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Transmittal

Mr. Jeff Gray
City Manager
City of Jonesville
265 East Chicago Street
Jonesville, MI 49250

December 11, 2019

Re: Documentation of Due Care Compliance

Project No. 190918

☐ FOR REVIEW
☒ FOR YOUR USE
☐ AS REQUESTED

Sent By: Todd C. Campbell, CPG

COPIES	DATE	DESCRIPTION
1	11/2019	Documentation of Due Care Compliance, Former Klein Tools Property, 121 Water Street, Jonesville, Michigan (Facility ID No. 30000308)

COMMENTS

Attached is the finalized plan. If you have any questions or require additional information, please contact me at 269.544.6948 or tcampbell@fishbeck.com.

By email

Copy: Mr. Ronald Smedley, CEcD, Brownfield Redevelopment Coordinator – EGLE Lansing
Mr. Holden Branch – EGLE
Mr. Roman A. Wilson – Fishbeck

Documentation of Due Care Compliance

Former Klein Tools Property
121 Water Street
Jonesville, Michigan

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Documentation of Due Care Compliance

Former Klein Tools Property
121 Water Street
Jonesville, Michigan
Facility ID No. 30000308

Prepared For:
Michigan Department of Environment, Great Lakes, and Energy
Lansing, Michigan

November 19, 2019
Project No. 190918

List of Figures

List of Tables

List of Abbreviations/Acronyms

AST	aboveground storage tank
BEA	Baseline Environmental Assessment
bgs	below ground surface
DCC	Direct Contact Criteria
DWC	Drinking Water Criteria
DWPC	Drinking Water Protection Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
ESA	Environmental Site Assessment
GNRCC	Generic Non-Residential Cleanup Criteria
GSIC	Groundwater Surface Water Interface Criteria
GSIPC	Groundwater Surface Water Interface Protection Criteria
MIOSHA	Michigan Occupational Safety and Health Administration
NREPA	Natural Resources and Environmental Protection Act
O&M	Operation and Maintenance
PA	Public Act
PCB	polychlorinated biphenyls
PFE	pressure field extension
PNA	polynuclear aromatic compound
PPE	personal protective equipment
RAP	Response Activity Plan
REC	recognized environmental condition
RIASL	Recommended Interim Action Screening Levels
SMP	Soil Management Plan
SSD	subslab depressurization
SVIAC	Soil Volatilization to Indoor Air Criteria
Tier I VV	Tier I Vapor Values
µg/Kg	micrograms per kilogram
µg/L	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
UST	underground storage tank
VI	vapor intrusion
VIAIC	Volatilization to Indoor Air Interface Criteria
VISL	Vapor Intrusion Screening Levels
VOC	volatile organic compound
VSIC	Volatile Soil Inhalation Criteria

1.0 Introduction

This Documentation of Due Care Compliance (DDCC) has been prepared on behalf of the City of Jonesville, Michigan (Jonesville), as owner of a property located at 121 Water Street, Jonesville, Hillsdale County, Michigan (subject property). A Location Map for the subject property is provided as Figure 1. A site map showing 2019 sample locations is provided as Figure 2.

This DDCC has been developed because the subject property was determined to be a *facility*, as defined in Part 201 of PA 451, 1994, as amended. Information used in the development of this Plan includes the following reports and investigations constituting all appropriate inquiry into past and current environmental conditions:

- Fishbeck, *Sampling and Analysis Plan*, 121 Water Street, Jonesville, Michigan, dated July 17, 2019.
- Michigan Department of Environment, Great Lakes, and Energy (EGLE) September 2019 Phase II ESA field activities.
- SME, *Baseline Environmental Assessment, Former Klein Tools Property, 121 Water Street, Jonesville, Michigan*, dated January 27, 2011.

Section 7a of Part 201 of Michigan's NREPA, 1994 PA 451, as amended, requires owners and operators to take due care measures to ensure that known existing contamination on a property does not cause unacceptable risks and is not exacerbated. An owner or operator of a *facility,* defined in Part 201 as property with contamination concentrations above Michigan's cleanup criteria for residential property, shall do all of the following with respect to contamination at the *facility*:

- Prevent exacerbation of the existing contamination.
- Prevent unacceptable human exposure and mitigate fire and explosion hazards to allow for the intended use of the *facility* in a manner that protects the public health and safety.
- Take reasonable precautions against the reasonably foreseeable acts or omissions of a third party.
- Provide notifications to EGLE and others, if warranted.
- Provide reasonable cooperation, assistance, and access to the persons who are authorized to conduct response activities at the property.
- Comply with any land use or resource use restrictions established or relied on in connection with the response activities.
- Not impede the effectiveness or integrity of any land use or resource use restriction.

The subject property is comprised of three parcels: the main parcel along the St. Joseph River (Parcel ID No. 060 001 038) approximately 2.29 acres in size, a small parcel north of the main parcel (Parcel ID No. 060 001 004) approximately 0.3 acre in size, and a parcel east of Water Street (Parcel ID No. 060 001 036) approximately 0.3 acre in size. The main parcel contains one building approximately 64,100 square feet in size on the main floor and approximately 4,400 square feet of office space on the second floor. The building is set on a concrete slab and is of cinder block construction. The subject property is currently vacant. Historically, the subject property was used as a woolen mill which burned down in the late 1800s. Other property uses included: steam printing, engineering, restaurant, photoshop, creamery, steam laundry, machine shop, carpenter shop, hay rack factory, a church, residential, and storage. Due to previous environmental investigations completed to evaluate the historical manufacturing operations, including historical material handling and waste storage practices; soil and groundwater at the subject property are known to be impacted by contaminants including metals and volatile organic compounds (VOCs) at concentrations exceeding Part 201 Generic Non-Residential Cleanup Criteria (GNRCC).

2.0 Hazardous Substance Information

2.1 Soil/Groundwater Contamination

The current soil and groundwater contamination concentrations on the subject property were identified from the Phase II ESA conducted by EGLE in September 2019. Details of this investigation are provided below.

Between September 9 and 11, 2019, EGLE completed nine soil borings (SB-01 through SB-09) on the subject property. EGLE also collected groundwater samples TMW-01 through TMW-04 and TMW-06 through TMW-09. The water samples were collected from wells installed in respective soil borings using a 4-foot-long Geoprobe® stainless steel drop screen. A groundwater sample was also collected from the concrete pit located on the west side of the building. The soil and groundwater samples were analyzed for (VOCs, polynuclear aromatic compounds (PNAs), and Michigan 10 Metals.

Soil Results

The sample analytical results indicated that the following contaminants were present in soil exceeding Part 201 GNRCC for one or more of the following criteria: Direct Contact Criteria (DCC); Drinking Water Protection Criteria (DWPC); Groundwater Surface Water Interface Protection Criteria (GSIPC), Proposed Vapor Intrusion (VI) Tier I Vapor Values (VV). Compounds showing exceedances consist of the following:

1,2,4-trimethylbenzene (1,2,4-TMB)	Fluorene
Acenaphthene	Lead
Anthracene	Mercury
Arsenic	Naphthalene
Benzo (a) anthracene	Phenanthrene
Benzo (a) pyrene	Selenium
Benzo (b) fluoranthene	Tetrachloroethene (PCE)
Cadmium	Total chromium
cis-1,2-dichloroethene (cis-1,2-DCE)	Trans-1,2-dichloroethene
Copper	Trichloroethene (TCE)
Ethylbenzene	Vinyl chloride (VC)
Fluoranthene	Zinc

A soil analytical summary table for all of the tested compounds compared to Part 201 GNRCC is provided as Table 1. The GNRCC soil exceedances are provided in Table 2 and shown on Figure 3.

Groundwater Results

The sample analytical results indicated that the following contaminants were present in groundwater exceeding Part 201 GNRCC for one or more of the following criteria: Drinking Water Criteria (DWC); Groundwater Surface Water Interface Criteria (GSIC), and Proposed VI Tier I VV. Compounds showing exceedances are provided in the table below.

Table – Groundwater Exceedances

Arsenic	Total chromium
cis-1,2-dichloroethene (cis-1,2-DCE)	Trichloroethene (TCE)
Copper	Zinc
Lead	Barium
Mercury	Silver
Selenium	

The groundwater analytical summary table for all of the tested compounds compared to Part 201 GNRCC is provided as Table 3. The GNRCC groundwater exceedances are provided in Table 4 and shown on Figure 4.

The soil gas and indoor air investigation completed concurrently with the September 2019 Phase II ESA at the subject property is discussed in Section 2.4.1.

2.2 Exposure Pathways

Each set of GRCC corresponds to a specific exposure pathway. A complete exposure pathway is generally defined by the following four elements:

- A source of chemical release to the environment.
- An environmental medium for transport of the chemical (e.g., air, groundwater, soil vapor, or soil).
- A point of potential exposure for a receptor.
- A route of exposure for the receptor (e.g., ingestion, inhalation, or dermal contact).

An exposure pathway is considered complete or potentially complete, and exposure is considered possible, only if all four of these elements are present. Exposure pathway evaluations for soil and groundwater on the subject property are summarized below and provided in Tables 5 and 6, respectively.

2.2.1 Drinking Water

Several compounds were identified in soil and groundwater exceeding Non-Residential DWPC and DWC, respectively. Therefore, the drinking water exposure pathway is complete. However, this pathway is restricted since the subject property is supplied with municipal water and there are no drinking water wells on the subject property.

2.2.2 Groundwater/Surface Water Interface

Several compounds were identified in soil and groundwater exceeding their respective GSIPC and GSIC, respectively. However, while GSIC are applicable for establishing a property as a *facility*, these criteria are not used to assess due care obligations with regard to exposure controls. GSIPC and GSIC were established to assess the potential impacts of a contaminant to flora and fauna in surface water bodies. In addition, no site activities will be undertaken to exacerbate this condition. Therefore, the GSI exposure pathway is not applicable.

In the event that land use changes in the future, a new exposure pathway evaluation will be conducted to assist in verifying compliance with applicable due care obligations.

2.2.3 Volatilization to Indoor Air

Several VOCs, PNAs, and one metal (mercury) were identified at concentrations exceeding the Soil Volatilization to Indoor Air Criteria (SVIAC), Infinite Source Volatile Soil Inhalation Criteria (VSIC), and/or Proposed VI Tier I VV in soil and groundwater during the September 2019 Phase II ESA at several locations within and adjacent to the building. In addition, VOCs were detected in groundwater outside the south side of the building exceeding VI Tier I VV. Therefore, the VIA pathway is complete and due care response activities are warranted.

2.2.4 Direct Contact

One metal (lead) was detected in a soil boring (SB-02) completed outside the building at a concentration exceeding DCC. The lead was detected at a depth of 5 to 6 feet bgs. Three PNAs (benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene) were detected in a soil boring (SB-04) completed inside the building. The exceedances were from a soil sample collected between 3 and 4 feet bgs. Benzo(a)pyrene was also detected in the soil boring (SB-05) completed inside of the building. The exceedance was from a soil sample collected between 2 and 4 feet bgs. Therefore, this pathway is relevant; however, it is restricted due to the presence of the paved surface outside the building and the concrete floor inside the building. No other contaminants were identified on the subject property at concentrations exceeding their respective DCC.

2.2.5 Subsurface Soil Infinite Source Volatile Soil (Ambient) Inhalation

TCE was identified in soil at two locations, SB-01 and SB-04, outside the building and inside the building, respectively at concentrations exceeding its soil Infinite Source VSIC (ambient); therefore, this exposure pathway is relevant. However, the building is vacant with restricted access. Due care response activities are warranted for this exposure pathway.

2.2.6 Particulate Soil Inhalation

No contaminants were identified in soil on the subject property at concentrations exceeding their respective Particulate Soil Inhalation Criteria; therefore, this exposure pathway is not complete. No due care response activities are warranted for this exposure pathway.

2.2.7 Flammability/Explosivity

Contaminants observed in groundwater are volatile and flammable. However, the maximum concentrations are below the EGLE screening levels for flammability/explosivity. Therefore, this exposure pathway is not complete. No due care response activities are warranted for this exposure pathway.

2.3 Exposure Controls

The exposure pathway analysis discussed above has identified that the only exposure pathway requiring further response activities is Volatilization to Indoor Air.

2.3.1 Volatilization to Indoor Air

During the September 2019 Phase II ESA, EGLE conducted subslab soil gas and ambient air sampling at the subject property. Nine vapor pins (VP-01 through VP-09) were installed beneath the floor of the building and four indoor air samples were collected throughout the building. The results showed exceedances of the Proposed Vapor Intrusion (VI) Tier I Vapor Values (VV) at eight of the nine subslab soil gas locations. In addition, one indoor air sample exceeded the Proposed VI Tier I VV for TCE.

Soil gas and indoor air exceedances are provided in Table 7 and shown on Figure 5.

2.4 Current and Proposed Property Use

The subject property is currently vacant and access is restricted by a fence along the perimeter of the property, with the exception of portions of the east and south boundaries due to the presence of the building. The building is locked to prevent unauthorized access. The City is currently marketing the property for redevelopment.

2.5 Hazardous Substances Used, Stored, or Handled

There are hazardous substances stored on the subject property and staining from the historical use of hazardous substances is present on the concrete floor within the building.

3.0 Notifications

3.1 Offsite Migration Notification

There is no known offsite migration of contamination at the subject property. An offsite migration notice has not been filed with EGLE, nor is it required for this property.

3.2 Abandoned Container Notification

There are currently no abandoned containers located on the subject property. A notice of abandoned containers has not been filed with EGLE, nor is it required for this property.

3.3 Easement Holder Notification

A written notification will be made by the City to all identified utility and easement holders of property in the general vicinity of the subject property's known contamination that contaminants could cause unacceptable exposures. This notification may be made by providing the easement holders with a copy of this plan.

Easement holders, utility providers, or contractors performing activities onsite that may result in an employee exposure will need to conduct a hazard assessment for each task they are required to perform. The hazard assessments should be used to determine personal protective equipment (PPE), applicable regulations, and shall be included in a Site-Specific Health and Safety Plan submitted to the City. Applicable construction safety regulations may include:

Michigan Occupational Safety and Health Agency (MIOSHA) Construction Safety Standards:

- Part 1 General Rules
- Part 6 Personal Protective Equipment
- Part 9 Excavation, Trenching, & Shoring
- Part 13 Mobile Equipment
- Part 18 Fire Protection and Prevention
- Part 19 Tools
- Part 20 Demolition
- Part 22 Signals, Signs, Tags, and Barricades
- Part 42 Hazard Communication

MIOSHA Construction Health Standards:

- Part 308 Inorganic Arsenic*
- Part 430 Hazard Communication
- Part 432 Hazardous Waste Operations and Emergency Response
- Part 451 Respiratory Protection*
- Part 601 Air Contaminants for Construction*
- Part 603 Lead Exposure in Construction*
- Part 604 Chromium (VI) in Construction*
- Part 680 Occupational Noise Exposure
- Part 690 Silica in Construction

* Monitoring for airborne concentrations of contaminants may be required in order to properly prescribe adequate respiratory protection.

3.4 Mitigation of Fire and Explosion Hazards

There are no fire or explosion hazards on the subject property that would require their mitigation.

4.0 Compliance with Section 7a Summary

4.1 Exacerbation

Exacerbation can occur when an activity undertaken by the owner/operator of a property causes the existing contamination to migrate beyond the property boundaries. An owner/operator can also exacerbate contamination by changing the facility conditions in a manner that would increase the response activity costs for the liable party. A person who causes exacerbation would be responsible for remediation of the contamination they caused or for the increase in the response activity costs.

Any future development activities on the subject property that may result in the disruption of contaminated soil or groundwater will be performed in accordance with all applicable state and federal regulations, including

Part 201, and the laws and regulations listed in Part 201 Section 20107a Administrative Rule 1005. A record describing the handling of the soil and/or groundwater and its final disposition will be maintained.

