soil Inhalation	Non-Residential Particulate Soil Inhalation	Non-Residential Direct Contact	Soil Saturation Concentration Screening
	Units	a	b	c	d	e	f	g	h	i	j
Volatile Organic Compounds (VOCs)											
1,1,1-Trichloroethane	ug/kg	--	4000	4000	1800	460000	460000	4500000	29000000000	460000	460000
1,1,2,2-Tetrachloroethane	ug/kg	--	170	700	1600	94000	23000	34000	68000000	240000	870000
1,1,2-Trichloroethane	ug/kg	--	100	100	6600	420000	24000	57000	250000000	840000	920000
1,1-Dichloroethane	ug/kg	--	18000	50000	15000	890000	430000	2500000	15000000000	890000	890000
1,1-Dichloroethene	ug/kg	--	140	140	2600	220000	330	3700	78000000	570000	570000
1,2,4-Trichlorobenzene	ug/kg	--	4200	4200	5900	1100000	1100000	34000000	11000000000	1100000	1100000
1,2,4-Trimethylbenzene	ug/kg	--	2100	2100	570	110000	110000	25000000	36000000000	110000	110000
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	--	10	10	ID	1200	1200	900	700000	1200	1200
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	--	20	20	110	500	3600	5800	18000000	430	890000
1,2-Dichlorobenzene	ug/kg	--	14000	14000	280	210000	210000	46000000	44000000000	210000	210000
1,2-Dichloroethane	ug/kg	--	100	100	7200	380000	11000	21000	150000000	420000	1200000
1,2-Dichloropropane	ug/kg	--	100	100	4600	320000	7400	30000	120000000	550000	550000
1,3,5-Trimethylbenzene	ug/kg	--	1800	1800	1100	94000	94000	19000000	36000000000	94000	94000
1,3-Dichlorobenzene	ug/kg	--	170	480	680	51000	48000	94000	8800000	170000	170000
1,4-Dichlorobenzene	ug/kg	--	1700	1700	360	140000	100000	260000	570000000	1900000	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	--	260000	760000	44000	27000000	27000000	35000000	29000000000	27000000	27000000
2-Hexanone	ug/kg	--	20000	58000	ID	2500000	1800000	1300000	1200000000	2500000	2500000
2-Methylnaphthalene	ug/kg	--	57000	170000	4200	5500000	4900000	1800000	290000000	26000000	--
2-Methylnaphthalene A	ug/kg	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	--	36000	100000	ID	2700000	2700000	53000000	60000000000	2700000	2700000
Acetone	ug/kg	--	15000	42000	34000	110000000	110000000	160000000	170000000000	73000000	110000000
Benzene	ug/kg	--	100	100	4000	220000	8400	45000	470000000	400000	400000
Bromodichloromethane	ug/kg	--	1600	1600	ID	280000	6400	31000	110000000	490000	1500000
Bromoform	ug/kg	--	1600	1600	ID	870000	770000	3100000	3600000000	870000	870000
Bromomethane (Methyl bromide)	ug/kg	--	200	580	700	1400000	1600	13000	150000000	1000000	2200000
Carbon disulfide	ug/kg	--	16000	46000	ID	280000	140000	1600000	21000000000	280000	280000
Carbon tetrachloride	ug/kg	--	100	100	900	92000	990	12000	170000000	390000	390000
Chlorobenzene	ug/kg	--	2000	2000	500	260000	220000	920000	2100000000	260000	260000
Chloroethane	ug/kg	--	8600	34000	22000	950000	950000	36000000	290000000000	950000	950000
Chloroform (Trichloromethane)	ug/kg	--	1600	1600	7000	1500000	38000	150000	1600000000	1500000	1500000
Chloromethane (Methyl chloride)	ug/kg	--	5200	22000	ID	1100000	10000	120000	2600000000	1100000	1100000
cis-1,2-Dichloroethene	ug/kg	--	1400	1400	12000	640000	41000	210000	1000000000	640000	640000
cis-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--	--	--	--
Cyclohexane	ug/kg	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/kg	--	1600	1600	ID	360000	21000	80000	160000000	500000	610000
Dichlorodifluoromethane (CFC-12)	ug/kg	--	95000	270000	ID	1000000	1700000	63000000	1500000000000	1000000	1000000
Ethylbenzene	ug/kg	--	1500	1500	360	140000	140000	2400000	13000000000	140000	140000
Isopropyl benzene	ug/kg	--	91000	260000	3200	390000	390000	2000000	2600000000	390000	390000
m&p-Xylenes	ug/kg	--	--	--	--	--	--	--	--	--	--
Methyl acetate	ug/kg	--	--	--	--	--	--	--	--	--	--
Methyl cyclohexane	ug/kg	--	--	--	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/kg	--	800	800	140000	5900000	5900000	30000000	88000000000	5900000	5900000
Methylene chloride	ug/kg	--	100	100	30000	2300000	240000	700000	8300000000	2300000	2300000
Naphthalene	ug/kg	--	35000	100000	730	2100000	470000	350000	88000000	52000000	--
o-Xylene	ug/kg	--	5600	5600	--	150000	150000	54000000	130000000000	150000	150000
Styrene	ug/kg	--	2700	2700	2100	270000	520000	3300000	6900000000	520000	520000
Tetrachloroethene	ug/kg	--	100	100	1200	88000	21000	210000	1200000000	88000	88000
Toluene	ug/kg	--	16000	16000	5400	250000	250000	3300000	12000000000	250000	250000
trans-1,2-Dichloroethene	ug/kg	--	2000	2000	30000	1400000	43000	330000	2100000000	1400000	1400000
trans-1,3-Dichloropropene	ug/kg	--	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/kg	--	100	100	4000	440000	1900	14000	59000000	500000	500000
Trichlorofluoromethane (CFC-11)	ug/kg	--	52000	150000		560000	560000	110000000	1700000000000	560000	560000
Trifluorotrichloroethane (Freon 113)	ug/kg	--	550000	550000	1700	550000	550000	210000000	2300000000000	550000	550000
Vinyl chloride	ug/kg	--	40	40	260	20000	2800	29000	890000000	34000	490000
Xylenes (total)	ug/kg	--	5600	5600	820	150000	150000	54000000	130000000000	150000	150000
Semi-Volatile Organic Compounds (SVOCs)											
1,4-Dichlorobenzene	ug/kg	--	1700	1700	360	140000	100000	260000	570000000	1900000	--
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg	--	--	--	--	--	--	--	--	--	--

TABLE 3.1

SOIL CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]

	Units	Site Specific Background	Residential Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Non-Residential Soil Volatilization to Indoor Air Inhalation	Non-Residential Infinite Source Volatile Soil Inhalation	Non-Residential Particulate Soil Inhalation	Non-Residential Direct Contact	Soil Saturation Concentration Screening
		a	b	c	d	e	f	g	h	i	j
2,4,5-Trichlorophenol	ug/kg	--	39000	110000		9100000	NLV	NLV	10000000000	73000000	--
2,4,6-Trichlorophenol	ug/kg	--	2400	9400	330	200000	NLV	NLV	1300000000	3300000	--
2,4-Dichlorophenol	ug/kg	--	1500	4200	330	960000	NLV	NLV	2300000000	1800000	1800000
2,4-Dimethylphenol	ug/kg	--	7400	20000	7600	10000000	NLV	NLV	2100000000	36000000	--
2,4-Dinitrophenol	ug/kg	--	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/kg	--	430	640	--	170000	NLV	NLV	20000000	220000	--
2,6-Dinitrotoluene	ug/kg	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/kg	--	620000	1800000	--	2300000	ID	ID	ID	180000000	
2-Chlorophenol	ug/kg	--	900	2600	360	1900000	800000	1100000	530000000	4500000	19000000
2-Methylnaphthalene	ug/kg	--	57000	170000	4200	5500000	4900000	1800000	290000000	26000000	--
2-Methylphenol	ug/kg	--	7400	20000	1000	16000000	NLV	NLV	2900000000	36000000	--
2-Nitroaniline	ug/kg	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	ug/kg	--	400	1200	ID	1600000	NLV	NLV	ID	2000000	--
3&4-Methylphenol	ug/kg	--	7400	20000	1000	16000000	NLV	NLV	2900000000	36000000	--
3,3'-Dichlorobenzidine	ug/kg	--	2000	2000	2000	4600	NLV	NLV	8200000	30000	--
3-Nitroaniline	ug/kg	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/kg	--	830	830	--	190000	NLV	NLV	59000000	260000	--
4-Bromophenyl phenyl ether	ug/kg	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/kg	--	5800	16000	280	3000000	NLV	NLV	ID	15000000	--
4-Chloroaniline	ug/kg	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/kg	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	ug/kg	--	7400	20000	1000	16000000	NLV	NLV	2900000000	36000000	--
4-Nitroaniline	ug/kg	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	ug/kg	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/kg	--	300000	880000	8700	970000	350000000	97000000	6200000000	130000000	--
Acenaphthylene	ug/kg	--	5900	17000	ID	440000	3000000	2700000	1000000000	5200000	--
Acetophenone	ug/kg	--	30000	88000	ID	1100000	1100000	52000000	14000000000	1100000	1100000
Anthracene	ug/kg	--	41000	41000	ID	41000	1000000000	1600000000	29000000000	730000000	--
Atrazine	ug/kg	--	60	60	150	110000	NLV	NLV	ID	330000	--
Benzaldehyde	ug/kg	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	ID	80000	--
Benzo(a)pyrene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	1900000	8000	--
Benzo(b)fluoranthene	ug/kg	--	NLL	NLL	NLL	NLL	ID	ID	ID	80000	--
Benzo(g,h,i)perylene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	350000000	7000000	--
Benzo(k)fluoranthene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	ID	800000	--
Biphenyl (1,1-Biphenyl)	ug/kg	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/kg	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/kg	--	100	170	100	110000	44000	13000	12000000	58000	2200000
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	890000000	10000000	10000000
Butyl benzylphthalate (BBP)	ug/kg	--	310000	310000	120000	310000	NLV	NLV	21000000000	310000	310000
Caprolactam	ug/kg	--	120000	340000	--	1000000000	NLV	NLV	290000000	310000000	--
Carbazole	ug/kg	--	9400	39000	1100	820000	NLV	NLV	78000000	2400000	--
Chrysene	ug/kg	--	NLL	NLL	NLL	NLL	ID	ID	ID	8000000	--
Dibenz(a,h)anthracene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	ID	8000	--
Dibenzofuran	ug/kg	--	ID	ID	1700	ID	3600000	160000	2900000	ID	--
Diethyl phthalate	ug/kg	--	110000	320000	2200	740000	NLV	NLV	1500000000	740000	740000
Dimethyl phthalate	ug/kg	--	790000	790000	--	790000	NLV	NLV	1500000000	790000	790000
Di-n-butylphthalate (DBP)	ug/kg	--	760000	760000	11000	760000	NLV	NLV	1500000000	760000	760000
Di-n-octyl phthalate (DnOP)	ug/kg	--	100000000	140000000	ID	140000000	NLV	NLV	14000000000	20000000	140000000
Fluoranthene	ug/kg	--	730000	730000	5500	730000	1000000000	890000000	4100000000	130000000	--
Fluorene	ug/kg	--	390000	890000	5300	890000	1000000000	150000000	4100000000	87000000	--
Hexachlorobenzene	ug/kg	--	1800	1800	350	8200	220000	56000	8500000	37000	--
Hexachlorobutadiene	ug/kg	--	26000	72000	91	350000	350000	460000	180000000	350000	350000
Hexachlorocyclopentadiene	ug/kg	--	320000	320000	ID	720000	56000	60000	5900000	720000	720000
Hexachloroethane	ug/kg	--	430	1200	1800	110000	79000	660000	100000000	730000	--
Indeno(1,2,3-cd)pyrene	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	ID	80000	--
Isophorone	ug/kg	--	15000	62000	26000	2400000	NLV	NLV	8200000000	2400000	2400000
Naphthalene	ug/kg	--	35000	100000	730	2100000	470000	350000	88000000	52000000	--
Nitrobenzene	ug/kg	--	330	330	3600	220000	170000	64000	21000000	340000	490000
N-Nitrosodi-n-propylamine	ug/kg	--	330	330	--	7200	NLV	NLV	2000000	5400	1500000
N-Nitrosodiphenylamine	ug/kg	--	5400	22000	--	700000	NLV	NLV	2800000000	7800000	--
Pentachlorophenol	ug/kg	--	22	22	G, X	4300	NLV	NLV	130000000	320000	--
Phenanthrene	ug/kg	--	56000	160000	2100	1100000	5100000	190000	2900000	5200000	--

TABLE 3.1

SOIL CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

		Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]									
		Site Specific Background	Residential Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Non-Residential Soil Volatilization to Indoor Air Inhalation	Non-Residential Infinite Source Volatile Soil Inhalation	Non-Residential Particulate Soil Inhalation	Non-Residential Direct Contact	Soil Saturation Concentration Screening
		a	b	c	d	e	f	g	h	i	j
	Units										
Phenol	ug/kg	--	88000	260000	9000	12000000	NLV	NLV	18000000000	12000000	12000000
Pyrene	ug/kg	--	480000	480000	ID	480000	1000000000	780000000	2900000000	84000000	--
Pyridine	ug/kg	--	400	420	--	37000	2000	9800	100000000	37000	37000
Metals											
Aluminum	ug/kg	13300000	1000	1000	--	1000000000	NLV	NLV	ID	370000000	--
Antimony	ug/kg	190	4300	4300	94000	49000000	NLV	NLV	5900000	670000	--
Arsenic	ug/kg	10700	4600	4600	4600	2000000	NLV	NLV	910000	37000	--
Barium	ug/kg	119000	1300000	1300000	440000	1000000000	NLV	NLV	150000000	130000000	--
Beryllium	ug/kg	690	51000	51000	84000	1000000000	NLV	NLV	590000	1600000	--
Cadmium	ug/kg	1200	6000	6000	3600	230000000	NLV	NLV	2200000	2100000	--
Calcium	ug/kg	171000000	--	--	--	--	--	--	--	--	--
Chromium	ug/kg	21300	30000	30000	3300	140000000	NLV	NLV	240000	9200000	--
Chromium III (trivalent)	ug/kg	23400	1000000000	1000000000	3000000000	1000000000	NLV	NLV	150000000	1000000000	--
Chromium VI (hexavalent)	ug/kg	2100	30000	30000	3300	140000000	NLV	NLV	240000	9200000	--
Cobalt	ug/kg	9800	800	2000	2000	48000000	NLV	NLV	5900000	9000000	--
Copper	ug/kg	32000	5800000	5800000	73000	1000000000	NLV	NLV	59000000	73000000	--
Iron	ug/kg	22200000	6000	6000	--	1000000000	NLV	NLV	ID	580000000	--
Lead	ug/kg	48800	700000	700000	2800000	ID	NLV	NLV	44000000	900000	--
Lead - coarse fraction	ug/kg	--	700000	700000	--	ID	NLV	NLV	44000000	900000	--
Lead - fine fraction	ug/kg	--	700000	700000	--	ID	NLV	NLV	44000000	900000	--
Lead - total (calculated by fine/coarse fraction)	ug/kg	--	700000	700000	--	ID	NLV	NLV	44000000	900000	--
Magnesium	ug/kg	80000000	8000000	22000000	--	1000000000	NLV	NLV	2900000000	1000000000	--
Manganese	ug/kg	1010000	1000	1000	55000	180000000	NLV	NLV	1500000	90000000	--
Mercury	ug/kg	130	1700	1700	50	47000	89000	62000	8800000	580000	--
Nickel	ug/kg	29700	100000	100000	76000	1000000000	NLV	NLV	16000000	150000000	--
Potassium	ug/kg	1960000	--	--	--	--	--	--	--	--	--
Selenium	ug/kg	1980	4000	4000	400	78000000	NLV	NLV	59000000	9600000	--
Silver	ug/kg	1000	4500	13000	100	200000000	NLV	NLV	2900000	9000000	--
Sodium	ug/kg	1500000	2500000	7000000	--	1000000000	NLV	NLV	ID	1000000000	--
Thallium	ug/kg	480	2300	2300	4200	15000000	NLV	NLV	5900000	130000	--
Vanadium	ug/kg	34200	72000	990000	430000	1000000000	NLV	NLV	ID	5500000	--
Zinc	ug/kg	150000	2400000	5000000	170000	1000000000	NLV	NLV	ID	630000000	--
PCBs											
Aroclor-1016 (PCB-1016)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1221 (PCB-1221)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1232 (PCB-1232)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1242 (PCB-1242)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1248 (PCB-1248)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1254 (PCB-1254)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Aroclor-1260 (PCB-1260)	ug/kg	--	NLL	NLL	NLL	NLL	16000000	810000	6500000	16000	--
Total Petroleum Hydrocarbons (TPH)											
Ethylene glycol	ug/kg	--	300000	840000	--	110000000	NLV	NLV	29000000000	110000000	110000000
Total Petroleum Hydrocarbons - Purgeable (GRO)	ug/kg	--	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	--	--	--	--	--	--	--	--	--	350000 (2)
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	--	--	--	--	--	--	--	--	--	1000000 (2)
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	--	--	--	--	--	--	--	--	--	2000000 (2)
Herbicides											
2,4,5-TP (Silvex)	ug/kg	--	3600	3600	2200	3100000	NLV	NLV	ID	5500000	--
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/kg	--	1400	1400	4400	2400000	NLV	NLV	2900000000	8600000	--
Pesticides											
4,4'-DDD	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	56000000	400000	--
4,4'-DDE	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	40000000	190000	--
4,4'-DDT	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	40000000	280000	--

TABLE 3.1

SOIL CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria (1)

	Units	Site Specific Background	Residential Drinking Water Protection	Non-Residential Drinking Water Protection	Groundwater Surface Water Interface Protection	Groundwater Contact Protection	Non-Residential Soil Volatilization to Indoor Air Inhalation	Non-Residential Infinite Source Volatile Soil Inhalation	Non-Residential Particulate Soil Inhalation	Non-Residential Direct Contact	Soil Saturation Concentration Screening
		a	b	c	d	e	f	g	h	i	j
Aldrin	ug/kg	--	NLL	NLL	NLL	NLL	7100000	200000	800000	4300	--
alpha-BHC	ug/kg	--	18	71	ID	2500	160000	41000	2100000	12000	--
alpha-Chlordane	ug/kg	--	NLL	NLL	NLL	NLL	59000000	4200000	21000000	150000	--
beta-BHC	ug/kg	--	37	150	ID	5100	NLV	NLV	7400000	25000	--
delta-BHC	ug/kg	--	--	--	--	--	--	--	--	--	--
Dieldrin	ug/kg	--	NLL	NLL	NLL	NLL	720000	64000	850000	4700	--
Endosulfan I	ug/kg	--	--	--	--	--	--	--	--	--	--
Endosulfan II	ug/kg	--	--	--	--	--	--	--	--	--	--
Endosulfan sulfate	ug/kg	--	--	--	--	--	--	--	--	--	--
Endrin	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	ID	190000	--
Endrin aldehyde	ug/kg	--	--	--	--	--	--	--	--	--	--
Endrin ketone	ug/kg	--	--	--	--	--	--	--	--	--	--
gamma-BHC (lindane)	ug/kg	--	20	20	20	7100	ID	ID	ID	42000	--
gamma-Chlordane	ug/kg	--	NLL	NLL	NLL	NLL	59000000	4200000	21000000	240000	--
Heptachlor	ug/kg	--	NLL	NLL	NLL	NLL	1900000	210000	3000000	23000	--
Heptachlor epoxide	ug/kg	--	NLL	NLL	NLL	NLL	NLV	NLV	1500000	9500	--
Methoxychlor	ug/kg	--	16000	16000	--	18000	ID	ID	ID	5600000	--
Toxaphene	ug/kg	--	24000	24000	8200	360000	NLV	NLV	12000000	85000	--

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
(2) MDEQ draft re-design of Part 201 (September 2009)
ID -Insufficient data to develop criterion.
NA - A criterion or value is not available or, in the case of background and CAS numbers, not applicable.
NLL - Hazardous substance is not likely to leach under most soil conditions.
NLV - Hazardous substance is not likely to volatilize under most conditions.

TABLE 3.2

GROUNDWATER CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

				Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]							
		Site-Background Shallow	Site-Background Intermediate	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	Non-Residential Groundwater Volatilization to Indoor Air Inhalation	Groundwater Contact	Water Solubility	Flammability and Explosivity Screening Levels	Acute Inhalation Screening Levels
	Units			a	b	c	d	e	f	g	h
Volatile Organic Compounds (VOCs)											
1,1,1-Trichloroethane	ug/L	--	--	200	200	89	1300000	1300000	1330000	ID	1300000
1,1,2,2-Tetrachloroethane	ug/L	--	--	8.5	35	78	77000	4700	2970000	ID	ID
1,1,2-Trichloroethane	ug/L	--	--	5	5	330	110000	21000	4420000	--	ID
1,1-Dichloroethane	ug/L	--	--	880	2500	740	2300000	2400000	5060000	380000	ID
1,1-Dichloroethene	ug/L	--	--	7	7	130	1300	11000	2250000	97000	140000
1,2,4-Trichlorobenzene	ug/L	--	--	70	70	99	300000	19000	300000	--	300000
1,2,4-Trimethylbenzene	ug/L	--	--	63	63	17	56000	56000	55890	56000	ID
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	0.2	0.2	--	1200	390	1230	--	ID
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	0.05	0.05	5.7	15000	25	4200000	ID	ID
1,2-Dichlorobenzene	ug/L	--	--	600	600	13	160000	160000	156000	--	160000
1,2-Dichloroethane	ug/L	--	--	5	5	360	59000	19000	8520000	2500000	ID
1,2-Dichloropropane	ug/L	--	--	5	5	230	36000	16000	2800000	550000	2800000
1,3,5-Trimethylbenzene	ug/L	--	--	72	72	45	61000	61000	61150	ID	ID
1,3-Dichlorobenzene	ug/L	--	--	6.6	19	28	41000	2000	111000	ID	ID
1,4-Dichlorobenzene	ug/L	--	--	75	75	17	74000	6400	73800		ID
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	13000	38000	2200	240000000	240000000	240000000	ID	240000000
2-Hexanone	ug/L	--	--	1000	2900	ID	8700000	5200000	16000000		ID
2-Methylnaphthalene	ug/L	--	--	260	750	19	25000	25000	24600	ID	ID
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	1800	5200	ID	20000000	13000000	20000000	ID	20000000
Acetone	ug/L	--	--	730	2100	1700	1000000000	31000000	1000000000	15000000	1000000000
Benzene	ug/L	--	--	5	5	200	35000	11000	1750000	68000	67000
Bromodichloromethane	ug/L	--	--	80	80	ID	37000	14000	6740000	ID	ID
Bromoform	ug/L	--	--	80	80	ID	3100000	140000	3100000	ID	ID
Bromomethane (Methyl bromide)	ug/L	--	--	10	29	35	9000	70000	14500000	ID	ID
Carbon disulfide	ug/L	--	--	800	2300	ID	550000	1200000	1190000	13000	ID
Carbon tetrachloride	ug/L	--	--	5	5	45	2400	4600	793000	ID	96000
Chlorobenzene	ug/L	--	--	100	100	25	470000	86000	472000	160000	ID
Chloroethane	ug/L	--	--	430	1700	1100	5700000	440000	5740000	110000	ID
Chloroform (Trichloromethane)	ug/L	--	--	80	80	350	180000	150000	7920000	ID	ID
Chloromethane (Methyl chloride)	ug/L	--	--	260	1100	ID	45000	490000	6340000	36000	210000
cis-1,2-Dichloroethene	ug/L	--	--	70	70	620	210000	200000	3500000	530000	ID
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--
Cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	--	--	80	80	ID	110000	18000	2600000	ID	ID
Dichlorodifluoromethane (CFC-12)	ug/L	--	--	1700	4800	ID	300000	300000	300000	ID	ID
Ethylbenzene	ug/L	--	--	74	74	18	170000	170000	169000	43000	170000
Isopropyl benzene	ug/L	--	--	800	2300	28	56000	56000	56000	29000	ID
Methyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--
Methyl cyclohexane	ug/L	--	--	--	--	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	--	--	40	40	7100	47000000	610000	46800000	ID	ID
Methylene chloride	ug/L	--	--	5	5	1500	1400000	220000	17000000	ID	ID
Naphthalene	ug/L	--	--	520	1500	11	31000	31000	31000	--	31000
Styrene	ug/L	--	--	100	100	80	310000	9700	310000	140000	310000
Tetrachloroethene	ug/L	--	--	5	5	60	170000	12000	200000	ID	200000
Toluene	ug/L	--	--	790	790	270	530000	530000	526000	61000	ID
trans-1,2-Dichloroethene	ug/L	--	--	100	100	1500	200000	220000	6300000	230000	ID
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--
Trichloroethene	ug/L	--	--	5	5	200	4900	22000	1100000	ID	1100000
Trichlorofluoromethane (CFC-11)	ug/L	--	--	2600	7300	--	1100000	1100000	1100000	ID	1100000
Trifluorotrichloroethane (Freon 113)	ug/L	--	--	170000	170000	32	170000	170000	170000	ID	170000
Vinyl chloride	ug/L	--	--	2	2	13	13000	1000	2760000	33000	ID
Xylenes (total)	ug/L	--	--	280	280	41	190000	190000	186000	70000	190000
Semi-Volatile Organic Compounds (SVOCs)											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	--	--	730	2100	--	NLV	170000	1200000	ID	ID
2,4,6-Trichlorophenol	ug/L	--	--	120	470	5	NLV	10000	800000	ID	ID
2,4-Dichlorophenol	ug/L	--	--	73	210	11	NLV	48000	4500000	ID	ID
2,4-Dimethylphenol	ug/L	--	--	370	1000	380	NLV	520000	7870000	ID	ID
2,4-Dinitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--

TABLE 3.2

GROUNDWATER CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

		Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]									
		Site-Background Shallow	Site-Background Intermediate	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	Non-Residential Groundwater Volatilization to Indoor Air Inhalation	Groundwater Contact	Water Solubility	Flammability and Explosivity Screening Levels	Acute Inhalation Screening Levels
				a	b	c	d	e	f	g	h
	Units										
2,4-Dinitrotoluene	ug/L	--	--	7.7	32	--	NLV	8600	270000	ID	ID
2,6-Dinitrotoluene	ug/L	--	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	--	--	1800	5200	--	ID	6700	6740	ID	ID
2-Chlorophenol	ug/L	--	--	45	130	18	ID	94000	22000000	ID	ID
2-Methylnaphthalene	ug/L	--	--	260	750	19	25000	25000	24600	ID	ID
2-Methylphenol	ug/L	--	--	370	1000	30	NLV	810000	28000000	--	ID
2-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--
2-Nitrophenol	ug/L	--	--	20	58	ID	NLV	79000	2500000	ID	ID
3&4-Methylphenol	ug/L	--	--	370	1000	30	NLV	810000	28000000	--	ID
3,3'-Dichlorobenzidine	ug/L	--	--	1.1	4.3	0.3	NLV	180	3110	ID	ID
3-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	--	--	20	20	--	NLV	9500	200000	ID	ID
4-Bromophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	--	--	150	420	7.4	NLV	79000	3900000	ID	ID
4-Chloroaniline	ug/L	--	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	--	--	--	--	--	--	--	--	--	--
4-Methylphenol	ug/L	--	--	370	1000	30	NLV	810000	28000000	--	ID
4-Nitroaniline	ug/L	--	--	--	--	--	--	--	--	--	--
4-Nitrophenol	ug/L	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L	--	--	1300	3800	38	4200	4200	4240	ID	ID
Acenaphthylene	ug/L	--	--	52	150	ID	3900	3900	3930	ID	ID
Acetophenone	ug/L	--	--	1500	4400	--	6100000	6100000	6100000	ID	ID
Anthracene	ug/L	--	--	43	43	ID	43	43	43.4	ID	ID
Atrazine	ug/L	--	--	3	3	7.3	NLV	5400	70000	ID	ID
Benzaldehyde	ug/L	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	--	--	2.1	8.5	ID	NLV	9.4	9.4	ID	ID
Benzo(a)pyrene	ug/L	--	--	5	5	ID	NLV	1	1.62	ID	ID
Benzo(b)fluoranthene	ug/L	--	--	1.5	1.5	ID	ID	1.5	1.5	ID	ID
Benzo(g,h,i)perylene	ug/L	--	--	1	1	--	NLV	1	0.26	ID	ID
Benzo(k)fluoranthene	ug/L	--	--	1	1	--	NLV	1	0.8	ID	ID
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	--	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	--	--	2	8.3	1	210000	5700	17200000	17000000	17000000
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	6	6	25	NLV	320	340	--	340
Butyl benzylphthalate (BBP)	ug/L	--	--	1200	2700	67	NLV	2700	2690	ID	ID
Caprolactam	ug/L	--	--	5800	17000	--	NLV	390000000	5250000000	--	1000000000
Carbazole	ug/L	--	--	85	350	10	NLV	7400	7480	ID	ID
Chrysene	ug/L	--	--	1.6	1.6	ID	ID	1.6	1.6	ID	ID
Dibenz(a,h)anthracene	ug/L	--	--	2	2	ID	NLV	2	2.49	ID	ID
Dibenzofuran	ug/L	--	--	ID	ID	4	10000	ID	10000	ID	ID
Diethyl phthalate	ug/L	--	--	5500	16000	110	NLV	1100000	1080000	--	ID
Dimethyl phthalate	ug/L	--	--	73000	210000	--	NLV	4200000	4190000	--	ID
Di-n-butylphthalate (DBP)	ug/L	--	--	880	2500	9.7	NLV	11000	11200	--	ID
Di-n-octyl phthalate (DnOP)	ug/L	--	--	130	380	ID	NLV	400	3000	ID	ID
Fluoranthene	ug/L	--	--	210	210	1.6	210	210	206	ID	ID
Fluorene	ug/L	--	--	880	2000	12	2000	2000	1980	ID	ID
Hexachlorobenzene	ug/L	--	--	1	1	0.2	3000	4.6	6200	ID	ID
Hexachlorobutadiene	ug/L	--	--	15	42	0.053	3200	400	3230	ID	ID
Hexachlorocyclopentadiene	ug/L	--	--	50	50	ID	420	1600	1800	ID	ID
Hexachloroethane	ug/L	--	--	7.3	21	6.7	50000	1900	50000	ID	ID
Indeno(1,2,3-cd)pyrene	ug/L	--	--	2	2	ID	NLV	2	0.022	ID	ID
Isophorone	ug/L	--	--	770	3100	1300	NLV	990000	12000000	--	12000000
Naphthalene	ug/L	--	--	520	1500	11	31000	31000	31000	--	31000
Nitrobenzene	ug/L	--	--	3.4	9.6	180	550000	11000	2090000	--	ID
N-Nitrosodi-n-propylamine	ug/L	--	--	5	5	--	NLV	360	9890000	ID	ID
N-Nitrosodiphenylamine	ug/L	--	--	270	1100	--	NLV	35000	35100	ID	ID
Pentachlorophenol	ug/L	--	--	1	1	2.8	NLV	200	1850000	ID	ID
Phenanthrene	ug/L	--	--	52	150	2	1000	1000	1000	ID	ID
Phenol	ug/L	--	--	4400	13000	450	NLV	29000000	82800000	--	ID
Pyrene	ug/L	--	--	140	140	ID	140	140	135	ID	ID
Pyridine	ug/L	--	--	20	21		12000	94000	300000	81000	ID
Metals											

TABLE 3.2

GROUNDWATER CLEANUP CRITERIA
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

		Michigan Act 451, Part 201 Cleanup Criteria: Non-Residential Generic Cleanup Criteria [(1)]									
		Site-Background Shallow	Site-Background Intermediate	Residential Drinking Water	Non-Residential Drinking Water	Groundwater Surface Water Interface	Non-Residential Groundwater Volatilization to Indoor Air Inhalation	Groundwater Contact	Water Solubility	Flammability and Explosivity Screening Levels	Acute Inhalation Screening Levels
	Units			a	b	c	d	e	f	g	h
Aluminum	ug/L	3700	640	50	50	--	NLV	64000000	--	ID	ID
Antimony	ug/L	2	2	6	6	130	NLV	68000	--	ID	ID
Arsenic	ug/L	61	61	10	10	10	NLV	4300	--	ID	ID
Barium	ug/L	1100	630	2000	2000	670	NLV	14000000	--	ID	ID
Beryllium	ug/L	1	1	4	4	6.7	NLV	290000	--	ID	ID
Cadmium	ug/L	1.5	1	5	5	3	NLV	190000	--	ID	ID
Calcium	ug/L	610000	240000	--	--	--	--	--	--	--	--
Chromium	ug/L	10	10	100	100	11	NLV	460000	--	ID	ID
Chromium III (trivalent)	ug/L	10	10	100	100	G,X	NLV	290000000	--	ID	ID
Chromium VI (hexavalent)	ug/L	30	12	100	100	11	NLV	460000	--	ID	ID
Cobalt	ug/L	20	0.82	40	100	100	NLV	2400000	--	ID	ID
Copper	ug/L	10	8.4	1000	1000	13	NLV	7400000	--	ID	ID
Iron	ug/L	66000	16000	300	300	--	NLV	58000000	--	ID	ID
Lead	ug/L	5.0	3	4	4	16	NLV	ID	--	ID	ID
Magnesium	ug/L	370000	69000	400000	1100000	--	NLV	1000000000	--	ID	ID
Manganese	ug/L	1900	580	50	50	2800	NLV	9100000	--	ID	ID
Mercury	ug/L	0.2	0.2	2	2	0.0013	56	56	56	ID	ID
Methyl mercury	ug/L			--	--	--	--	--	--	--	--
Nickel	ug/L	20	20	100	100	73	NLV	74000000	--	ID	ID
Potassium	ug/L	13000	5500	--	--	--	--	--	--	--	--
Selenium	ug/L	5	5	50	50	5	NLV	970000	--	ID	ID
Silver	ug/L	0.2	0.2	34	98	0.2	NLV	1500000	--	ID	ID
Sodium	ug/L	1300000	750000	120000	350000	--	NLV	1000000000	--	ID	ID
Thallium	ug/L	2	2	2	2	3.7	NLV	13000	--	ID	ID
Vanadium	ug/L	9.7	4	4.5	62	27	NLV	970000	--	ID	ID
Zinc	ug/L	89	50	2400	5000	170	NLV	110000000	--	ID	ID
PCBs											
Aroclor-1016 (PCB-1016)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1221 (PCB-1221)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1232 (PCB-1232)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1242 (PCB-1242)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1248 (PCB-1248)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1254 (PCB-1254)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Aroclor-1260 (PCB-1260)	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
Total PCBs	ug/L	--	--	0.5	0.5	0.2	45	3.3	44.7	ID	ID
General Chemistry											
Chloride	ug/L	--	--	250000	250000	FF	NLV	ID	--	ID	ID

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
ID - means insufficient data to develop criterion.
NA - means a criterion or value is not available or, in the case of background and CAS numbers, not applicable.
NLL - means hazardous substance is not likely to leach under most soil conditions.
NLV - means hazardous substance is not likely to volatilize under most conditions.