A Soil Management Plan should be developed prior to any future site development activities. The Soil Management Plan defines procedures for managing soils to be excavated during site development. The purpose of the document is to provide construction managers and contractors with information and guidance on potential environmental concerns that may be encountered during the excavation and relocation of soils during any future development activities.

If groundwater is encountered during future site development, no pumping or dewatering of groundwater shall be completed without proper characterization of the groundwater, and evaluation of the potential for known existing groundwater impacts to be exacerbated. Any groundwater generated during site activities will be properly handled or disposed in accordance with state and federal regulations.

After redevelopment, the normal daily use of the subject property will not result in exacerbation of known subsurface impacts and will not increase response costs for known subsurface impacts. No activities will be conducted by the City during normal daily operations that will potentially disturb contaminated soils and/or groundwater.

4.2 Due Care

Owners and operators of a facility must exercise due care by undertaking response activities that are necessary to prevent unacceptable exposures to contamination.

Based on available analytical data and site use information, unacceptable exposure consisting of the migration of subslab soil gas into the building exists; however, the building is currently vacant and access to the subject property is restricted. Anyone performing activities within the building should complete a hazardous assessment to determine PPE, applicable regulations, and shall be included in a Site-Specific Health and Safety Plan submitted to the City, consistent with Section 3.3 of this report.

Site personnel will have no contact with subsurface contamination during normal daily activities at the subject property.

Site groundwater will not be utilized for any purpose (including drinking water and irrigation) other than groundwater monitoring, if necessary. Potable water is provided by municipal authorities.

Any utility and/or easement holders will be notified by the owner or operator, in writing, of the subsurface contamination to avoid any potential unacceptable risks for workers (as discussed in Section 3.3 of this report).

4.3 Reasonable Precaution

Taking reasonable precautions against the reasonably foreseeable actions and omissions of a third party means trying to prevent things that could cause a third party to be exposed to an unacceptable risk. The subject property is currently vacant and has no ongoing operations. The due care measures previously discussed will provide reasonable precautions to prevent the unacceptable exposure of workers, occupants, or third parties to the known contamination in the foreseeable future. The presence of the paved area will provide exposure barriers.

Site groundwater will not be utilized for any purpose other than groundwater monitoring, if necessary. Potable water will be obtained from municipal authorities. In addition, all subsurface activities must be approved by the City and be conducted in accordance with all applicable state and federal regulations. These actions and the exposure barriers in place will protect against the reasonably foreseeable acts or omissions of a third party.

4.4 Provide Reasonable Cooperation, Assistance, and Access

The City will allow an authorized person to conduct response activities on the property (such as liable person or EGLE), including such actions as installing monitoring wells, operating a remediation system, conducting inspections, etc. However, the statute specifically states that this shall not be interpreted as providing any right of access not expressly authorized by law. The authorized person must still go through the normal process of acquiring voluntary or court ordered access.

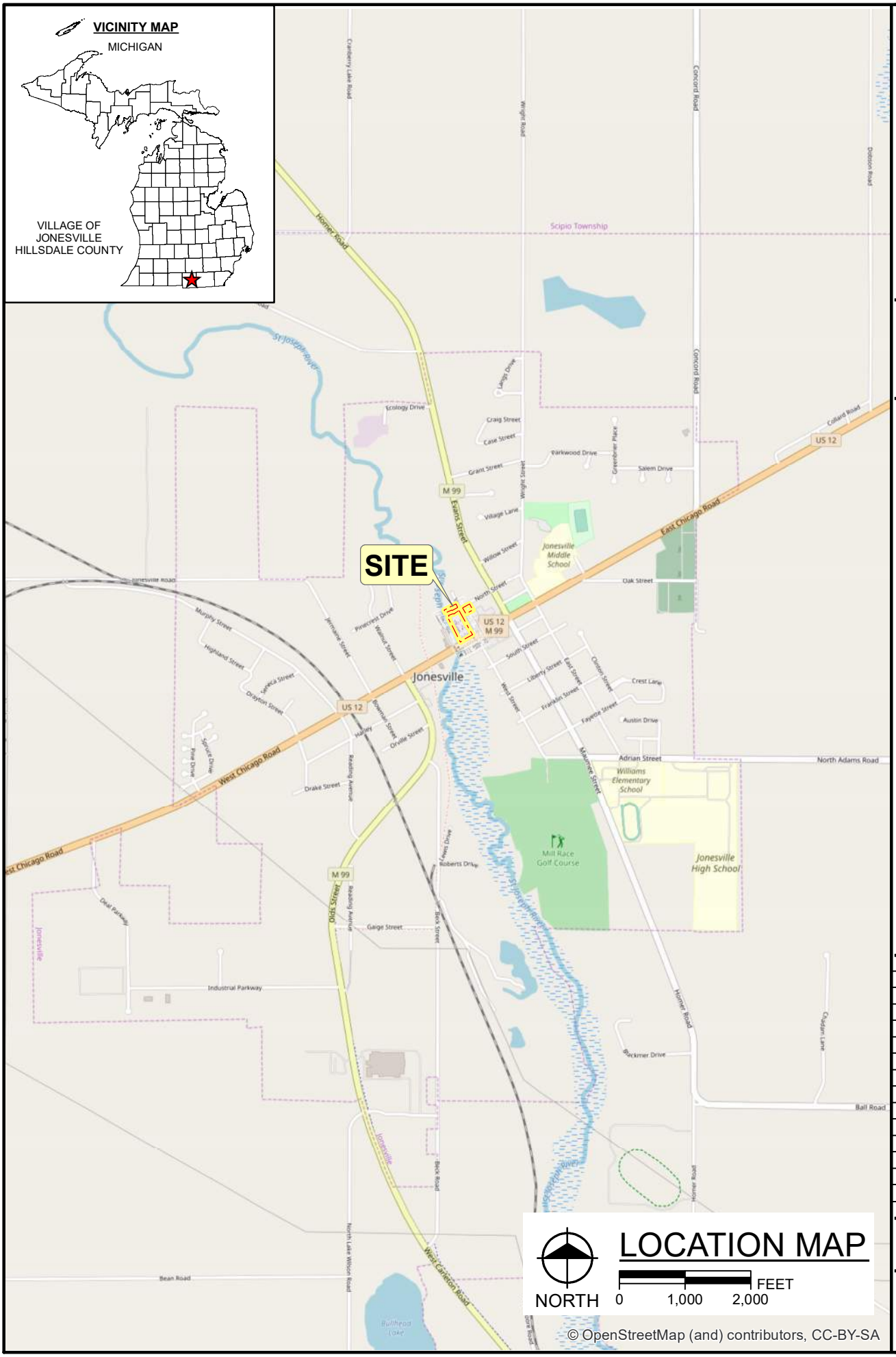
4.5 Comply with and Not Impede Effectiveness of Land and Resource Use Restrictions

The City is required to comply with any established land use restrictions and/or institutional controls and are not to impede the effectiveness or integrity of any institutional control employed in connection with a response action.

4.6 Due Care Documentation

The City must maintain documentation that due care requirements have been evaluated, and any response actions that are needed have been taken. The documentation does not need to be submitted to EGLE, but must be available for EGLE to review, upon request, within eight months of becoming the owner or operator or having knowledge that the property is a *facility*. Documentation requirements are described in Part 201 Section 20107a Administrative Rule 1003 Subrule (5).

Figures



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Klein Tools

121 Water St., Jonesville, Michigan

Documanetation of Due Care Compliance

PROJECT NO.
190918

FIGURE NO.
1

PLOT INFO: Z:\2019\190918\CAD\GIS\MAPDOC\DCFIG01_LOCATION MAP.mxd Date: 11/4/2019 11:10:28 AM User: ACS

LEGEND

- Vapor Pin/Indoor Air Sample Location
- Soil Boring/Temporary Well Location
- Approximate Property Boundary

Reference:
Aerial photo - Google Earth Pro - 7/7/18
Boring/Monitoring Well Locations - SME
Property Featuresand Soil Boring Location Diagram - 1/14/11

NORTH

0 30 60 FEET

SOIL BORING/TEMPORARY WELL VAPOR PROBE/INDOOR AIR LOACTIONS

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PROJECT NO.
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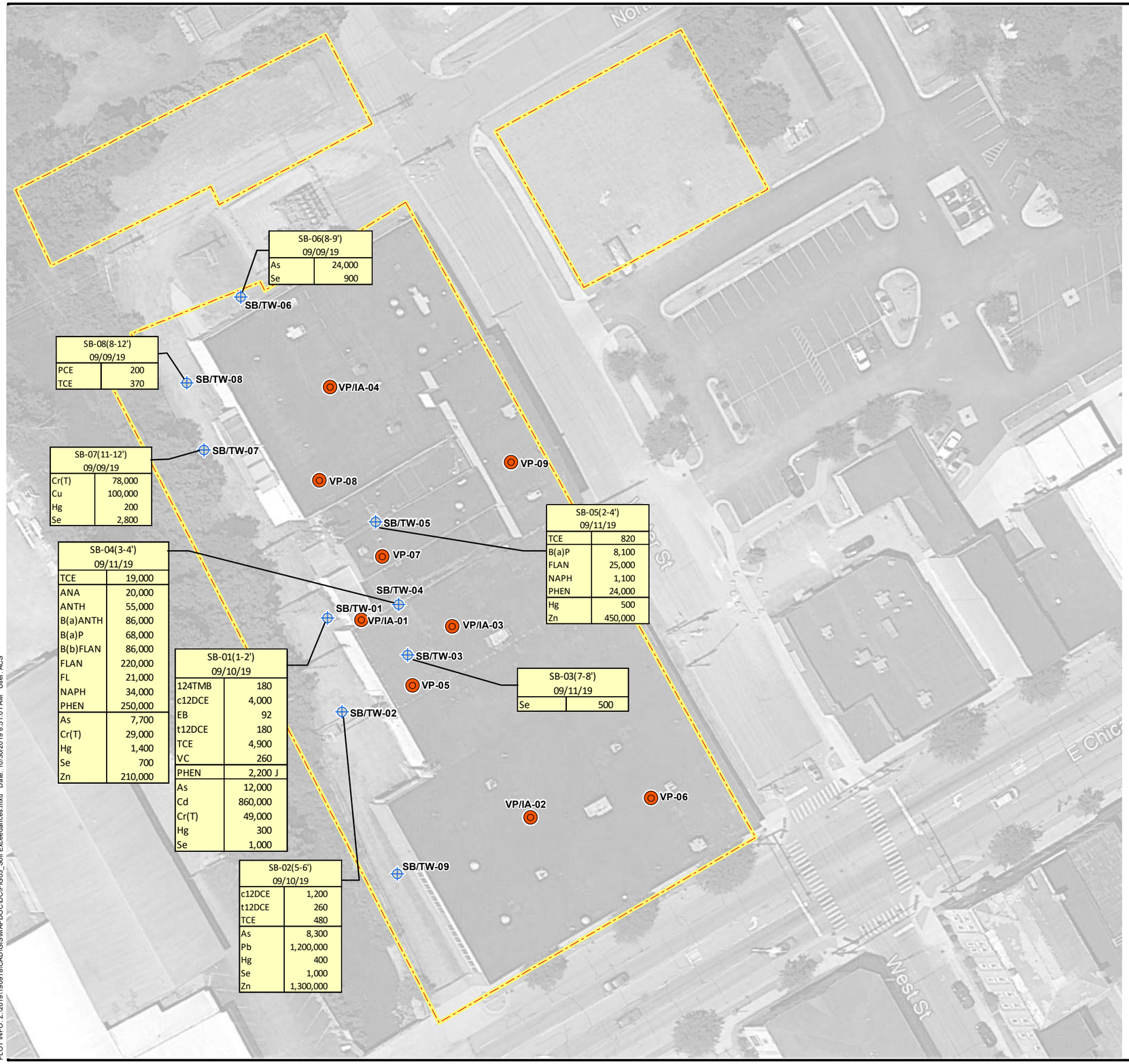
FIGURE NO.
2

PLOT INFO : Z:\2019\190918\CAD\GIS\MAPDOC\DCF\G02_SB-TW and VP-IA Locations.mxd Date: 10/30/2019 8:27:00 AM User: ACS



LEGEND

- Vapor Pin/Indoor Air Sample Location
- Soil Boring/Temporary Well Location
- Approximate Property Boundary

124TMB - 1,2,4-Trimethylbenzene
ANA - Acenaphthene
ANTH - Anthracene
As - Arsenic
B(a)ANTH - Benzo(a)anthracene
B(a)P - Benzo(a)pyrene
B(b)FLAN - Benzo(b)fluoranthene
Cd - Cadmium
c12DCE - cis-1,2-Dichloroethene
Cr(T) - Chromium, Total
Cu - Copper
EB - Ethylbenzene
FL - Fluorene
FLAN - Fluoranthene
Pb - Lead
Hg - Mercury (Total)
NAPH - Naphthalene
PHEN - Phenanthrene
PCE - Tetrachloroethene
Se - Selenium
t12DCE - trans-1,2-Dichloroethene
TCE - Trichloroethene
VC - Vinyl chloride
Zn - Zinc
J - Estimated value

Results expressed in µg/Kg dry weight.

Reference:
Aerial photo - Google Earth Pro - 7/7/18
Boring/Monitoring Well Locations - SME
Property Featuresand Soil Boring Location Diagram - 1/14/11

NORTH

SOIL EXCEEDANCES

0 30 60 FEET

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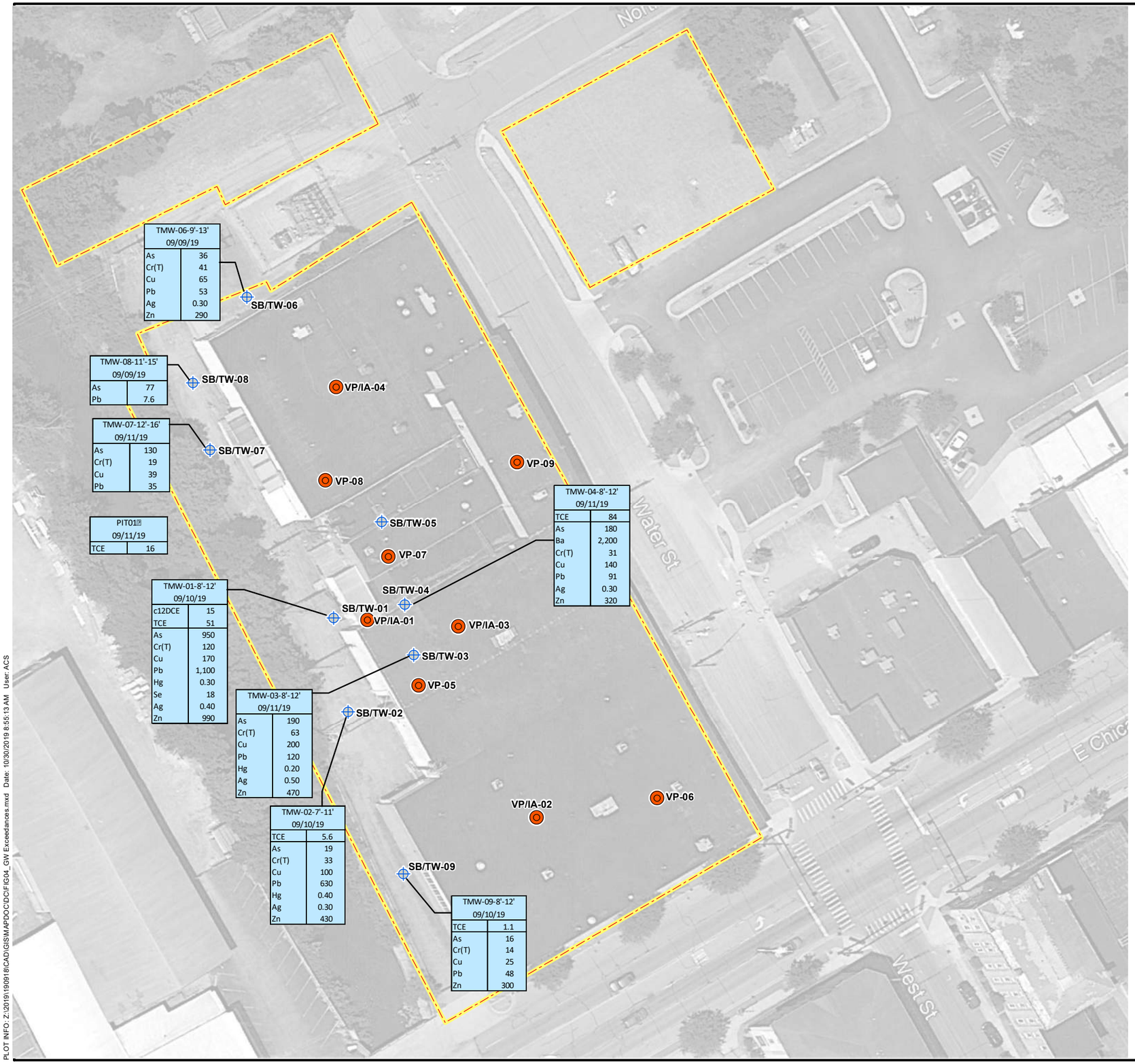
FIGURE NO.
3

PLOT INFO: Z:\2019\190918\CAD\GIS\MAPDOC\DCF\FIG03_Soil Exceedances.mxd Date: 10/30/2019 8:51:01 AM User: ACS



PLOT INFO : Z:\2019\190918\CAD\GIS\MAPDOC\DOC\FIG04_GW Exceedances.mxd Date: 10/30/2019 8:55:13 AM User: ACS

LEGEND

- Vapor Pin/Indoor Air Sample Location
- Soil Boring/Temporary Well Location
- Approximate Property Boundary

c12DCE - cis-1,2-Dichloroethene
TCE - Trichloroethene
As - Arsenic
BA - Barium
Cr(T) - Chromium, Total
Cu - Copper
Pb - Lead
Hg - Mercury
Se - Selenium
Ag - Silver
Zn - Zinc

Results expressed in µg/L.

Reference:
Aerial photo - Google Earth Pro - 7/7/18
Boring/Monitoring Well Locations - SME
Property Featuresand Soil Boring Location Diagram - 1/14/11

NORTH

GROUNDWATER EXCEEDANCES

0 30 60 FEET

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PROJECT NO.
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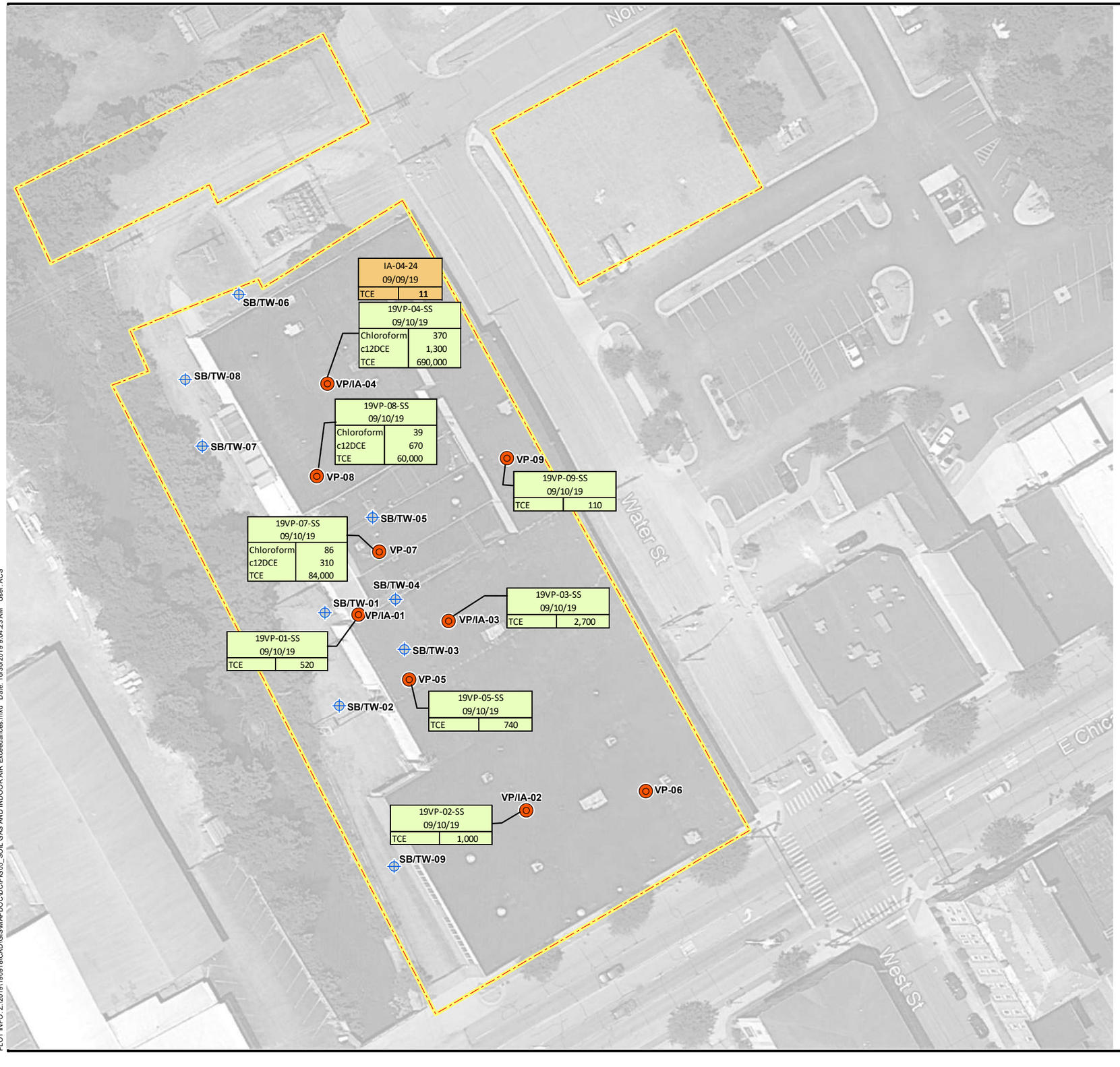
FIGURE NO.
4



LEGEND

- Vapor Pin/Indoor Air Sample Location
- Soil Boring/Temporary Well Location
- Approximate Property Boundary

SOIL GAS
c12DCE - cis-1,2-Dichloroethene
TCE - Trichloroethene

Results are expressed in µg/m^3.

Indoor Air
TCE - Trichloroethene

Results are expressed in µg/m^3.

Reference:
Aerial photo - Google Earth Pro - 7/7/18
Boring/Monitoring Well Locations - SME
Property Featuresand Soil Boring Location Diagram - 1/14/11

SOIL GAS AND INDOOR AIR EXCEEDANCES

NORTH 0 30 60 FEET

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PROJECT NO.
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FIGURE NO.
5

PLOT INFO: Z:\2019\190918\CAD\GIS\MAPDOC\DCIFIG05_SOIL GAS AND INDOOR AIR Exceedances.mxd Date: 10/30/2019 9:04:23 AM User: ACS