TABLE 4.1

SOIL SAMPLE KEY
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Sample ID	*Sample Location*	*REC*	*Sample Matrix*	*Sample Depth (ft bgs)*	*Date*	*QA/QC*	*Parent Sample ID*	*Analysis*
SO-48891-030408-NRS-003	SB7-8	7	SO	2-6	3/4/2008			Metals, PCBs, VOCs, SVOCs
SO-48891-031008-NRS-012	SB31-1	31	SO	4-8	3/10/2008			Metals, H & T Cr, PCBs, VOCs, SVOCs
SO-48891-032408-NRS-052	SB48-3	48	SO	6-8	3/24/2008			BTEX, TMB, MTBE, PAH, Ethylene Glycol
S-48891-061308-NRS-0139	SB31-5	31	SO	2-5	6/13/2008			Arsenic
S-48891-100208-NRS-024	SB46-3	46	SO	2-3	10/2/2008			Metals, Pesticides, Herbicides
S-48891-100208-NRS-025	SB46-3	46	SO	2-3	10/2/2008	Duplicate	S-48891-100208-NRS-024	Metals, Pesticides, Herbicides
S-48891-100908-NRS-063	SB38-4	38	SO	1-3	10/9/2008			VOC + Nap, PCB, Metal, H & T Cr, & Pb
S-48891-100908-NRS-064	SB38-5	38	SO	1-3	10/9/2008			VOC + Nap, PCB, Metal, H & T Cr, & Pb
S-48891-100908-NRS-065	SB38-11	38	SO	1-2	10/9/2008			Metals, PCBs, VOCs
S-48891-060409-EV-039	SB38-22	38	SO	1-1.5	6/4/2009			VOCs
S-48891-060409-EV-040	SB38-23	38	SO	1-1.5	6/4/2009			VOCs
S-48891-060409-EV-041	SB38-24	38	SO	2.5-3	6/4/2009			VOCs
S-48891-060409-EV-042	SB38-25	38	SO	5.5-6	6/4/2009			VOCs
S-48891-060409-EV-043	SB38-25	38	SO	5.5-6	6/4/2009	Duplicate	S-48891-060409-EV-042	VOCs
S-48891-082809-DR-128	SB38-30	38	SO	1-3	8/28/2009			VOCs
S-48891-010913-EM-038	SB1-13M	AOC 1	SO	6.5-7.5	1/9/2013			TCL VOCs, Metals, PCBs, SVOCs
S-48891-011013-EM-039	SB8-13M	AOC 1	SO	11-12	1/10/2013			Metals, PCBs, VOCs, SVOCs
S-48891-011013-EM-040	SB8-13M	AOC 1	SO	13-14	1/10/2013			Metals, PCBs, VOCs, SVOCs
SO-48891-022013-DR-007	SB8-13-8	AOC 1	SO	10-12	2/20/2013			VOCs
SO-48891-022013-DR-008	SB8-13-9	AOC 1	SO	11-13	2/20/2013			VOCs
SO-48891-022013-DR-009	SB8-13-10	AOC 1	SO	10-12	2/20/2013	MS/MSD		VOCs
SO-48891-022013-DR-010	SB38-35	38	SO	5-7	2/20/2013			VOCs
SO-48891-022013-DR-011	SB38-36	38	SO	3-5	2/20/2013			VOCs
SO-48891-022013-DR-012	SB38-37	38	SO	3-5	2/20/2013			VOCs
SO-48891-022013-DR-013	SB38-38	38	SO	3-5	2/20/2013			VOCs
SO-48891-022813-DR-024	SB12-5	12	SO	9-10	2/28/2013			PCBs, VOCs, SVOCs
SO-48891-022813-DR-025	SB12-6	12	SO	3-5	2/28/2013			PCBs, VOCs, SVOCs
SO-48891-022813-DR-026	SB12-7	12	SO	3-5	2/28/2013			PCBs, VOCs, SVOCs
SO-48891-022813-DR-027	SB12-8	12	SO	3-5	2/28/2013			PCBs, VOCs, SVOCs
SO-48891-022813-DR-028	SB31-2	31	SO	9-10	3/1/2013			Metals
SO-48891-030113-DR-029	SB12-9	12	SO	10-12	3/1/2013			PCBs, VOCs, SVOCs
SO-48891-030113-DR-030	SB12-10	12	SO	8-10	3/1/2013			PCBs, VOCs, SVOCs
SO-48891-030113-DR-031	SB12-11	12	SO	3-5	3/1/2013			PCBs, VOCs, SVOCs
SO-48891-032813-SK-135	SB8-13M	AOC 1	SO	11	3/28/2013			TPH-GRO
SO-48891-032813-SK-140	SB12-12	12	SO	12.5	3/28/2013			PCBs, TPH, SVOCs, VOCs
SO-48891-032813-SK-133	SB8-13-2	AOC 1	SO	16	3/28/2013			VOCs
SO-48891-032813-SK-134	SB8-13-1	AOC 1	SO	12.4	3/28/2013			VOCs
SO-48891-032813-SK-136	SB31-6	31	Soil	5	3/28/2013			Arsenic
SO-48891-032813-SK-137	SB31-7	31	Soil	5	3/28/2013			Arsenic
SO-48891-032813-SK-138	SB31-8	31	Soil	5	3/28/2013			Arsenic
SO-48891-032813-SK-139	SB31-9	31	Soil	5	3/28/2013			Arsenic
SO-048891-091113-SM-001	North Wall	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs
SO-048891-091113-SM-002	East Wall	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs
SO-048891-091113-SM-003	South Wall	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs
SO-048891-091113-SM-004	West Wall	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs
SO-048891-091113-SM-005	North Floor	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs
SO-048891-091113-SM-006	South Floor	AOC 3	Soil	--	9/11/2013			TPH-DRO/ORO, PCBs

TABLE 4.2

GROUNDWATER SAMPLE KEY
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Sample ID	*Sample Location*	*REC*	*Sample Matrix*	*Screened Interval*	*Date*	*QA/QC*	*Parent Sample ID*	*Analysis*
GW-48891-042508-NRS-007	PMW-4S	42	WG	15-20	4/25/2008			VOC, SVOC, PCB, & Metals
GW-48891-042508-NRS-008	PMW-4I	42	WG	30-35	4/25/2008			VOC, SVOC, PCB, & Metals
GW-48891-042908-NRS-012	PMW-3I	42	WG	27-32	4/29/2008			VOC, SVOC, PCB, & Metals
GW-48891-042908-EV-023	TW31-1	31	WG	13-18	4/29/2008			Metals, PCBs, VOCs, SVOCs
GW-48891-050208-EV-052	TW8-1	8	WG	34-39	5/2/2008			Metals, VOCs
GW-48891-050508-NRS-055	PMW-3	42	WG	10-20	5/5/2008			VOC, SVOC, PCB, & Metals
GW-48891-102208-NRS-037	TW38-4	38	WG	10-15	10/22/2008			VOCs
GW-48891-102408-NRS-068	TW20-1	20	WG	3-8	10/24/2008			VOCs
GW-48891-102408-NRS-064	TW38-11	38	WG	6-11	10/24/2008			VOCs
GW-48891-011713-EM-042	MW-1M	AOC 1	WG	3-8	1/17/2013			Metals, PCBs, VOCs, SVOCs
GW-48891-011713-EM-043	MW-3M	AOC 1	WG	7.5-12.5	1/17/2013			Metals, PCBs, VOCs, SVOCs
GW-48891-011712-BW-017	PMW-4S	42	WG	15-20	1/18/2012			Metals
GW-48891-011712-BW-018	PMW-4I	42	WG	30-35	1/18/2012			Metals
GW-48891-011712-BW-015	PMW-3I	42	WG	27-32	1/18/2012			Metals
GW-48891-011712-BW-016	PMW-3I	42	WG	27-32	1/18/2012	Duplicate	GW-48891-011812-BW-015	Metals
GW-48891-011712-BW-014	PMW-3	42	WG	10-20	1/18/2012			Metals
GW-48891-062512-JY-040	PMW-3	42	WG	10-20	6/25/2012			Hex-Tr Chrome, ICP/MS, Total Mercury
GW-48891-062512-JY-041	PMW-3I	42	WG	27-32	6/25/2012			Hex-Tr Chrome, ICP/MS, Total Mercury
GW-48891-062712-JY-058	PMW-4S	42	WG	15-20	6/27/2012			Hex-Tr Chrome, ICP/MS, Total Mercury
GW-48891-062712-JY-059	PMW-4I	42	WG	30-35	6/27/2012			Hex-Tr Chrome, ICP/MS, Total Mercury
GW-48891-100812-SK-009	PMW-4S	42	WG	15-20	10/8/2012			Metals
GW-48891-100812-SK-010	PMW-4S	42	WG	15-20	10/8/2012	Duplicate	GW-48891-100812-SK-009	Metals
GW-48891-100812-SK-007	PMW-3I	42	WG	27-32	10/8/2012			Metals
GW-48891-100812-SK-008	PMW-3	42	WG	10-20	10/8/2012			Metals
GW-48891-100812-SK-011	PMW-4I	42	WG	30-35	10/8/2012			Metals
GW-48891-030513-DR-032	TW8-13-9	AOC 1	WG	10-15	3/5/2013			Metals, VOCs
GW-48891-030513-DR-033	MW-4M	AOC 1	WG	5-10	3/5/2013			Metals, PCBs, VOCs, SVOCs
GW-48891-030513-DR-034	MW-5M	AOC 1	WG	6-11	3/5/2013			Metals, PCBs, VOCs, SVOCs
GW-48891-040513-SK-012	TW8-13-2	AOC 1	WG	14.85-19.85	4/11/2013			VOCs

TABLE 5.2

REC 7 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB7-8***
Sample Identification		***SO-48891-030408-NRS-003***
Sample Date		***3/4/2008***
Depth		***(2-6) ft BGS***
Sample Type		
	Units	
Volatile Organic Compounds (VOCs)		
1,1,1-Trichloroethane	ug/kg	ND(6.5)
1,1,2,2-Tetrachloroethane	ug/kg	ND(6.5)
1,1,2-Trichloroethane	ug/kg	ND(6.5)
1,1-Dichloroethane	ug/kg	ND(6.5)
1,1-Dichloroethene	ug/kg	ND(6.5)
1,2,4-Trichlorobenzene	ug/kg	ND(6.5)
1,2,4-Trimethylbenzene	ug/kg	ND(6.5)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(13)
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(6.5)
1,2-Dichlorobenzene	ug/kg	ND(6.5)
1,2-Dichloroethane	ug/kg	ND(6.5)
1,2-Dichloropropane	ug/kg	ND(6.5)
1,3,5-Trimethylbenzene	ug/kg	ND(6.5)
1,3-Dichlorobenzene	ug/kg	ND(6.5)
1,4-Dichlorobenzene	ug/kg	ND(6.5)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	ND(26)
2-Hexanone	ug/kg	ND(26)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(26)
Acetone	ug/kg	ND(26)
Benzene	ug/kg	ND(6.5)
Bromodichloromethane	ug/kg	ND(6.5)
Bromoform	ug/kg	ND(6.5)
Bromomethane (Methyl bromide)	ug/kg	ND(6.5)
Carbon disulfide	ug/kg	ND(6.5)
Carbon tetrachloride	ug/kg	ND(6.5)
Chlorobenzene	ug/kg	ND(6.5)
Chloroethane	ug/kg	ND(6.5)
Chloroform (Trichloromethane)	ug/kg	ND(6.5)
Chloromethane (Methyl chloride)	ug/kg	ND(6.5)
cis-1,2-Dichloroethene	ug/kg	ND(6.5)
cis-1,3-Dichloropropene	ug/kg	ND(6.5)
Cyclohexane	ug/kg	ND(13)
Dibromochloromethane	ug/kg	ND(6.5)
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(6.5)
Ethylbenzene	ug/kg	ND(6.5)
Isopropyl benzene	ug/kg	ND(6.5)
Methyl acetate	ug/kg	ND(13)
Methyl cyclohexane	ug/kg	ND(13)
Methyl tert butyl ether (MTBE)	ug/kg	ND(26)
Methylene chloride	ug/kg	ND(6.5)
Styrene	ug/kg	ND(6.5)
Tetrachloroethene	ug/kg	ND(6.5)
Toluene	ug/kg	0.42 J
trans-1,2-Dichloroethene	ug/kg	ND(6.5)
trans-1,3-Dichloropropene	ug/kg	ND(6.5)
Trichloroethene	ug/kg	ND(6.5)
Trichlorofluoromethane (CFC-11)	ug/kg	ND(6.5)
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(6.5)
Vinyl chloride	ug/kg	ND(6.5)
Xylenes (total)	ug/kg	ND(13)
Semi-Volatile Organic Compounds (SVOCs)		
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg	ND(290)
2,4,5-Trichlorophenol	ug/kg	ND(290)
2,4,6-Trichlorophenol	ug/kg	ND(290)
2,4-Dichlorophenol	ug/kg	ND(290)
2,4-Dimethylphenol	ug/kg	ND(290)
2,4-Dinitrophenol	ug/kg	ND(170)
2,4-Dinitrotoluene	ug/kg	ND(290)

TABLE 5.2

REC 7 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB7-8***
Sample Identification		***SO-48891-030408-NRS-003***
Sample Date		***3/4/2008***
Depth		***(2-6) ft BGS***
Sample Type		
	Units	
2,6-Dinitrotoluene	ug/kg	ND(290)
2-Chloronaphthalene	ug/kg	ND(290)
2-Chlorophenol	ug/kg	ND(290)
2-Methylnaphthalene	ug/kg	ND(290)
2-Methylphenol	ug/kg	ND(290)
2-Nitroaniline	ug/kg	ND(220)
2-Nitrophenol	ug/kg	ND(290)
3,3'-Dichlorobenzidine	ug/kg	ND(1800)
3-Nitroaniline	ug/kg	ND(220)
4,6-Dinitro-2-methylphenol	ug/kg	ND(170)
4-Bromophenyl phenyl ether	ug/kg	ND(290)
4-Chloro-3-methylphenol	ug/kg	ND(290)
4-Chloroaniline	ug/kg	ND(170)
4-Chlorophenyl phenyl ether	ug/kg	ND(290)
4-Methylphenol	ug/kg	ND(290)
4-Nitroaniline	ug/kg	ND(220)
4-Nitrophenol	ug/kg	ND(370)
Acenaphthene	ug/kg	ND(290)
Acenaphthylene	ug/kg	ND(290)
Acetophenone	ug/kg	ND(290)
Anthracene	ug/kg	ND(290)
Atrazine	ug/kg	ND(44)
Benzaldehyde	ug/kg	ND(290)
Benzo(a)anthracene	ug/kg	9.4 J
Benzo(a)pyrene	ug/kg	7.5 J
Benzo(b)fluoranthene	ug/kg	11 J
Benzo(g,h,i)perylene	ug/kg	ND(290)
Benzo(k)fluoranthene	ug/kg	ND(290)
Biphenyl (1,1-Biphenyl)	ug/kg	ND(290)
bis(2-Chloroethoxy)methane	ug/kg	ND(290)
bis(2-Chloroethyl)ether	ug/kg	ND(89)
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	ND(290)
Butyl benzylphthalate (BBP)	ug/kg	ND(290)
Caprolactam	ug/kg	ND(290)
Carbazole	ug/kg	ND(290)
Chrysene	ug/kg	8.5 J
Dibenz(a,h)anthracene	ug/kg	ND(290)
Dibenzofuran	ug/kg	ND(290)
Diethyl phthalate	ug/kg	ND(290)
Dimethyl phthalate	ug/kg	ND(290)
Di-n-butylphthalate (DBP)	ug/kg	ND(290)
Di-n-octyl phthalate (DnOP)	ug/kg	ND(290)
Fluoranthene	ug/kg	16 J
Fluorene	ug/kg	ND(290)
Hexachlorobenzene	ug/kg	ND(290)
Hexachlorobutadiene	ug/kg	ND(44)
Hexachlorocyclopentadiene	ug/kg	ND(290)
Hexachloroethane	ug/kg	ND(290)
Indeno(1,2,3-cd)pyrene	ug/kg	ND(290)
Isophorone	ug/kg	ND(290)
Naphthalene	ug/kg	ND(290)
Nitrobenzene	ug/kg	ND(290)
N-Nitrosodi-n-propylamine	ug/kg	ND(290)
N-Nitrosodiphenylamine	ug/kg	ND(290)
Pentachlorophenol	ug/kg	ND(170)
Phenanthrene	ug/kg	ND(290)
Phenol	ug/kg	ND(290)
Pyrene	ug/kg	13 J
Metals		
Aluminum	ug/kg	1470000

TABLE 5.2

REC 7 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB7-8***
Sample Identification		***SO-48891-030408-NRS-003***
Sample Date		***3/4/2008***
Depth		***(2-6) ft BGS***
Sample Type		
	Units	
Antimony	ug/kg	27 J
Arsenic	ug/kg	1800
Barium	ug/kg	8500
Beryllium	ug/kg	ND(180)
Cadmium	ug/kg	120
Calcium	ug/kg	49800000
Chromium	ug/kg	4300
Chromium III (trivalent)	ug/kg	4300
Chromium VI (hexavalent)	ug/kg	ND(890)
Cobalt	ug/kg	1700
Copper	ug/kg	4700
Iron	ug/kg	3890000
Lead - coarse fraction	ug/kg	3800 J
Lead - fine fraction	ug/kg	6000 J
Lead - total (calculated by fine/coarse fraction)	ug/kg	4800 J
Magnesium	ug/kg	9600000 J
Manganese	ug/kg	150000 J
Mercury	ug/kg	ND(44)
Nickel	ug/kg	4500
Potassium	ug/kg	290000 J
Selenium	ug/kg	180
Silver	ug/kg	ND(89) UJ
Sodium	ug/kg	673000 J
Thallium	ug/kg	ND(89)
Vanadium	ug/kg	5300
Zinc	ug/kg	17300
PCBs		
Aroclor-1016 (PCB-1016)	ug/kg	ND(37)
Aroclor-1221 (PCB-1221)	ug/kg	ND(37)
Aroclor-1232 (PCB-1232)	ug/kg	ND(37)
Aroclor-1242 (PCB-1242)	ug/kg	ND(37)
Aroclor-1248 (PCB-1248)	ug/kg	ND(37)
Aroclor-1254 (PCB-1254)	ug/kg	ND(37)
Aroclor-1260 (PCB-1260)	ug/kg	ND(37)

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilgram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 5.3

REC 8 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW8-1***
Sample Identification		***GW-48891-050208-EV-052***
Sample Date		***5/2/2008***
Sample Type		
	Units	
Volatile Organic Compounds (VOCs)		
1,2,4-Trimethylbenzene	ug/L	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	ND(1.0)
Benzene	ug/L	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)
Toluene	ug/L	ND(1.0)
Xylenes (total)	ug/L	ND(2.0)
Metals		
Cadmium	ug/L	ND(1.0)
Chromium	ug/L	3.0 J
Lead	ug/L	3.2

Notes:

Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 3.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.
ug/L - micrograms per kilogram

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.

The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

TABLE 5.4.1

LIFTS INVENTORY
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

FEATURE #	AREA/BUILDING	SUB-AREA DESCRIPTION	BAY	TYPE/ DESCRIPTION	NOTES/COMMENTS	CONFIRMATION THAT IT EXISTS	STATUS	ADD'T ASSESSMENT REQ'D?	Cylinder Pulled	Caisson Pumped	Caisson Filled	Concrete Removed	Inspected
235	Main Assembly	Assembly	H-10	Marmac Lift	Lift cylinder in concrete vault	Same Feature/Lift as #299	Removed	No	2/23/2012	2/27/2012 - 2/28/12	3/1/2012	3/6/2012	3/6/2012
238	Main Assembly	Trim	G-6	Marmac Lift	Surface mounted/chain driven (not in-ground)	No in-ground features	Removed	No	--	--	--	--	--
266	Main Assembly	Trim	C-10	Marmac Lift	Lift cylinder in concrete vault	Yes	Removed	No	2010	2/8/2012	2/9/2012	2/15/2012	2/15/2012
267	Main Assembly	Executive Garage	A5-4	dual post lift	removed and sampled in 2010, within REC 2 excavation area	existed	Removed	No	NA	NA	NA	NA	NA
272	Main Assembly	Assembly	B-12	Marmac Lift	Lift cylinder in concrete vault	Yes	Removed	No	2010	2/21/2012	3/1/2012	3/6/2012	3/6/2012
273	Main Assembly	Trim	A3-6	Marmac Lift	Lift cylinder in concrete vault	Yes	Removed	No	2010	2010	2/9/2012	2/15/2012	2/20/2012
274	Main Assembly	Trim	A3-7	Marmac Lift	Lift cylinder in concrete vault	Yes	Removed	No	2010	2010	2/9/2012	2/15/2012	2/20/2012
299	Main Assembly	Assembly	J-10	Marmac Lift	Lift cylinder in concrete vault	Same Feature/Lift as #235	Removed	No	2/23/2012	2/27/2012 - 2/28/12	3/1/2012	3/6/2012	3/6/2012
300	Main Assembly	Trim	D-5	Marmac Lift	Surface mounted/chain driven (not in-ground)	No in-ground features	Removed	No	--	--	--	--	--
--	Main Assembly	Engine Dress Up	A,B-3 to 4	Marmac Lift	Lift cylinder in concrete vault	yes	Removed	No	2010	3/12/2012	3/14/2012	3/15/2012	3/15/2012
268	Main Assembly	Engine Dress Up	A4-2/A4-4	Below-grade Hydraulic Lift	Former hydraulic vehicle lift	no information available	identified during Phase I through File Reviews	near/within REC 2 excavation	--	--	--	--	--
269	Main Assembly	Main Chassis	A6-8/A6-9	Below-grade Hydraulic Lift	Former hydraulic vehicle lift	no information available	identified during Phase I through File Reviews	near/within REC 2 excavation	--	--	--	--	--
303	Main Assembly	Engine Dress Up	A2-2	Below-grade Hydraulic Lift	Former hydraulic vehicle lift	no information available	identified during Phase I through File Reviews	yes	--	--	--	--	--
304	Main Assembly	Engine Dress Up	A4-2	Below-grade Hydraulic Lift	Former hydraulic vehicle lift	no information available	identified during Phase I through File Reviews	yes	--	--	--	--	--
305	Main Assembly	2nd Floor (Pilot Paint Shop)	G-7	Marmac Lift	Lift on 2nd floor, lift not in-ground	existed	removed	No. No in-ground features	--	--	--	--	--
306	Main Assembly	2rd Floor (Pilot Paint Shop)	H2-5	Marmac Lift	Lift on 2nd floor, lift not in-ground	existed	removed	No. No in-ground features	--	--	--	--	--
307	Main Assembly	T-Bird	C-3	Below-grade Hydraulic Lift	Former hydraulic vehicle lift	no information available	identified during Phase I through File Reviews	yes	--	--	--	--	--

TABLE 5.4.2

REC 12 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB12-5*	*SB12-6*	*SB12-7*	*SB12-8*	*SB12-9*	*SB12-10*	*SB12-11*	*SB12-12*
Sample Identification		*SO-48891-022813-DR-024*	*SO-48891-022813-DR-025*	*SO-48891-022813-DR-026*	*SO-48891-022813-DR-027*	*SO-48891-030113-DR-029*	*SO-48891-030113-DR-030*	*SO-48891-030113-DR-031*	*SO-48891-032813-SK-140*
Sample Date		*2/28/2013*	*2/28/2013*	*2/28/2013*	*2/28/2013*	*3/1/2013*	*3/1/2013*	*3/1/2013*	*3/28/2013*
Depth		*(9-10) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(10-12) ft BGS*	*(8-10) ft BGS*	*(3-5) ft BGS*	*(12.5) ft BGS*
Sample Type									
	Units								
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	ug/kg	ND(44)	ND(45)	230	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,1,2,2-Tetrachloroethane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,1,2-Trichloroethane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,1-Dichloroethane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,1-Dichloroethene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,2,4-Trichlorobenzene	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
1,2,4-Trimethylbenzene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
1,2-Dichlorobenzene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
1,2-Dichloroethane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,2-Dichloropropane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
1,3,5-Trimethylbenzene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
1,3-Dichlorobenzene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
1,4-Dichlorobenzene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	ND(670)	ND(680)	ND(650)	ND(680)	ND(660)	ND(670)	ND(680)	ND(660)
2-Hexanone	ug/kg	ND(2200)	ND(2300)	ND(2200)	ND(2300)	ND(2200)	ND(2200)	ND(2300)	ND(2200)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(2200)	ND(2300)	ND(2200)	ND(2300)	ND(2200)	ND(2200)	ND(2300)	ND(2200)
Acetone	ug/kg	ND(670)	ND(680)	ND(650)	ND(680)	ND(660)	ND(670)	ND(680)	ND(660)
Benzene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Bromodichloromethane	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
Bromoform	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
Bromomethane (Methyl bromide)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Carbon disulfide	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Carbon tetrachloride	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Chlorobenzene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Chloroethane	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Chloroform (Trichloromethane)	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Chloromethane (Methyl chloride)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
cis-1,2-Dichloroethene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
cis-1,3-Dichloropropene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Cyclohexane	ug/kg	ND(1100)	ND(1100)	ND(1000)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
Dibromochloromethane	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
Ethylbenzene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Isopropyl benzene	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Methyl acetate	ug/kg	ND(1100)	ND(1100)	ND(1000)	ND(1100)	30 J	33 J	ND(1100)	46 J
Methyl cyclohexane	ug/kg	ND(1100)	ND(1100)	ND(1000)	ND(1100)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Methylene chloride	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Naphthalene	ug/kg	--	--	--	--	--	--	--	--
Styrene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Tetrachloroethene	ug/kg	ND(44)	17 J	83	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Toluene	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
trans-1,2-Dichloroethene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
trans-1,3-Dichloropropene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Trichloroethene	ug/kg	ND(44)	ND(45)	ND(44)	ND(45)	ND(44)	ND(45)	ND(45)	ND(44)
Trichlorofluoromethane (CFC-11)	ug/kg	ND(89)	ND(90)	ND(87)	ND(90)	ND(88)	ND(89)	ND(91)	ND(88)
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(220)	ND(230)	ND(220)	ND(230)	ND(220)	ND(220)	ND(230)	ND(220)
Vinyl chloride	ug/kg	ND(35)	ND(36)	ND(35)	ND(36)	ND(35)	ND(36)	ND(36)	ND(35)
Xylenes (total)	ug/kg	ND(130)	ND(140)	ND(130)	ND(140)	ND(130)	ND(130)	ND(140)	ND(130)
Semi-Volatile Organic Compounds (SVOCs)									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2,4,5-Trichlorophenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2,4,6-Trichlorophenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2,4-Dichlorophenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)

TABLE 5.4.2

REC 12 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB12-5*	*SB12-6*	*SB12-7*	*SB12-8*	*SB12-9*	*SB12-10*	*SB12-11*	*SB12-12*
Sample Identification		*SO-48891-022813-DR-024*	*SO-48891-022813-DR-025*	*SO-48891-022813-DR-026*	*SO-48891-022813-DR-027*	*SO-48891-030113-DR-029*	*SO-48891-030113-DR-030*	*SO-48891-030113-DR-031*	*SO-48891-032813-SK-140*
Sample Date		*2/28/2013*	*2/28/2013*	*2/28/2013*	*2/28/2013*	*3/1/2013*	*3/1/2013*	*3/1/2013*	*3/28/2013*
Depth		*(9-10) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(10-12) ft BGS*	*(8-10) ft BGS*	*(3-5) ft BGS*	*(12.5) ft BGS*
Sample Type									
	Units								
2,4-Dimethylphenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2,4-Dinitrophenol	ug/kg	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(160)
2,4-Dinitrotoluene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2,6-Dinitrotoluene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2-Chloronaphthalene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2-Chlorophenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2-Methylnaphthalene	ug/kg	8.7 J	ND(300)	ND(310)	ND(300)	10 J	41 J	ND(300)	14 J
2-Methylphenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
2-Nitroaniline	ug/kg	ND(220)	ND(230)	ND(230)	ND(230)	ND(220)	ND(230)	ND(230)	ND(220)
2-Nitrophenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
3&4-Methylphenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
3,3'-Dichlorobenzidine	ug/kg	ND(1800)	ND(1800)	ND(1900)	ND(1800)	ND(1800)	ND(1800)	ND(1800)	ND(1800)
3-Nitroaniline	ug/kg	ND(220)	ND(230)	ND(230)	ND(230)	ND(220)	ND(230)	ND(230)	ND(220)
4,6-Dinitro-2-methylphenol	ug/kg	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(160)
4-Bromophenyl phenyl ether	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
4-Chloro-3-methylphenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
4-Chloroaniline	ug/kg	ND(220)	ND(230)	ND(230)	ND(230)	ND(220)	ND(230)	ND(230)	ND(220)
4-Chlorophenyl phenyl ether	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
4-Nitroaniline	ug/kg	ND(220)	ND(230)	ND(230)	ND(230)	ND(220)	ND(230)	ND(230)	ND(220)
4-Nitrophenol	ug/kg	ND(370)	ND(380)	ND(380)	ND(370)	ND(370)	ND(370)	ND(380)	ND(360)
Acenaphthene	ug/kg	11 J	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Acenaphthylene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Acetophenone	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Anthracene	ug/kg	22 J	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Atrazine	ug/kg	ND(45)	ND(46)	ND(46)	ND(45)	ND(45)	ND(45)	ND(46)	ND(44)
Benzaldehyde	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Benzo(a)anthracene	ug/kg	53 J	ND(300)	ND(310)	3.9 J	ND(300)	ND(300)	ND(300)	ND(290)
Benzo(a)pyrene	ug/kg	43 J	ND(300)	ND(310)	ND(300)	6.7 J	ND(300)	ND(300)	ND(290)
Benzo(b)fluoranthene	ug/kg	65 J	ND(300)	7.7 J	ND(300)	15 J	7.6 J	ND(300)	6.9 J
Benzo(g,h,i)perylene	ug/kg	38 J	ND(300)	ND(310)	ND(300)	26 J	24 J	ND(300)	7.7 J
Benzo(k)fluoranthene	ug/kg	21 J	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Biphenyl (1,1-Biphenyl)	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
bis(2-Chloroethoxy)methane	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
bis(2-Chloroethyl)ether	ug/kg	ND(90)	ND(91)	ND(93)	ND(91)	ND(89)	ND(90)	ND(92)	ND(88)
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	25 J	ND(300)	ND(310)	25 J	ND(300)	ND(300)	ND(300)	ND(290) UB
Butyl benzylphthalate (BBP)	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Caprolactam	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Carbazole	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Chrysene	ug/kg	53 J	ND(300)	8.3 J	5.3 J	22 J	22 J	ND(300)	ND(290)
Dibenz(a,h)anthracene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Dibenzofuran	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	11 J	ND(300)	9.0 J
Diethyl phthalate	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Dimethyl phthalate	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Di-n-butylphthalate (DBP)	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Di-n-octyl phthalate (DnOP)	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Fluoranthene	ug/kg	120 J	ND(300)	6.0 J	8.4 J	10 J	6.8 J	ND(300)	ND(290)
Fluorene	ug/kg	9.2 J	ND(300)	ND(310)	ND(300)	ND(300)	6.9 J	ND(300)	5.9 J
Hexachlorobenzene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Hexachlorobutadiene	ug/kg	ND(45)	ND(46)	ND(46)	ND(45)	ND(45)	ND(45)	ND(46)	ND(44)
Hexachlorocyclopentadiene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Hexachloroethane	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Indeno(1,2,3-cd)pyrene	ug/kg	27 J	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Isophorone	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Naphthalene	ug/kg	5.4 J	ND(300)	ND(310)	ND(300)	5.4 J	10 J	ND(300)	ND(290)
Nitrobenzene	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
N-Nitrosodi-n-propylamine	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
N-Nitrosodiphenylamine	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)
Pentachlorophenol	ug/kg	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(170)	ND(160)
Phenanthrene	ug/kg	98 J	ND(300)	5.7 J	6.8 J	22 J	32 J	ND(300)	19 J
Phenol	ug/kg	ND(300)	ND(300)	ND(310)	ND(300)	ND(300)	ND(300)	ND(300)	ND(290)

TABLE 5.4.2

REC 12 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB12-5*	*SB12-6*	*SB12-7*	*SB12-8*	*SB12-9*	*SB12-10*	*SB12-11*	*SB12-12*
Sample Identification		*SO-48891-022813-DR-024*	*SO-48891-022813-DR-025*	*SO-48891-022813-DR-026*	*SO-48891-022813-DR-027*	*SO-48891-030113-DR-029*	*SO-48891-030113-DR-030*	*SO-48891-030113-DR-031*	*SO-48891-032813-SK-140*
Sample Date		*2/28/2013*	*2/28/2013*	*2/28/2013*	*2/28/2013*	*3/1/2013*	*3/1/2013*	*3/1/2013*	*3/28/2013*
Depth		*(9-10) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(10-12) ft BGS*	*(8-10) ft BGS*	*(3-5) ft BGS*	*(12.5) ft BGS*
Sample Type									
	Units								
Pyrene	ug/kg	110 J	ND(300)	5.0 J	6.3 J	17 J	18 J	ND(300)	14 J
PCBs									
Aroclor-1016 (PCB-1016)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1221 (PCB-1221)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1232 (PCB-1232)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1242 (PCB-1242)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1248 (PCB-1248)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1254 (PCB-1254)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Aroclor-1260 (PCB-1260)	ug/kg	ND(37)	ND(37)	ND(38)	ND(37)	ND(37)	ND(37)	ND(38)	ND(36)
Total PCBs	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (TPH)(2)									
Total Petroleum Hydrocarbons (C10-C20)	ug/kg	--	--	--	--	--	--	--	40000 J
Total Petroleum Hydrocarbons (C20-C34)	ug/kg	--	--	--	--	--	--	--	63000 J
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	--	--	--	--	--	--	--	ND(4900) UB

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
(2) MDEQ draft re-design of Part 201 (September 2009)
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.

TABLE 5.6

REC 20 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW20-1***
Sample Identification		***GW-48891-102408-NRS-068***
Sample Date		***10/24/2008***
Sample Type		
	Units	
Volatile Organic Compounds (VOCs)		
1,1,1-Trichloroethane	ug/L	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)
1,2,4-Trimethylbenzene	ug/L	ND(1.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(25)
2-Hexanone	ug/L	ND(50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(50)
Acetone	ug/L	ND(25)
Benzene	ug/L	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0)
Bromoform	ug/L	ND(1.0)
Bromomethane (Methyl bromide)	ug/L	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)
Chloroethane	ug/L	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)
Chloromethane (Methyl chloride)	ug/L	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)
Cyclohexane	ug/L	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)
Isopropyl benzene	ug/L	ND(5.0)
Methyl acetate	ug/L	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)
Methylene chloride	ug/L	ND(5.0)
Naphthalene	ug/L	ND(5.0)
Styrene	ug/L	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0)
Toluene	ug/L	0.32 J
trans-1,2-Dichloroethene	ug/L	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)
Trichloroethene	ug/L	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)
Xylenes (total)	ug/L	ND(2.0)

Notes:

Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 4.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.
ug/L - micrograms per liter

TABLE 5.6

REC 20 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW20-1***
Sample Identification		***GW-48891-102408-NRS-068***
Sample Date		***10/24/2008***
Sample Type		
	Units	

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound

TABLE 5.7.1

REC 31 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB31-1*	*SB31-2*	*SB31-5*	*SB31-6*	*SB31-7*	*SB31-8*	*SB31-9*
Sample Identification		*SO-48891-031008-NRS-012*	*SO-48891-030113-DR-028*	*S-48891-061308-NRS-0139*	*SO-48891-032813-SK-136*	*SO-48891-032813-SK-137*	*SO-48891-032813-SK-138*	*SO-48891-032813-SK-139*
Sample Date		*3/10/2008*	*2/28/2013*	*6/13/2008*	*3/28/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(4-8) ft BGS*	*(9-10) ft BGS*	*(2-5) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*
Sample Type								
	Units							
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,1-Dichloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,1-Dichloroethene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2,4-Trimethylbenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(14)	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2-Dichloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,2-Dichloropropane	ug/kg	ND(7.2)	--	--	--	--	--	--
1,3,5-Trimethylbenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	4.6 J	--	--	--	--	--	--
2-Hexanone	ug/kg	ND(29)	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(29)	--	--	--	--	--	--
Acetone	ug/kg	30	--	--	--	--	--	--
Benzene	ug/kg	ND(7.2)	--	--	--	--	--	--
Bromodichloromethane	ug/kg	ND(7.2)	--	--	--	--	--	--
Bromoform	ug/kg	ND(7.2)	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/kg	ND(7.2)	--	--	--	--	--	--
Carbon disulfide	ug/kg	ND(7.2)	--	--	--	--	--	--
Carbon tetrachloride	ug/kg	ND(7.2)	--	--	--	--	--	--
Chlorobenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
Chloroethane	ug/kg	ND(7.2)	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/kg	ND(7.2)	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/kg	ND(7.2)	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/kg	ND(7.2)	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/kg	ND(7.2)	--	--	--	--	--	--
Cyclohexane	ug/kg	ND(14)	--	--	--	--	--	--
Dibromochloromethane	ug/kg	ND(7.2)	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(7.2)	--	--	--	--	--	--
Ethylbenzene	ug/kg	ND(7.2)	--	--	--	--	--	--
Isopropyl benzene	ug/kg	ND(7.2)	--	--	--	--	--	--
Methyl acetate	ug/kg	ND(14)	--	--	--	--	--	--
Methyl cyclohexane	ug/kg	ND(14)	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/kg	ND(29)	--	--	--	--	--	--
Methylene chloride	ug/kg	ND(7.2)	--	--	--	--	--	--
Styrene	ug/kg	ND(7.2)	--	--	--	--	--	--
Tetrachloroethene	ug/kg	ND(7.2)	--	--	--	--	--	--
Toluene	ug/kg	ND(7.2)	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/kg	ND(7.2)	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/kg	ND(7.2)	--	--	--	--	--	--
Trichloroethene	ug/kg	ND(7.2)	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/kg	ND(7.2)	--	--	--	--	--	--
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(7.2)	--	--	--	--	--	--
Vinyl chloride	ug/kg	ND(7.2)	--	--	--	--	--	--
Xylenes (total)	ug/kg	ND(14)	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg	ND(310)	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/kg	ND(310)	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/kg	ND(310)	--	--	--	--	--	--
2,4-Dichlorophenol	ug/kg	ND(310)	--	--	--	--	--	--
2,4-Dimethylphenol	ug/kg	ND(310)	--	--	--	--	--	--
2,4-Dinitrophenol	ug/kg	ND(170)	--	--	--	--	--	--

TABLE 5.7.1

REC 31 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB31-1*	*SB31-2*	*SB31-5*	*SB31-6*	*SB31-7*	*SB31-8*	*SB31-9*
Sample Identification		*SO-48891-031008-NRS-012*	*SO-48891-030113-DR-028*	*S-48891-061308-NRS-0139*	*SO-48891-032813-SK-136*	*SO-48891-032813-SK-137*	*SO-48891-032813-SK-138*	*SO-48891-032813-SK-139*
Sample Date		*3/10/2008*	*2/28/2013*	*6/13/2008*	*3/28/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(4-8) ft BGS*	*(9-10) ft BGS*	*(2-5) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*
Sample Type								
	Units							
2,4-Dinitrotoluene	ug/kg	ND(310)	--	--	--	--	--	--
2,6-Dinitrotoluene	ug/kg	ND(310)	--	--	--	--	--	--
2-Chloronaphthalene	ug/kg	ND(310)	--	--	--	--	--	--
2-Chlorophenol	ug/kg	ND(310)	--	--	--	--	--	--
2-Methylnaphthalene	ug/kg	ND(310)	--	--	--	--	--	--
2-Methylphenol	ug/kg	ND(310)	--	--	--	--	--	--
2-Nitroaniline	ug/kg	ND(230)	--	--	--	--	--	--
2-Nitrophenol	ug/kg	ND(310)	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/kg	ND(1900)	--	--	--	--	--	--
3-Nitroaniline	ug/kg	ND(230)	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/kg	ND(170)	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/kg	ND(310)	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/kg	ND(310)	--	--	--	--	--	--
4-Chloroaniline	ug/kg	ND(170)	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/kg	ND(310)	--	--	--	--	--	--
4-Methylphenol	ug/kg	ND(310)	--	--	--	--	--	--
4-Nitroaniline	ug/kg	ND(230)	--	--	--	--	--	--
4-Nitrophenol	ug/kg	ND(380)	--	--	--	--	--	--
Acenaphthene	ug/kg	ND(310)	--	--	--	--	--	--
Acenaphthylene	ug/kg	ND(310)	--	--	--	--	--	--
Acetophenone	ug/kg	ND(310)	--	--	--	--	--	--
Anthracene	ug/kg	ND(310)	--	--	--	--	--	--
Atrazine	ug/kg	ND(47)	--	--	--	--	--	--
Benzaldehyde	ug/kg	ND(310)	--	--	--	--	--	--
Benzo(a)anthracene	ug/kg	ND(310)	--	--	--	--	--	--
Benzo(a)pyrene	ug/kg	ND(310)	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/kg	ND(310)	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/kg	ND(310)	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/kg	ND(310)	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/kg	ND(310)	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/kg	ND(310)	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/kg	ND(93)	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	ND(310)	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/kg	ND(310)	--	--	--	--	--	--
Caprolactam	ug/kg	ND(310)	--	--	--	--	--	--
Carbazole	ug/kg	ND(310)	--	--	--	--	--	--
Chrysene	ug/kg	ND(310)	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/kg	ND(310)	--	--	--	--	--	--
Dibenzofuran	ug/kg	ND(310)	--	--	--	--	--	--
Diethyl phthalate	ug/kg	ND(310)	--	--	--	--	--	--
Dimethyl phthalate	ug/kg	ND(310)	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/kg	ND(310)	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/kg	ND(310)	--	--	--	--	--	--
Fluoranthene	ug/kg	ND(310)	--	--	--	--	--	--
Fluorene	ug/kg	ND(310)	--	--	--	--	--	--
Hexachlorobenzene	ug/kg	ND(310)	--	--	--	--	--	--
Hexachlorobutadiene	ug/kg	ND(47)	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/kg	ND(310)	--	--	--	--	--	--
Hexachloroethane	ug/kg	ND(310)	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/kg	ND(310)	--	--	--	--	--	--
Isophorone	ug/kg	ND(310)	--	--	--	--	--	--
Naphthalene	ug/kg	ND(310)	--	--	--	--	--	--
Nitrobenzene	ug/kg	ND(310)	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	ug/kg	ND(310)	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/kg	ND(310)	--	--	--	--	--	--
Pentachlorophenol	ug/kg	ND(170)	--	--	--	--	--	--
Phenanthrene	ug/kg	ND(310)	--	--	--	--	--	--
Phenol	ug/kg	ND(310)	--	--	--	--	--	--
Pyrene	ug/kg	ND(310)	--	--	--	--	--	--
Metals								