Tables

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: / *Depth Interval (ft):* / *Investigative/Field Duplicate/QC:* / *Laboratory ID:* / *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-01* (1-2) Investigative 1909114-01 09/10/19	SB-02† (5-6) Investigative 1909114-02 09/10/19	SB-03 (7-8) Investigative 1909114-03 09/11/19	SB-04† (3-4) Investigative 1909114-04 09/11/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]				
Volatile Organic Compounds	**CAS Number**																								
1,1,1,2-Tetrachloroethane	630-20-6	*NA*	*ID*	*4.40E+05*	*3.2 (M*)*	*1,500*	*6,200*	*36,000*	*54,000*	*1.00E+05*	*4.20E+08*	*4.80E+05 (C)*	*--*	*6,400*	*33,000*	*1.20E+05*	*2.10E+05*	*3.30E+05*	*5.30E+08*	*2.20E+06 (C)*	*--*	67 U	74 U	96 U	69 U
1,1,1-Trichloroethane	71-55-6	*NA*	*1,800*	*4.60E+05*	*450 (EE)*	*4,000*	*2.50E+05*	*3.80E+06*	*1.20E+07*	*2.80E+07*	*6.70E+10*	*5.00E+08 (C)*	*450*	*4,000*	*4.60E+05*	*4.50E+06*	*1.50E+07*	*3.10E+07*	*2.90E+10*	*1.00E+09 (C)*	*1,900*	67 U	74 U	96 U	69 U
1,1,2,2-Tetrachloroethane	79-34-5	*NA*	*1,600 (X)*	*8.70E+05*	*2.7 (M*)*	*170*	*4,300*	*10,000*	*10,000*	*14,000*	*5.40E+07*	*53,000*	*--*	*700*	*23,000*	*34,000*	*34,000*	*34,000*	*6.80E+07*	*2.40E+05*	*--*	67 U	74 U	96 U	69 U
1,1,2-Trichloroethane	79-00-5	*NA*	*6,600 (X)*	*9.20E+05*	*0.00037 (M*)*	*100*	*4,600*	*17,000*	*21,000*	*44,000*	*1.90E+08*	*1.80E+05*	*--*	*100*	*24,000*	*57,000*	*57,000*	*1.20E+05*	*2.50E+08*	*8.40E+05*	*--*	67 U	74 U	96 U	69 U
1,1-Dichloroethane	75-34-3	*NA*	*15,000*	*8.90E+05*	*2.6 (M*)*	*18,000*	*2.30E+05*	*2.10E+06*	*5.90E+06*	*1.40E+07*	*3.30E+10*	*2.70E+07 (C)*	*2.6 (M*)*	*50,000*	*4.30E+05*	*2.50E+06*	*6.00E+06*	*1.40E+07*	*1.50E+10*	*8.70E+07 (C)*	*19 (M*)*	67 U	74 U	96 U	69 U
1,1-Dichloroethene	75-35-4	*NA*	*2,600*	*5.70E+05*	*12 (M*)*	*140*	*62*	*1,100*	*5,300*	*13,000*	*6.20E+07*	*2.00E+05*	*12 (M*)*	*140*	*330*	*3,700*	*15,000*	*37,000*	*7.80E+07*	*6.60E+05 (C)*	*54*	67 U	74 U	96 U	69 U
1,2,3-Trichlorobenzene	87-61-6	*--*	*--*	*--*	*830*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	330 U	370 U	480 U	350 U
1,2,3-Trichloropropane	96-18-4	*NA*	*NA*	*8.30E+05*	*2.6 (M*)*	*840*	*4,000*	*9,200*	*9,200*	*11,000*	*2.00E+07*	*1.30E+06 (C)*	*--*	*2,400*	*7,500*	*11,000*	*11,000*	*12,000*	*8.80E+06*	*4.20E+06 (C)*	*--*	67 U	74 U	96 U	69 U
1,2,3-Trimethylbenzene	526-73-8	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*1,200*	130	74 U	96 U	69 U
1,2,4-Trichlorobenzene	120-82-1	*NA*	*5,900 (X)*	*1.10E+06*	*53 (M*)*	*4,200*	*9.60E+06 (C)*	*2.80E+07*	*2.80E+07*	*2.80E+07*	*2.50E+10*	*9.90E+05*	*53 (M*)*	*4,200*	*1.80E+07 (C)*	*3.40E+07*	*3.40E+07*	*3.40E+07*	*1.10E+10*	*5.80E+06 (C)*	*230 (M*)*	330 U	370 U	480 U	350 U
1,2,4-Trimethylbenzene	95-63-6	*NA*	*570*	*1.10E+05*	*150*	*2,100*	*4.30E+06 (C)*	*2.10E+07*	*5.00E+08*	*5.00E+08*	*8.20E+10*	*3.20E+07 (C)*	*150*	*2,100*	*8.00E+06 (C)*	*2.50E+07*	*6.00E+08*	*6.00E+08*	*3.60E+10*	*1.00E+08 (C)*	*650*	**180**	74 U	96 U	69 U
1,2-Dibromoethane (EDB)	106-93-4	*NA*	*110 (X)*	*8.90E+05*	*0.074 (M*)*	*20 (M); 1.0*	*670*	*1,700*	*1,700*	*3,300*	*1.40E+07*	*92*	*--*	*20 (M); 1.0*	*3,600*	*5,800*	*5,800*	*9,800*	*1.80E+07*	*430*	*--*	67 U	74 U	96 U	69 U
1,2-Dichlorobenzene	95-50-1	*NA*	*280*	*2.10E+05*	*1,500*	*14,000*	*1.10E+07 (C)*	*3.90E+07*	*3.90E+07*	*5.20E+07*	*1.00E+11*	*1.90E+07 (C)*	*--*	*14,000*	*2.00E+07 (C)*	*4.60E+07*	*4.60E+07*	*5.50E+07*	*4.40E+10*	*6.30E+07 (C)*	*--*	67 U	74 U	96 U	69 U
1,2-Dichloroethane	107-06-2	*NA*	*7,200 (X)*	*1.20E+06*	*0.82 (M*)*	*100*	*2,100*	*6,200*	*11,000*	*26,000*	*1.20E+08*	*91,000*	*--*	*100*	*11,000*	*21,000*	*33,000*	*74,000*	*1.50E+08*	*4.20E+05*	*--*	67 U	74 U	96 U	69 U
1,2-Dichloropropane	78-87-5	*NA*	*4,600 (X)*	*5.50E+05*	*2.1 (M*)*	*100*	*4,000*	*25,000*	*50,000*	*1.10E+05*	*2.70E+08*	*1.40E+05*	*--*	*100*	*7,400*	*30,000*	*51,000*	*1.20E+05*	*1.20E+08*	*6.60E+05 (C)*	*--*	67 U	74 U	96 U	69 U
1,3,5-Trimethylbenzene	108-67-8	*NA*	*1,100*	*94,000*	*100*	*1,800*	*2.60E+06 (C)*	*1.60E+07*	*3.80E+08*	*3.80E+08*	*8.20E+10*	*3.20E+07 (C)*	*100*	*1,800*	*4.80E+06 (C)*	*1.90E+07*	*4.60E+08*	*4.60E+08*	*3.60E+10*	*1.00E+08 (C)*	*450*	69	74 U	96 U	69 U
1,3-Dichlorobenzene	541-73-1	*NA*	*680*	*1.70E+05*	*10 (M*)*	*170*	*26,000*	*79,000*	*79,000*	*1.10E+05*	*2.00E+08*	*2.00E+05 (C)*	*10 (M*)*	*480*	*48,000*	*94,000*	*94,000*	*1.10E+05*	*8.80E+07*	*6.60E+05 (C)*	*45 (M*)*	67 U	74 U	96 U	69 U
1,3-Dichloropropene, cis-	10061-01-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	67 U	74 U	96 U	69 U
1,3-Dichloropropene, trans-	10061-02-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	67 U	74 U	96 U	69 U
1,3-Dichloropropene (Total)	542-75-6	*NA*	*180 (X)*	*6.20E+05*	*3.1 (M*)*	*170*	*1,000*	*18,000*	*68,000*	*1.60E+05*	*7.80E+08*	*10,000*	*--*	*700*	*5,400*	*60,000*	*2.00E+05*	*4.70E+05*	*5.90E+08*	*2.40E+05*	*--*	134 U	148 U	192 U	138 U
1,4-Dichlorobenzene	106-46-7	*NA*	*360*	*NA*	*23 (M*)*	*1,700*	*19,000*	*77,000*	*77,000*	*1.10E+05*	*4.50E+08*	*4.00E+05*	*23 (M*)*	*1,700*	*1.00E+05*	*2.60E+05*	*2.60E+05*	*3.40E+05*	*5.70E+08*	*1.90E+06*	*160*	67 U	74 U	96 U	69 U
2,2,4-Trimethylpentane	540-84-1	*NA*	*NA*	*19,000*	*1.20E+05*	*ID*	*1.10E+05 (C)*	*5.20E+06*	*3.90E+07*	*9.60E+07*	*2.30E+11*	*ID*	*--*	*ID*	*2.00E+05 (C)*	*6.30E+06*	*4.00E+07*	*9.60E+07*	*1.00E+11*	*ID*	*--*	330 U	370 U	480 U	350 U
2-Butanone (MEK)	78-93-3	*NA*	*44,000*	*2.70E+07*	*31,000 (DD)*	*2.60E+05*	*5.40E+07 (C)*	*2.90E+07*	*2.90E+07*	*3.50E+07*	*6.70E+10*	*1.20E+08 (C)*	*--*	*7.60E+05*	*9.90E+07 (C)*	*3.50E+07*	*3.50E+07*	*3.60E+07*	*2.90E+10*	*7.00E+08 (C)*	*--*	330 U	370 U	480 U	350 U
4-Methyl-2-pentanone (MIBK)	108-10-1	*NA*	*ID*	*2.70E+06*	*12,000 (DD)*	*36,000*	*3.70E+07 (C)*	*4.50E+07*	*4.50E+07*	*6.70E+07*	*1.40E+11*	*5.60E+07 (C)*	*--*	*1.00E+05*	*6.90E+07 (C)*	*5.30E+07*	*5.30E+07*	*7.00E+07*	*6.00E+10*	*1.80E+08 (C)*	*--*	330 U	370 U	480 U	350 U
Acetone	67-64-1	*NA*	*34,000*	*1.10E+08*	*2.60E+05 (EE)*	*15,000*	*2.90E+08 (C)*	*1.30E+08*	*1.30E+08*	*1.90E+08*	*3.90E+11*	*2.30E+07*	*2.60E+05*	*42,000*	*5.40E+08 (C)*	*1.60E+08*	*1.60E+08*	*2.00E+08*	*1.70E+11*	*7.30E+07*	*7.80E+05*	1,300 U	1,500 U	1,900 U	1,400 U
Acrylonitrile	107-13-1	*NA*	*100 (M); 40*	*8.30E+06*	*1.2 (M*)*	*100 (M); 52*	*6,600*	*5,000*	*5,100*	*10,000*	*4.60E+07*	*16,000*	*--*	*220*	*35,000*	*17,000*	*17,000*	*31,000*	*5.80E+07*	*74,000*	*--*	330 U	370 U	480 U	350 U
Benzene	71-43-2	*NA*	*4,000 (X)*	*4.00E+05*	*1.7 (M*)*	*100*	*1,600*	*13,000*	*34,000*	*79,000*	*3.80E+08*	*1.80E+05*	*1.7 (M*)*	*100*	*8,400*	*45,000*	*99,000*	*2.30E+05*	*4.70E+08*	*8.40E+05 (C)*	*12 (M*)*	67 U	74 U	96 U	69 U
Bromochloromethane	74-97-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	67 U	74 U	96 U	69 U
Bromodichloromethane	75-27-4	*NA*	*ID*	*1.50E+06*	*0.61 (M*)*	*1,600 (W)*	*1,200*	*9,100*	*9,700*	*19,000*	*8.40E+07*	*1.10E+05*	*--*	*1,600 (W)*	*6,400*	*31,000*	*31,000*	*57,000*	*1.10E+08*	*4.90E+05*	*--*	67 U	74 U	96 U	69 U
Bromoform	75-25-2	*NA*	*ID*	*8.70E+05*	*45 (M*)*	*1,600 (W)*	*1.50E+05*	*9.00E+05*	*9.00E+05*	*9.00E+05*	*2.80E+09*	*8.20E+05*	*--*	*1,600 (W)*	*7.70E+05*	*3.10E+06*	*3.10E+06*	*3.10E+06*	*3.60E+09*	*3.80E+06 (C)*	*--*	67 U	74 U	96 U	69 U
Bromomethane	74-83-9	*NA*	*100*	*2.20E+06*	*0.90 (M*)*	*200*	*860*	*11,000*	*57,000*	*1.40E+05*	*3.30E+08*	*3.20E+05*	*--*	*580*	*1,600*	*13,000*	*57,000*	*1.40E+05*	*1.50E+08*	*1.00E+06*	*--*	270 U	300 U	380 U	280 U
Carbon disulfide	75-15-0	*NA*	*ID*	*2.80E+05*	*52 (M*)*	*16,000*	*76,000*	*1.30E+06*	*7.90E+06*	*1.90E+07*	*4.70E+10*	*7.20E+06 (C)*	*--*	*46,000*	*1.40E+05*	*1.60E+06*	*8.00E+06*	*1.90E+07*	*2.10E+10*	*4.30E+07 (C)*	*--*	67 U	74 U	96 U	69 U
Carbon tetrachloride	56-23-5	*NA*	*760 (X)*	*3.90E+05*	*0.31 (M*)*	*100*	*190*	*3,500*	*12,000*	*28,000*	*1.30E+08*	*96,000*	*--*	*100*	*990*	*12,000*	*34,000*	*79,000*	*1.70E+08*	*4.40E+05 (C)*	*--*	67 U	74 U	96 U	69 U
Chlorobenzene	108-90-7	*NA*	*500*	*2.60E+05*	*82*	*2,000*	*1.20E+05*	*7.70E+05*	*9.90E+05*	*2.10E+06*	*4.70E+09*	*4.30E+06 (C)*	*82*	*2,000*	*2.20E+05*	*9.20E+05*	*1.10E+06*	*2.10E+06*	*2.10E+09*	*1.40E+07 (C)*	*360*	67 U	74 U	96 U	69 U
Chloroethane	75-00-3	*NA*	*22,000 (X)*	*9.50E+05*	*330*	*8,600*	*2.90E+06 (C)*	*3.00E+07*	*1.20E+08*	*2.80E+08*	*6.70E+11*	*2.60E+06 (C)*	*330*	*34,000*	*5.30E+06 (C)*	*3.60E+07*	*1.20E+08*	*2.80E+08*	*2.90E+11*	*1.20E+07 (C)*	*1,500*	330 U	370 U	480 U	350 U
Chloroform	67-66-3	*NA*	*7,000*	*1.50E+06*	*0.26 (M*)*	*1,600 (W)*	*7,200*	*45,000*	*1.20E+05*	*2.70E+05*	*1.30E+09*	*1.20E+06*	*0.26 (M*)*	*1,600 (W)*	*38,000*	*1.50E+05*	*3.40E+05*	*7.90E+05*	*1.60E+09*	*5.50E+06 (C)*	*1.9 (M*)*	67 U	74 U	96 U	69 U
Chloromethane	74-87-3	*NA*	*ID*	*1.10E+06*	*6.9 (M*)*	*5,200*	*2,300*	*40,000*	*4.10E+05*	*1.00E+06*	*4.90E+09*	*1.60E+06 (C)*	*6.9 (M*)*	*22,000*	*10,000*	*1.20E+05*	*1.00E+06*	*2.50E+06*	*2.60E+09*	*7.40E+06 (C)*	*31 (M*)*	330 U	370 U	480 U	350 U
cis-1,2-Dichloroethene	156-59-2	*NA*	*12,000*	*6.40E+05*	*2.1 (M*)*	*1,400*	*22,000*	*1.80E+05*	*4.20E+05*	*9.90E+05*	*2.30E+09*	*2.50E+06 (C)*	*2.1 (M*)*	*1,400*	*41,000*	*2.10E+05*	*4.30E+05*	*1.00E+06*	*1.00E+09*	*8.00E+06 (C)*	*9.2 (M*)*	**4,000**	**1,200**	96 U	69 U
Cyclohexane	110-82-7	*--*	*--*	*--*	*320 (M*)*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	330 U	370 U	480 U	350 U
Dibromochloromethane	124-48-1	*NA*	*ID*	*6.10E+05*	*0.40 (M*,MM)*	*1,600 (W)*	*3,900*	*24,000*	*24,000*	*33,000*	*1.30E+08*	*1.10E+05*	*--*	*1,600 (W)*	*21,000*	*80,000*	*80,000*	*98,000*	*1.60E+08*	*5.00E+05*	*--*	67 U	74 U	96 U	69 U
Dibromomethane	74-95-3	*NA*	*NA*	*2.00E+06*	*3.5 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.50E+06 (C)*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06 (C)*	*--*	67 U	74 U	96 U	69 U
Dichlorodifluoromethane	75-71-8	*NA*	*ID*	*1.00E+06*	*12 (M*)*	*95,000*	*9.00E+05*	*5.30E+07*	*5.50E+08*	*1.40E+09*	*3.30E+12*	*5.20E+07 (C)*	*--*	*2.70E+05*	*1.70E+06*	*6.30E+07*	*5.50E+08*	*1.40E+09*	*1.50E+12*	*1.70E+08 (C)*	*--*	330 U	370 U	480 U	350 U
Diethyl ether	60-29-7	*NA*	*ID*	*7.40E+06*	*350*	*200*	*2.80E+07 (C)*	*8.50E+07*	*1.50E+08*	*3.40E+08*	*8.00E+11*	*1.10E+08 (C)*	*--*	*200*	*5.20E+07 (C)*	*1.00E+08*	*1.60E+08*	*3.50E+08*	*3.50E+11*	*3.60E+08 (C)*	*--*	270 U	300 U	380 U	280 U
Diisopropyl ether	108-20-3	*NA*	*ID*	*1,300*	*190 (M*,DD)*	*600*	*6.70E+05 (C)*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*9.20E+05 (C)*	*--*	*1,700 (C)*	*1.20E+06 (C)*	*3.20E+06*	*4.80E+06*	*1.00E+07*	*1.10E+10*	*3.00E+06 (C)*	*--*	330 U	370 U	480 U	350 U
Ethyl-tert-butyl ether (ETBE)	637-92-3	*NA*	*ID*	*6.50E+05*	*NA*	*980*	*5.40E+05*	*1.90E+06*	*4.50E+06*	*1.10E+07*	*2.50E+10*	*ID*	*--*	*980*	*1.70E+06 (C)*	*2.30E+06*	*4.60E+06*	*1.10E+07*	*1.10E+10*	*ID*	*--*	330 U	370 U	480 U	350 U
Ethylbenzene	100-41-4	*NA*	*360*	*1.40E+05*	*12 (M*)*	*1,500*	*87,000*	*7.20E+05*	*1.00E+06*	*2.20E+06*	*1.00E+10*	*2.20E+07 (C)*	*12 (M*)*	*1,500*	*4.60E+05 (C)*	*2.40E+06*	*3.10E+06*	*6.50E+06*	*1.30E+10*	*7.10E+07 (C)*	*86*	**92**	74 U	96 U	69 U
Hexachloroethane	67-72-1	*NA*	*1,800 (X)*	*NA*	*3.2 (M*)*	*430*	*40,000*	*5.50E+05*	*9.30E+05*	*9.30E+05*	*2.30E+08*	*2.30E+05*	*--*	*1,200*	*79,000*	*6.60E+05*	*1.40E+06*	*1.40E+06*	*1.00E+08*	*7.30E+05*	*--*	330 U	370 U	480 U	350 U
Isopropylbenzene	98-82-8	*NA*	*3,200*	*3.90E+05*	*3.8 (M*)*	*91,000*	*4.00E+05 (C)*	*1.70E+06*	*1.70E+06*	*2.80E+06*	*5.80E+09*	*2.50E+07 (C)*	*--*	*2.60E+05*	*7.30E+05 (C)*	*2.00E+06*	*2.00E+06*	*3.00E+06*	*2.60E+09*	*8.00E+07 (C)*	*--*	67 U	74 U	96 U	69 U
Methyl-tert-butyl ether (MTBE)	1634-04-4	*NA*	*1.40E+05 (X)*	*5.90E+06*	*74 (M*)*	*800*	*9.90E+06 (C)*	*2.50E+07*	*3.90E+07*	*8.70E+07*	*2.00E+11*	*1.50E+06*	*74 (M*)*	*800*	*1.80E+07 (C)*	*3.00E+07*	*4.10E+07*	*8.90E+07*	*8.80E+10*	*7.10E+06 (C)*	*520*	67 U	74 U	96 U	69 U
Methylene chloride	75-09-2	*NA*	*30,000 (X)*	*2.30E+06*	*130*	*100*	*45,000*	*2.10E+05*	*5.90E+05*	*1.40E+06*	*6.60E+09*	*1.30E+06*	*130*	*100*	*2.40E+05*	*7.00E+05*	*1.70E+06*	*4.00E+06*	*8.30E+09*	*5.80E+06 (C)*	*570*	130 U	150 U	190 U	140 U
n-Butylbenzene	104-51-8	*NA*	*ID*	*1.00E+07*	*550*	*1,600*	*ID*	*ID*	*ID*	*ID*	*2.00E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*8.80E+08*	*8.00E+06*	*--*	110	74 U	96 U	69 U
n-Hexane	110-54-3	*NA*	*NA*	*44,000*	*24,000*	*1.80E+05 (C)*	*5.10E+05 (C)*	*3.00E+06*	*3.20E+06*	*6.20E+06*	*1.30E+10*	*9.20E+07 (C)*	*--*	*5.10E+05 (C)*	*9.50E+05 (C)*	*3.50E+06*	*3.50E+06*	*6.40E+06*	*5.90E+09*	*3.00E+08 (C)*	*--*	67 U	74 U	96 U	69 U
n-Propylbenzene	103-65-1	*NA*	*ID*	*1.00E+07*	*1,800 (DD)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*1.30E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*5.90E+08*	*8.00E+06*	*--*	67 U	74 U	96 U	69 U
sec-Butylbenzene	135-98-8	*NA*	*ID*	*1.00E+07*	*3,800*	*1,600*	*ID*	*ID*	*ID*	*ID*	*4.00E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*1.80E+08*	*8.00E+06*	*--*	67 U	74 U	96 U	69 U
Styrene	100-42-5	*NA*	*2,100 (X)*	*5.20E+05*	*150*	*2,700*	*2.50E+05*	*9.70E+05*	*9.70E+05*	*1.40E+06*	*5.50E+09*	*4.00E+05*	*--*	*2,700*	*1.30E+06 (C)*	*3.30E+06*	*3.30E+06*	*4.20E+06*	*6.90E+09*	*1.90E+06 (C)*	*--*	67 U	74 U	96 U	69 U
t-Amyl methyl ether (TAME)	994-05-8	*NA*	*NA*	*4.40E+05*	*NA*	*3,900*	*58,000*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*2.90E+07 (C)*	*--*	*3,900*	*1.10E+05*	*4.00E+05*	*7.80E+05*	*1.80E+06*	*1.80E+09*	*9.50E+07 (C)*	*--*	330 U	370 U	480 U	350 U
t-Butyl alcohol	75-65-0	*NA*	*NA*	*1.10E+08*	*NA*	*78,000*	*3.10E+08 (C)*	*9.70E+07*	*2.00E+08*	*2.00E+08*	*1.30E+11*	*1.20E+08 (C)*	*--*	*2.20E+05*	*5.80E+08 (C)*	*1.20E+08*	*2.40E+08*	*2.40E+08*	*5.60E+10*	*3.90E+08 (C)*	*--*	3300 U	3,700 U	4,800 U	3,500 U
t-Butylbenzene	98-06-6	*NA*	*ID*	*1.00E+07*	*0.64 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*6.70E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*2.90E+08*	*8.00E+06*	*--*	67 U	74 U	96 U	69 U
Tetrachloroethene	127-18-4	*NA*	*1,200 (X)*	*88,000*	*6.2 (M*,EE)*	*100*	*11,000*	*1.70E+05*	*4.80E+05*	*1.10E+06*	*2.70E+09*	*2.00E+05 (C)*	*6.2 (M*)*	*100*	*21,000*	*2.10E+05*	*4.90E+05*	*1.10E+06*	*1.20E+09*	*9.30E+05 (C)*	*19 (M*)*	67 U	74 U	96 U	69 U
Tetrahydrofuran	109-99-9	*NA*	*2.20E+05 (X)*	*1.20E+08*	*13,000*	*1,900*	*1.30E+06*	*1.30E+07*	*6.70E+07*	*1.60E+08*	*3.90E+11*	*2.90E+06*	*--*	*5,400*	*2.40E+06*	*1.50E+07*	*6.70E+07*	*1.60E+08*	*1.70E+11*	*9.50E+06*	*--*	330 U	370 U	480 U	350 U
Toluene	108-88-3	*NA*	*5,400*	*2.50E+05*	*3,700 (EE)*	*16,000*	*3.30E+05 (C)*	*2.80E+06*	*5.10E+06*	*1.20E+07*	*2.70E+10*	*5.00E+07 (C)*	*3,700*	*16,000*	*6.10E+05 (C)*	*3.30E+06*	*3.60E+07*	*3.60E+07*	*1.20E+10*	*1.60E+08 (C)*	*16,000*	140	74 U	96 U	69 U
trans-1,2-Dichloroethene	156-60-5	*NA*	*30,000 (X)*	*1.40E+06*	*39 (M*,EE)*	*2,000*	*23,000*	*2.80E+05*	*8.30E+05*	*2.00E+06*	*4.70E+09*	*3.80E+06 (C)*	*39 (M*)*	*2,000*	*43,000*	*3.30E+05*	*8.40E+05*	*2.00E+06*	*2.10E+09*	*1.20E+07 (C)*	*340*	**180**	**260**	96 U	69 U
Trichloroethene	79-01-6	*NA*	*4,000 (X)*	*5.00E+05*	*0.33 (M*,DD)*	*100*	*1,000*	*11,000*	*25,000*	*57,000*	*1.30E+08*	*1.10E+05*	*0.33 (M*)*	*100*	*1,900*	*14,000*	*25,000*	*58,000*	*5.90E+07*	*6.60E+05 (C)*	*1.0 (M*)*	**4,900**	**480**	96 U	**19,000**
Trichlorofluoromethane	75-69-4	*NA*	*NA*	*5.60E+05*	*19 (M*)*	*52,000*	*2.80E+06 (C)*	*9.20E+07*	*6.30E+08*	*1.50E+09*	*3.80E+12*	*7.90E+07 (C)*	*--*	*1.50E+05*	*5.10E+06 (C)*	*1.10E+08*	*1.40E+11*	*1.40E+11*	*1.70E+12*	*2.60E+08 (C)*	*--*	67 U	74 U	96 U	69 U
Vinyl chloride	75-01-4	*NA*	*260 (X)*	*4.90E+05*	*0.082 (M*,MM)*	*40*	*270*	*4,200*	*30,000*	*73,000*	*3.50E+08*	*3,800*	*0.082 (M*)*	*40*	*2,800*	*29,000*	*1.70E+05*	*4.20E+05*	*8.90E+08*	*34,000*	*2.0 (M*)*	**260**	74 U	96 U	69 U
Xylenes, meta- & para-	179601-23-1	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	160	150 U	190 U	140 U
Xylene, ortho-	95-47-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	93	74 U	96 U	69 U
Xylenes, Total	1330-20-7	*NA*	*980*	*1.50E+05*	*280*	*5,600*	*6.30E+06 (C)*	*4.60E+07*	*6.10E+07*	*1.30E+08*	*2.90E+11*	*4.10E+08 (C)*	*280*	*5,600*	*1.20E+07 (C)*	*5.40E+07*	*6.50E+07*	*1.30E+08*	*1.30E+11*	*1.00E+09 (C)*	*1,200*	253	224 U	286 U	209 U

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: *Depth Interval (ft):* *Investigative/Field Duplicate/QC:* *Laboratory ID:* *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-01* (1-2) Investigative 1909114-01 09/10/19	SB-02† (5-6) Investigative 1909114-02 09/10/19	SB-03 (7-8) Investigative 1909114-03 09/11/19	SB-04† (3-4) Investigative 1909114-04 09/11/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]				
Polynuclear Aromatic Compounds	***CAS Number***																							
2-Methylnaphthalene	91-57-6	*NA*	*4,200*	*NA*	*1,700*	*57,000*	*2.70E+06*	*1.50E+06*	*1.50E+06*	*1.50E+06*	*6.70E+08*	*8.10E+06*	--	*1.70E+05*	*4.90E+06*	*1.80E+06*	*1.80E+06*	*1.80E+06*	*2.90E+08*	*2.60E+07*	--	5,700 U	300 U	360 U	30,000 U
Acenaphthene	83-32-9	*NA*	*8,700*	*NA*	*2.00E+05*	*3.00E+05*	*1.90E+08*	*8.10E+07*	*8.10E+07*	*8.10E+07*	*1.40E+10*	*4.10E+07*	--	*8.80E+05*	*3.50E+08*	*9.70E+07*	*9.70E+07*	*9.70E+07*	*6.20E+09*	*1.30E+08*	--	2,300 U	120 U	140 U	**20,000**
Acenaphthylene	208-96-8	*NA*	*ID*	*NA*	*NA*	*5,900*	*1.60E+06*	*2.20E+06*	*2.20E+06*	*2.20E+06*	*2.30E+09*	*1.60E+06*	--	*17,000*	*3.00E+06*	*2.70E+06*	*2.70E+06*	*2.70E+06*	*1.00E+09*	*5.20E+06*	--	2,300 U	130	140 U	12,000 U
Anthracene	120-12-7	*NA*	*ID*	*NA*	*1.30E+07*	*41,000*	*1.00E+09*	*1.40E+09*	*1.40E+09*	*1.40E+09*	*6.70E+10*	*2.30E+08*	--	*41,000*	*1.00E+09*	*1.60E+09*	*1.60E+09*	*1.60E+09*	*2.90E+10*	*7.30E+08*	--	2,300 U	170	140 U	**55,000**
Benzo(a)anthracene	56-55-3	*NA*	*NLL*	*NA*	*1.60E+05 (MM)*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	2,300 U	650	140 U	**86,000**
Benzo(a)pyrene	50-32-8	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+06*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.90E+06*	*8,000*	--	4,600 U	650	280 U	**68,000**
Benzo(b)fluoranthene	205-99-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*20,000*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*80,000*	--	4,600 U	1,100	280 U	**86,000**
Benzo(g,h,i)perylene	191-24-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*8.00E+08*	*2.50E+06*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*3.50E+08*	*7.00E+06*	--	4,600 U	370	280 U	29,000
Benzo(k)fluoranthene	207-08-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2.00E+05*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8.00E+05*	--	4,600 U	340	280 U	33,000
Chrysene	218-01-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.00E+06*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06*	--	3,800	680	140 U	75,000
Dibenzo(a,h)anthracene	53-70-3	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8,000*	--	4,600 U	240 U	280 U	24,000 U
Fluoranthene	206-44-0	*NA*	*5,500*	*NA*	*NA*	*7.30E+05*	*1.00E+09*	*7.40E+08*	*7.40E+08*	*7.40E+08*	*9.30E+09*	*4.60E+07*	--	*7.30E+05*	*1.00E+09*	*8.90E+08*	*8.80E+08*	*8.80E+08*	*4.10E+09*	*1.30E+08*	--	4,000	1,500	140 U	**220,000**
Fluorene	86-73-7	*NA*	*5,300*	*NA*	*4.70E+05*	*3.90E+05*	*5.80E+08*	*1.30E+08*	*1.30E+08*	*1.30E+08*	*9.30E+09*	*2.70E+07*	--	*8.90E+05*	*1.00E+09*	*1.50E+08*	*1.50E+08*	*1.50E+08*	*4.10E+09*	*8.70E+07*	--	2,300 U	120 U	140 U	**21,000**
Indeno(1,2,3-cd)pyrene	193-39-5	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	4,600 U	340	280 U	**29,000**
Naphthalene	91-20-3	*NA*	*730*	*NA*	*67 (M*)*	*35,000*	*2.50E+05*	*3.00E+05*	*3.00E+05*	*3.00E+05*	*2.00E+08*	*1.60E+07*	--	*1.00E+05*	*4.70E+05*	*3.50E+05*	*3.50E+05*	*3.50E+05*	*8.80E+07*	*5.20E+07*	--	2,300 U	120 U	140 U	**34,000**
Phenanthrene	85-01-8	*NA*	*2,100*	*NA*	*NA*	*56,000*	*2.80E+06*	*1.60E+05*	*1.60E+05*	*1.60E+05*	*6.70E+06*	*1.60E+06*	--	*1.60E+05*	*5.10E+06*	*1.90E+05*	*1.90E+05*	*1.90E+05*	*2.90E+06*	*5.20E+06*	--	**2,200 J**	790	140 U	**250,000**
Pyrene	129-00-0	*NA*	*ID*	*NA*	*2.50E+07*	*4.80E+05*	*1.00E+09*	*6.50E+08*	*6.50E+08*	*6.50E+08*	*6.70E+09*	*2.90E+07*	--	*4.80E+05*	*1.00E+09*	*7.80E+08*	*7.80E+08*	*7.80E+08*	*2.90E+09*	*8.40E+07*	--	3,800	1,100	140 U	160,000
Metals, Total	***CAS Number***																							
Arsenic (B)	7440-38-2	*5,800*	*4,600*	*NA*	*NA*	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*7.20E+05*	*7,600*	--	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*9.10E+05*	*37,000*	--	**12,000**	**8,300**	4,300	**7,700**
Barium (B)	7440-39-3	*75,000*	*4.40E+05 (G)*	*NA*	*NA*	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*3.30E+08*	*3.70E+07*	--	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+08*	*1.30E+08*	--	100,000	230,000	17,000	110,000
Cadmium (B)	7440-43-9	*1,200*	*3,600 (G,X)*	*NA*	*NA*	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.70E+06*	*5.50E+05*	--	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.20E+06*	*2.10E+06*	--	**860,000**	1,500	200 U	200
Chromium, Total (B, H)	7440-47-3	*18,000 (total)*	*3,300*	*NA*	*NA*	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.60E+05*	*2.50E+06*	--	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.40E+05*	*9.20E+06*	--	**49,000**	*11,000*	*9,100*	**29,000**
Copper (B)	7440-50-8	*32,000*	*75,000 (G)*	*NA*	*NA*	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.00E+07*	--	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*7.30E+07*	--	57,000	67,000	7,500	26,000
Lead (B)	7439-92-1	*21,000*	*5.10E+06 (G,X)*	*NA*	*NA*	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*1.00E+08*	*4.00E+05*	--	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*4.40E+07*	*9.00E+05*	--	120,000	**1,200,000**	6,400	180,000
Mercury (Total) (B)	7439-97-6	*130*	*50 (M); 1.2*	*NA*	*0.027*	*1,700*	*48,000*	*52,000*	*52,000*	*52,000*	*2.00E+07*	*1.60E+05*	*0.027*	*1,700*	*89,000*	*62,000*	*62,000*	*62,000*	*8.80E+06*	*5.80E+05*	*0.12*	**300**	**400**	70 U	**1,400**
Selenium (B)	7782-49-2	*410*	*400*	*NA*	*NA*	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.60E+06*	--	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*9.60E+06*	--	**1,000**	**1,000**	**500**	**700**
Silver (B)	7440-22-4	*1,000*	*100 (M); 27*	*NA*	*NA*	*4,500*	*NLV*	*NLV*	*NLV*	*NLV*	*6.70E+06*	*2.50E+06*	--	*13,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.90E+06*	*9.00E+06*	--	100	*200*	100 U	500
Zinc (B)	7440-66-6	*47,000*	*1.70E+05 (G)*	*NA*	*NA*	*2.40E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*1.70E+08*	--	*5.00E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*6.30E+08*	--	120,000	**1,300,000**	19,000	**210,000**
Solids, Total (%)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*87.8*	*83.0*	*70.2*	*83.7*

Results expressed in µg/Kg dry weight.
Bolded values exceed Statewide Default Background Level and an applicable criterion or screening level.
Italicized values are below Statewide Default Background Level but exceed an applicable criterion or screening level.

Data Qualifiers:
J Estimated value
U Not detected

Footnotes/Abbreviations:
[1] *Part 201 Soil Generic Cleanup Criteria and Screening Levels/Part 213 Risk-based Screening Levels, December 30, 2013 (GSI Criteria Updated June 25, 2018).*
[2] *Proposed VI Tier 1 Groundwater, Soil and Vapor Screening Levels, Part 201 Generic Screening Levels/Part 213 Risk-based Screening Levels, August 29, 2017.*
[3] *MDEQ Media Specific Volatilization to Indoor Air Interim Action Screening Levels, August, 2017.*
These screening levels are not intended for compliance or for obtaining closure of a release. However, based upon adequate investigation and characterization, further action for these chemicals for volatilization to indoor air may not be necessary if concentrations do not exceed the residential screening levels for soil vapor, soil and shallow groundwater. Typically, an exceedance of a time-sensitive screening level in any media will warrant expedited investigation and possible mitigation.
* Laboratory reported unidentified peaks present in sample.
† Laboratory reported probable petroleum products present in sample.
(B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated criterion.
(C) Value is screening level based on the chemical-specific generic soil saturation concentration (Csat).
(G) Criterion dependent on receiving surface water hardness; calculated criteria based on water hardness of 150 mg/L.
(H) Data provided for total chromium only; evaluated against hexavalent Chromium criteria.
(M) Calculated criterion is below the target detection limit (TDL); first number is the criterion (TDL), the second is the risk-based value.
(M*) Calculated health-based value is below the analytical target detection limit (TDL), therefore, the TDL is the criterion. The TDL is established specific for an individual environmental medium. The volatilization to indoor air pathway is evaluated using criterion for soil, groundwater and vapor pursuant to R 299.27. When a volatilization to indoor air criterion is the TDL for one or more medium, further evaluation of the remaining media is required to demonstrate compliance for the pathway.
(X) Criterion is not protective for surface water used as a drinking water source.
(W) Concentrations of trihalomethanes must be added together to determine compliance with criterion.
(DD) Hazardous substance causes developmental effects. Residential criteria are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential criteria are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after a single exposure (SE) or full-term (FT) exposure. Oral exposure pathways are drinking water and soil direct contact. Inhalation exposure pathways are ambient air and volatilization to indoor air.
(EE) The residential or nonresidential acceptable air concentration (AAC) for the hazardous substance is not derived pursuant to the equations of R 299.26 and R 299.27. The identified hazardous substance may cause adverse human health effects for less than chronic exposures. The AAC for this hazardous substance is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the department.
(MM) Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based values shall be modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
DC direct contact
DWP drinking water protection
GSIP groundwater surface water interface protection
ID Insufficient data to develop criterion.
NA not available
NLL Not likely to leach under most soil conditions.
NLV Not likely to volatilize under most conditions.
PSI particulate soil inhalation
RBSL risk based screening level
RIASL recommended interim action screening levels
SL screening level
SVIAI soil volatilization to indoor air inhalation
VI vapor intrusion
VSIC volatile soil inhalation criteria