TABLE 5.7.1

REC 31 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB31-1*	*SB31-2*	*SB31-5*	*SB31-6*	*SB31-7*	*SB31-8*	*SB31-9*
Sample Identification		*SO-48891-031008-NRS-012*	*SO-48891-030113-DR-028*	*S-48891-061308-NRS-0139*	*SO-48891-032813-SK-136*	*SO-48891-032813-SK-137*	*SO-48891-032813-SK-138*	*SO-48891-032813-SK-139*
Sample Date		*3/10/2008*	*2/28/2013*	*6/13/2008*	*3/28/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(4-8) ft BGS*	*(9-10) ft BGS*	*(2-5) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*	*(5-) ft BGS*
Sample Type								
	Units							
Aluminum	ug/kg	5540000	--	--	-	-	-	-
Antimony	ug/kg	150 J	--	--	-	-	-	-
Arsenic	ug/kg	**18100 J[cd]**	4500	5500	9300 J	**12000[cd]**	6100	**12000[cd]**
Barium	ug/kg	65900	--	--	-	-	-	-
Beryllium	ug/kg	360	--	--	-	-	-	-
Cadmium	ug/kg	450	--	--	-	-	-	-
Calcium	ug/kg	35700000	--	--	-	-	-	-
Chromium	ug/kg	11200	--	--	-	-	-	-
Chromium III (trivalent)	ug/kg	11200	--	--	-	-	-	-
Chromium VI (hexavalent)	ug/kg	ND(930)	--	--	-	-	-	-
Cobalt	ug/kg	7300	--	--	-	-	-	-
Copper	ug/kg	27300 J	--	--	-	-	-	-
Iron	ug/kg	19700000	--	--	-	-	-	-
Lead - coarse fraction	ug/kg	11200	--	--	-	-	-	-
Lead - fine fraction	ug/kg	17000	--	--	-	-	-	-
Lead - total (calculated by fine/coarse fraction)	ug/kg	12600	--	--	-	-	-	-
Magnesium	ug/kg	17300000 J	--	--	-	-	-	-
Manganese	ug/kg	707000	--	--	-	-	-	-
Mercury	ug/kg	ND(47)	--	--	-	-	-	-
Nickel	ug/kg	18000	--	--	-	-	-	-
Potassium	ug/kg	653000	--	--	-	-	-	-
Selenium	ug/kg	610	--	--	-	-	-	-
Silver	ug/kg	ND(93)	--	--	-	-	-	-
Sodium	ug/kg	ND(93100)	--	--	-	-	-	-
Thallium	ug/kg	160	--	--	-	-	-	-
Vanadium	ug/kg	26100	--	--	-	-	-	-
Zinc	ug/kg	69500	--	--	-	-	-	-
PCBs								
Aroclor-1016 (PCB-1016)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/kg	ND(38)	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/kg	ND(38)	--	--	--	--	--	--

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

TABLE 5.7.2

REC 31 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW31-1***
Sample Identification		***GW-48891-042908-EV-023***
Sample Date		***4/29/2008***
Sample Type		
	Units	
Volatile Organic Compounds (VOCs)		
1,1,1-Trichloroethane	ug/L	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)
1,2,4-Trimethylbenzene	ug/L	ND(1.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(25)
2-Hexanone	ug/L	ND(50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(50)
Acetone	ug/L	ND(25)
Benzene	ug/L	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0) UJ
Bromoform	ug/L	ND(1.0)
Bromomethane (Methyl bromide)	ug/L	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)
Chloroethane	ug/L	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)
Chloromethane (Methyl chloride)	ug/L	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0) UJ
Cyclohexane	ug/L	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)
Isopropyl benzene	ug/L	ND(5.0)
Methyl acetate	ug/L	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)
Methylene chloride	ug/L	ND(5.0)
Styrene	ug/L	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0)
Toluene	ug/L	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)
Trichloroethene	ug/L	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)
Xylenes (total)	ug/L	ND(2.0)
Semi-Volatile Organic Compounds (SVOCs)		
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	ND(5.0)
2,4,5-Trichlorophenol	ug/L	ND(5.0)
2,4,6-Trichlorophenol	ug/L	ND(4.0)
2,4-Dichlorophenol	ug/L	ND(10)
2,4-Dimethylphenol	ug/L	ND(5.0)
2,4-Dinitrophenol	ug/L	ND(20)
2,4-Dinitrotoluene	ug/L	ND(5.0)
2,6-Dinitrotoluene	ug/L	ND(5.0)

TABLE 5.7.2

REC 31 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW31-1***
Sample Identification		***GW-48891-042908-EV-023***
Sample Date		***4/29/2008***
Sample Type		
	Units	
2-Chloronaphthalene	ug/L	ND(5.0)
2-Chlorophenol	ug/L	ND(5.0)
2-Methylnaphthalene	ug/L	ND(5.0)
2-Methylphenol	ug/L	ND(5.0)
2-Nitroaniline	ug/L	ND(20)
2-Nitrophenol	ug/L	ND(5.0)
3,3'-Dichlorobenzidine	ug/L	ND(1.0)
3-Nitroaniline	ug/L	ND(20)
4,6-Dinitro-2-methylphenol	ug/L	ND(20)
4-Bromophenyl phenyl ether	ug/L	ND(5.0)
4-Chloro-3-methylphenol	ug/L	ND(5.0)
4-Chloroaniline	ug/L	ND(10)
4-Chlorophenyl phenyl ether	ug/L	ND(5.0)
4-Methylphenol	ug/L	ND(5.0)
4-Nitroaniline	ug/L	ND(20)
4-Nitrophenol	ug/L	ND(20)
Acenaphthene	ug/L	ND(5.0)
Acenaphthylene	ug/L	ND(5.0)
Acetophenone	ug/L	ND(5.0)
Anthracene	ug/L	ND(5.0)
Atrazine	ug/L	ND(3.0)
Benzaldehyde	ug/L	ND(10)
Benzo(a)anthracene	ug/L	ND(1.0)
Benzo(a)pyrene	ug/L	ND(1.0)
Benzo(b)fluoranthene	ug/L	ND(1.0)
Benzo(g,h,i)perylene	ug/L	ND(1.0)
Benzo(k)fluoranthene	ug/L	ND(1.0)
Biphenyl (1,1-Biphenyl)	ug/L	ND(10)
bis(2-Chloroethoxy)methane	ug/L	ND(5.0)
bis(2-Chloroethyl)ether	ug/L	ND(1.0)
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	ND(5.0)
Butyl benzylphthalate (BBP)	ug/L	ND(5.0)
Caprolactam	ug/L	ND(10)
Carbazole	ug/L	ND(10)
Chrysene	ug/L	ND(1.0)
Dibenz(a,h)anthracene	ug/L	ND(2.0)
Dibenzofuran	ug/L	ND(4.0)
Diethyl phthalate	ug/L	ND(5.0)
Dimethyl phthalate	ug/L	ND(5.0)
Di-n-butylphthalate (DBP)	ug/L	ND(5.0)
Di-n-octyl phthalate (DnOP)	ug/L	ND(5.0)
Fluoranthene	ug/L	ND(1.0)
Fluorene	ug/L	ND(5.0)
Hexachlorobenzene	ug/L	ND(0.20)
Hexachlorobutadiene	ug/L	ND(1.0)
Hexachlorocyclopentadiene	ug/L	ND(5.0)
Hexachloroethane	ug/L	ND(5.0)
Indeno(1,2,3-cd)pyrene	ug/L	ND(2.0)
Isophorone	ug/L	ND(5.0)
Naphthalene	ug/L	ND(5.0)
Nitrobenzene	ug/L	ND(3.0)
N-Nitrosodi-n-propylamine	ug/L	ND(5.0)
N-Nitrosodiphenylamine	ug/L	ND(5.0)
Pentachlorophenol	ug/L	ND(5.0)
Phenanthrene	ug/L	ND(2.0)
Phenol	ug/L	ND(5.0)
Pyrene	ug/L	ND(5.0)
Metals		
Aluminum	ug/L	1840
Antimony	ug/L	0.22 J
Arsenic	ug/L	8.3

TABLE 5.7.2

REC 31 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW31-1***
Sample Identification		***GW-48891-042908-EV-023***
Sample Date		***4/29/2008***
Sample Type		
	Units	
Barium	ug/L	324
Beryllium	ug/L	ND(1.0)
Cadmium	ug/L	ND(1.0)
Calcium	ug/L	350000
Chromium	ug/L	6.3
Cobalt	ug/L	ND(7.0)
Copper	ug/L	6.1
Iron	ug/L	8670
Lead	ug/L	ND(3.0)
Magnesium	ug/L	85600
Manganese	ug/L	316
Mercury	ug/L	ND(0.20)
Nickel	ug/L	4.5 J
Potassium	ug/L	15800
Selenium	ug/L	ND(5.0)
Silver	ug/L	ND(0.20)
Sodium	ug/L	**3590000**[b]
Thallium	ug/L	ND(1.0)
Vanadium	ug/L	5.7
Zinc	ug/L	21.2
PCBs		
Aroclor-1016 (PCB-1016)	ug/L	ND(0.10)
Aroclor-1221 (PCB-1221)	ug/L	ND(0.10)
Aroclor-1232 (PCB-1232)	ug/L	ND(0.10)
Aroclor-1242 (PCB-1242)	ug/L	ND(0.10)
Aroclor-1248 (PCB-1248)	ug/L	ND(0.10)
Aroclor-1254 (PCB-1254)	ug/L	ND(0.10)
Aroclor-1260 (PCB-1260)	ug/L	ND(0.10)

Notes:
Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 4.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.
ug/L - micrograms per liter

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 5.9.1

REC 38 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB38-4*	*SB38-5*	*SB38-11*	*SB38-22*	*SB38-23*	*SB38-24*	*SB38-25*	*SB38-25*
Sample Identification		*S-48891-100908-NRS-063*	*S-48891-100908-NRS-064*	*S-48891-100908-NRS-065*	*S-48891-060409-EV-039*	*S-48891-060409-EV-040*	*S-48891-060409-EV-041*	*S-48891-060409-EV-042*	*S-48891-060409-EV-043*
Sample Date		*10/9/2008*	*10/9/2008*	*10/9/2008*	*6/4/2009*	*6/4/2009*	*6/4/2009*	*6/4/2009*	*6/4/2009*
Depth		*(1-3) ft BGS*	*(1-3) ft BGS*	*(1-2) ft BGS*	*(1-1.5) ft BGS*	*(1-1.5) ft BGS*	*(2.5-3) ft BGS*	*(5.5-6) ft BGS*	*(5.5-6) ft BGS*
Sample Type									*Duplicate*
	Units								
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	0.77 J	ND(2200)	13	ND(4.2)	ND(5.0)
1,1,2,2-Tetrachloroethane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,1,2-Trichloroethane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
1,1-Dichloroethane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
1,1-Dichloroethene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
1,2,4-Trichlorobenzene	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,2,4-Trimethylbenzene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	**15000[cd]**	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(220) UJ	ND(9.1)	ND(9.2)	ND(8.7)	ND(11000)	ND(9.1)	ND(8.5) UJ	ND(10) UJ
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
1,2-Dichlorobenzene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,2-Dichloroethane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
1,2-Dichloropropane	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
1,3,5-Trimethylbenzene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	**4400[cd]**	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,3-Dichlorobenzene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
1,4-Dichlorobenzene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2) UJ	ND(5.0) UJ
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	ND(670)	ND(18)	ND(18)	ND(17)	ND(33000)	ND(18)	ND(17)	ND(20)
2-Hexanone	ug/kg	ND(2200)	ND(18)	ND(18)	ND(17)	ND(110000)	ND(18)	ND(17)	ND(20)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(2200)	ND(18)	ND(18)	ND(17)	730 J	ND(18)	ND(17)	ND(20)
Acetone	ug/kg	ND(670)	ND(18)	ND(18)	ND(17)	ND(33000)	ND(18)	ND(17)	ND(20)
Benzene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Bromodichloromethane	ug/kg	ND(89) UJ	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2)	ND(5.0)
Bromoform	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2)	ND(5.0)
Bromomethane (Methyl bromide)	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000) UJ	ND(4.5)	ND(4.2)	ND(5.0)
Carbon disulfide	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
Carbon tetrachloride	ug/kg	ND(44) UJ	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Chlorobenzene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Chloroethane	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
Chloroform (Trichloromethane)	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Chloromethane (Methyl chloride)	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
cis-1,2-Dichloroethene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
cis-1,3-Dichloropropene	ug/kg	ND(44) UJ	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Cyclohexane	ug/kg	ND(1100)	ND(9.1)	ND(9.2)	ND(8.7)	ND(53000)	ND(9.1)	ND(8.5)	ND(10)
Dibromochloromethane	ug/kg	ND(44) UJ	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2)	ND(5.0)
Ethylbenzene	ug/kg	10 J	ND(4.5)	ND(4.6)	ND(4.4)	**770 J[d]**	ND(4.5)	ND(4.2)	ND(5.0)
Isopropyl benzene	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	540 J	ND(4.5)	ND(4.2)	ND(5.0)
Methyl acetate	ug/kg	ND(1100)	ND(9.1)	ND(9.2)	ND(8.7)	ND(53000)	ND(9.1)	ND(8.5)	ND(10)
Methyl cyclohexane	ug/kg	ND(1100)	ND(9.1)	ND(9.2)	ND(8.7)	550 J	ND(9.1)	ND(8.5)	ND(10)
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(18)	ND(18)	ND(17)	ND(11000)	ND(18)	ND(17)	ND(20)
Methylene chloride	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
Naphthalene	ug/kg	ND(220) UJ	ND(4.5) UJ	ND(4.6) UJ	--	--	--	--	--
Styrene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Tetrachloroethene	ug/kg	**600[c]**	ND(4.5)	4.9	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Toluene	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	0.26 J	ND(4.2)	ND(5.0)
trans-1,2-Dichloroethene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
trans-1,3-Dichloropropene	ug/kg	ND(44) UJ	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Trichloroethene	ug/kg	ND(44)	ND(4.5)	ND(4.6)	ND(4.4)	ND(2200)	ND(4.5)	ND(4.2)	ND(5.0)
Trichlorofluoromethane (CFC-11)	ug/kg	ND(89)	ND(4.5)	ND(4.6)	ND(4.4)	ND(4400)	ND(4.5)	ND(4.2)	ND(5.0)
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(220)	ND(4.5)	ND(4.6)	ND(4.4)	ND(11000)	ND(4.5)	ND(4.2)	ND(5.0)
Vinyl chloride	ug/kg	ND(36)	ND(4.5)	ND(4.6)	ND(4.4)	ND(1800)	ND(4.5)	ND(4.2)	ND(5.0)
Xylenes (total)	ug/kg	64 J	ND(9.1)	ND(9.2)	ND(8.7)	**2900 J[d]**	ND(9.1)	ND(8.5)	ND(10)
Metals									
Aluminum	ug/kg	5820000	1950000	5370000	--	--	--	--	--
Antimony	ug/kg	49 J	ND(170)	76 J	--	--	--	--	--
Arsenic	ug/kg	3900	3600	4700	--	--	--	--	--
Barium	ug/kg	39300	8600	37100	--	--	--	--	--

TABLE 5.9.1

REC 38 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB38-4*	*SB38-5*	*SB38-11*	*SB38-22*	*SB38-23*	*SB38-24*	*SB38-25*	*SB38-25*
Sample Identification		*S-48891-100908-NRS-063*	*S-48891-100908-NRS-064*	*S-48891-100908-NRS-065*	*S-48891-060409-EV-039*	*S-48891-060409-EV-040*	*S-48891-060409-EV-041*	*S-48891-060409-EV-042*	*S-48891-060409-EV-043*
Sample Date		*10/9/2008*	*10/9/2008*	*10/9/2008*	*6/4/2009*	*6/4/2009*	*6/4/2009*	*6/4/2009*	*6/4/2009*
Depth		*(1-3) ft BGS*	*(1-3) ft BGS*	*(1-2) ft BGS*	*(1-1.5) ft BGS*	*(1-1.5) ft BGS*	*(2.5-3) ft BGS*	*(5.5-6) ft BGS*	*(5.5-6) ft BGS*
Sample Type									*Duplicate*
	Units								
Beryllium	ug/kg	160 J	ND(170)	160 J	--	--	--	--	--
Cadmium	ug/kg	250	130	290	--	--	--	--	--
Calcium	ug/kg	48900000	47400000	48600000	--	--	--	--	--
Chromium	ug/kg	13400	5300	10200	--	--	--	--	--
Chromium III (trivalent)	ug/kg	13400	4900	10200	--	--	--	--	--
Chromium VI (hexavalent)	ug/kg	ND(890)	ND(860)	ND(890)	--	--	--	--	--
Cobalt	ug/kg	4800	2500	4800	--	--	--	--	--
Copper	ug/kg	11200	8200	13200	--	--	--	--	--
Iron	ug/kg	10700000	5730000	11300000	--	--	--	--	--
Lead	ug/kg	4600	3200	5100	--	--	--	--	--
Magnesium	ug/kg	15500000	9610000	14400000	--	--	--	--	--
Manganese	ug/kg	230000	208000	196000	--	--	--	--	--
Mercury	ug/kg	25 J	ND(43)	28 J	--	--	--	--	--
Nickel	ug/kg	13100	6300	13200	--	--	--	--	--
Potassium	ug/kg	1100000	306000 J	1060000	--	--	--	--	--
Selenium	ug/kg	260	150 J	260	--	--	--	--	--
Silver	ug/kg	89	ND(86)	20 J	--	--	--	--	--
Sodium	ug/kg	159000	80100 J	154000	--	--	--	--	--
Thallium	ug/kg	250	78 J	260	--	--	--	--	--
Vanadium	ug/kg	14100	7200	15400	--	--	--	--	--
Zinc	ug/kg	33300	21700	33500	--	--	--	--	--
PCBs									
Aroclor-1016 (PCB-1016)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/kg	ND(37)	ND(35)	ND(37)	--	--	--	--	--
Total PCBs	ug/kg	ND	ND	ND	--	--	--	--	--

Notes on Page 4

TABLE 5.9.1

REC 38 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB38-30*	*SB38-35*	*SB38-36*	*SB38-37*	*SB38-38*
Sample Identification		*S-48891-082809-DR-128*	*SO-48891-022013-DR-010*	*SO-48891-022013-DR-011*	*SO-48891-022013-DR-012*	*SO-48891-022013-DR-013*
Sample Date		*8/28/2009*	*2/20/2013*	*2/20/2013*	*2/20/2013*	*2/20/2013*
Depth		*(1-3) ft BGS*	*(5-7) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*
Sample Type						
	Units					
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,1,2,2-Tetrachloroethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,1,2-Trichloroethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,1-Dichloroethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,1-Dichloroethene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,2,4-Trichlorobenzene	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
1,2,4-Trimethylbenzene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(8.2)	ND(220)	ND(230)	ND(230)	ND(230)
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
1,2-Dichlorobenzene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
1,2-Dichloroethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,2-Dichloropropane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
1,3,5-Trimethylbenzene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
1,3-Dichlorobenzene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
1,4-Dichlorobenzene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	4.4 J	ND(670)	ND(690)	ND(680)	ND(680)
2-Hexanone	ug/kg	ND(16)	ND(2200)	ND(2300)	ND(2300)	ND(2300)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(16)	ND(2200)	ND(2300)	ND(2300)	ND(2300)
Acetone	ug/kg	24	ND(670)	ND(690)	ND(680)	ND(680)
Benzene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Bromodichloromethane	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
Bromoform	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
Bromomethane (Methyl bromide)	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Carbon disulfide	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Carbon tetrachloride	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Chlorobenzene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Chloroethane	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Chloroform (Trichloromethane)	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Chloromethane (Methyl chloride)	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
cis-1,2-Dichloroethene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
cis-1,3-Dichloropropene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Cyclohexane	ug/kg	ND(8.2)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
Dibromochloromethane	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
Ethylbenzene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Isopropyl benzene	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Methyl acetate	ug/kg	ND(8.2)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
Methyl cyclohexane	ug/kg	ND(8.2)	ND(1100)	ND(1100)	ND(1100)	ND(1100)
Methyl tert butyl ether (MTBE)	ug/kg	ND(16)	ND(220)	ND(230)	ND(230)	ND(230)
Methylene chloride	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Naphthalene	ug/kg	--	--	--	--	--
Styrene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Tetrachloroethene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Toluene	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
trans-1,2-Dichloroethene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
trans-1,3-Dichloropropene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Trichloroethene	ug/kg	ND(4.1)	ND(45)	ND(46)	ND(45)	ND(45)
Trichlorofluoromethane (CFC-11)	ug/kg	ND(4.1)	ND(90)	ND(91)	ND(91)	ND(90)
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(4.1)	ND(220)	ND(230)	ND(230)	ND(230)
Vinyl chloride	ug/kg	ND(4.1)	ND(36)	ND(37)	ND(36)	ND(36)
Xylenes (total)	ug/kg	ND(8.2)	ND(130)	ND(140)	ND(140)	ND(140)
Metals						
Aluminum	ug/kg	--	--	--	--	--
Antimony	ug/kg	--	--	--	--	--
Arsenic	ug/kg	--	--	--	--	--
Barium	ug/kg	--	--	--	--	--

TABLE 5.9.1

REC 38 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB38-30*	*SB38-35*	*SB38-36*	*SB38-37*	*SB38-38*
Sample Identification		*S-48891-082809-DR-128*	*SO-48891-022013-DR-010*	*SO-48891-022013-DR-011*	*SO-48891-022013-DR-012*	*SO-48891-022013-DR-013*
Sample Date		*8/28/2009*	*2/20/2013*	*2/20/2013*	*2/20/2013*	*2/20/2013*
Depth		*(1-3) ft BGS*	*(5-7) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*	*(3-5) ft BGS*
Sample Type						
	Units					
Beryllium	ug/kg	--	--	--	--	--
Cadmium	ug/kg	--	--	--	--	--
Calcium	ug/kg	--	--	--	--	--
Chromium	ug/kg	--	--	--	--	--
Chromium III (trivalent)	ug/kg	--	--	--	--	--
Chromium VI (hexavalent)	ug/kg	--	--	--	--	--
Cobalt	ug/kg	--	--	--	--	--
Copper	ug/kg	--	--	--	--	--
Iron	ug/kg	--	--	--	--	--
Lead	ug/kg	--	--	--	--	--
Magnesium	ug/kg	--	--	--	--	--
Manganese	ug/kg	--	--	--	--	--
Mercury	ug/kg	--	--	--	--	--
Nickel	ug/kg	--	--	--	--	--
Potassium	ug/kg	--	--	--	--	--
Selenium	ug/kg	--	--	--	--	--
Silver	ug/kg	--	--	--	--	--
Sodium	ug/kg	--	--	--	--	--
Thallium	ug/kg	--	--	--	--	--
Vanadium	ug/kg	--	--	--	--	--
Zinc	ug/kg	--	--	--	--	--
PCBs						
Aroclor-1016 (PCB-1016)	ug/kg	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/kg	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/kg	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/kg	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/kg	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/kg	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/kg	--	--	--	--	--
Total PCBs	ug/kg	--	--	--	--	--

Notes on Page 4

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 5.9.2

REC 38 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW38-4***	***TW38-11***
Sample Identification		***GW-48891-102208-NRS-037***	***GW-48891-102408-NRS-064***
Sample Date		***10/22/2008***	***10/24/2008***
Sample Type			
	Units		
Volatile Organic Compounds (VOCs)			
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	1.8
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	ND(5.0)
1,2,4-Trimethylbenzene	ug/L	ND(1.0)	ND(1.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	ND(25)	ND(25)
2-Hexanone	ug/L	ND(50)	ND(50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(50)	ND(50)
Acetone	ug/L	ND(25)	ND(25)
Benzene	ug/L	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	ND(1.0) UJ	ND(1.0)
Bromoform	ug/L	ND(1.0) UJ	ND(1.0)
Bromomethane (Methyl bromide)	ug/L	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0) UJ	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)	ND(1.0)
Chloromethane (Methyl chloride)	ug/L	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0) UJ	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0) UJ	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)
Isopropyl benzene	ug/L	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)
Naphthalene	ug/L	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0) UJ	0.53 J
Toluene	ug/L	ND(1.0)	0.22 J
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0) UJ	ND(1.0)
Trichloroethene	ug/L	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)
Xylenes (total)	ug/L	ND(2.0)	ND(2.0)

Notes:

Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 4.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.
ug/L - micrograms per liter

TABLE 5.9.2

REC 38 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***TW38-4***	***TW38-11***
Sample Identification		***GW-48891-102208-NRS-037***	***GW-48891-102408-NRS-064***
Sample Date		***10/22/2008***	***10/24/2008***
Sample Type			
	Units		

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.

The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.

For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.

UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifer		*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Intermediate*	*Intermediate*
Sample Location		*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-3I*	*PMW-3I*
Sample Identification		*GW-48891-042508-NRS-007*	*GW-48891-011712-BW-017*	*GW-48891-062712-JY-058*	*GW-48891-100812-SK-009*	*GW-48891-100812-SK-010*	*GW-48891-011712-BW-015*	*GW-48891-011712-BW-016*
Sample Date		*4/25/2008*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*10/8/2012*	*1/18/2012*	*1/18/2012*
Sample Type						*Duplicate*		*Duplicate*
	Units							
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
1,1,2-Trichloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
1,1-Dichloroethene	ug/L	ND(1.0)	--	--	--	--	--	--
1,2,4-Trichlorobenzene	ug/L	ND(5.0)	--	--	--	--	--	--
1,2,4-Trimethylbenzene	ug/L	ND(1.0)	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0)	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	ND(1.0)	--	--	--	--	--	--
1,2-Dichloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	ND(1.0)	--	--	--	--	--	--
1,3,5-Trimethylbenzene	ug/L	ND(1.0)	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	ND(1.0)	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	ND(1.0)	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	0.68 J	--	--	--	--	--	--
2-Hexanone	ug/L	ND(50)	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(50)	--	--	--	--	--	--
Acetone	ug/L	ND(25)	--	--	--	--	--	--
Benzene	ug/L	ND(1.0)	--	--	--	--	--	--
Bromodichloromethane	ug/L	ND(1.0)	--	--	--	--	--	--
Bromoform	ug/L	ND(1.0)	--	--	--	--	--	--
Bromomethane (Methyl bromide)	ug/L	ND(1.0)	--	--	--	--	--	--
Carbon disulfide	ug/L	ND(5.0)	--	--	--	--	--	--
Carbon tetrachloride	ug/L	ND(1.0)	--	--	--	--	--	--
Chlorobenzene	ug/L	ND(1.0)	--	--	--	--	--	--
Chloroethane	ug/L	ND(1.0)	--	--	--	--	--	--
Chloroform (Trichloromethane)	ug/L	ND(1.0)	--	--	--	--	--	--
Chloromethane (Methyl chloride)	ug/L	ND(1.0)	--	--	--	--	--	--
cis-1,2-Dichloroethene	ug/L	ND(1.0)	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	ND(1.0)	--	--	--	--	--	--
Cyclohexane	ug/L	ND(1.0)	--	--	--	--	--	--
Dibromochloromethane	ug/L	ND(1.0)	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	--	--	--	--	--	--
Ethylbenzene	ug/L	ND(1.0)	--	--	--	--	--	--
Isopropyl benzene	ug/L	ND(5.0)	--	--	--	--	--	--
Methyl acetate	ug/L	ND(10)	--	--	--	--	--	--
Methyl cyclohexane	ug/L	ND(1.0)	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)	--	--	--	--	--	--
Methylene chloride	ug/L	ND(5.0)	--	--	--	--	--	--
Styrene	ug/L	ND(1.0)	--	--	--	--	--	--
Tetrachloroethene	ug/L	ND(1.0) UJ	--	--	--	--	--	--
Toluene	ug/L	ND(1.0)	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	ND(1.0)	--	--	--	--	--	--
trans-1,3-Dichloropropene	ug/L	ND(1.0)	--	--	--	--	--	--
Trichloroethene	ug/L	ND(1.0)	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	--	--	--	--	--	--
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	--	--	--	--	--	--
Vinyl chloride	ug/L	ND(1.0)	--	--	--	--	--	--
Xylenes (total)	ug/L	ND(2.0)	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	ND(5.0)	--	--	--	--	--	--
2,4,5-Trichlorophenol	ug/L	ND(5.0)	--	--	--	--	--	--
2,4,6-Trichlorophenol	ug/L	ND(4.0)	--	--	--	--	--	--
2,4-Dichlorophenol	ug/L	ND(10)	--	--	--	--	--	--
2,4-Dimethylphenol	ug/L	ND(5.0)	--	--	--	--	--	--
2,4-Dinitrophenol	ug/L	ND(20)	--	--	--	--	--	--
2,4-Dinitrotoluene	ug/L	ND(5.0)	--	--	--	--	--	--

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifier		*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Intermediate*	*Intermediate*
Sample Location		*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-3I*	*PMW-3I*
Sample Identification		*GW-48891-042508-NRS-007*	*GW-48891-011712-BW-017*	*GW-48891-062712-JY-058*	*GW-48891-100812-SK-009*	*GW-48891-100812-SK-010*	*GW-48891-011712-BW-015*	*GW-48891-011712-BW-016*
Sample Date		*4/25/2008*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*10/8/2012*	*1/18/2012*	*1/18/2012*
Sample Type						*Duplicate*		*Duplicate*
	Units							
2,6-Dinitrotoluene	ug/L	ND(5.0)	--	--	--	--	--	--
2-Chloronaphthalene	ug/L	ND(5.0)	--	--	--	--	--	--
2-Chlorophenol	ug/L	ND(5.0)	--	--	--	--	--	--
2-Methylnaphthalene	ug/L	ND(5.0)	--	--	--	--	--	--
2-Methylphenol	ug/L	ND(5.0)	--	--	--	--	--	--
2-Nitroaniline	ug/L	ND(20)	--	--	--	--	--	--
2-Nitrophenol	ug/L	ND(5.0)	--	--	--	--	--	--
3,3'-Dichlorobenzidine	ug/L	ND(1.0)	--	--	--	--	--	--
3-Nitroaniline	ug/L	ND(20)	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	ND(20)	--	--	--	--	--	--
4-Bromophenyl phenyl ether	ug/L	ND(5.0)	--	--	--	--	--	--
4-Chloro-3-methylphenol	ug/L	ND(5.0)	--	--	--	--	--	--
4-Chloroaniline	ug/L	ND(10)	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L	ND(5.0)	--	--	--	--	--	--
4-Methylphenol	ug/L	ND(5.0)	--	--	--	--	--	--
4-Nitroaniline	ug/L	ND(20)	--	--	--	--	--	--
4-Nitrophenol	ug/L	ND(20)	--	--	--	--	--	--
Acenaphthene	ug/L	ND(5.0)	--	--	--	--	--	--
Acenaphthylene	ug/L	ND(5.0)	--	--	--	--	--	--
Acetophenone	ug/L	ND(5.0)	--	--	--	--	--	--
Anthracene	ug/L	ND(5.0)	--	--	--	--	--	--
Atrazine	ug/L	ND(3.0)	--	--	--	--	--	--
Benzaldehyde	ug/L	ND(10)	--	--	--	--	--	--
Benzo(a)anthracene	ug/L	ND(1.0)	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	ND(1.0)	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L	ND(1.0)	--	--	--	--	--	--
Benzo(g,h,i)perylene	ug/L	ND(1.0)	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L	ND(1.0)	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	ND(10)	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L	ND(5.0)	--	--	--	--	--	--
bis(2-Chloroethyl)ether	ug/L	ND(1.0)	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	ND(5.0)	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L	ND(5.0)	--	--	--	--	--	--
Caprolactam	ug/L	ND(10)	--	--	--	--	--	--
Carbazole	ug/L	ND(10)	--	--	--	--	--	--
Chrysene	ug/L	ND(1.0)	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L	ND(2.0)	--	--	--	--	--	--
Dibenzofuran	ug/L	ND(4.0)	--	--	--	--	--	--
Diethyl phthalate	ug/L	ND(5.0)	--	--	--	--	--	--
Dimethyl phthalate	ug/L	ND(5.0)	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L	ND(5.0)	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	ND(5.0)	--	--	--	--	--	--
Fluoranthene	ug/L	ND(1.0)	--	--	--	--	--	--
Fluorene	ug/L	ND(5.0)	--	--	--	--	--	--
Hexachlorobenzene	ug/L	ND(0.20)	--	--	--	--	--	--
Hexachlorobutadiene	ug/L	ND(1.0)	--	--	--	--	--	--
Hexachlorocyclopentadiene	ug/L	ND(5.0)	--	--	--	--	--	--
Hexachloroethane	ug/L	ND(5.0)	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	ND(2.0)	--	--	--	--	--	--
Isophorone	ug/L	ND(5.0)	--	--	--	--	--	--
Naphthalene	ug/L	ND(5.0)	--	--	--	--	--	--
Nitrobenzene	ug/L	ND(3.0)	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	ug/L	ND(5.0)	--	--	--	--	--	--
N-Nitrosodiphenylamine	ug/L	ND(5.0)	--	--	--	--	--	--
Pentachlorophenol	ug/L	ND(5.0)	--	--	--	--	--	--
Phenanthrene	ug/L	ND(2.0)	--	--	--	--	--	--
Phenol	ug/L	ND(5.0)	--	--	--	--	--	--
Pyrene	ug/L	ND(5.0)	--	--	--	--	--	--
Metals								
Aluminum	ug/L	ND(200)	44 J	26 J	ND(50)	ND(50)	58	52

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifer		*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Shallow*	*Intermediate*	*Intermediate*
Sample Location		*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-4S*	*PMW-3I*	*PMW-3I*
Sample Identification		*GW-48891-042508-NRS-007*	*GW-48891-011712-BW-017*	*GW-48891-062712-JY-058*	*GW-48891-100812-SK-009*	*GW-48891-100812-SK-010*	*GW-48891-011712-BW-015*	*GW-48891-011712-BW-016*
Sample Date		*4/25/2008*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*10/8/2012*	*1/18/2012*	*1/18/2012*
Sample Type						*Duplicate*		*Duplicate*
	Units							
Antimony	ug/L	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)
Arsenic	ug/L	ND(5.0)	9.1	5.5	4.6 J	4.8 J	1.7 J	1.6 J
Barium	ug/L	302	310	270	200	200	120	120
Beryllium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Calcium	ug/L	201000	200000	230000	220000	240000	130000	130000
Chromium	ug/L	ND(5.0)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Chromium III (trivalent)	ug/L	--	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Chromium VI (hexavalent)	ug/L	--	ND(10)	10	ND(10)	7.2 J	ND(10)	ND(10)
Cobalt	ug/L	ND(7.0)	0.079 J	0.079 J	0.064 J	0.060 J	0.077 J	0.080 J
Copper	ug/L	0.36 J	ND(4.0) UB	ND(4.0) UB	ND(4.0)	ND(4.0) UB	ND(4.0) UB	ND(4.0) UB
Iron	ug/L	6900 J	14000	11000	6700	7000	1500	1500
Lead	ug/L	ND(3.0)	0.28 J	0.85 J	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)
Magnesium	ug/L	54300	53000	55000	61000	64000	27000	27000
Manganese	ug/L	662	620	550	430	440	320	320
Mercury	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20) UB	ND(0.20) UB	ND(0.20)	ND(0.20)
Methyl mercury	ug/L	--	--	--	--	--	--	--
Nickel	ug/L	ND(20.0)	ND(20) UB	0.65 J	ND(20) UB	ND(20) UB	ND(20) UB	ND(20) UB
Potassium	ug/L	3290	2400	2600	3400	3500	3500	3600
Selenium	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Silver	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sodium	ug/L	207000	160000	220000	290000	300000	450000	460000
Thallium	ug/L	ND(1.0)	ND(2.0)	ND(2.0)	0.16 J	0.29 J	ND(2.0)	ND(2.0)
Vanadium	ug/L	1.7 J	ND(4.0)	0.45 J	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)
Zinc	ug/L	6.2 J	ND(50) UB	89	ND(50)	ND(50) UB	ND(50) UB	ND(50)
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/L	ND(0.10)	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	ND(0.10)	--	--	--	--	--	--
General Chemistry								
Chloride	ug/L	--	--	--	--	--	--	--

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TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifer		*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*
Sample Location		*PMW-3I*	*PMW-3I*	*PMW-4I*	*PMW-4I*	*PMW-4I*	*PMW-3I*	*PMW-4I*
Sample Identification		*GW-48891-062512-JY-041*	*GW-48891-100812-SK-007*	*GW-48891-011712-BW-018*	*GW-48891-062712-JY-059*	*GW-48891-100812-SK-011*	*GW-48891-042908-NRS-012*	*GW-48891-042508-NRS-008*
Sample Date		*6/25/2012*	*10/8/2012*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*4/29/2008*	*4/25/2008*
Sample Type								
	Units							
Volatile Organic Compounds (VOCs)								
1,1,1-Trichloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
1,2,4-Trimethylbenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene dibromide)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	--	--	--	--	--	ND(25)	0.79 J
2-Hexanone	ug/L	--	--	--	--	--	ND(50)	ND(50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	--	--	--	--	--	ND(50)	ND(50)
Acetone	ug/L	--	--	--	--	--	ND(25)	ND(25)
Benzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Bromodichloromethane	ug/L	--	--	--	--	--	ND(1.0) UJ	ND(1.0)
Bromoform	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Bromomethane (Methyl bromide)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Chloroethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Chloromethane (Methyl chloride)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	ND(1.0) UJ	ND(1.0)
Cyclohexane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Isopropyl benzene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Methyl acetate	ug/L	--	--	--	--	--	ND(10)	ND(10)
Methyl cyclohexane	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Methylene chloride	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Styrene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0) UJ
Toluene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Xylenes (total)	ug/L	--	--	--	--	--	ND(2.0)	ND(2.0)
Semi-Volatile Organic Compounds (SVOCs)								
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2,4,5-Trichlorophenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2,4,6-Trichlorophenol	ug/L	--	--	--	--	--	ND(4.0)	ND(4.0)
2,4-Dichlorophenol	ug/L	--	--	--	--	--	ND(10)	ND(10)
2,4-Dimethylphenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2,4-Dinitrophenol	ug/L	--	--	--	--	--	ND(20)	ND(20)
2,4-Dinitrotoluene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifer		*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*
Sample Location		*PMW-3I*	*PMW-3I*	*PMW-4I*	*PMW-4I*	*PMW-4I*	*PMW-3I*	*PMW-4I*
Sample Identification		*GW-48891-062512-JY-041*	*GW-48891-100812-SK-007*	*GW-48891-011712-BW-018*	*GW-48891-062712-JY-059*	*GW-48891-100812-SK-011*	*GW-48891-042908-NRS-012*	*GW-48891-042508-NRS-008*
Sample Date		*6/25/2012*	*10/8/2012*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*4/29/2008*	*4/25/2008*
Sample Type								
	Units							
2,6-Dinitrotoluene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2-Chloronaphthalene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2-Chlorophenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2-Methylnaphthalene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2-Methylphenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
2-Nitroaniline	ug/L	--	--	--	--	--	ND(20)	ND(20)
2-Nitrophenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
3,3'-Dichlorobenzidine	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
3-Nitroaniline	ug/L	--	--	--	--	--	ND(20)	ND(20)
4,6-Dinitro-2-methylphenol	ug/L	--	--	--	--	--	ND(20)	ND(20)
4-Bromophenyl phenyl ether	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
4-Chloro-3-methylphenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
4-Chloroaniline	ug/L	--	--	--	--	--	ND(10)	ND(10)
4-Chlorophenyl phenyl ether	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
4-Methylphenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
4-Nitroaniline	ug/L	--	--	--	--	--	ND(20)	ND(20)
4-Nitrophenol	ug/L	--	--	--	--	--	ND(20)	ND(20)
Acenaphthene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Acenaphthylene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Acetophenone	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Anthracene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Atrazine	ug/L	--	--	--	--	--	ND(3.0)	ND(3.0)
Benzaldehyde	ug/L	--	--	--	--	--	ND(10)	ND(10)
Benzo(a)anthracene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Benzo(a)pyrene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Benzo(b)fluoranthene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Benzo(g,h,i)perylene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Benzo(k)fluoranthene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Biphenyl (1,1-Biphenyl)	ug/L	--	--	--	--	--	ND(10)	ND(10)
bis(2-Chloroethoxy)methane	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
bis(2-Chloroethyl)ether	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Butyl benzylphthalate (BBP)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Caprolactam	ug/L	--	--	--	--	--	ND(10)	ND(10)
Carbazole	ug/L	--	--	--	--	--	ND(10)	ND(10)
Chrysene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Dibenz(a,h)anthracene	ug/L	--	--	--	--	--	ND(2.0)	ND(2.0)
Dibenzofuran	ug/L	--	--	--	--	--	ND(4.0)	ND(4.0)
Diethyl phthalate	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Dimethyl phthalate	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Di-n-butylphthalate (DBP)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Di-n-octyl phthalate (DnOP)	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Fluoranthene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Fluorene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Hexachlorobenzene	ug/L	--	--	--	--	--	ND(0.20)	ND(0.20)
Hexachlorobutadiene	ug/L	--	--	--	--	--	ND(1.0)	ND(1.0)
Hexachlorocyclopentadiene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Hexachloroethane	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Indeno(1,2,3-cd)pyrene	ug/L	--	--	--	--	--	ND(2.0)	ND(2.0)
Isophorone	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Naphthalene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Nitrobenzene	ug/L	--	--	--	--	--	ND(3.0)	ND(3.0)
N-Nitrosodi-n-propylamine	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
N-Nitrosodiphenylamine	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Pentachlorophenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Phenanthrene	ug/L	--	--	--	--	--	ND(2.0)	ND(2.0)
Phenol	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Pyrene	ug/L	--	--	--	--	--	ND(5.0)	ND(5.0)
Metals								
Aluminum	ug/L	42 J	**710[b]**	44 J	ND(50)	33 J	ND(200)	ND(200)

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifer		*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*	*Intermediate*
Sample Location		*PMW-3I*	*PMW-3I*	*PMW-4I*	*PMW-4I*	*PMW-4I*	*PMW-3I*	*PMW-4I*
Sample Identification		*GW-48891-062512-JY-041*	*GW-48891-100812-SK-007*	*GW-48891-011712-BW-018*	*GW-48891-062712-JY-059*	*GW-48891-100812-SK-011*	*GW-48891-042908-NRS-012*	*GW-48891-042508-NRS-008*
Sample Date		*6/25/2012*	*10/8/2012*	*1/18/2012*	*6/27/2012*	*10/8/2012*	*4/29/2008*	*4/25/2008*
Sample Type								
	Units							
Antimony	ug/L	ND(2.0)	ND(2.0)	ND(2.0) UB	ND(2.0)	ND(2.0)	0.14 J	0.15 J
Arsenic	ug/L	2.3 J	2.5 J	24	14	4.2 J	ND(5.0)	ND(5.0)
Barium	ug/L	110	150	200	170	180	186	136
Beryllium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cadmium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Calcium	ug/L	120000	180000	110000	110000	130000	133000	110000
Chromium	ug/L	ND(10)	ND(10) UB	ND(10)	ND(10)	ND(10)	ND(5.0)	ND(5.0)
Chromium III (trivalent)	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	--	--
Chromium VI (hexavalent)	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	2 J	--	--
Cobalt	ug/L	0.15 J	0.12 J	ND(20)	ND(20)	ND(20)	ND(7.0)	ND(7.0)
Copper	ug/L	ND(4.0) UB	8.4	ND(4.0) UB	ND(4.0)	ND(4.0) UB	ND(2.0)	ND(2.0)
Iron	ug/L	1400	2400	16000	9300	3500	2370	2590 J
Lead	ug/L	ND(3.0)	ND(3.0) UB	0.24 J	ND(3.0)	ND(3.0) UB	ND(3.0)	ND(3.0)
Magnesium	ug/L	27000	39000	37000	35000	40000	29900	34700
Manganese	ug/L	380	440	47 J	42 J	ND(65) UB	379	140
Mercury	ug/L	ND(0.20)	ND(0.20) UB	ND(0.20)	ND(0.20)	ND(0.20) UB	ND(0.20)	ND(0.20)
Methyl mercury	ug/L	--	--	--	--	--	--	--
Nickel	ug/L	0.68 J	ND(20) UB	0.27 J	ND(20)	ND(20) UB	ND(20.0)	ND(20.0)
Potassium	ug/L	2800	3300	1600	1500	1600	4970	1600
Selenium	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Silver	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sodium	ug/L	390000	430000	7200	8500	17000	480000	31500
Thallium	ug/L	ND(2.0)	0.34 J	ND(2.0) UB	ND(2.0)	0.17 J	ND(1.0)	ND(1.0)
Vanadium	ug/L	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)
Zinc	ug/L	ND(50) UB	ND(50) UB	ND(50) UB	ND(50) UB	ND(50) UB	ND(20.0)	ND(20.0)
PCBs								
Aroclor-1016 (PCB-1016)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1221 (PCB-1221)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1232 (PCB-1232)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1242 (PCB-1242)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1248 (PCB-1248)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1254 (PCB-1254)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
Aroclor-1260 (PCB-1260)	ug/L	--	--	--	--	--	ND(0.10)	ND(0.10)
General Chemistry								
Chloride	ug/L	--	--	--	--	--	--	--

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TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifier		*Shallow*	*Shallow*	*Shallow*	*Shallow*
Sample Location		*PMW-3*	*PMW-3*	*PMW-3*	*PMW-3*
Sample Identification		*GW-48891-050508-NRS-055*	*GW-48891-011712-BW-014*	*GW-48891-062512-JY-040*	*GW-48891-100812-SK-008*
Sample Date		*5/5/2008*	*1/18/2012*	*6/25/2012*	*10/8/2012*
Sample Type					
	Units				
Volatile Organic Compounds (VOCs)					
1,1,1-Trichloroethane	ug/L	ND(1.0) UJ	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0) UJ	--	--	--
1,1,2-Trichloroethane	ug/L	ND(1.0) UJ	--	--	--
1,1-Dichloroethane	ug/L	ND(1.0) UJ	--	--	--
1,1-Dichloroethene	ug/L	ND(1.0) UJ	--	--	--
1,2,4-Trichlorobenzene	ug/L	ND(5.0) UJ	--	--	--
1,2,4-Trimethylbenzene	ug/L	ND(1.0) UJ	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0) UJ	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0) UJ	--	--	--
1,2-Dichlorobenzene	ug/L	ND(1.0) UJ	--	--	--
1,2-Dichloroethane	ug/L	ND(1.0) UJ	--	--	--
1,2-Dichloropropane	ug/L	ND(1.0) UJ	--	--	--
1,3,5-Trimethylbenzene	ug/L	ND(1.0) UJ	--	--	--
1,3-Dichlorobenzene	ug/L	ND(1.0) UJ	--	--	--
1,4-Dichlorobenzene	ug/L	ND(1.0) UJ	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	3.3 J	--	--	--
2-Hexanone	ug/L	ND(50) UJ	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	0.52 J	--	--	--
Acetone	ug/L	18 J	--	--	--
Benzene	ug/L	ND(1.0) UJ	--	--	--
Bromodichloromethane	ug/L	ND(1.0) UJ	--	--	--
Bromoform	ug/L	ND(1.0) UJ	--	--	--
Bromomethane (Methyl bromide)	ug/L	ND(1.0) UJ	--	--	--
Carbon disulfide	ug/L	0.48 J	--	--	--
Carbon tetrachloride	ug/L	ND(1.0) UJ	--	--	--
Chlorobenzene	ug/L	ND(1.0) UJ	--	--	--
Chloroethane	ug/L	ND(1.0) UJ	--	--	--
Chloroform (Trichloromethane)	ug/L	ND(1.0) UJ	--	--	--
Chloromethane (Methyl chloride)	ug/L	ND(1.0) UJ	--	--	--
cis-1,2-Dichloroethene	ug/L	ND(1.0) UJ	--	--	--
cis-1,3-Dichloropropene	ug/L	ND(1.0) UJ	--	--	--
Cyclohexane	ug/L	ND(1.0) UJ	--	--	--
Dibromochloromethane	ug/L	ND(1.0) UJ	--	--	--
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0) UJ	--	--	--
Ethylbenzene	ug/L	ND(1.0) UJ	--	--	--
Isopropyl benzene	ug/L	ND(5.0) UJ	--	--	--
Methyl acetate	ug/L	2.2 J	--	--	--
Methyl cyclohexane	ug/L	ND(1.0) UJ	--	--	--
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0) UJ	--	--	--
Methylene chloride	ug/L	ND(5.0) UJ	--	--	--
Styrene	ug/L	ND(1.0) UJ	--	--	--
Tetrachloroethene	ug/L	ND(1.0) UJ	--	--	--
Toluene	ug/L	0.22 J	--	--	--
trans-1,2-Dichloroethene	ug/L	ND(1.0) UJ	--	--	--
trans-1,3-Dichloropropene	ug/L	ND(1.0) UJ	--	--	--
Trichloroethene	ug/L	ND(1.0) UJ	--	--	--
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0) UJ	--	--	--
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0) UJ	--	--	--
Vinyl chloride	ug/L	ND(1.0) UJ	--	--	--
Xylenes (total)	ug/L	ND(2.0) UJ	--	--	--
Semi-Volatile Organic Compounds (SVOCs)					
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	ND(5.0) UJ	--	--	--
2,4,5-Trichlorophenol	ug/L	ND(5.0) UJ	--	--	--
2,4,6-Trichlorophenol	ug/L	ND(4.0) UJ	--	--	--
2,4-Dichlorophenol	ug/L	ND(10) UJ	--	--	--
2,4-Dimethylphenol	ug/L	ND(5.0) UJ	--	--	--
2,4-Dinitrophenol	ug/L	ND(20) UJ	--	--	--
2,4-Dinitrotoluene	ug/L	ND(5.0) UJ	--	--	--

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifier		*Shallow*	*Shallow*	*Shallow*	*Shallow*
Sample Location		*PMW-3*	*PMW-3*	*PMW-3*	*PMW-3*
Sample Identification		*GW-48891-050508-NRS-055*	*GW-48891-011712-BW-014*	*GW-48891-062512-JY-040*	*GW-48891-100812-SK-008*
Sample Date		*5/5/2008*	*1/18/2012*	*6/25/2012*	*10/8/2012*
Sample Type					
	Units				
2,6-Dinitrotoluene	ug/L	ND(5.0) UJ	--	--	--
2-Chloronaphthalene	ug/L	ND(5.0) UJ	--	--	--
2-Chlorophenol	ug/L	ND(5.0) UJ	--	--	--
2-Methylnaphthalene	ug/L	ND(5.0) UJ	--	--	--
2-Methylphenol	ug/L	ND(5.0) UJ	--	--	--
2-Nitroaniline	ug/L	ND(20) UJ	--	--	--
2-Nitrophenol	ug/L	ND(5.0) UJ	--	--	--
3,3'-Dichlorobenzidine	ug/L	ND(1.0) UJ	--	--	--
3-Nitroaniline	ug/L	ND(20) UJ	--	--	--
4,6-Dinitro-2-methylphenol	ug/L	ND(20) UJ	--	--	--
4-Bromophenyl phenyl ether	ug/L	ND(5.0) UJ	--	--	--
4-Chloro-3-methylphenol	ug/L	ND(5.0) UJ	--	--	--
4-Chloroaniline	ug/L	ND(10) UJ	--	--	--
4-Chlorophenyl phenyl ether	ug/L	ND(5.0) UJ	--	--	--
4-Methylphenol	ug/L	5.0 J	--	--	--
4-Nitroaniline	ug/L	ND(20) UJ	--	--	--
4-Nitrophenol	ug/L	ND(20) UJ	--	--	--
Acenaphthene	ug/L	ND(5.0) UJ	--	--	--
Acenaphthylene	ug/L	ND(5.0) UJ	--	--	--
Acetophenone	ug/L	ND(5.0) UJ	--	--	--
Anthracene	ug/L	ND(5.0) UJ	--	--	--
Atrazine	ug/L	ND(3.0) UJ	--	--	--
Benzaldehyde	ug/L	ND(10) UJ	--	--	--
Benzo(a)anthracene	ug/L	ND(1.0) UJ	--	--	--
Benzo(a)pyrene	ug/L	ND(1.0) UJ	--	--	--
Benzo(b)fluoranthene	ug/L	ND(1.0) UJ	--	--	--
Benzo(g,h,i)perylene	ug/L	ND(1.0) UJ	--	--	--
Benzo(k)fluoranthene	ug/L	ND(1.0) UJ	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L	ND(10) UJ	--	--	--
bis(2-Chloroethoxy)methane	ug/L	ND(5.0) UJ	--	--	--
bis(2-Chloroethyl)ether	ug/L	ND(1.0) UJ	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	ND(5.0) UJ	--	--	--
Butyl benzylphthalate (BBP)	ug/L	ND(5.0) UJ	--	--	--
Caprolactam	ug/L	ND(10) UJ	--	--	--
Carbazole	ug/L	ND(10) UJ	--	--	--
Chrysene	ug/L	ND(1.0) UJ	--	--	--
Dibenz(a,h)anthracene	ug/L	ND(2.0) UJ	--	--	--
Dibenzofuran	ug/L	ND(4.0) UJ	--	--	--
Diethyl phthalate	ug/L	ND(5.0) UJ	--	--	--
Dimethyl phthalate	ug/L	ND(5.0) UJ	--	--	--
Di-n-butylphthalate (DBP)	ug/L	ND(5.0) UJ	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L	ND(5.0) UJ	--	--	--
Fluoranthene	ug/L	ND(1.0) UJ	--	--	--
Fluorene	ug/L	ND(5.0) UJ	--	--	--
Hexachlorobenzene	ug/L	ND(0.20) UJ	--	--	--
Hexachlorobutadiene	ug/L	ND(1.0) UJ	--	--	--
Hexachlorocyclopentadiene	ug/L	ND(5.0) UJ	--	--	--
Hexachloroethane	ug/L	ND(5.0) UJ	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L	ND(2.0) UJ	--	--	--
Isophorone	ug/L	ND(5.0) UJ	--	--	--
Naphthalene	ug/L	ND(5.0) UJ	--	--	--
Nitrobenzene	ug/L	ND(3.0) UJ	--	--	--
N-Nitrosodi-n-propylamine	ug/L	ND(5.0) UJ	--	--	--
N-Nitrosodiphenylamine	ug/L	ND(5.0) UJ	--	--	--
Pentachlorophenol	ug/L	ND(5.0) UJ	--	--	--
Phenanthrene	ug/L	ND(2.0) UJ	--	--	--
Phenol	ug/L	ND(5.0) UJ	--	--	--
Pyrene	ug/L	ND(5.0) UJ	--	--	--
Metals					
Aluminum	ug/L	255	1600	**4600[b]**	2000

TABLE 5.12

REC 42 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Aquifier		*Shallow*	*Shallow*	*Shallow*	*Shallow*
Sample Location		*PMW-3*	*PMW-3*	*PMW-3*	*PMW-3*
Sample Identification		*GW-48891-050508-NRS-055*	*GW-48891-011712-BW-014*	*GW-48891-062512-JY-040*	*GW-48891-100812-SK-008*
Sample Date		*5/5/2008*	*1/18/2012*	*6/25/2012*	*10/8/2012*
Sample Type					
	Units				
Antimony	ug/L	0.31 J	ND(2.0) UB	0.60 J	0.40 J
Arsenic	ug/L	14.6	33	51	**69[bc]**
Barium	ug/L	465	270	320	270
Beryllium	ug/L	ND(1.0)	ND(1.0)	0.25 J	ND(1.0)
Cadmium	ug/L	1.5	ND(1.0)	ND(1.0)	ND(1.0)
Calcium	ug/L	160000	190000	180000	190000
Chromium	ug/L	5.6	4.0 J	8.0 J	ND(10) UB
Chromium III (trivalent)	ug/L	--	ND(10)	8 J	ND(10)
Chromium VI (hexavalent)	ug/L	--	ND(10)	ND(50)	4.6 J
Cobalt	ug/L	6.1 J	2.8 J	4.1 J	3.6 J
Copper	ug/L	ND(2.0)	ND(5.2) UB	8.5	5.4
Iron	ug/L	24400	57000	52000	57000
Lead	ug/L	ND(3.0)	1.8 J	4.3	2.0 J
Magnesium	ug/L	43100	82000	81000	75000
Manganese	ug/L	**1940[b]**	1100	1100	1600
Mercury	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20) UB
Methyl mercury	ug/L	--	--	--	--
Nickel	ug/L	10.8 J	6.8 J	12 J	11 J
Potassium	ug/L	6290	4600	4300	4000
Selenium	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	0.65 J
Silver	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sodium	ug/L	141000	120000	100000	100000
Thallium	ug/L	ND(1.0)	ND(2.0)	ND(2.0)	0.29 J
Vanadium	ug/L	5.7	4.0	9.7	4.6
Zinc	ug/L	6.2 J	ND(50) UB	ND(70) UB	ND(50) UB
PCBs					
Aroclor-1016 (PCB-1016)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1221 (PCB-1221)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1232 (PCB-1232)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1242 (PCB-1242)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1248 (PCB-1248)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1254 (PCB-1254)	ug/L	ND(0.10) UJ	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	ND(0.10) UJ	--	--	--
General Chemistry					
Chloride	ug/L	--	--	--	--

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Notes:
Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 4.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.
ug/L - micrograms per kilograms

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.
For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 5.13

INDUSTRIAL PROCESS SEWER INVESTIGATION
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Setup	*Start Manhole/Node*	*End Manhole/Node*	*Length of Survey (ft)*	*Further Investigation Recommended*	*Comments*
19	Executive Garage	NA	53.5	No	Survey abandoned [unable to continue pipe needs to be cleaned]
20	Executive Garage	NA	8.9	No	Survey abandoned [unable to continue pipe needs to be cleaned]
25	EG-10-A5	EG-6-A5	185	Yes	134.9 ft - Cracks multiple at joint 10 to 02 o'clock; Discoloration, lateral cracking
26	EG-6-A5	NA	140	No	Survey abandoned [unable to proceed, appears to be fence posts driven into the pipe
27	A5 D-Door	EG-10-A5	270	No	None

TABLE 5.14

REC 46 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB46-3***	***SB46-3***
Sample Identification		***S-48891-100208-NRS-024***	***S-48891-100208-NRS-025***
Sample Date		***10/2/2008***	***10/2/2008***
Depth		***(2-3) ft BGS***	***(2-3) ft BGS***
Sample Type			***Duplicate***
	Units		
Metals			
Aluminum	ug/kg	6110000	--
Antimony	ug/kg	120 J	--
Arsenic	ug/kg	5600	9600
Barium	ug/kg	46600	--
Beryllium	ug/kg	160 J	--
Cadmium	ug/kg	190	--
Calcium	ug/kg	53600000	--
Chromium	ug/kg	12700	--
Chromium III (trivalent)	ug/kg	12300	--
Chromium VI (hexavalent)	ug/kg	370 J	--
Cobalt	ug/kg	6300	--
Copper	ug/kg	13900	--
Iron	ug/kg	14100000	--
Lead	ug/kg	6900	--
Magnesium	ug/kg	18500000	--
Manganese	ug/kg	308000	--
Mercury	ug/kg	ND(45)	--
Nickel	ug/kg	18400	--
Potassium	ug/kg	1350000	--
Selenium	ug/kg	650	--
Silver	ug/kg	ND(90)	--
Sodium	ug/kg	ND(90300)	--
Thallium	ug/kg	350	--
Vanadium	ug/kg	18300	--
Zinc	ug/kg	37100	--
Herbicides			
2,4,5-TP (Silvex)	ug/kg	ND(23)	ND(23)
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/kg	ND(90)	ND(90)
Pesticides			
4,4'-DDD	ug/kg	ND(19)	ND(9.6)
4,4'-DDE	ug/kg	ND(19)	ND(9.6)
4,4'-DDT	ug/kg	ND(19)	ND(9.6)
Aldrin	ug/kg	ND(19)	ND(9.6)
alpha-BHC	ug/kg	ND(19)	ND(9.6)
alpha-Chlordane	ug/kg	ND(19)	ND(9.6)
beta-BHC	ug/kg	ND(19)	ND(9.6)
delta-BHC	ug/kg	ND(19)	ND(9.6)
Dieldrin	ug/kg	ND(19)	ND(9.6)
Endosulfan I	ug/kg	ND(19)	ND(9.6)
Endosulfan II	ug/kg	ND(19)	ND(9.6)
Endosulfan sulfate	ug/kg	ND(19)	ND(9.6)
Endrin	ug/kg	ND(19)	ND(9.6)
Endrin aldehyde	ug/kg	ND(19)	ND(9.6)
Endrin ketone	ug/kg	ND(19)	ND(9.6)
gamma-BHC (lindane)	ug/kg	ND(19)	ND(9.6)
gamma-Chlordane	ug/kg	ND(19)	ND(9.6)
Heptachlor	ug/kg	ND(19)	ND(9.6)
Heptachlor epoxide	ug/kg	ND(19)	ND(9.6)
Methoxychlor	ug/kg	ND(37)	ND(19)
Toxaphene	ug/kg	ND(760)	ND(380)

TABLE 5.14

REC 46 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB46-3***	***SB46-3***
Sample Identification		***S-48891-100208-NRS-024***	***S-48891-100208-NRS-025***
Sample Date		***10/2/2008***	***10/2/2008***
Depth		***(2-3) ft BGS***	***(2-3) ft BGS***
Sample Type			***Duplicate***
	Units		

Notes:

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

TABLE 5.15

REC 48 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		***SB48-3***
Sample Identification		***SO-48891-032408-NRS-052***
Sample Date		***3/24/2008***
Depth		***(6-8) ft BGS***
Sample Type		
	Units	
Volatile Organic Compounds (VOCs)		
1,2,4-Trimethylbenzene	ug/kg	ND(4.1)
1,3,5-Trimethylbenzene	ug/kg	ND(4.1)
Benzene	ug/kg	0.24 J
Ethylbenzene	ug/kg	ND(4.1)
Methyl tert butyl ether (MTBE)	ug/kg	ND(17)
Toluene	ug/kg	0.94 J
Xylenes (total)	ug/kg	ND(8.3)
Semi-Volatile Organic Compounds (SVOCs)		
2-Methylnaphthalene	ug/kg	ND(300)
Acenaphthene	ug/kg	ND(300)
Acenaphthylene	ug/kg	ND(300)
Anthracene	ug/kg	ND(300)
Benzo(a)anthracene	ug/kg	ND(300)
Benzo(a)pyrene	ug/kg	ND(300)
Benzo(b)fluoranthene	ug/kg	ND(300)
Benzo(g,h,i)perylene	ug/kg	ND(300)
Benzo(k)fluoranthene	ug/kg	ND(300)
Chrysene	ug/kg	ND(300)
Dibenz(a,h)anthracene	ug/kg	ND(300)
Fluoranthene	ug/kg	ND(300)
Fluorene	ug/kg	ND(300)
Indeno(1,2,3-cd)pyrene	ug/kg	ND(300)
Naphthalene	ug/kg	ND(300)
Phenanthrene	ug/kg	ND(300)
Pyrene	ug/kg	ND(300)
Total Petroleum Hydrocarbons (TPH)		
Ethylene glycol	ug/kg	ND(28000)

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

TABLE 5.16.1

AOC 1 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB1-13M*	*SB8-13-8*	*SB8-13-9*	*SB8-13-10*	*SB8-13M*	*SB8-13M*	*SB8-13M*	*SB8-13-1*	*SB8-13-2*
Sample Identification		*S-48891-010913-EM-038*	*SO-48891-022013-DR-007*	*SO-48891-022013-DR-008*	*SO-48891-022013-DR-009*	*S-48891-011013-EM-039*	*S-48891-011013-EM-040*	*SO-48891-032813-SK-135*	*SO-48891-032813-SK-134*	*SO-48891-032813-SK-133*
Sample Date		*1/9/2013*	*2/20/2013*	*2/20/2013*	*2/20/2013*	*1/10/2013*	*1/10/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(6.5-7.5) ft BGS*	*(10-12) ft BGS*	*(11-13) ft BGS*	*(10-12) ft BGS*	*(11-12) ft BGS*	*(13-14) ft BGS*	*(11-) ft BGS*	*(12.4) ft BGS*	*(16) ft BGS*
Sample Type										
	Units									
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,1,2,2-Tetrachloroethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,1,2-Trichloroethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,1-Dichloroethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,1-Dichloroethene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,2,4-Trichlorobenzene	ug/kg	17 J	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
1,2,4-Trimethylbenzene	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	**8800000**[cdefhi]	520	--	ND(90)	ND(96)
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
1,2-Dichlorobenzene	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
1,2-Dichloroethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,2-Dichloropropane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
1,3,5-Trimethylbenzene	ug/kg	ND(87) UB	ND(90)	ND(93)	ND(89)	**1800000**[cdefhi]	120	--	ND(90)	ND(96)
1,3-Dichlorobenzene	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
1,4-Dichlorobenzene	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	ND(650)	ND(680)	ND(700)	ND(670)	ND(1800000)	ND(710)	--	ND(680)	ND(720)
2-Hexanone	ug/kg	ND(2200)	ND(2300)	ND(2300)	ND(2200)	ND(6000000)	ND(2400)	--	ND(2300)	ND(2400)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	ND(2200)	ND(2300)	ND(2300)	ND(2200)	ND(6000000)	ND(2400)	--	ND(2300)	ND(2400)
Acetone	ug/kg	ND(650) UB	ND(680)	ND(700)	ND(670)	ND(1800000)	ND(710)	--	ND(680)	ND(720)
Benzene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Bromodichloromethane	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
Bromoform	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
Bromomethane (Methyl bromide)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Carbon disulfide	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Carbon tetrachloride	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Chlorobenzene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Chloroethane	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Chloroform (Trichloromethane)	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Chloromethane (Methyl chloride)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
cis-1,2-Dichloroethene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
cis-1,3-Dichloropropene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Cyclohexane	ug/kg	ND(1000)	ND(1100)	ND(1100)	ND(1100)	ND(2900000)	ND(1100)	--	ND(1100)	ND(1200)
Dibromochloromethane	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Dichlorodifluoromethane (CFC-12)	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
Ethylbenzene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Isopropyl benzene	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	**97000 J**[d]	ND(240)	--	ND(230)	ND(240)
Methyl acetate	ug/kg	ND(1000) UB	52 J	68 J	52 J	ND(2900000)	ND(1100) UB	--	54 J	73 J
Methyl cyclohexane	ug/kg	ND(1000)	ND(1100)	ND(1100)	ND(1100)	ND(2900000)	ND(1100)	--	ND(1100)	ND(1200)
Methyl tert butyl ether (MTBE)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Methylene chloride	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Styrene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Tetrachloroethene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Toluene	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
trans-1,2-Dichloroethene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
trans-1,3-Dichloropropene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Trichloroethene	ug/kg	ND(43)	ND(45)	ND(47)	ND(44)	ND(120000)	ND(47)	--	ND(45)	ND(48)
Trichlorofluoromethane (CFC-11)	ug/kg	ND(87)	ND(90)	ND(93)	ND(89)	ND(240000)	ND(94)	--	ND(90)	ND(96)
Trifluorotrichloroethane (Freon 113)	ug/kg	ND(220)	ND(230)	ND(230)	ND(220)	ND(600000)	ND(240)	--	ND(230)	ND(240)
Vinyl chloride	ug/kg	ND(35)	ND(36)	ND(37)	ND(36)	ND(96000)	ND(38)	--	ND(36)	ND(38)
Xylenes (total)	ug/kg	ND(130)	ND(140)	ND(140)	ND(130)	**120000 J**[cd]	10 J	--	ND(140)	ND(140)
Semi-Volatile Organic Compounds (SVOCs)										
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,4,5-Trichlorophenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,4,6-Trichlorophenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,4-Dichlorophenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,4-Dimethylphenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,4-Dinitrophenol	ug/kg	ND(160)	--	--	--	ND(720)	ND(180)	--	--	--

TABLE 5.16.1

AOC 1 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB1-13M*	*SB8-13-8*	*SB8-13-9*	*SB8-13-10*	*SB8-13M*	*SB8-13M*	*SB8-13M*	*SB8-13-1*	*SB8-13-2*
Sample Identification		*S-48891-010913-EM-038*	*SO-48891-022013-DR-007*	*SO-48891-022013-DR-008*	*SO-48891-022013-DR-009*	*S-48891-011013-EM-039*	*S-48891-011013-EM-040*	*SO-48891-032813-SK-135*	*SO-48891-032813-SK-134*	*SO-48891-032813-SK-133*
Sample Date		*1/9/2013*	*2/20/2013*	*2/20/2013*	*2/20/2013*	*1/10/2013*	*1/10/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(6.5-7.5) ft BGS*	*(10-12) ft BGS*	*(11-13) ft BGS*	*(10-12) ft BGS*	*(11-12) ft BGS*	*(13-14) ft BGS*	*(11-) ft BGS*	*(12.4) ft BGS*	*(16) ft BGS*
Sample Type										
	Units									
2,4-Dinitrotoluene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2,6-Dinitrotoluene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2-Chloronaphthalene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2-Chlorophenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2-Methylnaphthalene	ug/kg	180 J	--	--	--	ND(1300)	8.4 J	--	--	--
2-Methylphenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
2-Nitroaniline	ug/kg	ND(220)	--	--	--	ND(960)	ND(240)	--	--	--
2-Nitrophenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
3&4-Methylphenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
3,3'-Dichlorobenzidine	ug/kg	ND(1700)	--	--	--	ND(7700)	ND(1900)	--	--	--
3-Nitroaniline	ug/kg	ND(220)	--	--	--	ND(960)	ND(240)	--	--	--
4,6-Dinitro-2-methylphenol	ug/kg	ND(160)	--	--	--	ND(720)	ND(180)	--	--	--
4-Bromophenyl phenyl ether	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
4-Chloro-3-methylphenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
4-Chloroaniline	ug/kg	ND(220)	--	--	--	ND(960)	ND(240)	--	--	--
4-Chlorophenyl phenyl ether	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
4-Nitroaniline	ug/kg	ND(220)	--	--	--	ND(960)	ND(240)	--	--	--
4-Nitrophenol	ug/kg	ND(360)	--	--	--	ND(1600)	ND(390)	--	--	--
Acenaphthene	ug/kg	42 J	--	--	--	ND(1300)	ND(310)	--	--	--
Acenaphthylene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Acetophenone	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Anthracene	ug/kg	63 J	--	--	--	ND(1300)	ND(310)	--	--	--
Atrazine	ug/kg	ND(43)	--	--	--	ND(190)	ND(47)	--	--	--
Benzaldehyde	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Benzo(a)anthracene	ug/kg	150 J	--	--	--	ND(1300)	4.1 J	--	--	--
Benzo(a)pyrene	ug/kg	150 J	--	--	--	ND(1300)	ND(310)	--	--	--
Benzo(b)fluoranthene	ug/kg	200 J	--	--	--	21 J	ND(310)	--	--	--
Benzo(g,h,i)perylene	ug/kg	61 J	--	--	--	20 J	9.6 J	--	--	--
Benzo(k)fluoranthene	ug/kg	82 J	--	--	--	ND(1300)	ND(310)	--	--	--
Biphenyl (1,1-Biphenyl)	ug/kg	37 J	--	--	--	ND(1300)	ND(310)	--	--	--
bis(2-Chloroethoxy)methane	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
bis(2-Chloroethyl)ether	ug/kg	ND(86)	--	--	--	ND(380)	ND(94)	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	36 J	--	--	--	ND(1300)	ND(310) UB	--	--	--
Butyl benzylphthalate (BBP)	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Caprolactam	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Carbazole	ug/kg	39 J	--	--	--	ND(1300)	ND(310)	--	--	--
Chrysene	ug/kg	200 J	--	--	--	27 J	13 J	--	--	--
Dibenz(a,h)anthracene	ug/kg	17 J	--	--	--	ND(1300)	ND(310)	--	--	--
Dibenzofuran	ug/kg	33 J	--	--	--	ND(1300)	ND(310)	--	--	--
Diethyl phthalate	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Dimethyl phthalate	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Di-n-butylphthalate (DBP)	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Di-n-octyl phthalate (DnOP)	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Fluoranthene	ug/kg	380	--	--	--	40 J	7.4 J	--	--	--
Fluorene	ug/kg	47 J	--	--	--	ND(1300)	5.2 J	--	--	--
Hexachlorobenzene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Hexachlorobutadiene	ug/kg	ND(43)	--	--	--	ND(190)	ND(47)	--	--	--
Hexachlorocyclopentadiene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Hexachloroethane	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Indeno(1,2,3-cd)pyrene	ug/kg	57 J	--	--	--	ND(1300)	ND(310)	--	--	--
Isophorone	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Naphthalene	ug/kg	40 J	--	--	--	120 J	5.5 J	--	--	--
Nitrobenzene	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
N-Nitrosodi-n-propylamine	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
N-Nitrosodiphenylamine	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Pentachlorophenol	ug/kg	ND(160)	--	--	--	ND(720)	ND(180)	--	--	--
Phenanthrene	ug/kg	310	--	--	--	58 J	17 J	--	--	--
Phenol	ug/kg	ND(280)	--	--	--	ND(1300)	ND(310)	--	--	--
Pyrene	ug/kg	300	--	--	--	35 J	12 J	--	--	--
Metals										

TABLE 5.16.1

AOC 1 SOIL ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

Sample Location		*SB1-13M*	*SB8-13-8*	*SB8-13-9*	*SB8-13-10*	*SB8-13M*	*SB8-13M*	*SB8-13M*	*SB8-13-1*	*SB8-13-2*
Sample Identification		*S-48891-010913-EM-038*	*SO-48891-022013-DR-007*	*SO-48891-022013-DR-008*	*SO-48891-022013-DR-009*	*S-48891-011013-EM-039*	*S-48891-011013-EM-040*	*SO-48891-032813-SK-135*	*SO-48891-032813-SK-134*	*SO-48891-032813-SK-133*
Sample Date		*1/9/2013*	*2/20/2013*	*2/20/2013*	*2/20/2013*	*1/10/2013*	*1/10/2013*	*3/28/2013*	*3/28/2013*	*3/28/2013*
Depth		*(6.5-7.5) ft BGS*	*(10-12) ft BGS*	*(11-13) ft BGS*	*(10-12) ft BGS*	*(11-12) ft BGS*	*(13-14) ft BGS*	*(11-) ft BGS*	*(12.4) ft BGS*	*(16) ft BGS*
Sample Type										
	Units									
Aluminum	ug/kg	3600000	--	--	--	9400000	4200000	--	--	--
Antimony	ug/kg	220 J / ND(900)	--	--	--	ND(1100) / 560	ND(1000) / 500	--	--	--
Arsenic	ug/kg	4400	--	--	--	5000	6000	--	--	--
Barium	ug/kg	31000	--	--	--	52000	21000	--	--	--
Beryllium	ug/kg	220	--	--	--	460	170	--	--	--
Cadmium	ug/kg	340	--	--	--	400	390	--	--	--
Calcium	ug/kg	85000000	--	--	--	92000000	80000000	--	--	--
Chromium	ug/kg	14000	--	--	--	18000	8700	--	--	--
Cobalt	ug/kg	3500	--	--	--	**11000[cd]**	6400	--	--	--
Copper	ug/kg	11000	--	--	--	26000	16000	--	--	--
Iron	ug/kg	8400000	--	--	--	19000000	12000000	--	--	--
Lead	ug/kg	17000	--	--	--	8100	5500	--	--	--
Magnesium	ug/kg	17000000	--	--	--	20000000	26000000	--	--	--
Manganese	ug/kg	250000	--	--	--	360000	310000	--	--	--
Mercury	ug/kg	ND(43)	--	--	--	ND(50)	ND(45)	--	--	--
Nickel	ug/kg	11000	--	--	--	34000	19000	--	--	--
Potassium	ug/kg	550000	--	--	--	2000000	920000	--	--	--
Selenium	ug/kg	49 J / ND(450)	--	--	--	ND(540) / 450	ND(510) / 470	--	--	--
Silver	ug/kg	ND(450) / 61 J	--	--	--	ND(540) / 110	93 J / ND(510)	--	--	--
Sodium	ug/kg	270000	--	--	--	150000	160000	--	--	--
Thallium	ug/kg	ND(900) / 130 J	--	--	--	ND(1100) / 370 J	380 J / ND(1000)	--	--	--
Vanadium	ug/kg	11000	--	--	--	26000	14000	--	--	--
Zinc	ug/kg	48000	--	--	--	62000	47000	--	--	--
PCBs										
Aroclor-1016 (PCB-1016)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1221 (PCB-1221)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1232 (PCB-1232)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1242 (PCB-1242)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1248 (PCB-1248)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1254 (PCB-1254)	ug/kg	22 J	--	--	--	ND(39)	ND(38)	--	--	--
Aroclor-1260 (PCB-1260)	ug/kg	ND(36)	--	--	--	ND(39)	ND(38)	--	--	--
Total PCBs	ug/kg	22 J	--	--	--	ND	ND	--	--	--
Total Petroleum Hydrocarbons (TPH)(2)										
Total Petroleum Hydrocarbons (C6-C10) GRO	ug/kg	--	--	--	--	--	--	ND(4500) UB	--	--

Notes:
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
(2) MDEQ draft re-design of Part 201 (September 2009)
a - SSB; c - DWPC; d - GSIPC; e - GCPC; f - SVIIC; g - VSIC; h - PSIC; i - DCC; j - Csat

ft BGS - feet below ground surface
ND ( ) - Not present at or above the associated value.
ug/kg - micrograms per kilogram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.