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: *Depth Interval (ft):* *Investigative/Field Duplicate/QC:* *Laboratory ID:* *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-05† (2-4) Investigative 1909114-05 09/11/19	SB-06 (8-9) Investigative 1909114-06 09/09/19	SB-07 (11-12) Investigative 1909114-07 09/09/19	SB-08 (8-12) Investigative 1909114-08 09/09/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]				
Volatile Organic Compounds	**CAS Number**																							
1,1,1,2-Tetrachloroethane	630-20-6	*NA*	*ID*	*4.40E+05*	*3.2 (M*)*	*1,500*	*6,200*	*36,000*	*54,000*	*1.00E+05*	*4.20E+08*	*4.80E+05 (C)*	*--*	*6,400*	*33,000*	*1.20E+05*	*2.10E+05*	*3.30E+05*	*5.30E+08*	*2.20E+06 (C)*	*--*	64 U	170 U	110 U	110 U
1,1,1-Trichloroethane	71-55-6	*NA*	*1,800*	*4.60E+05*	*450 (EE)*	*4,000*	*2.50E+05*	*3.80E+06*	*1.20E+07*	*2.80E+07*	*6.70E+10*	*5.00E+08 (C)*	*450*	*4,000*	*4.60E+05*	*4.50E+06*	*1.50E+07*	*3.10E+07*	*2.90E+10*	*1.00E+09 (C)*	*1,900*	64 U	170 U	110 U	110 U
1,1,2,2-Tetrachloroethane	79-34-5	*NA*	*1,600 (X)*	*8.70E+05*	*2.7 (M*)*	*170*	*4,300*	*10,000*	*10,000*	*14,000*	*5.40E+07*	*53,000*	*--*	*700*	*23,000*	*34,000*	*34,000*	*34,000*	*6.80E+07*	*2.40E+05*	*--*	64 U	170 U	110 U	110 U
1,1,2-Trichloroethane	79-00-5	*NA*	*6,600 (X)*	*9.20E+05*	*0.00037 (M*)*	*100*	*4,600*	*17,000*	*21,000*	*44,000*	*1.90E+08*	*1.80E+05*	*--*	*100*	*24,000*	*57,000*	*57,000*	*1.20E+05*	*2.50E+08*	*8.40E+05*	*--*	64 U	170 U	110 U	110 U
1,1-Dichloroethane	75-34-3	*NA*	*15,000*	*8.90E+05*	*2.6 (M*)*	*18,000*	*2.30E+05*	*2.10E+06*	*5.90E+06*	*1.40E+07*	*3.30E+10*	*2.70E+07 (C)*	*2.6 (M*)*	*50,000*	*4.30E+05*	*2.50E+06*	*6.00E+06*	*1.40E+07*	*1.50E+10*	*8.70E+07 (C)*	*19 (M*)*	64 U	170 U	110 U	110 U
1,1-Dichloroethene	75-35-4	*NA*	*2,600*	*5.70E+05*	*12 (M*)*	*140*	*62*	*1,100*	*5,300*	*13,000*	*6.20E+07*	*2.00E+05*	*12 (M*)*	*140*	*330*	*3,700*	*15,000*	*37,000*	*7.80E+07*	*6.60E+05 (C)*	*54*	64 U	170 U	110 U	110 U
1,2,3-Trichlorobenzene	87-61-6	*--*	*--*	*--*	*830*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	320 U	830 U	530 U	540 U
1,2,3-Trichloropropane	96-18-4	*NA*	*NA*	*8.30E+05*	*2.6 (M*)*	*840*	*4,000*	*9,200*	*9,200*	*11,000*	*2.00E+07*	*1.30E+06 (C)*	*--*	*2,400*	*7,500*	*11,000*	*11,000*	*12,000*	*8.80E+06*	*4.20E+06 (C)*	*--*	64 U	170 U	110 U	110 U
1,2,3-Trimethylbenzene	526-73-8	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*1,200*	64 U	170 U	110 U	110 U
1,2,4-Trichlorobenzene	120-82-1	*NA*	*5,900 (X)*	*1.10E+06*	*53 (M*)*	*4,200*	*9.60E+06 (C)*	*2.80E+07*	*2.80E+07*	*2.80E+07*	*2.50E+10*	*9.90E+05*	*53 (M*)*	*4,200*	*1.80E+07 (C)*	*3.40E+07*	*3.40E+07*	*3.40E+07*	*1.10E+10*	*5.80E+06 (C)*	*230 (M*)*	320 U	830 U	530 U	540 U
1,2,4-Trimethylbenzene	95-63-6	*NA*	*570*	*1.10E+05*	*150*	*2,100*	*4.30E+06 (C)*	*2.10E+07*	*5.00E+08*	*5.00E+08*	*8.20E+10*	*3.20E+07 (C)*	*150*	*2,100*	*8.00E+06 (C)*	*2.50E+07*	*6.00E+08*	*6.00E+08*	*3.60E+10*	*1.00E+08 (C)*	*650*	64 U	170 U	110 U	110 U
1,2-Dibromoethane (EDB)	106-93-4	*NA*	*110 (X)*	*8.90E+05*	*0.074 (M*)*	*20 (M); 1.0*	*670*	*1,700*	*1,700*	*3,300*	*1.40E+07*	*92*	*--*	*20 (M); 1.0*	*3,600*	*5,800*	*5,800*	*9,800*	*1.80E+07*	*430*	*--*	64 U	170 U	110 U	110 U
1,2-Dichlorobenzene	95-50-1	*NA*	*280*	*2.10E+05*	*1,500*	*14,000*	*1.10E+07 (C)*	*3.90E+07*	*3.90E+07*	*5.20E+07*	*1.00E+11*	*1.90E+07 (C)*	*--*	*14,000*	*2.00E+07 (C)*	*4.60E+07*	*4.60E+07*	*5.50E+07*	*4.40E+10*	*6.30E+07 (C)*	*--*	64 U	170 U	110 U	110 U
1,2-Dichloroethane	107-06-2	*NA*	*7,200 (X)*	*1.20E+06*	*0.82 (M*)*	*100*	*2,100*	*6,200*	*11,000*	*26,000*	*1.20E+08*	*91,000*	*--*	*100*	*11,000*	*21,000*	*33,000*	*74,000*	*1.50E+08*	*4.20E+05*	*--*	64 U	170 U	110 U	110 U
1,2-Dichloropropane	78-87-5	*NA*	*4,600 (X)*	*5.50E+05*	*2.1 (M*)*	*100*	*4,000*	*25,000*	*50,000*	*1.10E+05*	*2.70E+08*	*1.40E+05*	*--*	*100*	*7,400*	*30,000*	*51,000*	*1.20E+05*	*1.20E+08*	*6.60E+05 (C)*	*--*	64 U	170 U	110 U	110 U
1,3,5-Trimethylbenzene	108-67-8	*NA*	*1,100*	*94,000*	*100*	*1,800*	*2.60E+06 (C)*	*1.60E+07*	*3.80E+08*	*3.80E+08*	*8.20E+10*	*3.20E+07 (C)*	*100*	*1,800*	*4.80E+06 (C)*	*1.90E+07*	*4.60E+08*	*4.60E+08*	*3.60E+10*	*1.00E+08 (C)*	*450*	64 U	170 U	110 U	110 U
1,3-Dichlorobenzene	541-73-1	*NA*	*680*	*1.70E+05*	*10 (M*)*	*170*	*26,000*	*79,000*	*79,000*	*1.10E+05*	*2.00E+08*	*2.00E+05 (C)*	*10 (M*)*	*480*	*48,000*	*94,000*	*94,000*	*1.10E+05*	*8.80E+07*	*6.60E+05 (C)*	*45 (M*)*	64 U	170 U	110 U	110 U
1,3-Dichloropropene, cis-	10061-01-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	64 U	170 U	110 U	110 U
1,3-Dichloropropene, trans-	10061-02-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	64 U	170 U	110 U	110 U
1,3-Dichloropropene (Total)	542-75-6	*NA*	*180 (X)*	*6.20E+05*	*3.1 (M*)*	*170*	*1,000*	*18,000*	*68,000*	*1.60E+05*	*7.80E+08*	*10,000*	*--*	*700*	*5,400*	*60,000*	*2.00E+05*	*4.70E+05*	*5.90E+08*	*2.40E+05*	*--*	128 U	340 U	220 U	220 U
1,4-Dichlorobenzene	106-46-7	*NA*	*360*	*NA*	*23 (M*)*	*1,700*	*19,000*	*77,000*	*77,000*	*1.10E+05*	*4.50E+08*	*4.00E+05*	*23 (M*)*	*1,700*	*1.00E+05*	*2.60E+05*	*2.60E+05*	*3.40E+05*	*5.70E+08*	*1.90E+06*	*160*	64 U	170 U	110 U	110 U
2,2,4-Trimethylpentane	540-84-1	*NA*	*NA*	*19,000*	*1.20E+05*	*ID*	*1.10E+05 (C)*	*5.20E+06*	*3.90E+07*	*9.60E+07*	*2.30E+11*	*ID*	*--*	*ID*	*2.00E+05 (C)*	*6.30E+06*	*4.00E+07*	*9.60E+07*	*1.00E+11*	*ID*	*--*	320 U	830 U	530 U	540 U
2-Butanone (MEK)	78-93-3	*NA*	*44,000*	*2.70E+07*	*31,000 (DD)*	*2.60E+05*	*5.40E+07 (C)*	*2.90E+07*	*2.90E+07*	*3.50E+07*	*6.70E+10*	*1.20E+08 (C)*	*--*	*7.60E+05*	*9.90E+07 (C)*	*3.50E+07*	*3.50E+07*	*3.60E+07*	*2.90E+10*	*7.00E+08 (C)*	*--*	320 U	830 U	530 U	540 U
4-Methyl-2-pentanone (MIBK)	108-10-1	*NA*	*ID*	*2.70E+06*	*12,000 (DD)*	*36,000*	*3.70E+07 (C)*	*4.50E+07*	*4.50E+07*	*6.70E+07*	*1.40E+11*	*5.60E+07 (C)*	*--*	*1.00E+05*	*6.90E+07 (C)*	*5.30E+07*	*5.30E+07*	*7.00E+07*	*6.00E+10*	*1.80E+08 (C)*	*--*	320 U	830 U	530 U	540 U
Acetone	67-64-1	*NA*	*34,000*	*1.10E+08*	*2.60E+05 (EE)*	*15,000*	*2.90E+08 (C)*	*1.30E+08*	*1.30E+08*	*1.90E+08*	*3.90E+11*	*2.30E+07*	*2.60E+05*	*42,000*	*5.40E+08 (C)*	*1.60E+08*	*1.60E+08*	*2.00E+08*	*1.70E+11*	*7.30E+07*	*7.80E+05*	1,300 U	3,300 U	2,100 U	2,200 U
Acrylonitrile	107-13-1	*NA*	*100 (M); 40*	*8.30E+06*	*1.2 (M*)*	*100 (M); 52*	*6,600*	*5,000*	*5,100*	*10,000*	*4.60E+07*	*16,000*	*--*	*220*	*35,000*	*17,000*	*17,000*	*31,000*	*5.80E+07*	*74,000*	*--*	320 U	830 U	530 U	540 U
Benzene	71-43-2	*NA*	*4,000 (X)*	*4.00E+05*	*1.7 (M*)*	*100*	*1,600*	*13,000*	*34,000*	*79,000*	*3.80E+08*	*1.80E+05*	*1.7 (M*)*	*100*	*8,400*	*45,000*	*99,000*	*2.30E+05*	*4.70E+08*	*8.40E+05 (C)*	*12 (M*)*	64 U	170 U	110 U	110 U
Bromochloromethane	74-97-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	64 U	170 U	110 U	110 U
Bromodichloromethane	75-27-4	*NA*	*ID*	*1.50E+06*	*0.61 (M*)*	*1,600 (W)*	*1,200*	*9,100*	*9,700*	*19,000*	*8.40E+07*	*1.10E+05*	*--*	*1,600 (W)*	*6,400*	*31,000*	*31,000*	*57,000*	*1.10E+08*	*4.90E+05*	*--*	64 U	170 U	110 U	110 U
Bromoform	75-25-2	*NA*	*ID*	*8.70E+05*	*45 (M*)*	*1,600 (W)*	*1.50E+05*	*9.00E+05*	*9.00E+05*	*9.00E+05*	*2.80E+09*	*8.20E+05*	*--*	*1,600 (W)*	*7.70E+05*	*3.10E+06*	*3.10E+06*	*3.10E+06*	*3.60E+09*	*3.80E+06 (C)*	*--*	64 U	170 U	110 U	110 U
Bromomethane	74-83-9	*NA*	*100*	*2.20E+06*	*0.90 (M*)*	*200*	*860*	*11,000*	*57,000*	*1.40E+05*	*3.30E+08*	*3.20E+05*	*--*	*580*	*1,600*	*13,000*	*57,000*	*1.40E+05*	*1.50E+08*	*1.00E+06*	*--*	260 U	660 U	420 U	430 U
Carbon disulfide	75-15-0	*NA*	*ID*	*2.80E+05*	*52 (M*)*	*16,000*	*76,000*	*1.30E+06*	*7.90E+06*	*1.90E+07*	*4.70E+10*	*7.20E+06 (C)*	*--*	*46,000*	*1.40E+05*	*1.60E+06*	*8.00E+06*	*1.90E+07*	*2.10E+10*	*4.30E+07 (C)*	*--*	64 U	170 U	110 U	110 U
Carbon tetrachloride	56-23-5	*NA*	*760 (X)*	*3.90E+05*	*0.31 (M*)*	*100*	*190*	*3,500*	*12,000*	*28,000*	*1.30E+08*	*96,000*	*--*	*100*	*990*	*12,000*	*34,000*	*79,000*	*1.70E+08*	*4.40E+05 (C)*	*--*	64 U	170 U	110 U	110 U
Chlorobenzene	108-90-7	*NA*	*500*	*2.60E+05*	*82*	*2,000*	*1.20E+05*	*7.70E+05*	*9.90E+05*	*2.10E+06*	*4.70E+09*	*4.30E+06 (C)*	*82*	*2,000*	*2.20E+05*	*9.20E+05*	*1.10E+06*	*2.10E+06*	*2.10E+09*	*1.40E+07 (C)*	*360*	64 U	170 U	110 U	110 U
Chloroethane	75-00-3	*NA*	*22,000 (X)*	*9.50E+05*	*330*	*8,600*	*2.90E+06 (C)*	*3.00E+07*	*1.20E+08*	*2.80E+08*	*6.70E+11*	*2.60E+06 (C)*	*330*	*34,000*	*5.30E+06 (C)*	*3.60E+07*	*1.20E+08*	*2.80E+08*	*2.90E+11*	*1.20E+07 (C)*	*1,500*	320 U	830 U	530 U	540 U
Chloroform	67-66-3	*NA*	*7,000*	*1.50E+06*	*0.26 (M*)*	*1,600 (W)*	*7,200*	*45,000*	*1.20E+05*	*2.70E+05*	*1.30E+09*	*1.20E+06*	*0.26 (M*)*	*1,600 (W)*	*38,000*	*1.50E+05*	*3.40E+05*	*7.90E+05*	*1.60E+09*	*5.50E+06 (C)*	*1.9 (M*)*	64 U	170 U	110 U	110 U
Chloromethane	74-87-3	*NA*	*ID*	*1.10E+06*	*6.9 (M*)*	*5,200*	*2,300*	*40,000*	*4.10E+05*	*1.00E+06*	*4.90E+09*	*1.60E+06 (C)*	*6.9 (M*)*	*22,000*	*10,000*	*1.20E+05*	*1.00E+06*	*2.50E+06*	*2.60E+09*	*7.40E+06 (C)*	*31 (M*)*	320 U	830 U	530 U	540 U
cis-1,2-Dichloroethene	156-59-2	*NA*	*12,000*	*6.40E+05*	*2.1 (M*)*	*1,400*	*22,000*	*1.80E+05*	*4.20E+05*	*9.90E+05*	*2.30E+09*	*2.50E+06 (C)*	*2.1 (M*)*	*1,400*	*41,000*	*2.10E+05*	*4.30E+05*	*1.00E+06*	*1.00E+09*	*8.00E+06 (C)*	*9.2 (M*)*	64 U	170 U	110 U	110 U
Cyclohexane	110-82-7	*--*	*--*	*--*	*320 (M*)*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	320 U	830 U	530 U	540 U
Dibromochloromethane	124-48-1	*NA*	*ID*	*6.10E+05*	*0.40 (M*,MM)*	*1,600 (W)*	*3,900*	*24,000*	*24,000*	*33,000*	*1.30E+08*	*1.10E+05*	*--*	*1,600 (W)*	*21,000*	*80,000*	*80,000*	*98,000*	*1.60E+08*	*5.00E+05*	*--*	64 U	170 U	110 U	110 U
Dibromomethane	74-95-3	*NA*	*NA*	*2.00E+06*	*3.5 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.50E+06 (C)*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06 (C)*	*--*	64 U	170 U	110 U	110 U
Dichlorodifluoromethane	75-71-8	*NA*	*ID*	*1.00E+06*	*12 (M*)*	*95,000*	*9.00E+05*	*5.30E+07*	*5.50E+08*	*1.40E+09*	*3.30E+12*	*5.20E+07 (C)*	*--*	*2.70E+05*	*1.70E+06*	*6.30E+07*	*5.50E+08*	*1.40E+09*	*1.50E+12*	*1.70E+08 (C)*	*--*	320 U	830 U	530 U	540 U
Diethyl ether	60-29-7	*NA*	*ID*	*7.40E+06*	*350*	*200*	*2.80E+07 (C)*	*8.50E+07*	*1.50E+08*	*3.40E+08*	*8.00E+11*	*1.10E+08 (C)*	*--*	*200*	*5.20E+07 (C)*	*1.00E+08*	*1.60E+08*	*3.50E+08*	*3.50E+11*	*3.60E+08 (C)*	*--*	260 U	660 U	420 U	430 U
Diisopropyl ether	108-20-3	*NA*	*ID*	*1,300*	*190 (M*,DD)*	*600*	*6.70E+05 (C)*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*9.20E+05 (C)*	*--*	*1,700 (C)*	*1.20E+06 (C)*	*3.20E+06*	*4.80E+06*	*1.00E+07*	*1.10E+10*	*3.00E+06 (C)*	*--*	320 U	830 U	530 U	540 U
Ethyl-tert-butyl ether (ETBE)	637-92-3	*NA*	*ID*	*6.50E+05*	*NA*	*980*	*5.40E+05*	*1.90E+06*	*4.50E+06*	*1.10E+07*	*2.50E+10*	*ID*	*--*	*980*	*1.70E+06 (C)*	*2.30E+06*	*4.60E+06*	*1.10E+07*	*1.10E+10*	*ID*	*--*	320 U	830 U	530 U	540 U
Ethylbenzene	100-41-4	*NA*	*360*	*1.40E+05*	*12 (M*)*	*1,500*	*87,000*	*7.20E+05*	*1.00E+06*	*2.20E+06*	*1.00E+10*	*2.20E+07 (C)*	*12 (M*)*	*1,500*	*4.60E+05 (C)*	*2.40E+06*	*3.10E+06*	*6.50E+06*	*1.30E+10*	*7.10E+07 (C)*	*86*	64 U	170 U	110 U	110 U
Hexachloroethane	67-72-1	*NA*	*1,800 (X)*	*NA*	*3.2 (M*)*	*430*	*40,000*	*5.50E+05*	*9.30E+05*	*9.30E+05*	*2.30E+08*	*2.30E+05*	*--*	*1,200*	*79,000*	*6.60E+05*	*1.40E+06*	*1.40E+06*	*1.00E+08*	*7.30E+05*	*--*	320 U	830 U	530 U	540 U
Isopropylbenzene	98-82-8	*NA*	*3,200*	*3.90E+05*	*3.8 (M*)*	*91,000*	*4.00E+05 (C)*	*1.70E+06*	*1.70E+06*	*2.80E+06*	*5.80E+09*	*2.50E+07 (C)*	*--*	*2.60E+05*	*7.30E+05 (C)*	*2.00E+06*	*2.00E+06*	*3.00E+06*	*2.60E+09*	*8.00E+07 (C)*	*--*	64 U	170 U	110 U	110 U
Methyl-tert-butyl ether (MTBE)	1634-04-4	*NA*	*1.40E+05 (X)*	*5.90E+06*	*74 (M*)*	*800*	*9.90E+06 (C)*	*2.50E+07*	*3.90E+07*	*8.70E+07*	*2.00E+11*	*1.50E+06*	*74 (M*)*	*800*	*1.80E+07 (C)*	*3.00E+07*	*4.10E+07*	*8.90E+07*	*8.80E+10*	*7.10E+06 (C)*	*520*	64 U	170 U	110 U	110 U
Methylene chloride	75-09-2	*NA*	*30,000 (X)*	*2.30E+06*	*130*	*100*	*45,000*	*2.10E+05*	*5.90E+05*	*1.40E+06*	*6.60E+09*	*1.30E+06*	*130*	*100*	*2.40E+05*	*7.00E+05*	*1.70E+06*	*4.00E+06*	*8.30E+09*	*5.80E+06 (C)*	*570*	130 U	330 U	210 U	220 U
n-Butylbenzene	104-51-8	*NA*	*ID*	*1.00E+07*	*550*	*1,600*	*ID*	*ID*	*ID*	*ID*	*2.00E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*8.80E+08*	*8.00E+06*	*--*	64 U	170 U	110 U	110 U
n-Hexane	110-54-3	*NA*	*NA*	*44,000*	*24,000*	*1.80E+05 (C)*	*5.10E+05 (C)*	*3.00E+06*	*3.20E+06*	*6.20E+06*	*1.30E+10*	*9.20E+07 (C)*	*--*	*5.10E+05 (C)*	*9.50E+05 (C)*	*3.50E+06*	*3.50E+06*	*6.40E+06*	*5.90E+09*	*3.00E+08 (C)*	*--*	64 U	170 U	110 U	110 U
n-Propylbenzene	103-65-1	*NA*	*ID*	*1.00E+07*	*1,800 (DD)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*1.30E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*5.90E+08*	*8.00E+06*	*--*	64 U	170 U	110 U	110 U
sec-Butylbenzene	135-98-8	*NA*	*ID*	*1.00E+07*	*3,800*	*1,600*	*ID*	*ID*	*ID*	*ID*	*4.00E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*1.80E+08*	*8.00E+06*	*--*	64 U	170 U	110 U	110 U
Styrene	100-42-5	*NA*	*2,100 (X)*	*5.20E+05*	*150*	*2,700*	*2.50E+05*	*9.70E+05*	*9.70E+05*	*1.40E+06*	*5.50E+09*	*4.00E+05*	*--*	*2,700*	*1.30E+06 (C)*	*3.30E+06*	*3.30E+06*	*4.20E+06*	*6.90E+09*	*1.90E+06 (C)*	*--*	64 U	170 U	110 U	110 U
t-Amyl methyl ether (TAME)	994-05-8	*NA*	*NA*	*4.40E+05*	*NA*	*3,900*	*58,000*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*2.90E+07 (C)*	*--*	*3,900*	*1.10E+05*	*4.00E+05*	*7.80E+05*	*1.80E+06*	*1.80E+09*	*9.50E+07 (C)*	*--*	320 U	830 U	530 U	540 U
t-Butyl alcohol	75-65-0	*NA*	*NA*	*1.10E+08*	*NA*	*78,000*	*3.10E+08 (C)*	*9.70E+07*	*2.00E+08*	*2.00E+08*	*1.30E+11*	*1.20E+08 (C)*	*--*	*2.20E+05*	*5.80E+08 (C)*	*1.20E+08*	*2.40E+08*	*2.40E+08*	*5.60E+10*	*3.90E+08 (C)*	*--*	3,200 U	8300 U	5,300 U	5,400 U
t-Butylbenzene	98-06-6	*NA*	*ID*	*1.00E+07*	*0.64 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*6.70E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*2.90E+08*	*8.00E+06*	*--*	64 U	170 U	110 U	110 U
Tetrachloroethene	127-18-4	*NA*	*1,200 (X)*	*88,000*	*6.2 (M*,EE)*	*100*	*11,000*	*1.70E+05*	*4.80E+05*	*1.10E+06*	*2.70E+09*	*2.00E+05 (C)*	*6.2 (M*)*	*100*	*21,000*	*2.10E+05*	*4.90E+05*	*1.10E+06*	*1.20E+09*	*9.30E+05 (C)*	*19 (M*)*	64 U	170 U	110 U	**200**
Tetrahydrofuran	109-99-9	*NA*	*2.20E+05 (X)*	*1.20E+08*	*13,000*	*1,900*	*1.30E+06*	*1.30E+07*	*6.70E+07*	*1.60E+08*	*3.90E+11*	*2.90E+06*	*--*	*5,400*	*2.40E+06*	*1.50E+07*	*6.70E+07*	*1.60E+08*	*1.70E+11*	*9.50E+06*	*--*	320 U	830 U	530 U	540 U
Toluene	108-88-3	*NA*	*5,400*	*2.50E+05*	*3,700 (EE)*	*16,000*	*3.30E+05 (C)*	*2.80E+06*	*5.10E+06*	*1.20E+07*	*2.70E+10*	*5.00E+07 (C)*	*3,700*	*16,000*	*6.10E+05 (C)*	*3.30E+06*	*3.60E+07*	*3.60E+07*	*1.20E+10*	*1.60E+08 (C)*	*16,000*	64 U	170 U	110 U	110 U
trans-1,2-Dichloroethene	156-60-5	*NA*	*30,000 (X)*	*1.40E+06*	*39 (M*,EE)*	*2,000*	*23,000*	*2.80E+05*	*8.30E+05*	*2.00E+06*	*4.70E+09*	*3.80E+06 (C)*	*39 (M*)*	*2,000*	*43,000*	*3.30E+05*	*8.40E+05*	*2.00E+06*	*2.10E+09*	*1.20E+07 (C)*	*340*	64 U	170 U	110 U	110 U
Trichloroethene	79-01-6	*NA*	*4,000 (X)*	*5.00E+05*	*0.33 (M*,DD)*	*100*	*1,000*	*11,000*	*25,000*	*57,000*	*1.30E+08*	*1.10E+05*	*0.33 (M*)*	*100*	*1,900*	*14,000*	*25,000*	*58,000*	*5.90E+07*	*6.60E+05 (C)*	*1.0 (M*)*	**820**	170 U	110 U	**370**
Trichlorofluoromethane	75-69-4	*NA*	*NA*	*5.60E+05*	*19 (M*)*	*52,000*	*2.80E+06 (C)*	*9.20E+07*	*6.30E+08*	*1.50E+09*	*3.80E+12*	*7.90E+07 (C)*	*--*	*1.50E+05*	*5.10E+06 (C)*	*1.10E+08*	*1.40E+11*	*1.40E+11*	*1.70E+12*	*2.60E+08 (C)*	*--*	64 U	170 U	110 U	110 U
Vinyl chloride	75-01-4	*NA*	*260 (X)*	*4.90E+05*	*0.082 (M*,MM)*	*40*	*270*	*4,200*	*30,000*	*73,000*	*3.50E+08*	*3,800*	*0.082 (M*)*	*40*	*2,800*	*29,000*	*1.70E+05*	*4.20E+05*	*8.90E+08*	*34,000*	*2.0 (M*)*	64 U	170 U	110 U	110 U
Xylenes, meta- & para-	179601-23-1	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	130 U	330 U	210 U	220 U
Xylene, ortho-	95-47-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	64 U	170 U	110 U	110 U
Xylenes, Total	1330-20-7	*NA*	*980*	*1.50E+05*	*280*	*5,600*	*6.30E+06 (C)*	*4.60E+07*	*6.10E+07*	*1.30E+08*	*2.90E+11*	*4.10E+08 (C)*	*280*	*5,600*	*1.20E+07 (C)*	*5.40E+07*	*6.50E+07*	*1.30E+08*	*1.30E+11*	*1.00E+09 (C)*	*1,200*	194 U	500 U	320 U	330 U