TABLE 5.16.2

AOC 1 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Sample Location		*MW-1M*	*MW-3M*	*MW-4M*	*MW-5M*	*TW8-13-9*	*TW8-13-2*
Sample Identification		*GW-48891-011713-EM-042*	*GW-48891-011713-EM-043*	*GW-48891-030513-DR-033*	*GW-48891-030513-DR-034*	*GW-48891-030513-DR-032*	*GW-48891-040513-SK-012*
Sample Date		*1/17/2013*	*1/17/2013*	*3/5/2013*	*3/5/2013*	*3/5/2013*	*4/5/2013*
Sample Type							
	Units						
Volatile Organic Compounds (VOCs)							
1,1,1-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2,2-Tetrachloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1,2-Trichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,1-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2,4-Trimethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dibromoethane (Ethylene dibromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,2-Dichloropropane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3,5-Trimethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,3-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
1,4-Dichlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	0.78 J	ND(10)	ND(10)	5.8 J	ND(10)	ND(10)
2-Hexanone	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	ND(10)	ND(10)	ND(10)	ND(10) UB	ND(10)	ND(10)
Acetone	ug/L	ND(10) UB	ND(10) UB	ND(10) UB	41	ND(10)	1.6 UB
Benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	0.18 J	ND(1.0)	0.20 UB
Bromodichloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromoform	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Bromomethane (Methyl bromide)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Carbon disulfide	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Carbon tetrachloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chlorobenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloroform (Trichloromethane)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Chloromethane (Methyl chloride)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
cis-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dibromochloromethane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Dichlorodifluoromethane (CFC-12)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Ethylbenzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Isopropyl benzene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl acetate	ug/L	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Methyl cyclohexane	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Methyl tert butyl ether (MTBE)	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(1.0)
Methylene chloride	ug/L	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Styrene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	0.46 J	ND(1.0)	ND(1.0)
Tetrachloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Toluene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	0.49 J	ND(1.0)	ND(1.0)
trans-1,2-Dichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
trans-1,3-Dichloropropene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichloroethene	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trichlorofluoromethane (CFC-11)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Trifluorotrichloroethane (Freon 113)	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Vinyl chloride	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)
Xylenes (total)	ug/L	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	0.30 J
Semi-Volatile Organic Compounds (SVOCs)							
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2,4,5-Trichlorophenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2,4,6-Trichlorophenol	ug/L	ND(4.0)	ND(3.9)	ND(4.2)	ND(28)	--	--
2,4-Dichlorophenol	ug/L	ND(9.9)	ND(9.8)	ND(10)	ND(69)	--	--
2,4-Dimethylphenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2,4-Dinitrophenol	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
2,4-Dinitrotoluene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2,6-Dinitrotoluene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--

TABLE 5.16.2

AOC 1 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Sample Location		*MW-1M*	*MW-3M*	*MW-4M*	*MW-5M*	*TW8-13-9*	*TW8-13-2*
Sample Identification		*GW-48891-011713-EM-042*	*GW-48891-011713-EM-043*	*GW-48891-030513-DR-033*	*GW-48891-030513-DR-034*	*GW-48891-030513-DR-032*	*GW-48891-040513-SK-012*
Sample Date		*1/17/2013*	*1/17/2013*	*3/5/2013*	*3/5/2013*	*3/5/2013*	*4/5/2013*
Sample Type							
	Units						
2-Chloronaphthalene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2-Chlorophenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2-Methylnaphthalene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2-Methylphenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
2-Nitroaniline	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
2-Nitrophenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
3&4-Methylphenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
3,3'-Dichlorobenzidine	ug/L	ND(0.99) UJ	ND(0.98) UJ	ND(1.0)	ND(6.9)	--	--
3-Nitroaniline	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
4,6-Dinitro-2-methylphenol	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
4-Bromophenyl phenyl ether	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
4-Chloro-3-methylphenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
4-Chloroaniline	ug/L	ND(9.9)	ND(9.8)	ND(10)	ND(69)	--	--
4-Chlorophenyl phenyl ether	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
4-Nitroaniline	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
4-Nitrophenol	ug/L	ND(20)	ND(20)	ND(21)	ND(140)	--	--
Acenaphthene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Acenaphthylene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Acetophenone	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Anthracene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Atrazine	ug/L	ND(3.0)	ND(2.9)	ND(3.1)	ND(21)	--	--
Benzaldehyde	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Benzo(a)anthracene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Benzo(a)pyrene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Benzo(b)fluoranthene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Benzo(g,h,i)perylene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Benzo(k)fluoranthene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Biphenyl (1,1-Biphenyl)	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
bis(2-Chloroethoxy)methane	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
bis(2-Chloroethyl)ether	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	1.0 J	0.79 J	ND(5.2)	ND(35)	--	--
Butyl benzylphthalate (BBP)	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Caprolactam	ug/L	2.1 J	2.1 J	ND(10)	150	--	--
Carbazole	ug/L	ND(9.9)	ND(9.8)	ND(10)	ND(69)	--	--
Chrysene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Dibenz(a,h)anthracene	ug/L	ND(2.0)	ND(2.0)	ND(2.1)	ND(14)	--	--
Dibenzofuran	ug/L	0.66 J	ND(3.9)	ND(4.2)	ND(28)	--	--
Diethyl phthalate	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Dimethyl phthalate	ug/L	ND(5.0)	0.84 J	ND(5.2)	ND(35)	--	--
Di-n-butylphthalate (DBP)	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Di-n-octyl phthalate (DnOP)	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Fluoranthene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Fluorene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Hexachlorobenzene	ug/L	ND(0.20)	ND(0.20)	ND(0.21)	ND(1.4)	--	--
Hexachlorobutadiene	ug/L	ND(0.99)	ND(0.98)	ND(1.0)	ND(6.9)	--	--
Hexachlorocyclopentadiene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Hexachloroethane	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Indeno(1,2,3-cd)pyrene	ug/L	ND(2.0)	ND(2.0)	ND(2.1)	ND(14)	--	--
Isophorone	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Naphthalene	ug/L	0.29 J	ND(4.9)	ND(5.2)	ND(35)	--	--
Nitrobenzene	ug/L	ND(3.0)	ND(2.9)	ND(3.1)	ND(21)	--	--
N-Nitrosodi-n-propylamine	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
N-Nitrosodiphenylamine	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Pentachlorophenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Phenanthrene	ug/L	ND(2.0)	ND(2.0)	ND(2.1)	ND(14)	--	--
Phenol	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Pyrene	ug/L	ND(5.0)	ND(4.9)	ND(5.2)	ND(35)	--	--
Metals							
Aluminum	ug/L	440	52	18 J	200	--	--
Antimony	ug/L	ND(2.0)	ND(2.0)	ND(2.0)	1.8 J	--	--
Arsenic	ug/L	2.6	0.86 J	0.96 J	5.2	--	--
Barium	ug/L	94	160	200	160	--	--

TABLE 5.16.2

AOC 1 GROUNDWATER ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MI

Sample Location		*MW-1M*	*MW-3M*	*MW-4M*	*MW-5M*	*TW8-13-9*	*TW8-13-2*
Sample Identification		*GW-48891-011713-EM-042*	*GW-48891-011713-EM-043*	*GW-48891-030513-DR-033*	*GW-48891-030513-DR-034*	*GW-48891-030513-DR-032*	*GW-48891-040513-SK-012*
Sample Date		*1/17/2013*	*1/17/2013*	*3/5/2013*	*3/5/2013*	*3/5/2013*	*4/5/2013*
Sample Type							
	Units						
Beryllium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	--	--
Cadmium	ug/L	ND(1.0)	ND(1.0)	ND(1.0)	ND(1.0)	--	--
Calcium	ug/L	250000	210000	150000	170000	--	--
Chromium	ug/L	7.7	ND(2.0)	ND(10)	5.8 J	--	--
Cobalt	ug/L	1.6 J	0.86 J	0.97 J	2.9 J	--	--
Copper	ug/L	5.4	1.4 J	2.3 J	8.1	--	--
Iron	ug/L	110	94	47 J	44 J	--	--
Lead	ug/L	ND(2.0)	ND(2.0)	0.71 J	1.0 J	--	--
Magnesium	ug/L	340 J	64000	58000	20000	--	--
Manganese	ug/L	3.7 J	46	530	310	--	--
Mercury	ug/L	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	--	--
Nickel	ug/L	2.1 J	3.9 J	5.1 J	8.8 J	--	--
Potassium	ug/L	24000	2000	67000	46000	--	--
Selenium	ug/L	3.1	**63[bc]**	0.60 J	1.1 J	--	--
Sodium	ug/L	940000	43000	21000	70000	--	--
Thallium	ug/L	ND(2.0)	ND(2.0)	ND(2.0)	ND(2.0)	--	--
Vanadium	ug/L	6.2	1.5 J	ND(4.0)	2.3 J	--	--
Zinc	ug/L	ND(50)	ND(50)	18 J	6.9 J	--	--
PCBs							
Aroclor-1016 (PCB-1016)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1221 (PCB-1221)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1232 (PCB-1232)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1242 (PCB-1242)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1248 (PCB-1248)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1254 (PCB-1254)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Aroclor-1260 (PCB-1260)	ug/L	ND(0.099)	ND(0.098)	ND(0.10)	ND(0.10)	--	--
Total PCBs	ug/L	ND	ND	ND	ND	--	--

Notes:
Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended. (See Table 4.2 or Section 3.1 of Report)
b - DWC; c - GSIC; d - GVIIC; e - GCC; f - WS; g - FESL; h - AIL

ND ( ) - Not present at or above the associated value.

ENOVIS Quals:
J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero.
The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL.
For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ - The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

TABLE 6.1

AOC 1 SOIL VERIFICATION ANALYTICAL RESULTS
MENARDS PROPERTY - FORMER WIXOM ASSEMBLY PLANT
WIXOM, MICHIGAN

REC					***AOC-01***	***AOC-01***	***AOC-01***	***AOC-01***
Sample Location		Drinking	Non-Residential Drinking	Groundwater	***Floor***	***Floor***	***Floor***	***Floor***
Sample Identification		Water	Water	Surface Water	***S-48891-051013-DS-1064***	***S-48891-051013-DS-1065***	***S-48891-051013-DS-1066***	***S-48891-051013-DS-1067***
Sample Date		Protection	Protection	Interface Protection	***5/10/2013***	***5/10/2013***	***5/10/2013***	***5/10/2013***
Depth					***(11) ft BGS***	***(12) ft BGS***	***(12.5) ft BGS***	***(13) ft BGS***
	Units							
Volatile Organic Compounds (VOCs)								
1,2,4-Trimethylbenzene	ug/kg	2100	2100	570	ND(89)	ND(88)	ND(89)	ND(94)
1,3,5-Trimethylbenzene	ug/kg	1800	1800	1100	ND(89)	ND(88)	ND(89)	ND(94)
2-Methylnaphthalene	ug/kg	57000	170000	4200	ND(280)	ND(280)	ND(280)	ND(290)
Benzene	ug/kg	100	100	4000	ND(45)	ND(44)	ND(44)	ND(47)
Ethylbenzene	ug/kg	1500	1500	360	ND(45)	ND(44)	ND(44)	ND(47)
Methyl tert butyl ether (MTBE)	ug/kg	800	800	140000	ND(220)	ND(220)	ND(220)	ND(230)
Naphthalene	ug/kg	35000	100000	730	ND(280)	ND(280)	ND(280)	ND(290)
Toluene	ug/kg	16000	16000	5400	ND(89)	ND(88)	ND(89)	ND(94)
Xylenes (total)	ug/kg	5600	5600	820	ND(130)	ND(130)	ND(130)	ND(140)

REC		***AOC-01***	***AOC-01***	***AOC-01***	***AOC-01***	***AOC-01***	***AOC-01***	***AOC-01***
Sample Location		***Sidewall***	***Sidewall***	***Sidewall***	***Sidewall***	***Sidewall***	***Sidewall***	***Sidewall***
Sample Identification		***S-48891-051013-DS-2034***	***S-48891-051013-DS-2035***	***S-48891-051013-DS-2036***	***S-48891-051013-DS-2037***	***S-48891-051013-DS-2039***	***S-48891-051013-DS-2040***	***S-48891-051013-DS-2038***
Sample Date		***5/10/2013***	***5/10/2013***	***5/10/2013***	***5/10/2013***	***5/10/2013***	***5/10/2013***	***5/10/2013***
Depth		***(8) ft BGS***	***(10) ft BGS***	***(10) ft BGS***	***(10) ft BGS***	***(10) ft BGS***	***(10) ft BGS***	***(11) ft BGS***
	Units							
Volatile Organic Compounds (VOCs)								
1,2,4-Trimethylbenzene	ug/kg	ND(91)	ND(90)	ND(92)	ND(81)	ND(88)	ND(90)	ND(80)
1,3,5-Trimethylbenzene	ug/kg	ND(91)	ND(90)	ND(92)	ND(81)	ND(88)	ND(90)	ND(80)
2-Methylnaphthalene	ug/kg	ND(280)	ND(280) UB	ND(290)	ND(250)	ND(280)	ND(280)	ND(250)
Benzene	ug/kg	ND(45)	ND(45)	ND(46)	ND(40)	ND(44)	ND(45)	ND(40)
Ethylbenzene	ug/kg	ND(45)	ND(45)	ND(46)	ND(40)	ND(44)	ND(45)	ND(40)
Methyl tert butyl ether (MTBE)	ug/kg	ND(230)	ND(230)	ND(230)	ND(200)	ND(220)	ND(220)	ND(200)
Naphthalene	ug/kg	ND(280)	23 J	ND(290)	ND(250)	ND(280)	ND(280)	ND(250)
Toluene	ug/kg	ND(91)	ND(90)	ND(92)	ND(81)	ND(88)	ND(90)	ND(80)
Xylenes (total)	ug/kg	ND(140)	ND(140)	ND(140)	ND(120)	ND(130)	ND(130)	ND(120)

Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

Notes:
ft BGS - feet below ground surface
ND ( ) - Not detected at the associated reporting limit.
ug/kg - micrograms per kilogram

ENOVIS Quals:

J - Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.

UB - The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.

Appendix D

PM ENVIRONMENTAL Environmental & Engineering Services

ENVIRONMENTAL DATABASE SEARCH

10400 Assembly Park Dr
10400 Assembly Park Dr
Wixom, MI 48393

Inquiry Number: 04871645.2r
March 07, 2017

The EDR Radius Map™ Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

10400 ASSEMBLY PARK DR
WIXOM, MI 48393

COORDINATES

Latitude (North):	42.5016010 - 42˚ 30' 5.76''
Longitude (West):	83.5367690 - 83˚ 32' 12.36''
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	291557.0
UTM Y (Meters):	4708375.0
Elevation:	959 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6066304 MILFORD, MI
Version Date:	2014
South Map:	6066326 SALEM, MI
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140705
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
10400 ASSEMBLY PARK DR
WIXOM, MI 48393

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1		28790 S WIXOM RD	EDR Hist Auto	Lower	375, 0.071, East
A2	SUNOCO GAS STATION	28790 WIXOM RD	MI UST	Lower	375, 0.071, East
3	FORMER TEXACO	NE CORNER WIXOM RD &	MI LUST	Higher	791, 0.150, SSE
4	WATERLAND TRUCKING S	29100 WIXOM RD	MI AST	Lower	815, 0.154, North
5	MODERN MILWORKS	29000 S WIXOM RD	RCRA NonGen / NLR, FINDS, ECHO	Higher	826, 0.156, NNE
B6	WIXOM ASSEMBLY PLANT	28801 S WIXOM RD	MI AST	Lower	830, 0.157, NNW
B7	FORD MOTOR - WIXOM A	28801 S WIXOM RD	MI LUST, MI UST, MI INVENTORY, MI WDS	Lower	830, 0.157, NNW
B8	FORD MOTOR COMPANY	28801 S WIXOM RD	SEMS-ARCHIVE, RCRA-SQG, MI HIST LF, RAATS, PADS,...	Lower	830, 0.157, NNW
B9	FORD WIXOM ASSEMBLY	28601 & 28801 SOUTH	MI BEA	Lower	830, 0.157, NNW
B10	CLAIRVOYANT ENERGY S	28801 SOUTH WIXOM RO	MI BEA	Lower	830, 0.157, NNW
B11	FORD MOTOR COMPANY	28801 WIXOM ROAD	MI AUL, MI AIRS, MI BEA, MI NPDES	Lower	830, 0.157, NNW
C12	PYLES DIVISION, SEAL	28990 S WIXOM RD	MI LUST, MI UST, MI INVENTORY, MI WDS	Higher	852, 0.161, NE
C13	ALTA LIFT TRUCK SERV	28990 S WIXOM RD	RCRA NonGen / NLR	Higher	852, 0.161, NE
B14	FORD WIXOM ASSEMBLY	28601 & 28801 SOUTH	MI INVENTORY	Lower	972, 0.184, NW
B15	FORD MOTOR WIXOM ASS	28601 AND 28801SOUTH	MI INVENTORY	Lower	972, 0.184, NW
16	MI DEPT/TRANSPORTATI	I 96 UNDER WIXOM RD	RCRA NonGen / NLR	Higher	1270, 0.241, South
D17	HOLLOWAY SAND AND GR	29250 SOUTH WIXOM	MI INVENTORY	Lower	1572, 0.298, NNE
D18	HOL-ACC 1	29250 WIXOM RD	ABANDONED MINES	Lower	1572, 0.298, NNE
D19	MICHIGAN FOUNDATION	29250 WIXOM RD	ABANDONED MINES	Lower	1572, 0.298, NNE
E20	B & J GAS AND OIL CO	29330 & 29420 WIXOM	MI INVENTORY	Lower	1597, 0.302, NNW
E21	29330 + 29420 WIXOM	29330+29420 WIXOM RO	MI INVENTORY	Lower	1597, 0.302, NNW
F22	FORD MOTOR CO WIXOM	28801 SOUTH WIXOM RD	MI AUL, MI PART 201, MI INVENTORY	Lower	1602, 0.303, North
F23	FORD MOTOR COMPANY W	28801 WIXOM ROAD	MI INVENTORY	Lower	1602, 0.303, North
24	GABBA ENTERPRISE	28055 WIXOM	MI LUST, MI UST	Higher	1670, 0.316, South
25	WALTER TOEBE CONST.	29001 WALL ST	MI LUST, MI UST, MI WDS	Higher	1720, 0.326, ENE
G26	WIXOM FUEL STOP	29420 S WIXOM RD""	MI LUST, MI UST	Lower	1753, 0.332, NNE
G27	PAVEMENT SEALANTS	29420 WIXOM ROAD	MI DEL PART 201	Lower	1753, 0.332, NNE
28	VACANT LAND	28060 WIXOM ROAD	MI BEA	Higher	1786, 0.338, SSE
29	28011 GRAND OAKS COU	28011 GRAND OAKS COU	US BROWNFIELDS, FINDS	Higher	2230, 0.422, SW
30	WIXOM SUPPLY & EQUIP	48850 W TWELVE MILE	MI LUST, MI UST	Higher	2324, 0.440, SSE
H31	MOBILE GASOLINE STAT	49200 WEST GRAND RIV	MI AUL	Higher	2337, 0.443, South
H32	ADAMS OIL INC	49200 GRAND RIVER AV	MI LUST, MI UST, MI INVENTORY	Higher	2337, 0.443, South
I33	FORM TECH CONCRETE F	48575 DOWNING ST	MI LUST, MI UST, MI WDS	Higher	2347, 0.445, ENE
I34	MOELLER MANUFACTURIN	48602 DOWNING ST	MI INVENTORY, MI SPILLS, MI NPDES, MI WDS	Higher	2406, 0.456, ENE
I35	WIXOM NITRIC RELEASE	48602 DOWNING STREET	SEMS	Higher	2406, 0.456, ENE
36	TLC PROPERTY, LLC	26700 WIXOM ROAD	MI INVENTORY	Higher	2428, 0.460, South
37	PRATT & MILLER	29425 WALL STREET	MI INVENTORY	Higher	2488, 0.471, NE
38	KIBNER TRUCKING	48130 WEST ROAD	MI PART 201, MI DEL PART 201	Higher	4365, 0.827, NE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent CERCLIS

MI SHWS ..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

EXECUTIVE SUMMARY

State and tribal landfill and/or solid waste disposal site lists

MI SWF/LF..... Solid Waste Facilities Database

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

MI BROWNFIELDS..... Brownfields and UST Site Database

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

MI SWRCY..... Recycling Facilities
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register
MI CDL..... Clandestine Drug Lab Listing
US CDL..... National Clandestine Laboratory Register

Local Land Records

MI LIENS..... Lien List
LIENS 2..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System

Other Ascertainable Records

FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST

EXECUTIVE SUMMARY

2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
PRP	Potentially Responsible Parties
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
MI COAL ASH	Coal Ash Disposal Sites
MI DRYCLEANERS	Drycleaning Establishments
MI LEAD	Lead Safe Housing Registry
MI UIC	Underground Injection Wells Database
FUELS PROGRAM	EPA Fuels Program Registered Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

MI RGA PART 201	Recovered Government Archive State Hazardous Waste Facilities List
MI RGA LF	Recovered Government Archive Solid Waste Facilities List
MI RGA LUST	Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

SEMS: SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the SEMS list, as provided by EDR, and dated 10/10/2016 has revealed that there is 1 SEMS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WIXOM NITRIC RELEASE	48602 DOWNING STREET	ENE 1/4 - 1/2 (0.456 mi.)	I35	76

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

A review of the SEMS-ARCHIVE list, as provided by EDR, and dated 10/10/2016 has revealed that there is 1 SEMS-ARCHIVE site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR COMPANY	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B8***	***18***

Federal RCRA generators list

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/12/2016 has revealed that there is 1

RCRA-SQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR COMPANY	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B8***	***18***

State and tribal leaking storage tank lists

MI LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Environmental Quality's Leaking Underground Storage Tank (LUST) Database.

A review of the MI LUST list, as provided by EDR, and dated 10/10/2016 has revealed that there are 9 MI LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FORMER TEXACO Release Status: Closed Substance Release: Unknown Facility Id: 50001823	NE CORNER WIXOM RD &	SSE 1/8 - 1/4 (0.150 mi.)	3	9
PYLES DIVISION, SEAL Release Status: Closed Facility Id: 00033896	***28990 S WIXOM RD***	***NE 1/8 - 1/4 (0.161 mi.)***	***C12***	***41***
GABBA ENTERPRISE Release Status: Closed Facility Id: 00017262	***28055 WIXOM***	***S 1/4 - 1/2 (0.316 mi.)***	***24***	***55***
WALTER TOEBE CONST. Release Status: Closed Facility Id: 00017746	***29001 WALL ST***	***ENE 1/4 - 1/2 (0.326 mi.)***	***25***	***59***
WIXOM SUPPLY & EQUIP Release Status: Closed Substance Release: Diesel,Gasoline Facility Id: 00037178	***48850 W TWELVE MILE***	***SSE 1/4 - 1/2 (0.440 mi.)***	***30***	***68***
ADAMS OIL INC Release Status: Closed Substance Release: Gasoline Facility Id: 00032981	***49200 GRAND RIVER AV***	***S 1/4 - 1/2 (0.443 mi.)***	***H32***	***71***
FORM TECH CONCRETE F Release Status: Closed Substance Release: Unknown Facility Id: 00036086	***48575 DOWNING ST***	***ENE 1/4 - 1/2 (0.445 mi.)***	***I33***	***73***

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR - WIXOM A Release Status: Closed Release Status: Open Substance Release: Gasoline,Gasoline Substance Release: Other Substance Release: Gasoline Facility Id: 00014262	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B7***	***13***
WIXOM FUEL STOP	***29420 S WIXOM RD''''***	***NNE 1/4 - 1/2 (0.332 mi.)***	***G26***	***62***

Release Status: Closed
Substance Release: Gasoline,Diesel
Facility Id: 00002394

State and tribal registered storage tank lists

MI UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Quality's Michigan UST database.

A review of the MI UST list, as provided by EDR, has revealed that there are 3 MI UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PYLES DIVISION, SEAL	***28990 S WIXOM RD***	***NE 1/8 - 1/4 (0.161 mi.)***	***C12***	***41***
Database: UST, Date of Government Version: 10/10/2016 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00033896				

Lower Elevation	Address	Direction / Distance	Map ID	Page
SUNOCO GAS STATION	28790 WIXOM RD	E 0 - 1/8 (0.071 mi.)	A2	8
Database: UST, Date of Government Version: 10/10/2016 Tank Status: Currently In Use Facility Type: ACTIVE Facility Id: 00041956				
FORD MOTOR - WIXOM A	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B7***	***13***
Database: UST, Date of Government Version: 10/10/2016 Tank Status: Removed from Ground Facility Type: CLOSED Facility Id: 00014262				

MI AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Natural Resources' Michigan AST database.

A review of the MI AST list, as provided by EDR, and dated 11/02/2016 has revealed that there are 2 MI AST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
WATERLAND TRUCKING S	29100 WIXOM RD	N 1/8 - 1/4 (0.154 mi.)	4	10
Facility Id: 91084314 List Status: CLOSED Removed/Closed Date: 06/27/2008 Removed/Closed Date: 09/11/2008 Tank Status: Removed from Premises				
WIXOM ASSEMBLY PLANT	28801 S WIXOM RD	NNW 1/8 - 1/4 (0.157 mi.)	B6	12
Facility Id: 92063073 List Status: CLOSED				

Removed/Closed Date: 06/15/2012
Tank Status: Removed from Premises

State and tribal institutional control / engineering control registries

MI AUL: A listing of sites with institutional and/or engineering controls in place.

A review of the MI AUL list, as provided by EDR, and dated 12/01/2016 has revealed that there are 3 MI AUL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MOBILE GASOLINE STAT Facility ID: 00032981	49200 WEST GRAND RIV	S 1/4 - 1/2 (0.443 mi.)	H31	70

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR COMPANY Facility ID: 00014262	***28801 WIXOM ROAD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B11***	***39***
FORD MOTOR CO WIXOM	***28801 SOUTH WIXOM RD***	***N 1/4 - 1/2 (0.303 mi.)***	***F22***	***53***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA's listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 12/19/2016 has revealed that there is 1 US BROWNFIELDS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
28011 GRAND OAKS COU	***28011 GRAND OAKS COU***	***SW 1/4 - 1/2 (0.422 mi.)***	***29***	***66***

Local Lists of Landfill / Solid Waste Disposal Sites

MI HIST LF: The database contains historical information and is no longer updated..

A review of the MI HIST LF list, as provided by EDR, and dated 03/01/1997 has revealed that there is 1 MI HIST LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR COMPANY	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B8***	***18***

EXECUTIVE SUMMARY

Local Lists of Hazardous waste / Contaminated Sites

MI INVENTORY: The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the MI INVENTORY list, as provided by EDR, and dated 10/25/2016 has revealed that there are 13 MI INVENTORY sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PYLES DIVISION, SEAL	***28990 S WIXOM RD***	***NE 1/8 - 1/4 (0.161 mi.)***	***C12***	***41***
ADAMS OIL INC Facility ID: 00032981	***49200 GRAND RIVER AV***	***S 1/4 - 1/2 (0.443 mi.)***	***H32***	***71***
MOELLER MANUFACTURIN	***48602 DOWNING ST***	***ENE 1/4 - 1/2 (0.456 mi.)***	***I34***	***75***
TLC PROPERTY, LLC Facility ID: 63005259	26700 WIXOM ROAD	S 1/4 - 1/2 (0.460 mi.)	36	77
PRATT & MILLER Facility ID: 63000925	29425 WALL STREET	NE 1/4 - 1/2 (0.471 mi.)	37	77

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR - WIXOM A Facility ID: 00014262	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B7***	***13***
FORD WIXOM ASSEMBLY Facility ID: 63000022	28601 & 28801 SOUTH	NW 1/8 - 1/4 (0.184 mi.)	B14	50
FORD MOTOR WIXOM ASS Facility ID: 63000022	28601 AND 28801SOUTH	NW 1/8 - 1/4 (0.184 mi.)	B15	50
HOLLOWAY SAND AND GR Facility ID: 63005956	29250 SOUTH WIXOM	NNE 1/4 - 1/2 (0.298 mi.)	D17	52
B & J GAS AND OIL CO Facility ID: 63005640	29330 & 29420 WIXOM	NNW 1/4 - 1/2 (0.302 mi.)	E20	53
29330 + 29420 WIXOM Facility ID: 63005640	29330+29420 WIXOM RO	NNW 1/4 - 1/2 (0.302 mi.)	E21	53
FORD MOTOR CO WIXOM Facility ID: 63000022	***28801 SOUTH WIXOM RD***	***N 1/4 - 1/2 (0.303 mi.)***	***F22***	***53***
FORD MOTOR COMPANY W Facility ID: 63000022	28801 WIXOM ROAD	N 1/4 - 1/2 (0.303 mi.)	F23	55

EXECUTIVE SUMMARY

MI PART 201: A Part 201 Listed site is a location that has been evaluated and scored by the DEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the DEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to DEQ are not on the list, nor are sites with releases that resulted in low environmental impact.

A review of the MI PART 201 list, as provided by EDR, and dated 10/01/2013 has revealed that there are 2 MI PART 201 sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KIBNER TRUCKING	***48130 WEST ROAD***	***NE 1/2 - 1 (0.827 mi.)***	***38***	***78***
Facility Status: Delisted - no longer meets criteria specified in rules Facility ID: 63000136				

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR CO WIXOM	***28801 SOUTH WIXOM RD***	***N 1/4 - 1/2 (0.303 mi.)***	***F22***	***53***
Facility Status: Remedial Action in Progress (may incl. use restrictions, O&M and/or monitoring) Facility ID: 63000022				

MI DEL PART 201: A deleted site has been removed from the Part 201 List because information known to the DEQ at the time of the evaluation does not support inclusion on the Part 201 List. This designation is often applied to sites where changes in cleanup criteria resulted in a determination that the site no longer exceeds any applicable cleanup criterion. A delisted site has been removed from the Part 201 List because response actions have reduced the levels of contaminants to concentrations which meet or are below the criteria for unrestricted residential use.

A review of the MI DEL PART 201 list, as provided by EDR, and dated 08/01/2013 has revealed that there are 2 MI DEL PART 201 sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KIBNER TRUCKING	***48130 WEST ROAD***	***NE 1/2 - 1 (0.827 mi.)***	***38***	***78***
Facility Id: 63000136				

Lower Elevation	Address	Direction / Distance	Map ID	Page
PAVEMENT SEALANTS	29420 WIXOM ROAD	NNE 1/4 - 1/2 (0.332 mi.)	G27	65
Facility Id: 63000132				

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/12/2016 has revealed that

there are 3 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MODERN MILWORKS	***29000 S WIXOM RD***	***NNE 1/8 - 1/4 (0.156 mi.)***	***5***	***10***
ALTA LIFT TRUCK SERV	28990 S WIXOM RD	NE 1/8 - 1/4 (0.161 mi.)	C13	43
MI DEPT/TRANSPORTATI	I 96 UNDER WIXOM RD	S 1/8 - 1/4 (0.241 mi.)	16	50

MI BEA: A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

A review of the MI BEA list, as provided by EDR, and dated 08/21/2013 has revealed that there are 4 MI BEA sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VACANT LAND	28060 WIXOM ROAD	SSE 1/4 - 1/2 (0.338 mi.)	28	65

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD WIXOM ASSEMBLY	28601 & 28801 SOUTH	NNW 1/8 - 1/4 (0.157 mi.)	B9	38
CLAIRVOYANT ENERGY S	28801 SOUTH WIXOM RO	NNW 1/8 - 1/4 (0.157 mi.)	B10	38
FORD MOTOR COMPANY	***28801 WIXOM ROAD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B11***	***39***

WI MANIFEST: Hazardous waste manifest information.

A review of the WI MANIFEST list, as provided by EDR, and dated 12/31/2015 has revealed that there is 1 WI MANIFEST site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
FORD MOTOR COMPANY ACT Status: A FID: 0 EPA ID: MID005379714	***28801 S WIXOM RD***	***NNW 1/8 - 1/4 (0.157 mi.)***	***B8***	***18***

ABANDONED MINES: An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

A review of the ABANDONED MINES list, as provided by EDR, and dated 06/09/2016 has revealed that there are 2 ABANDONED MINES sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HOL-ACC 1	29250 WIXOM RD	NNE 1/4 - 1/2 (0.298 mi.)	D18	52
MICHIGAN FOUNDATION	29250 WIXOM RD	NNE 1/4 - 1/2 (0.298 mi.)	D19	52

EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

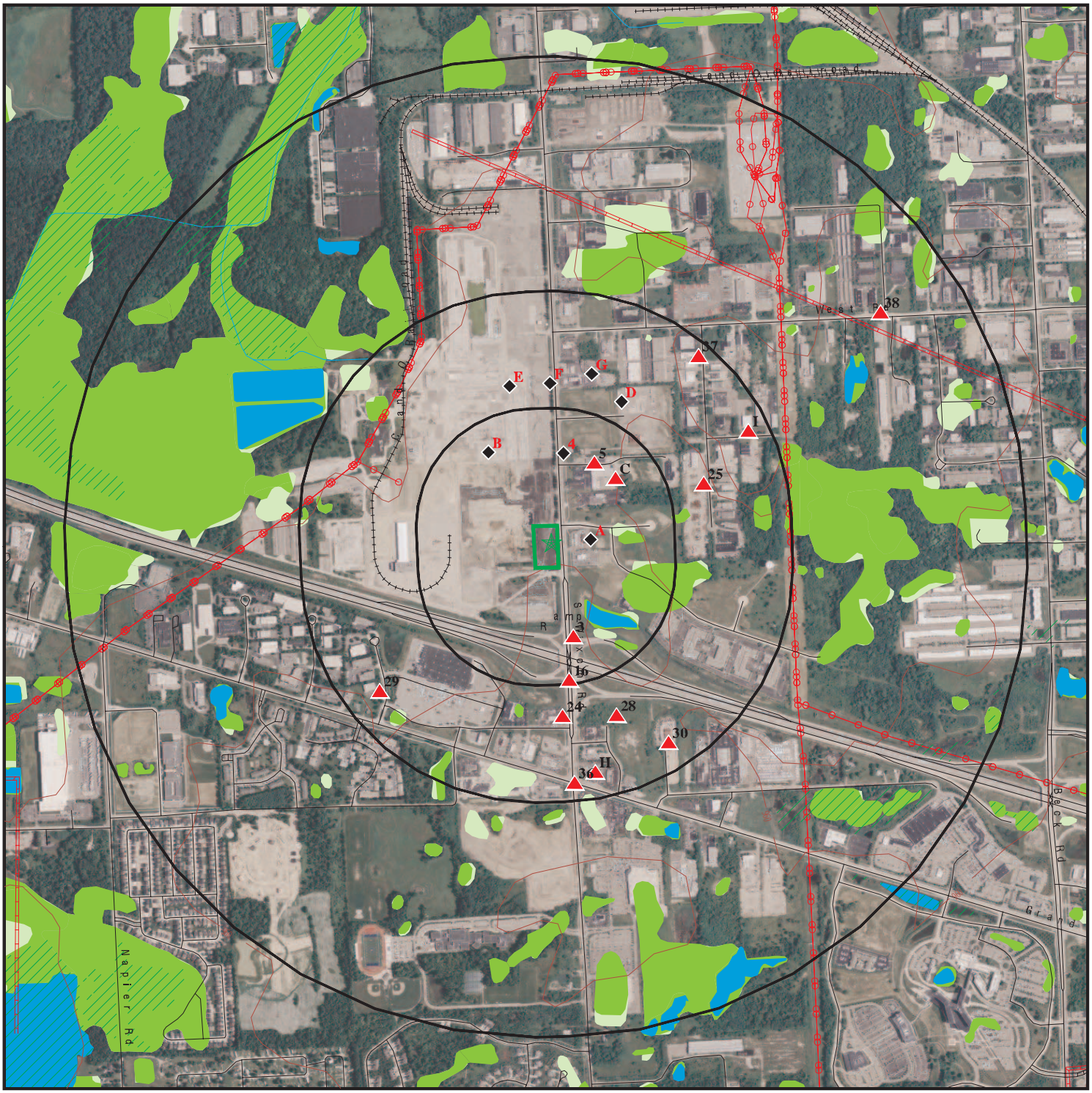
A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	28790 S WIXOM RD	E 0 - 1/8 (0.071 mi.)	A1	8

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 04871645.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 10400 Assembly Park Dr	CLIENT: PM Environmental, Inc.
ADDRESS: 10400 Assembly Park Dr Wixom MI 48393	CONTACT: Kim Hippensteel
LAT/LONG: 42.501601 / 83.536769	INQUIRY #: 04871645.2r
	DATE: March 07, 2017 12:36 pm

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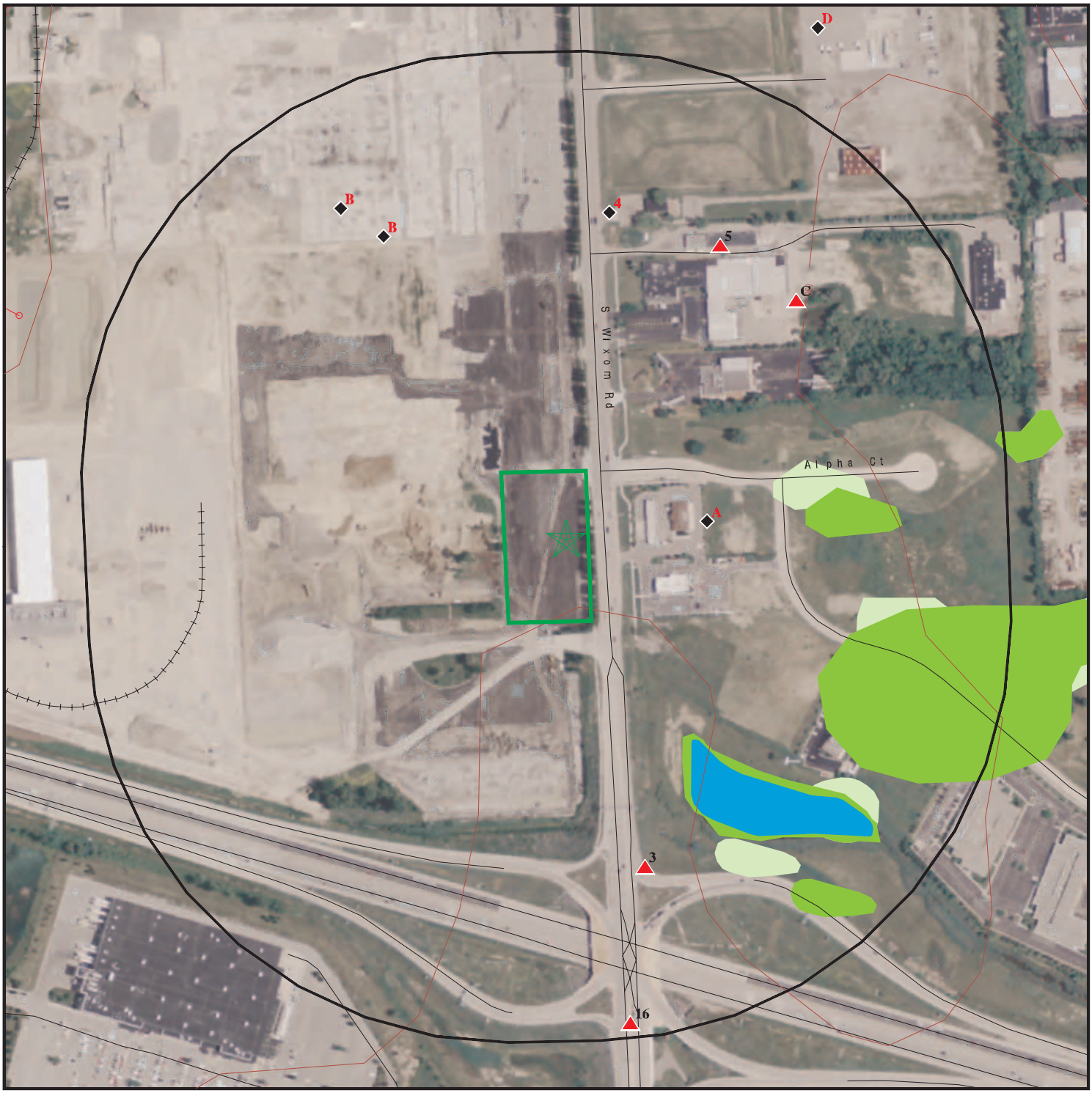
DETAIL MAP - 04871645.2R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 10400 Assembly Park Dr	CLIENT: PM Environmental, Inc.
ADDRESS: 10400 Assembly Park Dr Wixom MI 48393	CONTACT: Kim Hippensteel INQUIRY #: 04871645.2r
LAT/LONG: 42.501601 / 83.536769	DATE: March 07, 2017 12:37 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	1	NR	NR	1
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	1	0	NR	NR	1
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	1	NR	NR	NR	1
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
MI SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
MI SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
MI LUST	0.500		0	3	6	NR	NR	9
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MI UST	0.250		1	2	NR	NR	NR	3
MI AST	0.250		0	2	NR	NR	NR	2
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
MI AUL	0.500		0	1	2	NR	NR	3
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
MI BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	1	NR	NR	1
Local Lists of Landfill / Solid Waste Disposal Sites								
MI HIST LF	0.500		0	1	0	NR	NR	1
MI SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
MI INVENTORY	0.500		0	4	9	NR	NR	13
MI PART 201	1.000		0	0	1	1	NR	2
MI CDL	TP		NR	NR	NR	NR	NR	0
MI DEL PART 201	1.000		0	0	1	1	NR	2
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
MI LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
MI SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	3	NR	NR	NR	3
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
MI AIRS	TP		NR	NR	NR	NR	NR	0
MI BEA	0.500		0	3	1	NR	NR	4
MI COAL ASH	0.500		0	0	0	NR	NR	0
MI DRYCLEANERS	0.250		0	0	NR	NR	NR	0
MI LEAD	TP		NR	NR	NR	NR	NR	0
WI MANIFEST	0.250		0	1	NR	NR	NR	1
MI NPDES	TP		NR	NR	NR	NR	NR	0
MI UIC	TP		NR	NR	NR	NR	NR	0
MI WDS	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.500		0	0	2	NR	NR	2
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
MI RGA PART 201	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MI RGA LF	TP		NR	NR	NR	NR	NR	0
MI RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	2	22	24	2	0	50

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
East
< 1/8
0.071 mi.
375 ft.

28790 S WIXOM RD
WIXOM, MI 48393

Site 1 of 2 in cluster A

EDR Hist Auto **1015390783**
N/A

Relative:
Lower

Actual:
958 ft.

EDR Historical Auto Stations:

Name: WIXOM SUN FUEL CENTER
Year: 2009
Address: 28790 S WIXOM RD

Name: WIXOM SUN SUNOCO GAS STATION
Year: 2010
Address: 28790 S WIXOM RD

Name: WIXOM SUN FUEL CENTER
Year: 2011
Address: 28790 S WIXOM RD

Name: WIXOM SUN FUEL CENTER
Year: 2012
Address: 28790 S WIXOM RD

A2
East
< 1/8
0.071 mi.
375 ft.

SUNOCO GAS STATION
28790 WIXOM RD
WIXOM, MI 48393

Site 2 of 2 in cluster A

MI UST **U004126809**
N/A

Relative:
Lower

Actual:
958 ft.

UST:

Facility ID:	00041956
Facility Type:	ACTIVE
Owner Name:	ALY BAZI
Owner Address:	28790 WIXOM RD
Owner City,St,Zip:	WIXOM, MI 48393
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(586) 749-7444
Contact:	Abualk Hair Sbiha
Contact Phone:	(248) 924-3016
Date of Collection:	Not reported
Accuracy:	Not reported
Accuracy Value Unit:	Not reported
Horizontal Datum:	Not reported
Source:	Not reported
Point Line Area:	Not reported
Desc Category:	Not reported
Method of Collection:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Tank ID:	1
Tank Status:	**Currently In Use**
Capacity:	25000
Product:	Gasoline
Install Date:	09/28/2008
Remove Date:	Not reported
Tank Release Detection:	Tank Tightness Testing, Automatic Tank Gauging, Interstitial Monitoring Double Walled Tank
Pipe Realease Detection:	Interstitial Monitoring Double Walled Piping

SUNOCO GAS STATION (Continued) **U004126809**

Piping Material:	Double Walled
Piping Type:	Pressure
Construction Material:	Double Walled
Impressed Device:	Yes

Tank ID:	2
Tank Status:	**Currently In Use**
Capacity:	25000
Product:	Gasoline, Diesel
Install Date:	09/28/2008
Remove Date:	Not reported
Tank Release Detection:	Tank Tightness Testing, Automatic Tank Gauging, Interstitial Monitoring Double Walled Tank
Pipe Realease Detection:	Interstitial Monitoring Double Walled Piping
Piping Material:	Double Walled
Piping Type:	Pressure
Construction Material:	Double Walled
Impressed Device:	Yes

---

3 **FORMER TEXACO** **MI LUST** **S102852268**
SSE **NE CORNER WIXOM RD & I-96** **N/A**
1/8-1/4 **WIXOM, MI 48098**
0.150 mi.
791 ft.

Relative:
Higher

Actual:
969 ft.

LUST:

Facility ID:	50001823
Source:	STATE OF MICHIGAN
Owner Name:	Estate Of Burton Stover/R. Wells
Owner Address:	% NBD BANK 900 TOWER DR
Owner City,St,Zip:	TROY, MI 48098
Owner Contact:	Not reported
Owner Phone:	( ) -
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Former Texaco
Latitude:	42.49876
Longitude:	-83.53585
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)

Leak Number:	C-0002-96
Release Date:	01/03/1992
Substance Released:	Unknown
Release Status:	Closed
Release Closed Date:	09/09/1993

4 North 1/8-1/4 0.154 mi. 815 ft.

WATERLAND TRUCKING SERVICE
29100 WIXOM RD
WIXOM, MI 48393

MI AST **1004260390**
N/A

Relative: Lower

Actual: 958 ft.

AST:

Facility ID:	91084314
Facility Phone:	( ) -
Owner Name:	WATERLAND TRUCKING SERVICE
Owner Address:	29100 WIXOM RD
Owner City,St,Zip:	WIXOM, MI 48393-0335
Owner County:	USA
Owner Contact:	Not reported
Owner Telephone:	(248) 866-3746
District:	Region 1 - SE Michigan District Office
Contact:	Mr Kendrich
List Status:	CLOSED
Date of Collection:	Not reported
Accuracy:	15 METERS
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Description Category:	Not reported
Method of Collection:	Interpolation-Map
Horizontal Datum:	NAD83
Latitude:	42.5067300
Longitude:	-83.537765
Tank Id:	1
Tank Status:	Removed from Premises
Capacity (in gallons):	6000
Installation Date:	12/07/2000
Substance Stored:	FL/CL
Removed/Closed Date:	06/27/2008
Tank Id:	2
Tank Status:	Removed from Premises
Capacity (in gallons):	6000
Installation Date:	12/07/2000
Substance Stored:	FL/CL
Removed/Closed Date:	09/11/2008

---

5 NNE 1/8-1/4 0.156 mi. 826 ft.

MODERN MILWORKS
29000 S WIXOM RD
WIXOM, MI 48393

RCRA NonGen / NLR **1000312207**
FINDS **MID017453473**
ECHO

Relative: Higher

Actual: 959 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2000
Facility name:	MODERN MILWORKS
Facility address:	29000 S WIXOM RD WIXOM, MI 48393
EPA ID:	MID017453473
Contact:	JEFFREY WEINGER
Contact address:	29000 S WIXOM RD WIXOM, MI 48393
Contact country:	US
Contact telephone:	(000) 000-0000

MODERN MILWORKS (Continued) **1000312207**

Contact email: Not reported
EPA Region: 05
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NO ACTIVE O/OP AS NOT GENERATING WASTE
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/02/2000
Owner/Op end date: Not reported

Owner/operator name: NO ACTIVE O/OP AS NOT GENERATING WASTE
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/02/2000
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

Historical Generators:
Date form received by agency: 09/17/1998
Site name: MODERN MILWORKS
Classification: Not a generator, verified

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 06/08/1987
Site name: MODERN MILWORKS

MODERN MILWORKS (Continued) **1000312207**

Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

FINDS:

Registry ID: 110006514619

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ECHO:
Envid: 1000312207
Registry ID: 110006514619
DFR URL: http://echo.epa.gov/detailed_facility_report?fid=110006514619

B6 **WIXOM ASSEMBLY PLANT** **MI AST** **U003327174**
NNW **28801 S WIXOM RD** **N/A**
1/8-1/4 **WIXOM, MI 48393**
0.157 mi.
830 ft. **Site 1 of 8 in cluster B**

Relative:
Lower

Actual:
952 ft.

AST:
Facility ID: 92063073
Facility Phone: (313) 317-4438
Owner Name: WIXOM ASSEMBLY PLANT
Owner Address: 28801 S WIXOM RD
Owner City,St,Zip: WIXOM, MI 48393-3415
Owner County: USA
Owner Contact: Facility Environmental Representative
Owner Telephone: (248) 344-5286
District: Region 1 - SE Michigan District Office
Contact: Ann McCormick
List Status: CLOSED
Date of Collection: 01/11/2001
Accuracy: 100 FEET
Source: STATE OF MICHIGAN
Point Line Area: POINT
Description Category: Plant Entrance (Freight)
Method of Collection: Address Matching-House Number
Horizontal Datum: NAD83
Latitude: 42.4994850
Longitude: -83.536385

Tank Id: 1
Tank Status: Removed from Premises
Capacity (in gallons): 20000
Installation Date: Not reported
Substance Stored: LPG

WIXOM ASSEMBLY PLANT (Continued) **U003327174**

Removed/Closed Date: 06/15/2012

B7
NNW
1/8-1/4
0.157 mi.
830 ft.

FORD MOTOR - WIXOM ASSEMBLY PLANT
28801 S WIXOM RD
WIXOM, MI 48393

MI LUST **U003323012**
MI UST **N/A**
MI INVENTORY
MI WDS

Site 2 of 8 in cluster B

Relative:
Lower

Actual:
952 ft.

LUST:

Facility ID:	00014262
Source:	STATE OF MICHIGAN
Owner Name:	Ford Motor Co - Environmental Quality Office
Owner Address:	290 Town Center Dr Suite 800
Owner City,St,Zip:	Dearborn, MI 48126
Owner Contact:	Not reported
Owner Phone:	(313) 322-3891
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Ford Motor - Wixom Assembly Plant
Latitude:	42.49953
Longitude:	-83.53638
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-0056-13
Release Date:	05/09/2013
Substance Released:	Gasoline,Gasoline
Release Status:	Closed
Release Closed Date:	04/22/2015
Leak Number:	C-0191-09
Release Date:	11/03/2009
Substance Released:	Other
Release Status:	Open
Release Closed Date:	Not reported
Leak Number:	C-0238-08
Release Date:	02/26/2008
Substance Released:	Gasoline,Gasoline
Release Status:	Open
Release Closed Date:	Not reported
Leak Number:	C-0519-98
Release Date:	06/19/1998
Substance Released:	Gasoline
Release Status:	Closed
Release Closed Date:	02/20/2014
Leak Number:	C-0674-00
Release Date:	07/19/2000
Substance Released:	Gasoline
Release Status:	Closed
Release Closed Date:	02/20/2014

FORD MOTOR - WIXOM ASSEMBLY PLANT (Continued) **U003323012**

UST:

Facility ID:	00014262
Facility Type:	CLOSED
Owner Name:	FORD MOTOR CO - ENVIRONMENTAL QUALITY OFFICE
Owner Address:	290 TOWN CENTER DR SUITE 800
Owner City,St,Zip:	DEARBORN, MI 48126
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(313) 322-3891
Contact:	Ann McCormick
Contact Phone:	(248) 344-5286
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.49953
Longitude:	-83.53638

Tank ID:	3
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	BRAKE/FLUID
Install Date:	05/08/1956
Remove Date:	08/01/1990
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	6
Tank Status:	**Removed from Ground**
Capacity:	10725
Product:	Hazardous Substance
Install Date:	05/08/1982
Remove Date:	10/01/1988
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Bare Steel
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	10
Tank Status:	**Removed from Ground**
Capacity:	3000
Product:	Gasoline,BENZENE
Install Date:	01/01/1988
Remove Date:	08/11/1990
Tank Release Detection:	Not reported

FORD MOTOR - WIXOM ASSEMBLY PLANT (Continued) **U003323012**

Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 8-1
Tank Status: Removed from Ground
Capacity: 20000
Product: Gasoline
Install Date: 05/08/1956
Remove Date: 12/01/1989
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel,Lined Interier
Impressed Device: No

Tank ID: 8-2
Tank Status: Removed from Ground
Capacity: 20000
Product: Gasoline
Install Date: 05/08/1956
Remove Date: 12/01/1989
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel,Lined Interier
Impressed Device: No

Tank ID: 8-3
Tank Status: Removed from Ground
Capacity: 20000
Product: Gasoline
Install Date: 05/08/1956
Remove Date: 12/01/1989
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel,Lined Interier
Impressed Device: No

Tank ID: 8-5
Tank Status: Removed from Ground
Capacity: 20000
Product: Hazardous Substance
Install Date: 05/08/1956
Remove Date: 12/01/1989
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported

FORD MOTOR - WIXOM ASSEMBLY PLANT (Continued) **U003323012**

Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

Tank ID: 9-1
Tank Status: Removed from Ground
Capacity: 20000
Product: Hazardous Substance,STRONTIUM CHROMATE,7
Install Date: 05/08/1962
Remove Date: 12/01/1988
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

Tank ID: 9-2
Tank Status: Removed from Ground
Capacity: 20000
Product: Hazardous Substance,STRONTIUM CHROMATE,7
Install Date: 05/08/1962
Remove Date: 12/01/1988
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

Tank ID: 9-3
Tank Status: Removed from Ground
Capacity: 20000
Product: Hazardous Substance,STRONTIUM CHROMATE,7
Install Date: 05/08/1962
Remove Date: 12/01/1988
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

Tank ID: 10-1
Tank Status: Removed from Ground
Capacity: 30000
Product: Gasoline,BENZENE
Install Date: Not reported
Remove Date: 03/01/1990
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Double Walled

FORD MOTOR - WIXOM ASSEMBLY PLANT (Continued) **U003323012**

Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 10-2
Tank Status: Removed from Ground
Capacity: 30000
Product: Gasoline
Install Date: 01/01/1990
Remove Date: 02/15/2008
Tank Release Detection: Inter Monitoring Double Walled Tank
Pipe Realease Detection: Not reported
Piping Material: ABOVEGROUND
Piping Type: Pressure
Construction Material: Cathodically Protected Steel,Double Walled
Impressed Device: No

Tank ID: 10-3
Tank Status: Removed from Ground
Capacity: 30000
Product: Gasoline
Install Date: 01/01/1990
Remove Date: 02/15/2008
Tank Release Detection: Inter Monitoring Double Walled Tank
Pipe Realease Detection: Not reported
Piping Material: ABOVEGROUND
Piping Type: Pressure
Construction Material: Cathodically Protected Steel,Double Walled
Impressed Device: No

Tank ID: 8-11
Tank Status: Removed from Ground
Capacity: 15000
Product: TRANS FLUID
Install Date: 05/08/1956
Remove Date: 12/01/1989
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Bare Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

INVENTORY:
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.49953
Longitude: -83.53639

WDS:
Site Id: MID005379714

FORD MOTOR - WIXOM ASSEMBLY PLANT (Continued) **U003323012**

WMD Id:	393645
Site Specific Name:	FORD MOTOR CO WIXOM ASSEMBLY PLT
Mailing Address:	290 TOWN CENTER DR
Mailing City/State/Zip:	48126
Mailing County:	WAYNE

B8
NNW
1/8-1/4
0.157 mi.
830 ft.

Relative:
Lower

Actual:
952 ft.

FORD MOTOR COMPANY
28801 S WIXOM RD
WIXOM, MI 48393

Site 3 of 8 in cluster B

SEMS-ARCHIVE **1000183614**
RCRA-SQG **MID005379714**
MI HIST LF
RAATS
PADS
WI MANIFEST

SEMS-ARCHIVE:

Site ID:	502296
EPA ID:	MID005379714
Federal Facility:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

Following information was gathered from the prior CERCLIS update completed in 10/2013:

Site ID:	0502296
Federal Facility:	Not a Federal Facility
NPL Status:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

Program Priority:

Description:	Great Lakes

CERCLIS-NFRAP Assessment History:

Action:	HAZARD RANKING SYSTEM PACKAGE
Date Started:	/ /
Date Completed:	04/01/84
Priority Level:	NFRAP-Site does not qualify for the NPL based on existing information
Action:	DISCOVERY
Date Started:	/ /
Date Completed:	08/01/80
Priority Level:	Not reported
Action:	SITE INSPECTION
Date Started:	/ /
Date Completed:	03/01/84
Priority Level:	NFRAP-Site does not qualify for the NPL based on existing information
Action:	PRELIMINARY ASSESSMENT
Date Started:	/ /
Date Completed:	05/01/83
Priority Level:	Low priority for further assessment
Action:	ARCHIVE SITE
Date Started:	/ /
Date Completed:	10/10/91
Priority Level:	Not reported

RCRA-SQG:

FORD MOTOR COMPANY (Continued) **1000183614**

Date form received by agency:	06/18/2015
Facility name:	FORD MOTOR COMPANY
Facility address:	28801 S WIXOM RD WIXOM, MI 48393
EPA ID:	MID005379714
Mailing address:	290 TOWN CENTER DR STE 800 DEARBORN, MI 48126
Contact:	ANN MCCORMICK
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(313) 317-4438
Contact email:	AMCCORM3@FORD.COM
EPA Region:	05
Land type:	Private
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	FORD MOTOR CO
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	04/15/1957
Owner/Op end date:	Not reported

Owner/operator name:	FORD MOTOR CO
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	04/15/1957
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No

FORD MOTOR COMPANY (Continued) **1000183614**

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

Historical Generators:
Date form received by agency: 08/18/2014
Site name: FORD MOTOR COMPANY
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 03/08/2012
Site name: FORD MOTOR COMPANY
Classification: Small Quantity Generator

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D008
. Waste name: LEAD

Date form received by agency: 02/26/2010
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D008
. Waste name: LEAD

Date form received by agency: 04/29/2009
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 03/01/2008
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

Date form received by agency: 02/29/2008
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

FORD MOTOR COMPANY (Continued) **1000183614**

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 04/30/2007
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 03/01/2006
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

Date form received by agency: 02/24/2006
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 03/01/2004
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

Date form received by agency: 02/18/2004
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 04/28/2003
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 03/01/2002
Site name: FORD MOTOR CO WIXOM ASSEMBLY PLT
Classification: Large Quantity Generator

Date form received by agency: 02/27/2002
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 02/13/2001
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

FORD MOTOR COMPANY (Continued) **1000183614**

Date form received by agency: 02/28/2000
Site name: FORD MOTOR CO WIXOM ASSEMBLY PLT
Classification: Large Quantity Generator

Date form received by agency: 02/28/2000
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 02/26/1998
Site name: FORD MOTOR COMPANY, WIXOM ASSEMBLY
Classification: Large Quantity Generator

Date form received by agency: 10/07/1997
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 02/20/1996
Site name: FORD MOTOR COMPANY, WIXOM ASSY PL
Classification: Large Quantity Generator

Date form received by agency: 02/17/1994
Site name: FORD MOTOR COMPANY, WIXOM ASSEMBLY PLANT
Classification: Large Quantity Generator

Date form received by agency: 02/28/1990
Site name: FORD MOTOR CO WIXOM ASSEMBLY PLT
Classification: Large Quantity Generator

Date form received by agency: 11/18/1980
Site name: FORD MOTOR COMPANY
Classification: Not a generator, verified

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 08/11/1980
Site name: FORD MOTOR COMPANY
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 01/01/1901
Site name: FORD MOTOR CO. WIXOM ASSEMBLY PLT.
Classification: Large Quantity Generator

Biennial Reports:

Last Biennial Reporting Year: 2013

Annual Waste Handled:
Waste code: D002

FORD MOTOR COMPANY (Continued) **1000183614**

Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs): 186

Waste code: D008
Waste name: LEAD
Amount (Lbs): 186

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 07/11/2013
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/01/2013
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Air Emission Standards - Equipment Leaks
Date violation determined: 06/08/2002
Date achieved compliance: 03/04/2003
Violation lead agency: EPA
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 02/06/2003
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: 16000
Paid penalty amount: 244000

Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 08/21/2001
Date achieved compliance: 01/07/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/30/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

FORD MOTOR COMPANY (Continued) **1000183614**

Regulation violated: Not reported
Area of violation: Generators - Records/Reporting
Date violation determined: 09/30/1997
Date achieved compliance: 01/05/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 09/30/1997
Date achieved compliance: 01/05/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 09/30/1997
Date achieved compliance: 01/05/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/30/1997
Date achieved compliance: 01/05/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported

FORD MOTOR COMPANY (Continued) **1000183614**

Area of violation: LDR - General
Date violation determined: 09/30/1997
Date achieved compliance: 01/05/1998
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/30/1997
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 08/12/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 75000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest

FORD MOTOR COMPANY (Continued) **1000183614**

Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 08/12/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 75000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 08/12/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 75000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/27/1989
Date achieved compliance: 08/12/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/02/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/14/1987
Date achieved compliance: 12/04/1987
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/20/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/14/1987

FORD MOTOR COMPANY (Continued) **1000183614**

Date achieved compliance: 12/04/1987
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/20/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/19/1986
Date achieved compliance: 03/24/1987
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/05/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/04/1985
Date achieved compliance: 10/31/1985
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 10/09/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 08/19/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/06/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 08/19/1986

FORD MOTOR COMPANY (Continued) **1000183614**

Violation lead agency: EPA
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 10/11/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 56500
Final penalty amount: 14000
Paid penalty amount: 14000

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 08/19/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/06/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 11/25/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 07/06/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 08/19/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 11/25/1986
Violation lead agency: EPA

FORD MOTOR COMPANY (Continued) **1000183614**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/13/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 11/25/1986
Violation lead agency: EPA
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 10/11/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: 56500
Final penalty amount: 14000
Paid penalty amount: 14000

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1985
Date achieved compliance: 11/25/1986
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/06/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 07/11/2013
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: State Statute or Regulation
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/28/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 02/06/2003
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: TSD IS-Air Emission Standards - Equipment Leaks
Date achieved compliance: 03/04/2003
Evaluation lead agency: EPA

Evaluation date: 06/08/2002

FORD MOTOR COMPANY (Continued) **1000183614**

Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: TSD IS-Air Emission Standards - Equipment Leaks
Date achieved compliance: 03/04/2003
Evaluation lead agency: EPA

Evaluation date: 06/08/2002
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: TSD IS-Air Emission Standards - Equipment Leaks
Date achieved compliance: 03/04/2003
Evaluation lead agency: EPA

Evaluation date: 08/21/2001
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: State Statute or Regulation
Date achieved compliance: 01/07/2002
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Records/Reporting
Date achieved compliance: 01/05/1998
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 01/05/1998
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Universal Waste - Small Quantity Handlers
Date achieved compliance: 01/05/1998
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 01/05/1998
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/05/1998
Evaluation lead agency: State

Evaluation date: 09/26/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 10/27/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 08/12/1991

FORD MOTOR COMPANY (Continued) **1000183614**

Evaluation lead agency: State

Evaluation date: 10/27/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 08/12/1991
Evaluation lead agency: State

Evaluation date: 10/27/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 08/12/1991
Evaluation lead agency: State

Evaluation date: 10/14/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/04/1987
Evaluation lead agency: State

Evaluation date: 10/14/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 12/04/1987
Evaluation lead agency: State

Evaluation date: 03/19/1987
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/19/1986
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/24/1987
Evaluation lead agency: State

Evaluation date: 04/01/1986
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 11/15/1985
Evaluation: GROUNDWATER MONITORING EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/15/1985
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/04/1985

FORD MOTOR COMPANY (Continued) **1000183614**

Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	10/31/1985
Evaluation lead agency:	State

Evaluation date:	05/01/1985
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	11/25/1986
Evaluation lead agency:	EPA

Evaluation date:	05/01/1985
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	08/19/1986
Evaluation lead agency:	EPA

Historical LF:

Facility ID:	63000029
Status:	INACTIVE
Contact:	Not reported
Facility Phone:	Not reported
Facility Fax:	Not reported
Facility Type:	Not reported
Facility Email:	Not reported
Facility is Open:	Not reported
Facility Type:	Landfill Type III
Facility Contact:	Not reported
County Code:	63
Facility Number:	000029
Staff:	Not reported
Active:	No
Permit Date:	Not reported
Permit Number:	Not reported
License Date:	/ /
License No:	Not reported
No Waste:	Not reported
Enforcement:	Not reported
Exp Letters:	Not reported
Operator Name:	Not reported
Operator Contact:	Not reported
Operator Address:	Not reported
Operator City,St,Zip:	Not reported
Operator Telephone:	Not reported
Operator Fax:	Not reported
Operator Email:	Not reported
Owner Name:	FORD MOTOR COMPANY
Owner Contact:	Not reported
Attention:	Not reported
Owner Address:	THE AMERICAN ROAD
Owner City,St,Zip:	DEARBORN, MI 48124
Owner Telephone:	Not reported
Owner Fax:	Not reported
Owner Email:	Not reported
District:	S.E. Michigan
Section:	08
Permit Applicant:	FORD MOTOR COMPANY
Permit Applicant Contact:	Not reported

FORD MOTOR COMPANY (Continued) **1000183614**

Permit Applicant Address: PO BOX 19
Permit Applicant City,St,Zip: WIXOM, MI 48096
Permit Applicant Phone: Not reported
Application Type: Private
Liner Information: Not reported
Nature of Wastes Allowed: Not reported
Township: Not reported
Section Number: Not reported
Township Section: Not reported
District: Not reported
Business Type: Not reported
County Description: Not reported
County 2 Description: Not reported
Liner Type: Not reported
Reported Date: Not reported
Amount: 0.00
Financial Instrument: Not reported
Fund Type: Not reported
Issued Date: Not reported
Expires: Not reported
Expiry: Not reported
Licensed: Not reported
Comments: Not reported
Date of Expiry of Current License: Not reported
Acreage Currently Licensed: 0.000
Acres Certified Closed: 0.000
Issue of 1st Construction Permit Date: Not reported
Acres Given in 1st Construction Permit: 0.000
Issue of 2nd Construction Permit Date: Not reported
Acres Given in 2nd Construction Permit: 0.000
Issue of 3rd Construction Permit Date: Not reported
Acres Given in 3rd Construction Permit: 0.000
Restrictive Deed Covenant Filed: Not reported
Perpetual Care Fund Type: Not reported
Perpetual Care Fund Signed: Not reported
Perpetual Care Fund Agreement Signed: Not reported
Groundwater Monitoring System Exists: Not reported
Date landill Certified Closed: Not reported
Received Waste on or After Oct. 9, 1991: Not reported
Site Monitorable Under Definition of New Rules: Not reported

PADS:
EPAID: MID005379714
Facility name: FORD MOTOR CO WIXOM ASSEM PLT
Facility Address: 50000 GRAND RIVER EXP
WIXOM, MI 48096
Facility country: US
Generator: Yes
Storer: No
Transporter: No
Disposer: No
Research facility: No
Smelter: No
Facility owner name: FORD MOTOR CO
Contact title: Not reported
Contact name: LEE J P
Contact tel: (313)344-5000

FORD MOTOR COMPANY (Continued) **1000183614**

Contact extension:	Not reported
Mailing address:	50000 GRAND RIVER EXP WIXOM, MI 48096
Mailing country:	US
Cert. title:	Not reported
Cert. name:	Not reported
Cert. date:	03/30/1990
Date received:	04/27/1990

WI MANIFEST:

Year:	2013
EPA ID:	MID005379714
FID:	Not reported
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Shipped:

Year:	2013
Manifest Doc Id:	000656115VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	05/22/2013
GEN Copy Revd Date:	Not reported
TSD Date:	05/22/2013
TSD EPA ID:	MID980991566
TSD Copy Revd Date:	07/15/2013

Year:	2013
Manifest Doc Id:	000657022VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	01/17/2013
GEN Copy Revd Date:	Not reported
TSD Date:	01/28/2013
TSD EPA ID:	WID988566543
TSD Copy Revd Date:	02/05/2013

Year:	2013
Manifest Doc Id:	000657023VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	01/17/2013
GEN Copy Revd Date:	Not reported
TSD Date:	01/28/2013
TSD EPA ID:	WID003967148
TSD Copy Revd Date:	02/12/2013

FORD MOTOR COMPANY (Continued) **1000183614**

Year:	2012
EPA ID:	MID005379714
FID:	Not reported
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Shipped:

Year:	2012
Manifest Doc Id:	000656754VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	11/07/2012
GEN Copy Revd Date:	Not reported
TSD Date:	11/19/2012
TSD EPA ID:	WID003967148
TSD Copy Revd Date:	12/17/2012

Year:	2012
Manifest Doc Id:	000656756VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	11/07/2012
GEN Copy Revd Date:	Not reported
TSD Date:	11/20/2012
TSD EPA ID:	WID988566543
TSD Copy Revd Date:	12/06/2012

Year:	2011
EPA ID:	MID005379714
FID:	Not reported
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Shipped:

Year:	2011
Manifest Doc Id:	000522525VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	08/30/2011

FORD MOTOR COMPANY (Continued) **1000183614**

GEN Copy Revd Date:	Not reported
TSD Date:	09/06/2011
TSD EPA ID:	WID988566543
TSD Copy Revd Date:	10/04/2011

Year:	2010
EPA ID:	MID005379714
FID:	Not reported
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Shipped:

Year:	2010
Manifest Doc Id:	000393979VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	12/28/2010
GEN Copy Revd Date:	Not reported
TSD Date:	01/06/2011
TSD EPA ID:	WID003967148
TSD Copy Revd Date:	02/11/2011

Year:	2010
Manifest Doc Id:	000394016VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	12/28/2010
GEN Copy Revd Date:	Not reported
TSD Date:	01/07/2011
TSD EPA ID:	WID988566543
TSD Copy Revd Date:	02/09/2011

Year:	2009
EPA ID:	MID005379714
FID:	Not reported
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

FORD MOTOR COMPANY (Continued) **1000183614**

Shipped:

Year:	2009
Manifest Doc Id:	000372110VES
Copy Type:	TSDCOPY
Gen EPA ID:	MID005379714
Gen Date:	04/16/2009
GEN Copy Revd Date:	Not reported
TSD Date:	04/22/2009
TSD EPA ID:	WID003967148
TSD Copy Revd Date:	06/05/2009

Year:	2007
EPA ID:	MID005379714
FID:	0
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Year:	2006
EPA ID:	MID005379714
FID:	0
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

Year:	2005
EPA ID:	MID005379714
FID:	0
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

FORD MOTOR COMPANY (Continued) **1000183614**

Year:	2004
EPA ID:	MID005379714
FID:	0
ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact Title:	ENV ENGR
Contact Name:	ANN MCCORMICK
Contact Address:	28801 WIXOM RD
Contact City/State/Zip:	WIXOM, MI 48393
Contact Telephone:	2483445286
Contact EMail Address:	Not reported

B9 **FORD WIXOM ASSEMBLY PLANT (PORTION OF)** **MI BEA** **S110748310**
NNW **28601 & 28801 SOUTH WIXOM ROAD** **N/A**
1/8-1/4 **WIXOM, MI**
0.157 mi.
830 ft. **Site 4 of 8 in cluster B**

Relative:
Lower

Actual:
952 ft.

BEA:

Secondary Address:	(County notes 28601 as official address)
BEA Number:	4597
District:	Southeast MI
Date Received:	10/08/2010
Submitter Name:	Xtreme Power Michigan, LLC
Petition Determination:	Affirmed
Petition Disclosure:	1
Category:	Same Hazardous Substance(s)
Determination 20107A:	No Request
Reviewer:	lebarj
Division Assigned:	Storage Tank Division

B10 **CLAIRVOYANT ENERGY SOLAR PANEL MFG.** **MI BEA** **S110624601**
NNW **28801 SOUTH WIXOM ROAD (PORTION OF)** **N/A**
1/8-1/4 **WIXOM, MI**
0.157 mi.
830 ft. **Site 5 of 8 in cluster B**

Relative:
Lower

Actual:
952 ft.

BEA:

Secondary Address:	Ford Wixom Assembly Plant
BEA Number:	4620
District:	Southeast MI
Date Received:	10/28/2010
Submitter Name:	Clairvoyant Energy Solar Panel Mfg.
Petition Determination:	Affirmed
Petition Disclosure:	1
Category:	Same Hazardous Substance(s)
Determination 20107A:	No Request
Reviewer:	lebarj
Division Assigned:	RRD

B11 NNW 1/8-1/4 0.157 mi. 830 ft. | **FORD MOTOR COMPANY**
28801 WIXOM ROAD
WIXOM, MI 48393

Site 6 of 8 in cluster B

MI AUL **S107696512**
MI AIRS **N/A**
MI BEA
MI NPDES

Relative: Lower

Actual: 952 ft.

AUL:

Status:	Pending
Site Name:	Not reported
Property:	on-site
Land Use Restriction Type:	RC
Program Type:	Part 213
Program Support Assigned User:	Not reported
Program Support Assigned Date:	Not reported
Legal Description Of Property:	Not reported
Based On The Deq Ref #:	11121313072
MDEQ Reference Number:	RC-RRD-213-13-072
Property Or Description Restricted Area:	Not reported
Lead Division:	RD
File Name Of Hyperlinked Legal Doc:	Not reported
Mapped Polygons Area In Acres:	Not reported
Mapped Polygons Area In Square Miles:	Not reported
Date Data Entry Started:	Not reported
Date Data Entry Finished:	Not reported
Individual Or Staff Assoc With The Mapping:	Not reported
Program Used To Map Restricted Features:	Not reported
Date Legal Paperwork Stamped/Filed/Register Of Deeds:	Not reported
Commercial I Land Use Restriction:	0
Commercial Ii Land Use Restriction:	0
Commercial Iii Land Use Restriction:	0
Commercial Iv Land Use Restriction:	0
Industrial Land Use Restriction:	0
Residential Land Use Restriction:	0
Recreational Land Use Restriction:	0
Multiple Land-Use Restrictions:	0
Site Specific Restrictions:	0
Groundwater Consumption Restrictions:	0
Groundwater Contact Restrictions:	0
Special Well Construction Requirements:	0
Special Building Restrictions:	0
Excavation And Soil Movement Restrictions:	0
Soil Movement Requirements:	0
There Is A Restriction On All Construction:	0
Monitoring Well Protected, No Tampering Or Removal:	0
There Is An Exposure Barrier In Place:	0
There Is A Health And Safety Plan:	0
There Is A Permanent Marker On The Site:	0
Map Comments:	Not reported
Comment:	May 29, 2013 consultant requested DEQ reference number.