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: *Depth Interval (ft):* *Investigative/Field Duplicate/QC:* *Laboratory ID:* *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-05† (2-4) Investigative 1909114-05 09/11/19	SB-06 (8-9) Investigative 1909114-06 09/09/19	SB-07 (11-12) Investigative 1909114-07 09/09/19	SB-08 (8-12) Investigative 1909114-08 09/09/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]				
Polynuclear Aromatic Compounds	***CAS Number***																								
2-Methylnaphthalene	91-57-6	*NA*	*4,200*	*NA*	*1,700*	*57,000*	*2.70E+06*	*1.50E+06*	*1.50E+06*	*1.50E+06*	*6.70E+08*	*8.10E+06*	--	*1.70E+05*	*4.90E+06*	*1.80E+06*	*1.80E+06*	*1.80E+06*	*2.90E+08*	*2.60E+07*	--	780	530 U	380 U	390 U
Acenaphthene	83-32-9	*NA*	*8,700*	*NA*	*2.00E+05*	*3.00E+05*	*1.90E+08*	*8.10E+07*	*8.10E+07*	*8.10E+07*	*1.40E+10*	*4.10E+07*	--	*8.80E+05*	*3.50E+08*	*9.70E+07*	*9.70E+07*	*9.70E+07*	*6.20E+09*	*1.30E+08*	--	1,400	210 U	150 U	160 U
Acenaphthylene	208-96-8	*NA*	*ID*	*NA*	*NA*	*5,900*	*1.60E+06*	*2.20E+06*	*2.20E+06*	*2.20E+06*	*2.30E+09*	*1.60E+06*	--	*17,000*	*3.00E+06*	*2.70E+06*	*2.70E+06*	*2.70E+06*	*1.00E+09*	*5.20E+06*	--	1,000	210 U	150 U	160 U
Anthracene	120-12-7	*NA*	*ID*	*NA*	*1.30E+07*	*41,000*	*1.00E+09*	*1.40E+09*	*1.40E+09*	*1.40E+09*	*6.70E+10*	*2.30E+08*	--	*41,000*	*1.00E+09*	*1.60E+09*	*1.60E+09*	*1.60E+09*	*2.90E+10*	*7.30E+08*	--	5,000	210 U	150 U	160 U
Benzo(a)anthracene	56-55-3	*NA*	*NLL*	*NA*	*1.60E+05 (MM)*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	10,000	210 U	150 U	160 U
Benzo(a)pyrene	50-32-8	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+06*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.90E+06*	*8,000*	--	**8,100**	430 U	300 U	310 U
Benzo(b)fluoranthene	205-99-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*20,000*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*80,000*	--	11,000	430 U	300 U	310 U
Benzo(g,h,i)perylene	191-24-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*8.00E+08*	*2.50E+06*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*3.50E+08*	*7.00E+06*	--	2,800	430 U	300 U	310 U
Benzo(k)fluoranthene	207-08-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2.00E+05*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8.00E+05*	--	3,500	430 U	300 U	310 U
Chrysene	218-01-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.00E+06*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06*	--	8,800	210 U	150 U	160 U
Dibenzo(a,h)anthracene	53-70-3	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8,000*	--	2,200 U	430 U	300 U	310 U
Fluoranthene	206-44-0	*NA*	*5,500*	*NA*	*NA*	*7.30E+05*	*1.00E+09*	*7.40E+08*	*7.40E+08*	*7.40E+08*	*9.30E+09*	*4.60E+07*	--	*7.30E+05*	*1.00E+09*	*8.90E+08*	*8.80E+08*	*8.80E+08*	*4.10E+09*	*1.30E+08*	--	**25,000**	210 U	150 U	160 U
Fluorene	86-73-7	*NA*	*5,300*	*NA*	*4.70E+05*	*3.90E+05*	*5.80E+08*	*1.30E+08*	*1.30E+08*	*1.30E+08*	*9.30E+09*	*2.70E+07*	--	*8.90E+05*	*1.00E+09*	*1.50E+08*	*1.50E+08*	*1.50E+08*	*4.10E+09*	*8.70E+07*	--	1,200	210 U	150 U	160 U
Indeno(1,2,3-cd)pyrene	193-39-5	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	3,000	430 U	300 U	310 U
Naphthalene	91-20-3	*NA*	*730*	*NA*	*67 (M*)*	*35,000*	*2.50E+05*	*3.00E+05*	*3.00E+05*	*3.00E+05*	*2.00E+08*	*1.60E+07*	--	*1.00E+05*	*4.70E+05*	*3.50E+05*	*3.50E+05*	*3.50E+05*	*8.80E+07*	*5.20E+07*	--	**1,100**	210 U	150 U	160 U
Phenanthrene	85-01-8	*NA*	*2,100*	*NA*	*NA*	*56,000*	*2.80E+06*	*1.60E+05*	*1.60E+05*	*1.60E+05*	*6.70E+06*	*1.60E+06*	--	*1.60E+05*	*5.10E+06*	*1.90E+05*	*1.90E+05*	*1.90E+05*	*2.90E+06*	*5.20E+06*	--	**24,000**	210 U	150 U	180
Pyrene	129-00-0	*NA*	*ID*	*NA*	*2.50E+07*	*4.80E+05*	*1.00E+09*	*6.50E+08*	*6.50E+08*	*6.50E+08*	*6.70E+09*	*2.90E+07*	--	*4.80E+05*	*1.00E+09*	*7.80E+08*	*7.80E+08*	*7.80E+08*	*2.90E+09*	*8.40E+07*	--	18,000	210 U	150 U	160 U
Metals, Total	***CAS Number***																								
Arsenic (B)	7440-38-2	*5,800*	*4,600*	*NA*	*NA*	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*7.20E+05*	*7,600*	--	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*9.10E+05*	*37,000*	--	*5,400*	**24,000**	4,000	*4,700*
Barium (B)	7440-39-3	*75,000*	*4.40E+05 (G)*	*NA*	*NA*	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*3.30E+08*	*3.70E+07*	--	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+08*	*1.30E+08*	--	130,000	28,000	93,000	130,000
Cadmium (B)	7440-43-9	*1,200*	*3,600 (G,X)*	*NA*	*NA*	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.70E+06*	*5.50E+05*	--	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.20E+06*	*2.10E+06*	--	900	200 U	200 U	200 U
Chromium, Total (B, H)	7440-47-3	*18,000 (total)*	*3,300*	*NA*	*NA*	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.60E+05*	*2.50E+06*	--	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.40E+05*	*9.20E+06*	--	*14,000*	*5,000*	**78,000**	*16,000*
Copper (B)	7440-50-8	*32,000*	*75,000 (G)*	*NA*	*NA*	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.00E+07*	--	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*7.30E+07*	--	17,000	9,200	**100,000**	11,000
Lead (B)	7439-92-1	*21,000*	*5.10E+06 (G,X)*	*NA*	*NA*	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*1.00E+08*	*4.00E+05*	--	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*4.40E+07*	*9.00E+05*	--	190,000	4,800	65,000	29,000
Mercury (Total) (B)	7439-97-6	*130*	*50 (M); 1.2*	*NA*	*0.027*	*1,700*	*48,000*	*52,000*	*52,000*	*52,000*	*2.00E+07*	*1.60E+05*	*0.027*	*1,700*	*89,000*	*62,000*	*62,000*	*62,000*	*8.80E+06*	*5.80E+05*	*0.12*	**500**	100 U	**200**	80 U
Selenium (B)	7782-49-2	*410*	*400*	*NA*	*NA*	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.60E+06*	--	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*9.60E+06*	--	200 U	**900**	**2,800**	200 U
Silver (B)	7440-22-4	*1,000*	*100 (M); 27*	*NA*	*NA*	*4,500*	*NLV*	*NLV*	*NLV*	*NLV*	*6.70E+06*	*2.50E+06*	--	*13,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.90E+06*	*9.00E+06*	--	100 U	100 U	100 U	100 U
Zinc (B)	7440-66-6	*47,000*	*1.70E+05 (G)*	*NA*	*NA*	*2.40E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*1.70E+08*	--	*5.00E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*6.30E+08*	--	**450,000**	13,000	23,000	30,000
Solids, Total (%)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*89.7*	*46.9*	*66.5*	*63.7*