AIRS:

State Registration Number:	A5260
Naics Code:	Not reported
Contact Email:	Not reported
Contact Name:	CHRIS LEPPI
Contact Phone:	2483445036
Contact Address:	(same as site address)
Contact City,St,Zip:	Not reported
Permit Number:	334-07

FORD MOTOR COMPANY (Continued) **S107696512**

Date Received:	10/08/2007
Application Reason:	OPT-OUT
Record Type:	Not reported
State County FIPS:	Not reported
Facility Category:	Not reported
SIC Primary:	Not reported
Tribal Code:	Not reported
Facility Status:	Not reported
Supplemental Location Text:	Not reported
Business Name:	Not reported
Principal Product:	Not reported
Principal Product Description:	Not reported
UTM Zone (Geo Coordinates Universal Transverse Mercator System):	Not reported
UTM Horizontal Coord:	Not reported
UTM Vertical Coord:	Not reported
Mailing Name:	Not reported
Mailing Contact Person:	Not reported
Mailing Street:	Not reported
Mailing City:	Not reported
Mailing State:	Not reported
Mailing Zip:	Not reported
Mailing Zip 4 Extension:	Not reported
Compliance Person:	Not reported
Compliance Area Code:	Not reported
Compliance Phone Number:	Not reported
Emission Inventory Contact Person:	Not reported
EI Contact Area Code:	Not reported
EI Contact Phone Number:	Not reported
Permit Contact Person:	Not reported
Permit Contact Person Area Code:	Not reported
Permit Contact Person Phone Number:	Not reported
Federal Employer Id Number:	Not reported
# Of Employees:	Not reported
Reporting Year:	Not reported
Date Record Was Created:	Not reported

BEA:

Secondary Address:	Not reported
BEA Number:	5652
District:	Southeast MI
Date Received:	06/24/2013
Submitter Name:	Trident Barrow Management 22 LLC
Petition Determination:	No Request
Petition Disclosure:	0
Category:	Not reported
Determination 20107A:	No Request
Reviewer:	wojcieck
Division Assigned:	RRD

MI NPDES:

Permit Number:	MIS410193
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	03/12/2015
Effective Date:	03/12/2015
Expiration Date:	04/01/2019

FORD MOTOR COMPANY (Continued) **S107696512**

Permittee Name:	Ford Motor Company
Permittee Address:	c/o EQO
Permittee Addr2:	200 Town Center Drive, Suite 800
Permittee City,St,Zip:	Dearborn, MI 48126
Permit Type:	NPDES Certificate of Coverage under General Permit (COC)
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Ford-Wixom Assembly Plt
Latitude:	42.498611
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-83.536111
Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4090005
Permit Status:	In Effect
COC Permit Category:	SW-Industrial CY4
DEQ District Email:	Southeast Michigan
DEQ Permit Compliance Manager:	Robert Jacobson
DEQ Permit Compliance Manager Email:	jacobsonr1@michigan.gov

C12 **PYLES DIVISION, SEALED POWER COR** **MI LUST** **U003867936**
NE **28990 S WIXOM RD** **MI UST** **N/A**
1/8-1/4 **WIXOM, MI 48393** **MI INVENTORY**
0.161 mi. **MI WDS**
852 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
959 ft.

LUST:

Facility ID:	00033896
Source:	STATE OF MICHIGAN
Owner Name:	Pyles Div Sealed Power Corp
Owner Address:	28990 S Wixom Rd
Owner City,St,Zip:	Wixom, MI 48393-3416
Owner Contact:	Not reported
Owner Phone:	(313) 349-5500
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Graco - Pyles
Latitude:	42.49982
Longitude:	-83.53602
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-0673-90
Release Date:	04/18/1990
Substance Released:	Not reported
Release Status:	Closed
Release Closed Date:	03/08/1993

UST:

Facility ID:	00033896
Facility Type:	CLOSED

PYLES DIVISION, SEALED POWER COR (Continued) **U003867936**

Owner Name:	PYLES DIV SEALED POWER CORP
Owner Address:	28990 S WIXOM RD
Owner City,St,Zip:	WIXOM, MI 48393-3416
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(313) 349-5500
Contact:	CHERYL L. HUNTER
Contact Phone:	(313) 349-5500
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.49982
Longitude:	-83.53602

Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	01/01/1972
Remove Date:	03/01/1990
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	2
Tank Status:	**Removed from Ground**
Capacity:	5000
Product:	Gasoline
Install Date:	01/01/1972
Remove Date:	03/01/1990
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

INVENTORY:

Bea Number:	201405960LV
Township:	Wixom
District:	Southeast MI
Data Source:	BEA
Latitude:	Not reported
Longitude:	Not reported

WDS:

Site Id:	Not reported

PYLES DIVISION, SEALED POWER COR (Continued) **U003867936**

WMD Id:	465187
Site Specific Name:	GRACO INC WIXOM
Mailing Address:	28990 S WIXOM RD
Mailing City/State/Zip:	48393
Mailing County:	OAKLAND

Site Id:	MID006556070
WMD Id:	394310
Site Specific Name:	ALTA LIFT TRUCK SERVICES INC
Mailing Address:	28990 S WIXOM RD
Mailing City/State/Zip:	48393
Mailing County:	OAKLAND

C13 **ALTA LIFT TRUCK SERVICES INC** **RCRA NonGen / NLR** **1000841543**
NE **28990 S WIXOM RD** **MID006556070**
1/8-1/4 **WIXOM, MI 48393**
0.161 mi.
852 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
959 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/25/2013
Facility name:	ALTA LIFT TRUCK SERVICES INC
Facility address:	28990 S WIXOM RD WIXOM, MI 48393
EPA ID:	MID006556070
Contact:	DEBORAH TANNER
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	(248) 449-6700
Contact email:	Not reported
EPA Region:	05
Land type:	Other land type
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/2013
Owner/Op end date:	Not reported

Owner/operator name:	NO ACTIVE O/OP AS NOT GENERATING WASTE
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/2013
Owner/Op end date:	Not reported

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

Historical Generators:
Date form received by agency: 11/05/2002
Site name: ALTA LIFT TRUCK SERVICES INC
Classification: Not a generator, verified

. Waste code: D001
. Waste name: IGNITABLE WASTE

Date form received by agency: 08/03/1992
Site name: GRACO INC.
Classification: Large Quantity Generator

Date form received by agency: 07/27/1981
Site name: ALTA LIFT TRUCK SERVICES INC
Classification: Not a generator, verified

. Waste code: D001
. Waste name: IGNITABLE WASTE

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 02/22/2002
Date achieved compliance: 04/03/2002
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/18/2002
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/02/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/02/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/21/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/05/2001

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Used Oil - Generators
Date violation determined: 06/05/2001
Date achieved compliance: 09/21/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/02/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/21/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/02/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/21/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 06/05/2001
Date achieved compliance: 08/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/02/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Records/Reporting
Date violation determined: 06/05/2001
Date achieved compliance: 08/02/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Used Oil - Generators
Date violation determined: 06/05/2001
Date achieved compliance: 09/21/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/05/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 06/05/2001
Date achieved compliance: 11/15/2001
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/21/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 07/01/1992
Date achieved compliance: 12/03/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Enforcement action date: 07/01/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:

Evaluation date: 02/22/2002
Evaluation: NON-FINANCIAL RECORD REVIEW
Area of violation: State Statute or Regulation
Date achieved compliance: 04/03/2002
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 11/15/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 11/15/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/15/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Used Oil - Generators
Date achieved compliance: 09/21/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Manifest
Date achieved compliance: 11/15/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 08/02/2001
Evaluation lead agency: State

Evaluation date: 05/24/2001
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Records/Reporting
Date achieved compliance: 08/02/2001
Evaluation lead agency: State

ALTA LIFT TRUCK SERVICES INC (Continued) **1000841543**

Evaluation date: 06/22/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/03/1992
Evaluation lead agency: State

B14
NW
1/8-1/4
0.184 mi.
972 ft.

FORD WIXOM ASSEMBLY PLANT (PORTION OF)
28601 & 28801 SOUTH WIXOM ROAD (COUNTY NOTES 28601 AS OFFICI
OAKLAND (County), MI

MI INVENTORY **S114028421**
N/A

Site 7 of 8 in cluster B

Relative:
Lower

Actual:
950 ft.

INVENTORY:
Bea Number: 201004597LV
Township: Wixom
District: Southeast MI
Data Source: BEA
Latitude: 42.50444
Longitude: -83.5394

B15
NW
1/8-1/4
0.184 mi.
972 ft.

FORD MOTOR WIXOM ASSEMBLY
28601 AND 28801SOUTH WIXOM ROAD
OAKLAND (County), MI 48393

MI INVENTORY **S114028419**
N/A

Site 8 of 8 in cluster B

Relative:
Lower

Actual:
950 ft.

INVENTORY:
Bea Number: 201004620LV
Township: Wixom
District: Southeast MI
Data Source: BEA
Latitude: 42.50444
Longitude: -83.5394

Bea Number: 201305789LV
Township: Wixom
District: Southeast MI
Data Source: BEA
Latitude: 42.50444
Longitude: -83.5394

16
South
1/8-1/4
0.241 mi.
1270 ft.

MI DEPT/TRANSPORTATION
I 96 UNDER WIXOM RD
WIXOM, MI 48393

RCRA NonGen / NLR **1001124111**
MIR000020412

Relative:
Higher

Actual:
971 ft.

RCRA NonGen / NLR:
Date form received by agency: 09/17/1998
Facility name: MI DEPT/TRANSPORTATION
Facility address: I 96 UNDER WIXOM RD
WIXOM, MI 48393
EPA ID: MIR000020412
Mailing address: PO BOX 30050
LANSING, MI 48909
Contact: GARY BEASLEY

MI DEPT/TRANSPORTATION (Continued) **1001124111**

Contact address: I 96 UNDER WIXOM RD
WIXOM, MI 48393
Contact country: US
Contact telephone: (517) 335-1923
Contact email: Not reported
EPA Region: 05
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: MICH DEPT OF TRANSPORTATION
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: State
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1970
Owner/Op end date: Not reported

Owner/operator name: MICH DEPT OF TRANSPORTATION
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: State
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1970
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

Historical Generators:
Date form received by agency: 12/06/1996
Site name: MI DEPT/TRANSPORTATION
Classification: Large Quantity Generator

. Waste code: D001

MI DEPT/TRANSPORTATION (Continued) **1001124111**

. Waste name: IGNITABLE WASTE

Violation Status: No violations found

D17 NNE 1/4-1/2 0.298 mi. 1572 ft. | **HOLLOWAY SAND AND GRAVEL** | **MI INVENTORY** | **S114029293**
29250 SOUTH WIXOM | **N/A**
WIXOM, MI 48393

Site 1 of 3 in cluster D

Relative: Lower
Actual: 958 ft.

INVENTORY:

Bea Number:	Not reported
Township:	Wixom
District:	Southeast MI
Data Source:	Part 201
Latitude:	42.50599
Longitude:	-83.53316

D18 NNE 1/4-1/2 0.298 mi. 1572 ft. | **HOL-ACC 1** | **ABANDONED MINES** | **1018221043**
29250 WIXOM RD | **N/A**
WIXOM, MI 48096

Site 2 of 3 in cluster D

Relative: Lower
Actual: 958 ft.

ABANDONED MINES:

Mine ID:	3304009
Mine Type:	Surface
Mine Status Description:	Abandoned
Mine Status Date:	11/01/1985
Coal (C) or Metal (M) Mine:	C
Controller ID:	C11757
Controller Name:	Holloway Daniel
Operator ID:	P16543
Operator name:	Hol-Acc Corp
Latitude:	39.5417
Longitude:	82.1667

D19 NNE 1/4-1/2 0.298 mi. 1572 ft. | **MICHIGAN FOUNDATION QUARRY** | **ABANDONED MINES** | **1018204336**
29250 WIXOM RD | **N/A**
WIXOM, MI 48393

Site 3 of 3 in cluster D

Relative: Lower
Actual: 958 ft.

ABANDONED MINES:

Mine ID:	2002520
Mine Type:	Surface
Mine Status Description:	Abandoned
Mine Status Date:	07/24/1985
Coal (C) or Metal (M) Mine:	M
Controller ID:	M01492
Controller Name:	Daniel W Holloway
Operator ID:	L03813
Operator name:	Rockwood Stone Inc
Latitude:	Not reported
Longitude:	Not reported

E20
NNW
1/4-1/2
0.302 mi.
1597 ft.

B & J GAS AND OIL COMPANY
29330 & 29420 WIXOM ROAD
OAKLAND (County), MI

MI INVENTORY **S114029023**
N/A

Site 1 of 2 in cluster E

Relative:
Lower

Actual:
948 ft.

INVENTORY:

Bea Number:	199600180LV
Township:	Wixom
District:	Southeast MI
Data Source:	BEA
Latitude:	42.50648
Longitude:	-83.53852

E21
NNW
1/4-1/2
0.302 mi.
1597 ft.

29330 + 29420 WIXOM ROAD
29330+29420 WIXOM ROAD
WIXOM, MI 48393

MI INVENTORY **S114029022**
N/A

Site 2 of 2 in cluster E

Relative:
Lower

Actual:
948 ft.

INVENTORY:

Bea Number:	Not reported
Township:	Wixom City
District:	Southeast MI
Data Source:	Part 201
Latitude:	42.50648
Longitude:	-83.53852

F22
North
1/4-1/2
0.303 mi.
1602 ft.

FORD MOTOR CO WIXOM
28801 SOUTH WIXOM RD (OAKLAND ACCESS)
WIXOM, MI 48393

MI AUL **S110126748**
MI PART 201 **N/A**
MI INVENTORY

Site 1 of 2 in cluster F

Relative:
Lower

Actual:
951 ft.

AUL:

Status:	Pending
Site Name:	Ford Motor Co Wixom
Property:	on-site
Land Use Restriction Type:	RC
Program Type:	Part 201
Program Support Assigned User:	Not reported
Program Support Assigned Date:	Not reported
Legal Description Of Property:	Site Address
Based On The Deq Ref #:	11120114004
MDEQ Reference Number:	RC-RRD-201-14-004
Property Or Description Restricted Area:	Not reported
Lead Division:	RD
File Name Of Hyperlinked Legal Doc:	Not reported
Mapped Polygons Area In Acres:	Not reported
Mapped Polygons Area In Square Miles:	Not reported
Date Data Entry Started:	Not reported
Date Data Entry Finished:	Not reported
Individual Or Staff Assoc With The Mapping:	Not reported
Program Used To Map Restricted Features:	Not reported
Date Legal Paperwork Stamped/Filed/Register Of Deeds:	Not reported
Commercial I Land Use Restriction:	0
Commercial Ii Land Use Restriction:	0
Commercial Iii Land Use Restriction:	0

FORD MOTOR CO WIXOM (Continued) **S110126748**

Commercial Iv Land Use Restriction: 0
Industrial Land Use Restriction: 0
Residential Land Use Restriction: 0
Recreational Land Use Restriction: 0
Multiple Land-Use Restrictions: 0
Site Specific Restrictions: 0
Groundwater Consumption Restrictions: 0
Groundwater Contact Restrictions: 0
Special Well Construction Requirements: 0
Special Building Restrictions: 0
Excavation And Soil Movement Restrictions: 0
Soil Movement Requirements: 0
There Is A Restriction On All Construction: 0
Monitoring Well Protected, No Tampering Or Removal: 0
There Is An Exposure Barrier In Place: 0
There Is A Health And Safety Plan: 0
There Is A Permanent Marker On The Site: 0
Map Comments: Not reported
Comment: Januaury 23, 2014 consultant requested DEQ reference #.

Status: Pending
Site Name: Ford Motor Co Wixom
Property: On-Site
Land Use Restriction Type: RC
Program Type: Part 201
Program Support Assigned User: Not reported
Program Support Assigned Date: Not reported
Legal Description Of Property: Site Address
Based On The Deq Ref #: 11120115012
MDEQ Reference Number: RC-RRD-201-15-012
Property Or Description Restricted Area: Not reported
Lead Division: RRD
File Name Of Hyperlinked Legal Doc: Not reported
Mapped Polygons Area In Acres: Not reported
Mapped Polygons Area In Square Miles: Not reported
Date Data Entry Started: Not reported
Date Data Entry Finished: Not reported
Individual Or Staff Assoc With The Mapping: Not reported
Program Used To Map Restricted Features: Not reported
Date Legal Paperwork Stamped/Filed/Register Of Deeds: Not reported
Commercial I Land Use Restriction: 0
Commercial Ii Land Use Restriction: 0
Commercial Iii Land Use Restriction: 0
Commercial Iv Land Use Restriction: 0
Industrial Land Use Restriction: 0
Residential Land Use Restriction: 0
Recreational Land Use Restriction: 0
Multiple Land-Use Restrictions: 0
Site Specific Restrictions: 0
Groundwater Consumption Restrictions: 0
Groundwater Contact Restrictions: 0
Special Well Construction Requirements: 0
Special Building Restrictions: 0
Excavation And Soil Movement Restrictions: 0
Soil Movement Requirements: 0
There Is A Restriction On All Construction: 0
Monitoring Well Protected, No Tampering Or Removal: 0

FORD MOTOR CO WIXOM (Continued) **S110126748**

There Is An Exposure Barrier In Place: 0
There Is A Health And Safety Plan: 0
There Is A Permanent Marker On The Site: 0
Map Comments: Not reported
Comment: 20150209 - Reference number was requested by Kristen T. Aspinall of CRA - Nick Ekel

PART 201:
Facility ID: 63000022
Facility Status: Remedial Action in Progress (may incl. use restrictions, O&M and/or monitoring)
Source: Not reported
SAM Score: 29
SAM Score Date: 09/19/1991
Township: 01N
Range: 08E
Section: 7
Quarter: Not reported
Quarter/Quarter: Not reported
Pollutants: Cd; Pb

INVENTORY:
Bea Number: Not reported
Township: Wixom
District: Southeast MI
Data Source: Part 201
Latitude: 42.50444
Longitude: -83.5394

F23 **FORD MOTOR COMPANY WIXOM** **MI INVENTORY** **S114028420**
North **28801 WIXOM ROAD** **N/A**
1/4-1/2 **OAKLAND (County), MI 48393**
0.303 mi.
1602 ft. **Site 2 of 2 in cluster F**

Relative: Lower
Actual: 951 ft.

INVENTORY:
Bea Number: 201305652LV
Township: Wixom
District: Southeast MI
Data Source: BEA
Latitude: 42.50444
Longitude: -83.5394

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24 **GABBA ENTERPRISE** **MI LUST** **U003323797**
South **28055 WIXOM** **MI UST** **N/A**
1/4-1/2 **WIXOM, MI 48126**
0.316 mi.
1670 ft.

Relative: Higher
Actual: 971 ft.

LUST:
Facility ID: 00017262
Source: STATE OF MICHIGAN
Owner Name: Safeway Acquisitions Group LLC
Owner Address: 8700 Brandt
Owner City,St,Zip: Dearborn, MI 48126

GABBA ENTERPRISE (Continued) **U003323797**

Owner Contact:	Tim McCafferty
Owner Phone:	(313) 624-9911
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Wixom 76 Truck Stop
Latitude:	42.49600
Longitude:	-83.53696
Date of Collection:	01/05/2006
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-2564-90
Release Date:	12/05/1990
Substance Released:	Not reported
Release Status:	Closed
Release Closed Date:	01/10/1997

UST:

Facility ID:	00017262
Facility Type:	ACTIVE
Owner Name:	SAFEWAY ACQUISITIONS GROUP LLC
Owner Address:	8700 BRANDT
Owner City,St,Zip:	DEARBORN, MI 48126
Owner Country:	USA
Owner Contact:	Tim McCafferty
Owner Phone:	(313) 624-9911
Contact:	Andrew Attisha
Contact Phone:	(248) 330-5030
Date of Collection:	01/05/2006
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	GPS Code Meas. Standard Positioning Service SA Off
Latitude:	42.49600
Longitude:	-83.53696
Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No
Tank ID:	2

GABBA ENTERPRISE (Continued) **U003323797**

Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	3
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	4
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	5
Tank Status:	**Removed from Ground**
Capacity:	250
Product:	Not reported
Install Date:	04/20/1966
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Unknown
Impressed Device:	No

Tank ID:	6
Tank Status:	**Removed from Ground**

GABBA ENTERPRISE (Continued) **U003323797**

Capacity:	6000
Product:	Diesel
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	7
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Diesel
Install Date:	04/21/1971
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Fiberglass reinforced plastic
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	8
Tank Status:	**Removed from Ground**
Capacity:	8000
Product:	Diesel
Install Date:	04/20/1985
Remove Date:	08/20/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Galvanized Steel
Piping Type:	Not reported
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	9
Tank Status:	**Currently In Use**
Capacity:	12000
Product:	Gasoline
Install Date:	03/01/1993
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging,Inter Monitoring Double Walled Tank,Inventory Control
Pipe Realease Detection:	Line Tightness Testing
Piping Material:	Double Walled,Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Double Walled,Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	10
Tank Status:	**Currently In Use**

GABBA ENTERPRISE (Continued) **U003323797**

Capacity:	12000
Product:	Gasoline
Install Date:	03/01/1993
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging,Inter Monitoring Double Walled Tank,Inventory Control
Pipe Realease Detection:	Line Tightness Testing
Piping Material:	Double Walled,Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Double Walled,Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	11
Tank Status:	**Currently In Use**
Capacity:	12000
Product:	Gasoline
Install Date:	03/01/1993
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging,Inter Monitoring Double Walled Tank,Inventory Control
Pipe Realease Detection:	Line Tightness Testing
Piping Material:	Double Walled,Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Double Walled,Fiberglass Reinforced plastic
Impressed Device:	No

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25 **WALTER TOEBE CONST. CO** **MI LUST** **U000262341**
ENE **29001 WALL ST** **MI UST** **N/A**
1/4-1/2 **WIXOM, MI 48393** **MI WDS**
0.326 mi.
1720 ft.

Relative:
Higher

Actual:
960 ft.

LUST:

Facility ID:	00017746
Source:	STATE OF MICHIGAN
Owner Name:	Walter Toebe Const. Co
Owner Address:	PO BOX 407 29001 WALL ST
Owner City,St,Zip:	WIXOM, MI 48393
Owner Contact:	Not reported
Owner Phone:	(313) 349-7500
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Toebe Construction
Latitude:	42.50519
Longitude:	-83.53061
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)

Leak Number:	C-0294-91
Release Date:	02/28/1991
Substance Released:	Not reported
Release Status:	Closed

WALTER TOEBE CONST. CO (Continued) **U000262341**

Release Closed Date: 01/27/2013

UST:

Facility ID:	00017746
Facility Type:	CLOSED
Owner Name:	WALTER TOEBE CONST. CO
Owner Address:	PO BOX 407 29001 WALL ST
Owner City,St,Zip:	WIXOM, MI 48393
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(313) 349-7500
Contact:	STEVEN B. LEWIS
Contact Phone:	(313) 349-7500
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.50519
Longitude:	-83.53061

Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	04/30/1966
Remove Date:	07/29/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel,Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	2
Tank Status:	**Removed from Ground**
Capacity:	4000
Product:	Diesel
Install Date:	05/01/1971
Remove Date:	07/29/1991
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Not reported
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	3
Tank Status:	**Removed from Ground**
Capacity:	4000
Product:	Diesel
Install Date:	05/01/1971
Remove Date:	07/29/1991

WALTER TOEBE CONST. CO (Continued) **U000262341**

Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel,Fiberglass Reinforced plastic
Impressed Device: No

Tank ID: 4
Tank Status: Removed from Ground
Capacity: 4000
Product: Gasoline
Install Date: 04/30/1966
Remove Date: 07/29/1991
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel,Fiberglass Reinforced plastic
Impressed Device: No

Tank ID: 5
Tank Status: Removed from Ground
Capacity: 6000
Product: Diesel
Install Date: 05/01/1971
Remove Date: 07/29/1991
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Construction Material: Unknown
Impressed Device: No

Tank ID: 6
Tank Status: Removed from Ground
Capacity: 6000
Product: Gasoline
Install Date: 04/30/1972
Remove Date: 07/29/1991
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Not reported
Construction Material: Unknown
Impressed Device: No

WDS:
Site Id: MID078415635
WMD Id: 397286
Site Specific Name: WALTER TOEBE CONSTRUCTION CO
Mailing Address: 29001 WALL ST
Mailing City/State/Zip: 48393
Mailing County: OAKLAND

G26 NNE 1/4-1/2 0.332 mi. 1753 ft. | **WIXOM FUEL STOP**
29420 S WIXOM RD''''''
WIXOM, MI 48393

Site 1 of 2 in cluster G

MI LUST **U004249562**
MI UST **N/A**

Relative: Lower

Actual: 950 ft.

LUST:

Facility ID:	00002394
Source:	STATE OF MICHIGAN
Owner Name:	Wixom Stop & Go Inc
Owner Address:	29330 S Wixom Rd
Owner City,St,Zip:	Wixom, MI 48393-3424
Owner Contact:	Not reported
Owner Phone:	(248) 449-4315
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	B & J Gas & Oil
Latitude:	42.50021
Longitude:	-83.53605
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-1260-93
Release Date:	10/12/1993
Substance Released:	Gasoline,Diesel
Release Status:	Closed
Release Closed Date:	01/11/1996

UST:

Facility ID:	00002394
Facility Type:	ACTIVE
Owner Name:	WIXOM STOP & GO INC
Owner Address:	29330 S WIXOM RD
Owner City,St,Zip:	WIXOM, MI 48393-3424
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(248) 449-4315
Contact:	Mike Chouman
Contact Phone:	(313) 605-9001
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.50021
Longitude:	-83.53605
Tank ID:	1
Tank Status:	**Closed in Ground**
Capacity:	6000
Product:	Gasoline
Install Date:	05/05/1985

WIXOM FUEL STOP (Continued) **U004249562**

Remove Date: 11/10/2014
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Fiberglass Reinforced Plastic
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 2
Tank Status: Closed in Ground
Capacity: 6000
Product: Gasoline
Install Date: 05/05/1984
Remove Date: 11/10/2014
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Fiberglass Reinforced Plastic
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 3
Tank Status: Closed in Ground
Capacity: 6000
Product: Gasoline
Install Date: 05/05/1984
Remove Date: 11/14/2014
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Fiberglass Reinforced Plastic
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 4
Tank Status: Closed in Ground
Capacity: 6000
Product: Diesel
Install Date: 05/05/1984
Remove Date: 11/10/2014
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Fiberglass Reinforced Plastic
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 5
Tank Status: Closed in Ground
Capacity: 6000
Product: Diesel
Install Date: 05/05/1981
Remove Date: 11/14/2014

WIXOM FUEL STOP (Continued) **U004249562**

Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Flexible Piping
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 6
Tank Status: Removed from Ground
Capacity: 1000
Product: Diesel
Install Date: 05/05/1970
Remove Date: 01/01/1987
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Galvanized Steel
Piping Type: Not reported
Construction Material: Asphalt Coated or Bare Steel
Impressed Device: No

Tank ID: 7
Tank Status: Closed in Ground
Capacity: 6000
Product: Diesel
Install Date: 11/27/1989
Remove Date: 11/12/2014
Tank Release Detection: Automatic Tank Gauging, Inter Monitoring/Second Containment
Pipe Realease Detection: Not reported
Piping Material: CONTAINED, Flexible Piping
Piping Type: Not reported
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 8
Tank Status: Closed in Ground
Capacity: 6000
Product: Diesel
Install Date: 12/11/1989
Remove Date: 11/12/2014
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Flexible Piping
Piping Type: Pressure
Construction Material: Cathodically Protected Steel
Impressed Device: No

Tank ID: 9
Tank Status: Currently In Use
Capacity: 21000
Product: Gasoline
Install Date: 10/03/2014
Remove Date: Not reported
Tank Release Detection: Automatic Tank Gauging, Interstitial Monitoring Double Walled Tank

WIXOM FUEL STOP (Continued) **U004249562**

Pipe Realease Detection: Automatic Line Leak Detectors, Interstitial Monitoring Double Walled Piping
Piping Material: APT, Double Walled, Flexible Piping
Piping Type: Pressure
Construction Material: Fiberglass Reinforced Plastic, Double Walled
Impressed Device: No

Tank ID: 10
Tank Status: Currently In Use
Capacity: 15000
Product: Gasoline
Install Date: 10/03/2014
Remove Date: Not reported
Tank Release Detection: Automatic Tank Gauging, Interstitial Monitoring Double Walled Tank
Pipe Realease Detection: Automatic Line Leak Detectors, Interstitial Monitoring Double Walled Piping
Piping Material: APT, Double Walled, Flexible Piping
Piping Type: Pressure, Pressure
Construction Material: Fiberglass Reinforced Plastic, Double Walled
Impressed Device: No

G27 **PAVEMENT SEALANTS** **MI DEL PART 201** **S105965683**
NNE **29420 WIXOM ROAD** **N/A**
1/4-1/2 **WIXOM, MI 48096**
0.332 mi.
1753 ft. **Site 2 of 2 in cluster G**

Relative: Lower

Actual: 950 ft.

DEL_PART201:
Facility ID: 63000132
Status: Deleted - available documentation does not support listing

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28 **VACANT LAND** **MI BEA** **S108414587**
SSE **28060 WIXOM ROAD** **N/A**
1/4-1/2 **WIXOM, MI**
0.338 mi.
1786 ft.

Relative: Higher

Actual: 965 ft.

BEA:
Secondary Address: Not reported
BEA Number: 3477
District: Southeast MI
Date Received: 02/28/2007
Submitter Name: Omkar Real Estate, LLC
Petition Determination: No Request
Petition Disclosure: 0
Category: No Hazardous Substance(s)
Determination 20107A: No Request
Reviewer: lebarj
Division Assigned: Environmental Response Division

29 SW 1/4-1/2 0.422 mi. 2230 ft.

28011 GRAND OAKS COURT
28011 GRAND OAKS COURT
WIXOM, MI 48393

US BROWNFIELDS FINDS

1016603574
N/A

Relative: Higher

Actual: 959 ft.

US BROWNFIELDS:

Recipient name:	Oakland County Michigan
Grant type:	Assessment
Property name:	28011 GRAND OAKS COURT
Property #:	22-07-401-015
Parcel size:	1.49
Property Description:	Standard and historical sources documents that the property was originally developed prior to 1940 with agricultural fields. The property was utilized for agricultural purposes until between 1961 and 1963, and was vacant land until between 1998 and 1999, when the current building was constructed. The building was occupied by Century Architecture Hardware Incorporated since development and was occupied by Short s Brewery from 2013 to 2014. The current owner indicated that the former operations associated with Century Architecture Hardware consisted of welding door s, wholesale distribution of doors and security systems, and general office activities from 1999 to 2014. The owner also indicated that a portion of the office area was utilized for merchandising and general office activities by Short s Brewery from 2013 to 2014.
Latitude:	42.497080
Longitude:	-83.544341
HCM label:	Address Matching-House Number
Map scale:	Not reported
Point of reference:	Entrance Point of a Facility or Station
Datum:	North American Datum of 1983
ACRES property ID:	171941
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	2400
Assessment funding source:	US EPA - Brownfields Assessment Cooperative Agreement
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported
Redevelopment start date:	Not reported
Assessment funding entity:	EPA
Cleanup funding entity:	Not reported
Grant type:	Hazardous
Accomplishment type:	Phase I Environmental Assessment
Accomplishment count:	1
Cooperative agreement #:	00E01208
Ownership entity:	Not reported
Current owner:	Not reported
Did owner change:	Not reported
Cleanup required:	No
Video available:	No
Photo available:	Yes
Institutional controls required:	N
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported

28011 GRAND OAKS COURT (Continued) **1016603574**

IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	No
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Y
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported
Past use residential acreage:	Not reported
Past use commercial acreage:	1.49
Past use industrial acreage:	Not reported
Future use greenspace acreage:	Not reported
Future use residential acreage:	Not reported
Future use commercial acreage:	Not reported
Future use industrial acreage:	1.49
Greenspace acreage and type:	Not reported
Superfund Fed. landowner flag:	Not reported
Arsenic cleaned up:	Not reported
Cadmium cleaned up:	Not reported
Chromium cleaned up:	Not reported
Copper cleaned up:	Not reported
Iron cleaned up:	Not reported
mercury cleaned up:	Not reported
nickel cleaned up:	Not reported

28011 GRAND OAKS COURT (Continued) **1016603574**

No clean up:	Not reported
Pesticides cleaned up:	Not reported
Selenium cleaned up:	Not reported
SVOCs cleaned up:	Not reported
Unknown clean up:	Not reported
Arsenic contaminant found:	Not reported
Cadmium contaminant found:	Not reported
Chromium contaminant found:	Not reported
Copper contaminant found:	Not reported
Iron contaminant found:	Not reported
Mercury contaminant found:	Not reported
Nickel contaminant found:	Not reported
No contaminant found:	Not reported
Pesticides contaminant found:	Not reported
Selenium contaminant found:	Not reported
SVOCs contaminant found:	Not reported
Unknown contaminant found:	Not reported
Future Use: Multistory	Not reported
Media affected Bluiding Material:	Not reported
Media affected indoor air:	Not reported
Building material media cleaned up:	Not reported
Indoor air media cleaned up:	Not reported
Unknown media cleaned up:	Not reported
Past Use: Multistory	Not reported
Highlights:	Not reported
IC Data Address:	Not reported
Redev Completition Date:	Not reported
# Below Poverty:	122
% Below Poverty:	6.1%
# Low Income:	378
% Low Income:	2.0%
Meidan Income:	2006
# Unemployed:	73
% Unemployed:	10.1%
# Vacant Housing:	29
% Vacant Housing:	25.5%

FINDS:

Registry ID: 110059722536

Environmental Interest/Information System
US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an federal online database for Brownfields Grantees to electronically submit data directly to EPA.

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30 **WIXOM SUPPLY & EQUIPMENT CO** **MI LUST** **U003330329**
SSE **48850 W TWELVE MILE RD** **MI UST** **N/A**
1/4-1/2 **WIXOM, MI 48096**
0.440 mi.
2324 ft.

Relative:
Higher

Actual:
960 ft.

LUST:

Facility ID:	00037178
Source:	STATE OF MICHIGAN
Owner Name:	Wixom Supply & Equip Co

WIXOM SUPPLY & EQUIPMENT CO (Continued) **U003330329**

Owner Address:	48850 W TWELVE MILE RD PO BOX 502
Owner City,St,Zip:	WIXOM, MI 48096
Owner Contact:	Not reported
Owner Phone:	(313) 348-2729
Country:	USA
District:	Region 1 - SE Michigan District Office
Site Name:	Wixom Supply
Latitude:	42.49394
Longitude:	-83.53262
Date of Collection:	01/11/2001
Method of Collection:	Address Matching-House Number
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Data:	NAD83
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Leak Number:	C-0183-93
Release Date:	02/11/1993
Substance Released:	Diesel,Gasoline
Release Status:	Closed
Release Closed Date:	08/08/1997

UST:

Facility ID:	00037178
Facility Type:	CLOSED
Owner Name:	WIXOM SUPPLY & EQUIP CO
Owner Address:	48850 W TWELVE MILE RD PO BOX 502
Owner City,St,Zip:	WIXOM, MI 48096
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(313) 348-2729
Contact:	PETE PHEIL
Contact Phone:	(313) 348-2729
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.49394
Longitude:	-83.53262
Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	10000
Product:	Gasoline
Install Date:	01/01/1977
Remove Date:	01/28/1993
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Unknown
Piping Type:	Suction: Valve at Tank
Construction Material:	Unknown
Impressed Device:	No

WIXOM SUPPLY & EQUIPMENT CO (Continued) **U003330329**

Tank ID: 2
Tank Status: Removed from Ground
Capacity: 10000
Product: Gasoline
Install Date: 01/01/1977
Remove Date: 01/28/1993
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Suction: Valve at Tank
Construction Material: Unknown
Impressed Device: No

Tank ID: 3
Tank Status: Removed from Ground
Capacity: 10000
Product: Diesel
Install Date: 01/01/1977
Remove Date: 01/28/1993
Tank Release Detection: Not reported
Pipe Realease Detection: Not reported
Piping Material: Unknown
Piping Type: Suction: Valve at Tank
Construction Material: Unknown
Impressed Device: No

H31
South
1/4-1/2
0.443 mi.
2337 ft.

MOBILE GASOLINE STATION **MI AUL** **S109846536**
49200 WEST GRAND RIVER AVENUE **N/A**
WIXOM, MI 48393

Site 1 of 2 in cluster H

Relative:
Higher

Actual:
969 ft.

AUL:
Status: Recorded
Site Name: Not reported
Property: Mobile Gasoline Station
Land Use Restriction Type: RC
Program Type: Part 213
Program Support Assigned User: Nicholas Ekel
Program Support Assigned Date: 11/23/2010
Legal Description Of Property: Migrated
Based On The Deq Ref #: 11121306006
MDEQ Reference Number: RC-RRD-213-06-006
Property Or Description Restricted Area: Migrated
Lead Division: STD
File Name Of Hyperlinked Legal Doc: U:\\KERMIT\\11121306006.PDF
Mapped Polygons Area In Acres: 1.6264000000000001
Mapped Polygons Area In Square Miles: 2.5000000000000001E-3
Date Data Entry Started: 08/11/2011
Date Data Entry Finished: 08/11/2011
Individual Or Staff Assoc With The Mapping: Nicholas Ekel
Program Used To Map Restricted Features: ArcINFO 9.3 & IcoMAP 4.2
Date Legal Paperwork Stamped/Filed/Register Of Deeds: 08/08/2005
Commercial I Land Use Restriction: 0
Commercial Ii Land Use Restriction: 0
Commercial Iii Land Use Restriction: 0
Commercial Iv Land Use Restriction: 0

MOBILE GASOLINE STATION (Continued) **S109846536**

Industrial Land Use Restriction: 0
Residential Land Use Restriction: 0
Recreational Land Use Restriction: 0
Multiple Land-Use Restrictions: 0
Site Specific Restrictions: 1
Groundwater Consumption Restrictions: 1
Groundwater Contact Restrictions: 0
Special Well Construction Requirements: 0
Special Building Restrictions: 0
Excavation And Soil Movement Restrictions: 0
Soil Movement Requirements: 0
There Is A Restriction On All Construction: 0
Monitoring Well Protected, No Tampering Or Removal: 1
There Is An Exposure Barrier In Place: 0
There Is A Health And Safety Plan: 0
There Is A Permanent Marker On The Site: 0
Map Comments: 20101123 - LRUR is NOT mapped in KERMIT - Nick Ekel 20110811 - LRUR is mapped in KERMIT - Nick Ekel
Comment: Request received on 3/13/2006

H32
South
1/4-1/2
0.443 mi.
2337 ft.

ADAMS OIL INC **MI LUST** **U003325059**
49200 GRAND RIVER AVE **MI UST** **N/A**
WIXOM, MI 48393 **MI INVENTORY**

Site 2 of 2 in cluster H

Relative:
Higher

Actual:
969 ft.

LUST:
Facility ID: 00032981
Source: STATE OF MICHIGAN
Owner Name: Adams Oil Inc
Owner Address: 49200 Grand River Ave
Owner City,St,Zip: Wixom, MI 48393
Owner Contact: Not reported
Owner Phone: (248) 347-6320
Country: USA
District: Region 1 - SE Michigan District Office
Site Name: Mobil SS #03-BIK
Latitude: 42.49421
Longitude: -83.53538
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)

Leak Number: C-0171-04
Release Date: 05/05/2004
Substance Released: Gasoline
Release Status: Closed
Release Closed Date: 08/22/2005

UST:
Facility ID: 00032981
Facility Type: ACTIVE
Owner Name: ADAMS OIL INC
Owner Address: 49200 GRAND RIVER AVE

ADAMS OIL INC (Continued) **U003325059**

Owner City,St,Zip:	WIXOM, MI 48393
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(248) 347-6320
Contact:	Bader Obaid
Contact Phone:	(734) 355-3376
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.49421
Longitude:	-83.53538

Tank ID:	1
Tank Status:	**Currently In Use**
Capacity:	10000
Product:	Gasoline
Install Date:	01/01/1989
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging
Pipe Realease Detection:	Automatic Line Leak Detectors,Line Tightness Testing
Piping Material:	Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	2
Tank Status:	**Currently In Use**
Capacity:	10000
Product:	Gasoline
Install Date:	01/01/1989
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging
Pipe Realease Detection:	Automatic Line Leak Detectors,Line Tightness Testing
Piping Material:	Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

Tank ID:	3
Tank Status:	**Currently In Use**
Capacity:	10000
Product:	Gasoline
Install Date:	01/01/1989
Remove Date:	Not reported
Tank Release Detection:	Automatic Tank Gauging
Pipe Realease Detection:	Automatic Line Leak Detectors,Line Tightness Testing
Piping Material:	Fiberglass reinforced plastic
Piping Type:	Pressure
Construction Material:	Fiberglass Reinforced plastic
Impressed Device:	No

ADAMS OIL INC (Continued) **U003325059**

Tank ID: 4
Tank Status: Currently In Use
Capacity: 10000
Product: Gasoline
Install Date: 01/01/1989
Remove Date: Not reported
Tank Release Detection: Automatic Tank Gauging
Pipe Realease Detection: Automatic Line Leak Detectors,Line Tightness Testing
Piping Material: Fiberglass reinforced plastic
Piping Type: Pressure
Construction Material: Fiberglass Reinforced plastic
Impressed Device: No

INVENTORY:
Bea Number: Not reported
Township: Not reported
District: Southeast MI
Data Source: Part 213
Latitude: 42.49422
Longitude: -83.53539

I33 ENE 1/4-1/2 0.445 mi. 2347 ft. | **FORM TECH CONCRETE FORM INC** | **MI LUST** | **U003325785**
48575 DOWNING ST | **MI UST** | **N/A**
WIXOM, MI 48393 | **MI WDS**

Site 1 of 3 in cluster I

Relative: Higher

Actual: 967 ft.

LUST:
Facility ID: 00036086
Source: STATE OF MICHIGAN
Owner Name: Form Tech Concrete Form Inc
Owner Address: 48575 Downing St
Owner City,St,Zip: Wixom, MI 48393-3503
Owner Contact: Not reported
Owner Phone: (313) 344-8260
Country: USA
District: Region 1 - SE Michigan District Office
Site Name: Form Tech Concrete Form Inc
Latitude: 42.50495
Longitude: -83.52979
Date of Collection: 01/11/2001
Method of Collection: Address Matching-House Number
Accuracy: 100
Accuracy Value Unit: FEET
Horizontal Data: NAD83
Point Line Area: POINT
Desc Category: Plant Entrance (Freight)

Leak Number: C-0951-99
Release Date: 09/13/1999
Substance Released: Unknown
Release Status: Closed
Release Closed Date: 12/10/1999

UST:
Facility ID: 00036086
Facility Type: CLOSED
Owner Name: FORM TECH CONCRETE FORM INC

FORM TECH CONCRETE FORM INC (Continued) **U003325785**

Owner Address:	48575 DOWNING ST
Owner City,St,Zip:	WIXOM, MI 48393-3503
Owner Country:	USA
Owner Contact:	Not reported
Owner Phone:	(313) 344-8260
Contact:	MR MICHAEL FIDELHOLTZ
Contact Phone:	(248) 344-8260
Date of Collection:	01/11/2001
Accuracy:	100
Accuracy Value Unit:	FEET
Horizontal Datum:	NAD83
Source:	STATE OF MICHIGAN
Point Line Area:	POINT
Desc Category:	Plant Entrance (Freight)
Method of Collection:	Address Matching-House Number
Latitude:	42.50495
Longitude:	-83.52979

Tank ID:	1
Tank Status:	**Removed from Ground**
Capacity:	2000
Product:	Gasoline
Install Date:	01/01/1979
Remove Date:	08/27/1999
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Cathodically Protected
Piping Type:	Suction: No Valve At Tank
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

Tank ID:	2
Tank Status:	**Removed from Ground**
Capacity:	2000
Product:	Gasoline
Install Date:	01/01/1979
Remove Date:	08/27/1999
Tank Release Detection:	Not reported
Pipe Realease Detection:	Not reported
Piping Material:	Cathodically Protected
Piping Type:	Suction: Valve at Tank
Construction Material:	Asphalt Coated or Bare Steel
Impressed Device:	No

WDS:

Site Id:	MIR000043901
WMD Id:	413540
Site Specific Name:	FORM TECH CONCRETE FORMS INC
Mailing Address:	48575 DOWNING ST
Mailing City/State/Zip:	48393
Mailing County:	OAKLAND

I34 ENE 1/4-1/2 0.456 mi. 2406 ft. | **MOELLER MANUFACTURING CO INC**
48602 DOWNING ST
WIXOM, MI 48393

MI INVENTORY
MI SPILLS
MI NPDES
MI WDS

S109259086
N/A

Site 2 of 3 in cluster I

Relative: Higher

Actual: 963 ft.

INVENTORY:

Bea Number:	201606912LV
Township:	Wixom
District:	Southeast MI
Data Source:	BEA
Latitude:	Not reported
Longitude:	Not reported

PEAS:

Incident Date:	08/28/2007
Office Status:	Not reported
Initials of Incoming Operator:	Not reported
Time Received by DNRE Staff:	Not reported
Time Occur:	Not reported
Date Of PEAS Call:	Not reported
Complainant / Company:	MIKE HOWELL/CITY OF WIXOM
Complainant Address:	48602 DOWNING ST.
Company Involved:	TRONEX
DEQ Division Involved:	RRD
Incident Description:	Not reported
Description:	NITRIC ACID SPILL; CONTAINER RUPTURED, IS BLOCKED OFF NOW BUT SOME WENT INTO RETENTION POND.
Date Discovered:	Not reported
Time Discovered:	Not reported
Office/After Hours:	Not reported
Party Involved - Phone 1:	Not reported
Party Involved - Phone 2:	Not reported
Ongoing?:	Not reported
Release Secured:	Not reported
Source:	Not reported
Lead Division 2:	Not reported

MI NPDES:

Permit Number:	MIS410750
Permitee PO Box:	N
Permitee Email:	Not reported
Issue Date:	07/17/2014
Effective Date:	07/17/2014
Expiration Date:	04/01/2019
Permittee Name:	Moeller Manufacturing Company Incorporated
Permittee Address:	30100 Beck Road
Permittee Addr2:	Not reported
Permittee City,St,Zip:	Wixom, MI 48393
Permit Type:	NPDES Certificate of Coverage under General Permit (COC)
Facility Name 2:	Not reported
Facility Name 3:	Not reported
Facility Name 4:	Not reported
Designed Name:	Moeller Manufacturing Co
Latitude:	42.50302
Lat Direction:	N
Lat Type Code:	LAT
Longitude:	-83.52894

MOELLER MANUFACTURING CO INC (Continued) **S109259086**

Lon Direction:	W
Lon Type Code:	LON
Hydrologic Unit Code:	4090005
Permit Status:	In Effect
COC Permit Category:	SW-Industrial CY4
DEQ District Email:	Southeast Michigan
DEQ Permit Compliance Manager:	Not reported
DEQ Permit Compliance Manager Email:	Not reported

WDS:

Site Id:	MIK759185895
WMD Id:	483149
Site Specific Name:	MOELLER MANUFACTURING CO INC
Mailing Address:	30100 BECK RD
Mailing City/State/Zip:	48393
Mailing County:	OAKLAND

I35
ENE
1/4-1/2
0.456 mi.
2406 ft.

WIXOM NITRIC RELEASE **SEMS** **1010417403**
48602 DOWNING STREET **MIN000510228**
WIXOM, MI

Site 3 of 3 in cluster I

Relative:
Higher

Actual:
963 ft.

SEMS:

Site ID:	510228
EPA ID:	MIN000510228
Federal Facility:	N
NPL:	Not on the NPL
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)

Following information was gathered from the prior CERCLIS update completed in 10/2013:

Site ID:	0510228
EPA ID:	MIN000510228
Facility County:	OAKLAND
Short Name:	WIXOM NITRIC RELEASE
Congressional District:	11
IFMS ID:	B5LJ
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility
DMNSN Number:	0.00000
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	S
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	05
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)
Non NPL Status Date:	02/15/07

WIXOM NITRIC RELEASE (Continued) **1010417403**

Site Fips Code: 26125
CC Concurrence Date: / /
CC Concurrence FY: Not reported
Alias EPA ID: Not reported
Site FUDS Flag: Not reported

Alias Comments: Not reported
Site Description: A nitric acid spill was reported at the Tronex Chemical Company located in Wixom, MI. The spill occurred when an operator knocked the valve off the bottom of a 70% nitric acid tank. The tank then released the total contrents (quantity unknown) of the tank out of the secondary containment, throughout the building, into the adjacent parking lot, and into a sanitary sewer. The PRP is conducting the removal action with U.S. EPA oversight.

CERCLIS Assessment History:

Action Code: 001
Action: POTENTIALLY RESPONSIBLE PARTY EMERGENCY REMOVAL
Date Started: 08/28/07
Date Completed: 09/01/07
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: Responsible Party
Planning Status: Primary
Urgency Indicator: Emergency
Action Anomaly: Not reported

36
South
1/4-1/2
0.460 mi.
2428 ft.

TLC PROPERTY, LLC **MI INVENTORY** **S117977868**
26700 WIXOM ROAD **N/A**
OAKLAND (County), MI 48393

Relative:
Higher

Actual:
968 ft.

INVENTORY:
Bea Number: 201506479LV
Township: Novi
District: Southeast MI
Data Source: BEA
Latitude: 42.48598
Longitude: -83.53559

37
NE
1/4-1/2
0.471 mi.
2488 ft.

PRATT & MILLER **MI INVENTORY** **S114028501**
29425 WALL STREET **N/A**
WIXOM, MI 48393

Relative:
Higher

Actual:
960 ft.

INVENTORY:
Bea Number: Not reported
Township: Wixom
District: Southeast MI
Data Source: Part 201
Latitude: 42.50695
Longitude: -83.5298

38
NE
1/2-1
0.827 mi.
4365 ft.

KIBNER TRUCKING
48130 WEST ROAD
WIXOM, MI 48096

MI PART 201 **S105144538**
MI DEL PART 201 **N/A**

Relative:
Higher

Actual:
966 ft.

PART 201:

Facility ID:	63000136
Facility Status:	**Delisted - no longer meets criteria specified in rules**
Source:	Trucking & Warehousing
SAM Score:	28
SAM Score Date:	09/04/1990
Township:	01N
Range:	08E
Section:	5
Quarter:	SW
Quarter/Quarter:	SE
Pollutants:	Cd; Pb; Diesel fuel

DEL_PART201:

Facility ID:	63000136
Status:	Delisted - no longer meets criteria specified in rules

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 29

Source: EPA
Telephone: N/A
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 29

Source: EPA
Telephone: N/A
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/05/2016	Source: EPA
Date Data Arrived at EDR: 01/05/2017	Telephone: N/A
Date Made Active in Reports: 02/03/2017	Last EDR Contact: 03/02/2017
Number of Days to Update: 29	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 09/14/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/04/2016	Telephone: 703-603-8704
Date Made Active in Reports: 10/21/2016	Last EDR Contact: 01/05/2017
Number of Days to Update: 17	Next Scheduled EDR Contact: 04/17/2017
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/10/2016	Source: EPA
Date Data Arrived at EDR: 10/20/2016	Telephone: 800-424-9346
Date Made Active in Reports: 01/06/2017	Last EDR Contact: 03/02/2017
Number of Days to Update: 78	Next Scheduled EDR Contact: 05/01/2017
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 10/20/2016
Date Made Active in Reports: 01/06/2017
Number of Days to Update: 78

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.
This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/31/2013
Date Made Active in Reports: 11/20/2013
Number of Days to Update: 20

Source: Dept of Environmental Quality
Telephone: 517-284-5103
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: No Update Planned

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facilities Database
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 33

Source: Dept of Environmental Quality
Telephone: 517-335-4035
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Semi-Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank Sites
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 11/16/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 75

Source: Dept of Environmental Quality
Telephone: 517-373-9837
Last EDR Contact: 02/16/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Annually

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 112

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 02/19/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 105

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

State and tribal registered storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Varies

UST 2: Underground Storage Tank Listing
A listing of underground storage tank site locations that have unknown owner information.

Date of Government Version: 10/18/2016
Date Data Arrived at EDR: 10/21/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 101

Source: Dept of Environmental Quality
Telephone: 517-241-8847
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Annually

UST: Underground Storage Tank Facility List
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 10/10/2016
Date Data Arrived at EDR: 11/16/2016
Date Made Active in Reports: 01/26/2017
Number of Days to Update: 71

Source: Dept of Environmental Quality
Telephone: 517-241-8847
Last EDR Contact: 02/16/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Annually

AST: Aboveground Tanks
Registered Aboveground Storage Tanks.

Date of Government Version: 11/02/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 01/26/2017
Number of Days to Update: 69

Source: Dept of Environmental Quality
Telephone: 517-241-8847
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: No Update Planned

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 120

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 119

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016
Date Data Arrived at EDR: 04/27/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 37

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 35

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/26/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Engineering and Institutional Controls
A listing of sites with institutional and/or engineering controls in place.

Date of Government Version: 12/01/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/26/2017
Number of Days to Update: 51

Source: Dept of Environmental Quality
Telephone: 517-373-4828
Last EDR Contact: 02/27/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields and USTfield Site Database
All state funded Part 201 and 213 sites, as well as LUST sites that have been redeveloped by private entities using the BEA process. Be aware that this is not a list of all of the potential brownfield sites in Michigan.

Date of Government Version: 01/15/2016
Date Data Arrived at EDR: 02/02/2016
Date Made Active in Reports: 04/04/2016
Number of Days to Update: 62

Source: Dept of Environmental Quality
Telephone: 517-373-4805
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

BROWNFIELDS 2: Brownfields Building and Land Site Locations
A listing of brownfield building and land site locations. The listing is a collaborative effort of Michigan Economic Development Corporation, Michigan Economic Developers Association, Detrot Edison, Detroit Area Commercial Board of Realtors

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/10/2007
Date Made Active in Reports: 05/01/2007
Number of Days to Update: 21

Source: Economic Development Corporation
Telephone: 888-522-0103
Last EDR Contact: 02/27/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/19/2016
Date Data Arrived at EDR: 12/20/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF: Inactive Solid Waste Facilities
The database contains historical information and is no longer updated.

Date of Government Version: 03/01/1997
Date Data Arrived at EDR: 02/28/2003
Date Made Active in Reports: 03/06/2003
Number of Days to Update: 6

Source: Dept of Environmental Quality
Telephone: 517-335-4034
Last EDR Contact: 02/28/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycling Facilities
A listing of recycling center locations.

Date of Government Version: 11/28/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 62

Source: Dept of Environmental Quality
Telephone: 517-241-5719
Last EDR Contact: 12/27/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/31/2016
Next Scheduled EDR Contact: 02/13/2017
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/30/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: No Update Planned

INVENTORY: Inventory of Facilities

The Inventory of Facilities has three data sources: Facilities under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) identified through state funded or private party response activities (Projects); Facilities under Part 213, Leaking Underground Storage Tanks of the NREPA; and Facilities identified through submittals of Baseline Environmental Assessments (BEA) submitted pursuant to Part 201 or Part 213 of the NREPA. The Part 201 Projects Inventory does not include all of the facilities that are subject to regulation under Part 201 because owners are not required to inform the Department of Environmental Quality (DEQ) about the facilities and can pursue cleanup independently. Facilities that are not known to DEQ are not on the Inventory, nor are locations with releases that resulted in low environmental impact. Part 213 facilities listed here may have more than one release; a list of releases for which corrective actions have been completed and list of releases for which corrective action has not been completed is located on the Leaking Underground Storage Tanks Site Search webpage. The DEQ may or may not have reviewed and concurred with the conclusion that the corrective actions described in a closure report meets criteria. A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 10/25/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 96

Source: Department of Environmental Quality
Telephone: 517-284-5136
Last EDR Contact: 01/25/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

PART 201: Part 201 Site List

A Part 201 Listed site is a location that has been evaluated and scored by the DEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the DEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to DEQ are not on the list, nor are sites with releases that resulted in low environmental impact.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/03/2014
Date Made Active in Reports: 10/03/2014
Number of Days to Update: 0

Source: Department of Environmental Quality
Telephone: 517-284-5103
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Lab Listing

A listing of clandestine drug lab locations.

Date of Government Version: 05/11/2016
Date Data Arrived at EDR: 05/24/2016
Date Made Active in Reports: 07/05/2016
Number of Days to Update: 42

Source: Department of Community Health
Telephone: 517-373-3740
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

DEL PART 201: Delisted List of Contaminated Sites

A deleted site has been removed from the Part 201 List because information known to the DEQ at the time of the evaluation does not support inclusion on the Part 201 List. This designation is often applied to sites where changes in cleanup criteria resulted in a determination that the site no longer exceeds any applicable cleanup criterion. A delisted site has been removed from the Part 201 List because response actions have reduced the levels of contaminants to concentrations which meet or are below the criteria for unrestricted residential use.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 09/11/2013
Number of Days to Update: 41

Source: Dept of Environmental Quality
Telephone: 517-373-9541
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 12/05/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 67

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Quarterly

Local Land Records

LIENS: Lien List

An Environmental Lien is a charge, security, or encumbrance upon title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC * 9607(1) and similar state or local laws. In other words: a lien placed upon a property's title due to an environmental condition

Date of Government Version: 09/24/2015
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 96

Source: Dept of Environmental Quality
Telephone: 517-241-7603
Last EDR Contact: 01/20/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/24/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 37

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/28/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

PEAS: Pollution Emergency Alerting System

Environmental pollution emergencies reported to the Department of Environmental Quality such as tanker accidents, pipeline breaks, and release of reportable quantities of hazardous substances.

Date of Government Version: 10/31/2016
Date Data Arrived at EDR: 11/21/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 70

Source: Dept of Environmental Quality
Telephone: 517-373-8427
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 312-886-6186
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/11/2016
Date Data Arrived at EDR: 11/16/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/15/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/10/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/23/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2016
Date Data Arrived at EDR: 08/22/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/10/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/17/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/17/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/01/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 77

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/22/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/13/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/03/2017
Next Scheduled EDR Contact: 05/22/2017
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/22/2016
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/05/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 09/23/2016
Number of Days to Update: 22

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/03/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/03/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/15/2016
Date Data Arrived at EDR: 09/07/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 65

Source: EPA
Telephone: (312) 353-2000
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/24/2017
Next Scheduled EDR Contact: 06/12/2017
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 01/20/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Varies

AIRS: Permit and Emissions Inventory Data

Permit and emissions inventory data.

Date of Government Version: 12/06/2016
Date Data Arrived at EDR: 12/21/2016
Date Made Active in Reports: 02/07/2017
Number of Days to Update: 48

Source: Dept of Environmental Quality
Telephone: 517-373-7074
Last EDR Contact: 12/15/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Varies

BEA: Baseline Environmental Assessment Database

A BEA is a document that new or prospective property owners/operations disclose to the DEQ identifying the property as a facility pursuant to Part 201 and Part 213. The Inventory of BEA Facilities overlaps in part with the Part 201 Projects facilities and Part 213 facilities. There may be more than one BEA for each facility.

Date of Government Version: 08/21/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 09/12/2013
Number of Days to Update: 20

Source: Dept of Environmental Quality
Telephone: 517-373-9541
Last EDR Contact: 02/13/2017
Next Scheduled EDR Contact: 05/29/2017
Data Release Frequency: No Update Planned

COAL ASH: Coal Ash Disposal Sites
Coal fired power plants in Southeast Michigan that have coal ash handling on site.

Date of Government Version: 07/07/2016
Date Data Arrived at EDR: 07/18/2016
Date Made Active in Reports: 09/01/2016
Number of Days to Update: 45

Source: Dept of Environmental Quality
Telephone: 586-753-3754
Last EDR Contact: 01/03/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Establishments
A listing of drycleaning facilities in Michigan.

Date of Government Version: 10/25/2016
Date Data Arrived at EDR: 10/27/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 95

Source: Dept of Environmental Quality
Telephone: 517-335-4586
Last EDR Contact: 01/17/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Annually

LEAD CERT: Lead Safe Housing Registry
A listing of Michigan properties included in the Lead Safe Housing Registry.

Date of Government Version: 09/15/2015
Date Data Arrived at EDR: 09/16/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 14

Source: Department of Community Health
Telephone: 517-335-9699
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

NPDES: List of Active NPDES Permits
General information regarding NPDES (National Pollutant Discharge Elimination System) permits and NPDES Storm Water permits.

Date of Government Version: 05/04/2016
Date Data Arrived at EDR: 07/07/2016
Date Made Active in Reports: 09/01/2016
Number of Days to Update: 56

Source: Dept of Environmental Quality
Telephone: 517-241-1300
Last EDR Contact: 01/06/2017
Next Scheduled EDR Contact: 04/17/2017
Data Release Frequency: Varies

UIC: Underground Injection Wells Database
A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 11/08/2016
Date Made Active in Reports: 01/30/2017
Number of Days to Update: 83

Source: Dept of Environmental Quality
Telephone: 517-241-1515
Last EDR Contact: 01/23/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Varies

WDS: Waste Data System
The Waste Data System (WDS) tracks activities at facilities regulated by the Solid Waste, Scrap Tire, Hazardous Waste, and Liquid Industrial Waste programs.

Date of Government Version: 08/31/2016
Date Data Arrived at EDR: 09/01/2016
Date Made Active in Reports: 10/19/2016
Number of Days to Update: 48

Source: Dept of Environmental Quality
Telephone: 517-284-6562
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 12/11/2016
Date Data Arrived at EDR: 12/20/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 12/20/2016
Next Scheduled EDR Contact: 04/03/2017
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/21/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 73

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/22/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Quarterly

ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/09/2016
Date Data Arrived at EDR: 06/13/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 81

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/09/2016
Next Scheduled EDR Contact: 03/27/2017
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA PART 201: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Quality in Michigan.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/11/2016
Next Scheduled EDR Contact: 02/27/2017
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 01/03/2017
Number of Days to Update: 96

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/09/2017
Next Scheduled EDR Contact: 04/24/2017
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/30/2017
Date Data Arrived at EDR: 02/01/2017
Date Made Active in Reports: 02/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/01/2017
Next Scheduled EDR Contact: 05/08/2017
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 07/22/2016
Date Made Active in Reports: 11/22/2016
Number of Days to Update: 123

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/12/2017
Next Scheduled EDR Contact: 05/01/2017
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2017
Next Scheduled EDR Contact: 06/05/2017
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/12/2016
Next Scheduled EDR Contact: 03/27/2017
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Centers, Group & Family Homes
Source: Bureau of REgulatory Services
Telephone: 517-373-8300

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory
Source: Department of Natural Resources
Telephone: 517-241-2254

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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Appendix E

PM ENVIRONMENTAL Environmental & Engineering Services

PM PROFESSIONAL RESUMES

RACHEL BEKOWIES

STAFF CONSULTANT

1.800.313.2966 www.pmenv.com bekowies@pmenv.com

AREAS OF EXPERTISE

- Staff researcher for Phase I Environmental Site Assessments (ESAs).
- Data Collection, site investigation, and preparation of Phase I ESAs.
- Collection and evaluation of data for Phase I Reports, and preparation of reports.
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527).

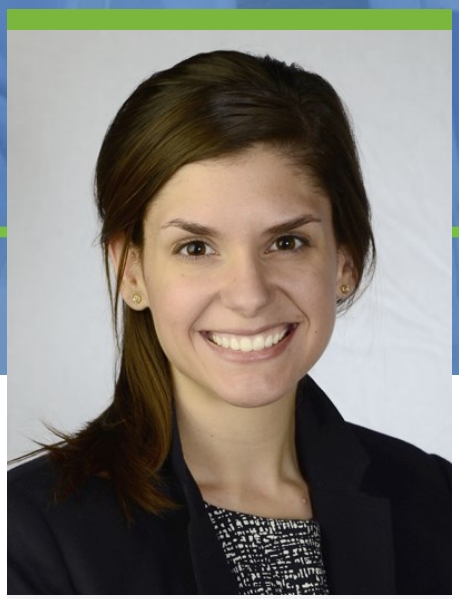
EDUCATION

- University of Michigan—Bachelor of Arts Environmental Studies

LAUREN BABUSKA

STAFF CONSULTANT

1.800.313.2966 www.pmenv.com babuska@pmenv.com



Lauren Babuska is a Staff Consultant at PM Environmental, Inc. and has served clients in multiple states since 2014. She specializes in Environmental Due Diligence including Phase I Environmental Site Assessments and customized environmental assessments to support all forms of real estate transaction.

AREAS OF EXPERTISE

- Staff consultant for Phase I Environmental Site Assessments (ESAs)
- Assist with site investigation for Phase I ESAs
- Assist with data collection and evaluation for Transaction Screen Assessments, Phase I ESAs and other due diligence reports
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527)

EDUCATION

- University of Michigan
  B.S. Geological Sciences

KRISTIN GABLE

REGIONAL MANAGER—DUE DILIGENCE GROUP

1.800.313.2966 www.pmenv.com gable@pmenv.com

Kristin Gable is the Regional Manager of Due Diligence at PM Environmental, Inc. and has served clients in over 13 States. She specializes in Environmental Due Diligence including Phase I Environmental Site Assessments and customized environmental assessments to support all forms of real estate transactions. Gable has successfully managed due diligence services for several multi-state portfolios including a multi-property portfolio of asphalt-sealant manufacturing facilities. She has managed thousands of environmental due diligence projects, and her recent focus includes serving industrial and petroleum industry clients.

AREAS OF EXPERTISE

- Data collection, site investigation, and preparation of Phase I ESA and Transaction Screen projects
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527, ASTM E-1528)
- Coordination and management of regional due diligence group
- Peer technical review of Phase I ESA projects using ASTM Standard 1527

EDUCATION

- Oakland University B.S. Environmental Science—Specialization in Environmental and Resource Management

CERTIFICATIONS

- Certified Asbestos Building Inspector Accreditation #A39706
- Meets the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312

KEVIN M. KRUSZEWSKI, P.G., Q.C.

SENIOR ENVIRONMENTAL RISK MANAGER

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Kevin Kruszewski is Senior Environmental Risk Manager at PM Environmental, Inc. and has served clients in over 48 states since 1988. He specializes in Phase I and Phase II Environmental Site Assessments (ESAs), Baseline Environmental Assessments (BEAs), and due care plans, Underground Storage Tank (UST) closures, and lender risk management. Kruszewski has been involved in thousands of transactions, including typical Environmental Due Diligence for purchase and refinance transactions, and participations and foreclosures. His recent focus incudes serving financial clients based in the Midwest with investment interests across the country.

AREAS OF EXPERTISE

- Real estate portfolio analysis for evaluation of environmental risk associated with single and multi property transactions for the lending industry
- Collateral and exposure analysis for over 3,000 real estate transactions, including single and multi commercial, industrial, and multi state properties
- Management of environmental due diligence associates with foreclosed properties
- Peer/senior technical review for Baseline Environmental Assessment (BEA) Projects
- Peer/senior technical review for due care analysis for BEAs in accordance with the Natural Resources and Environmental Protection Act, P.A. 451 of 1994, Parts 201 and 213
- Peer/senior technical review of Phase I, Phase II, Phase III ESA projects
- Peer/senior technical review for Leaking Underground Storage Tank (LUST) projects, including risk evaluation for the lending industry
- Technical review of land use based corrective action plans
- Experience with local, state, and federal regulatory acts
- Technical review of feasibility studies for the remediation of soil and groundwater
- Technical review of generic and site-specific risk assessments
- On-site management of the containment and recovery of dense non-aqueous phase liquids (DNAPLs)

EDUCATION

- Michigan State University B.S. Geology

REGISTRATION

- Professional Geologist—State of Indiana
- Certified UST Professional—State of Michigan

CERTIFICATIONS

- OSHA 1910.120 Hazardous Waste Training
- American Red Cross Standard First Aid and Adult CPR
- Meets the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312

PROFESSIONAL ACTIVITIES

- Michigan Association of Environmental Professionals
- Environmental Bankers Association

Appendix F

PM ENVIRONMENTAL Environmental & Engineering Services

COMMON ACRONYMS AND TERMINOLOGY USED IN THE COURSE OF THIS PHASE I ESA

The following is a list of common acronyms:

All Appropriate Inquiry	AAI
Asbestos Containing Materials	ACM
Aboveground Storage Tank	AST
American Society for Testing Materials	ASTM
Approximate Minimum Search Distance	ASMD
Comprehensive Environmental Response, Compensation and Liability Act	CERCLA
Environmental Data Resources	EDR
Environmental Site Assessment	ESA
Federal Emergency Response Notification System	ERNS
Large Quantity Generator	LQG
Leaking Underground Storage Tank	LUST
National Priority List	NPL
No Further Remedial Action Planned	NFRAP
PM Environmental, Inc.	PME
Polychlorinated Biphenyls	PCBs
Resource Conservation and Recovery Act	RCRA
Small Quantity Generator	SQG
Treatment Storage and Disposal Facility	TSD
Underground Storage Tank	UST
United States Environmental Protection Agency	USEPA

TERMINOLOGY

The following provides definitions and descriptions of certain terms that may be used in this report. Several terms are defined by ASTM Standard Practice E 1527. The Standard Practice should be referenced for further detail (such as the precise wording), related definitions, or additional explanation regarding the meaning of terms.

Asbestos containing material (ACM): Any material found to contain greater than 1% asbestos using an analytical method that is approved by the USEPA for asbestos analysis.

De minimis conditions: Conditions that generally do not present a material risk or harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Friable material: Defined in the National Emission Standards for Hazardous Air Pollutants (NESHAP) as a material that can be pulverized or reduced to dust using hand pressure only.

General risk of enforcement action: The likelihood that an environmental condition would be subject to enforcement action if brought to the attention of appropriate

governmental agencies. If the circumstances suggest an enforcement action would be more likely than not, then the condition is considered a general risk of enforcement action.

Historical recognized environmental condition (HREC): Environmental condition which in the past would have been considered a recognized environmental condition, but which may or may not be considered a recognized environmental condition currently. The final decision rests with the environmental professional and will be influenced by the current impact of the historical recognized environmental condition on the subject property. If a past release of any hazardous substances or petroleum products has occurred in connection with the subject property, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further action letter or equivalent), this condition shall be considered a historical recognized environmental condition.

Non-friable material: Defined by National Emission Standards for Hazardous Air Pollutants (NESHAP) as a material that cannot be pulverized or reduced to dust using hand pressure only. According to NESHAP, non-friable building materials include those in Category I (packings, gaskets, resilient floor coverings/adhesives, and asphalt roofing materials) and those in Category II (all other materials).

Recognized environmental condition (REC): The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the subject property or into the ground, ground water, or surface water of the subject property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

Subject property: The area that is the focus of a Phase I Environmental Site Assessment. The boundaries are not necessarily consistent with recorded legal descriptions of real estate, and are defined by the User.

Suspect ACM of concern: Defined as "(I) all friable suspect ACMs (II) any non-friable suspect ACMs expected to be disturbed by renovation or demolition activities planned for the subject property."

General Scope of Services for Phase I ESA

The purpose of the Phase I ESA is to gather sufficient information to develop an independent professional opinion about the environmental condition of the subject property. The ESA will be conducted in an attempt to satisfy the ASTM Standard (E-1527-13) and the U.S. EPA Standards and Practices for All Appropriate Inquiry as defined in the Small Business Liability Relief and Brownfields Revitalization Act. The Phase I ESA will encompass the following scope of work:

Records Review

- Federal and State database search for sites within the ASTM approximate minimum search distances.
- Review of one or more additional state environmental record sources (e.g., fire department, health department, published local or state site contamination lists, etc.). PM is typically exhaustive in inquiry with these resources.
- Utilization of as many of the ASTM standard historical sources as necessary and as reasonably ascertainable and likely to be useful to document all obvious uses of the subject property from the present, back to the subject property's first developed usage (agricultural or the placement of fill) or 1940, whichever is earlier (e.g., aerial photographs, fire insurance maps, topographic maps, street directories, building record and other sources including knowledgeable interviewees). PM is typically exhaustive in usage of these resources to document subject property historical usages. **Chain of title is not typically consulted by PM unless all other standard and historical sources cannot adequately document subject property usages or if required by a lender. A separate fee to the lump sum quoted will be assessed for obtainment of chain of title.**
- A records review in accordance with the requirements for a Vapor Intrusion Assessment per ASTM E-2600-08 is not included in this scope of work.

Site Reconnaissance

- The objective of the site reconnaissance is to obtain information regarding the likelihood of recognized environmental conditions in connection with the subject property.
- The exterior of the subject property and any structures, as well as, pathways, roads, etc., will be visually and physically observed.
- The interior of the structures on the subject property will be visually and physically observed. This includes all common areas, maintenance and repair rooms, boiler rooms and representative number of occupant spaces. Observations under floors, above ceilings or behind walls are not required unless specified by requirements other than the ASTM standard.
- PM will evaluate non-ASTM scope issues with a visual inspection, and comment on asbestos containing building materials, lead based paint, and water intrusion associated with mold. Sampling is not included within this scope of work, but can be completed under a separate proposal.
- Current and past uses of the subject property and adjoining properties, and general uses of surrounding properties, to the extent visually and physically observed will be recorded. Emphasis is placed on subject property or adjoining property usages involving use, treatment, storage, disposal or generation of hazardous substances or petroleum products. These observations may include process details on raw material and waste management practices.
- General description of structures and improvements on the subject property (number and age of buildings, ancillary structures, utilities, storage tanks, hazardous substance and petroleum product usage, general chemical or raw material usage, heating and cooling, stains, solid waste, waste water, etc.).

Interviews with Owners and Occupants

- Interviews with owners, occupants, key site manager and user (person on behalf Phase I ESA conducted), typically with regard to information about current and historical uses, general site setting information, site specific documents, litigation, administrative orders, notices of violations with regard to environmental issues, etc.

Interviews with Local Government Officials

- A reasonable attempt will be made to interview at least one staff member of any of the following: the local fire department, the local agency or state agency having jurisdiction over environmental matters in the area in which the subject property is located, and/or the local health department. PM is typically exhaustive in its inquiry of these sources, unless professional experience has indicated the resource is not beneficial.

Evaluation and Report Preparation

- The report of the Phase I ESA findings will generally follow the ASTM format unless otherwise requested by the client or as outlined in any applicable lender requirements. The report will include documentation of sources, methodology, limitations, and credentials. *Liability/risk evaluations, recommendations for Phase II ESA testing and remediation techniques are not provided within the scope of an ASTM performed assessment.* Phase I ESA reports are kept in the strictest client confidence and are issued directly to the client. Issuance or reliance on the Phase I ESA report for purposes of making loan decisions by a private lender may be included in the Phase I ESA report if specified by the client.

USER'S CONTINUING OBLIGATIONS UNDER CERCLA

Conducting a Phase I ESA alone does not provide a landowner with protection against CERCLA liability. Landowners who want to maintain a bona Fide Prospective Purchaser, an Innocent Landowner, or a Contiguous Property Owner Defense must also comply with other pre-acquisition and post-acquisition requirements in the CERCLA regulations and AAI standards. The responsibilities for each defense are summarized below.

Bona Fide Prospective Purchaser Responsibilities

The Bona Fide Prospective Purchaser defense is intended for individuals or entities purchasing a property known to be contaminated. To obtain and maintain the defense, the individual or entity seeking the defense must also satisfy the following requirements (AAI, Section II D.1.):

- Have acquired a property after all disposal activities involving hazardous substances ceased at the property;
- Provide all legally required notices with respect to the discovery or release of any hazardous substances at the property;
- Exercise appropriate care by taking reasonable steps to stop continuing releases, prevent any threatened future releases, and prevent or limit human, environmental, or natural resources exposure to any previously released hazardous substance;
- Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restorations;
- Comply with land use restrictions established or relied on in connection with a response action;
- Not impede the effectiveness or integrity of any institutional controls;
- Comply with any CERCLA request for information or administrative subpoena; and
- Not be potentially liable, or affiliated with any other person who is potentially liable for response costs for addressing releases at the property.

Innocent Landowner Responsibilities

The Innocent Landowner Defense protects individuals or entities (ultimately the "property owner") purchasing a property that is not known to be contaminated. The property owner must also satisfy the following requirements to obtain and maintain the defense (AAI, Section II D.3 and CERCLA Section 107(b)(3)):

- Have no reason to know that any hazardous substance which is the subject of a release of threatened release was disposed of on, in, or at the facility;
- Provide full cooperation, assistance and access to persons authorized to conduct response actions at the property;
- Comply with any land use restrictions and not impeding the effectiveness or integrity of any institutional controls;

- Take reasonable steps to stop continuing releases, prevent any threatened release, and prevent to limit human, environmental, or natural resource exposure to any hazardous substances released on or from the landowner's property;
- Demonstrate that the act or omission that caused the release or threat of release of hazardous substances and the resulting damages were caused by the third party with whom the person does not have employment, agency, or contractual relationship;
- Exercise due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances;
- Take precautions against foreseeable acts or omissions of a third party and the consequences that could result from such acts or omissions.

Contiguous Property Owner Defense

The Contiguous Property Owner Defense protects individuals or entities purchasing a property that is not known to be contaminated, but could be contaminated by migration from a contiguous property owned by someone else. To qualify as a contiguous property owner, a landowner must have no knowledge of contamination prior to acquisition, or reason to know of contamination at the time of acquisition, have conducted AAI, and meet all of the criteria set forth in AAI Section II.D.2 and CERCLA Section 107(q)(1)(A), which include:

- Not cause, contribute, or consent to the release or threatened release;
- Not be potentially liable nor affiliated with nay other person potentially liable for response costs at the property;
- Take reasonable steps to stop continuing releases, prevent any threatened release, and prevent or limit human, environmental, or natural resource exposure to any hazardous substances released on or from the landowner's property;
- Provide full cooperation, assistance, and access to persons authorized to conduct response actions or natural resource restorations;
- Comply with land use restrictions established or relied on in connection with a response action;
- Not impede the effectiveness or integrity of any institutional controls;
- Comply with any CERCLA request for information or administrative subpoena;
- Provide all legally required notices with respect to discovery or release of any hazardous substances at the property.

Persons who know, or have reason to know, that the property is or could be contaminated at the time of acquisition of a property cannot qualify for the liability protection as a contiguous property owner, but may be entitles to Bona Fide Prospective Purchaser status.