Results expressed in µg/Kg dry weight.
Bolded values exceed Statewide Default Background Level and an applicable criterion or screening level.
Italicized values are below Statewide Default Background Level but exceed an applicable criterion or screening level.

Data Qualifiers:
J Estimated value
U Not detected

Footnotes/Abbreviations:
[1] *Part 201 Soil Generic Cleanup Criteria and Screening Levels/Part 213 Risk-based Screening Levels, December 30, 2013 (GSI Criteria Updated June 25, 2018).*
[2] *Proposed VI Tier 1 Groundwater, Soil and Vapor Screening Levels, Part 201 Generic Screening Levels/Part 213 Risk-based Screening Levels, August 29, 2017.*
[3] *MDEQ Media Specific Volatilization to Indoor Air Interim Action Screening Levels, August, 2017.*
These screening levels are not intended for compliance or for obtaining closure of a release. However, based upon adequate investigation and characterization, further action for these chemicals for volatilization to indoor air may not be necessary if concentrations do not exceed the residential screening levels for soil vapor, soil and shallow groundwater. Typically, an exceedance of a time-sensitive screening level in any media will warrant expedited investigation and possible mitigation.
* Laboratory reported unidentified peaks present in sample.
† Laboratory reported probable petroleum products present in sample.
(B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated criterion.
(C) Value is screening level based on the chemical-specific generic soil saturation concentration (Csat).
(G) Criterion dependent on receiving surface water hardness; calculated criteria based on water hardness of 150 mg/L.
(H) Data provided for total chromium only; evaluated against hexavalent Chromium criteria.
(M) Calculated criterion is below the target detection limit (TDL); first number is the criterion (TDL), the second is the risk-based value.
(M*) Calculated health-based value is below the analytical target detection limit (TDL), therefore, the TDL is the criterion. The TDL is established specific for an individual environmental medium. The volatilization to indoor air pathway is evaluated using criterion for soil, groundwater and vapor pursuant to R 299.27. When a volatilization to indoor air criterion is the TDL for one or more medium, further evaluation of the remaining media is required to demonstrate compliance for the pathway.
(X) Criterion is not protective for surface water used as a drinking water source.
(W) Concentrations of trihalomethanes must be added together to determine compliance with criterion.
(DD) Hazardous substance causes developmental effects. Residential criteria are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential criteria are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after a single exposure (SE) or full-term (FT) exposure. Oral exposure pathways are drinking water and soil direct contact. Inhalation exposure pathways are ambient air and volatilization to indoor air.
(EE) The residential or nonresidential acceptable air concentration (AAC) for the hazardous substance is not derived pursuant to the equations of R 299.26 and R 299.27. The identified hazardous substance may cause adverse human health effects for less than chronic exposures. The AAC for this hazardous substance is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the department.
(MM) Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based values shall be modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
DC direct contact
DWP drinking water protection
GSIP groundwater surface water interface protection
ID Insufficient data to develop criterion.
NA not available
NLL Not likely to leach under most soil conditions.
NLV Not likely to volatilize under most conditions.
PSI particulate soil inhalation
RBSL risk based screening level
RIASL recommended interim action screening levels
SL screening level
SVIAI soil volatilization to indoor air inhalation
VI vapor intrusion
VSIC volatile soil inhalation criteria

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: *Depth Interval (ft):* *Investigative/Field Duplicate/QC:* *Laboratory ID:* *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-09 (4-8) Investigative 1909114-09 09/10/19	DUP1 Duplicate 1909114-10 09/10/19	Trip Blank QC 1909114-11 08/30/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]			
Volatile Organic Compounds	**CAS Number**																							
1,1,1,2-Tetrachloroethane	630-20-6	*NA*	*ID*	*4.40E+05*	*3.2 (M*)*	*1,500*	*6,200*	*36,000*	*54,000*	*1.00E+05*	*4.20E+08*	*4.80E+05 (C)*	*--*	*6,400*	*33,000*	*1.20E+05*	*2.10E+05*	*3.30E+05*	*5.30E+08*	*2.20E+06 (C)*	*--*	59 U	61 U	50 U
1,1,1-Trichloroethane	71-55-6	*NA*	*1,800*	*4.60E+05*	*450 (EE)*	*4,000*	*2.50E+05*	*3.80E+06*	*1.20E+07*	*2.80E+07*	*6.70E+10*	*5.00E+08 (C)*	*450*	*4,000*	*4.60E+05*	*4.50E+06*	*1.50E+07*	*3.10E+07*	*2.90E+10*	*1.00E+09 (C)*	*1,900*	59 U	61 U	50 U
1,1,2,2-Tetrachloroethane	79-34-5	*NA*	*1,600 (X)*	*8.70E+05*	*2.7 (M*)*	*170*	*4,300*	*10,000*	*10,000*	*14,000*	*5.40E+07*	*53,000*	*--*	*700*	*23,000*	*34,000*	*34,000*	*34,000*	*6.80E+07*	*2.40E+05*	*--*	59 U	61 U	50 U
1,1,2-Trichloroethane	79-00-5	*NA*	*6,600 (X)*	*9.20E+05*	*0.00037 (M*)*	*100*	*4,600*	*17,000*	*21,000*	*44,000*	*1.90E+08*	*1.80E+05*	*--*	*100*	*24,000*	*57,000*	*57,000*	*1.20E+05*	*2.50E+08*	*8.40E+05*	*--*	59 U	61 U	50 U
1,1-Dichloroethane	75-34-3	*NA*	*15,000*	*8.90E+05*	*2.6 (M*)*	*18,000*	*2.30E+05*	*2.10E+06*	*5.90E+06*	*1.40E+07*	*3.30E+10*	*2.70E+07 (C)*	*2.6 (M*)*	*50,000*	*4.30E+05*	*2.50E+06*	*6.00E+06*	*1.40E+07*	*1.50E+10*	*8.70E+07 (C)*	*19 (M*)*	59 U	61 U	50 U
1,1-Dichloroethene	75-35-4	*NA*	*2,600*	*5.70E+05*	*12 (M*)*	*140*	*62*	*1,100*	*5,300*	*13,000*	*6.20E+07*	*2.00E+05*	*12 (M*)*	*140*	*330*	*3,700*	*15,000*	*37,000*	*7.80E+07*	*6.60E+05 (C)*	*54*	59 U	61 U	50 U
1,2,3-Trichlorobenzene	87-61-6	*--*	*--*	*--*	*830*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	300 U	310 U	250 U
1,2,3-Trichloropropane	96-18-4	*NA*	*NA*	*8.30E+05*	*2.6 (M*)*	*840*	*4,000*	*9,200*	*9,200*	*11,000*	*2.00E+07*	*1.30E+06 (C)*	*--*	*2,400*	*7,500*	*11,000*	*11,000*	*12,000*	*8.80E+06*	*4.20E+06 (C)*	*--*	59 U	61 U	50 U
1,2,3-Trimethylbenzene	526-73-8	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*270*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*1,200*	59 U	61 U	50 U
1,2,4-Trichlorobenzene	120-82-1	*NA*	*5,900 (X)*	*1.10E+06*	*53 (M*)*	*4,200*	*9.60E+06 (C)*	*2.80E+07*	*2.80E+07*	*2.80E+07*	*2.50E+10*	*9.90E+05*	*53 (M*)*	*4,200*	*1.80E+07 (C)*	*3.40E+07*	*3.40E+07*	*3.40E+07*	*1.10E+10*	*5.80E+06 (C)*	*230 (M*)*	300 U	310 U	250 U
1,2,4-Trimethylbenzene	95-63-6	*NA*	*570*	*1.10E+05*	*150*	*2,100*	*4.30E+06 (C)*	*2.10E+07*	*5.00E+08*	*5.00E+08*	*8.20E+10*	*3.20E+07 (C)*	*150*	*2,100*	*8.00E+06 (C)*	*2.50E+07*	*6.00E+08*	*6.00E+08*	*3.60E+10*	*1.00E+08 (C)*	*650*	59 U	61 U	50 U
1,2-Dibromoethane (EDB)	106-93-4	*NA*	*110 (X)*	*8.90E+05*	*0.074 (M*)*	*20 (M); 1.0*	*670*	*1,700*	*1,700*	*3,300*	*1.40E+07*	*92*	*--*	*20 (M); 1.0*	*3,600*	*5,800*	*5,800*	*9,800*	*1.80E+07*	*430*	*--*	59 U	61 U	50 U
1,2-Dichlorobenzene	95-50-1	*NA*	*280*	*2.10E+05*	*1,500*	*14,000*	*1.10E+07 (C)*	*3.90E+07*	*3.90E+07*	*5.20E+07*	*1.00E+11*	*1.90E+07 (C)*	*--*	*14,000*	*2.00E+07 (C)*	*4.60E+07*	*4.60E+07*	*5.50E+07*	*4.40E+10*	*6.30E+07 (C)*	*--*	59 U	61 U	50 U
1,2-Dichloroethane	107-06-2	*NA*	*7,200 (X)*	*1.20E+06*	*0.82 (M*)*	*100*	*2,100*	*6,200*	*11,000*	*26,000*	*1.20E+08*	*91,000*	*--*	*100*	*11,000*	*21,000*	*33,000*	*74,000*	*1.50E+08*	*4.20E+05*	*--*	59 U	61 U	50 U
1,2-Dichloropropane	78-87-5	*NA*	*4,600 (X)*	*5.50E+05*	*2.1 (M*)*	*100*	*4,000*	*25,000*	*50,000*	*1.10E+05*	*2.70E+08*	*1.40E+05*	*--*	*100*	*7,400*	*30,000*	*51,000*	*1.20E+05*	*1.20E+08*	*6.60E+05 (C)*	*--*	59 U	61 U	50 U
1,3,5-Trimethylbenzene	108-67-8	*NA*	*1,100*	*94,000*	*100*	*1,800*	*2.60E+06 (C)*	*1.60E+07*	*3.80E+08*	*3.80E+08*	*8.20E+10*	*3.20E+07 (C)*	*100*	*1,800*	*4.80E+06 (C)*	*1.90E+07*	*4.60E+08*	*4.60E+08*	*3.60E+10*	*1.00E+08 (C)*	*450*	59 U	61 U	50 U
1,3-Dichlorobenzene	541-73-1	*NA*	*680*	*1.70E+05*	*10 (M*)*	*170*	*26,000*	*79,000*	*79,000*	*1.10E+05*	*2.00E+08*	*2.00E+05 (C)*	*10 (M*)*	*480*	*48,000*	*94,000*	*94,000*	*1.10E+05*	*8.80E+07*	*6.60E+05 (C)*	*45 (M*)*	59 U	61 U	50 U
1,3-Dichloropropene, cis-	10061-01-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	59 U	61 U	50 U
1,3-Dichloropropene, trans-	10061-02-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	59 U	61 U	50 U
1,3-Dichloropropene (Total)	542-75-6	*NA*	*180 (X)*	*6.20E+05*	*3.1 (M*)*	*170*	*1,000*	*18,000*	*68,000*	*1.60E+05*	*7.80E+08*	*10,000*	*--*	*700*	*5,400*	*60,000*	*2.00E+05*	*4.70E+05*	*5.90E+08*	*2.40E+05*	*--*	118 U	122 U	100 U
1,4-Dichlorobenzene	106-46-7	*NA*	*360*	*NA*	*23 (M*)*	*1,700*	*19,000*	*77,000*	*77,000*	*1.10E+05*	*4.50E+08*	*4.00E+05*	*23 (M*)*	*1,700*	*1.00E+05*	*2.60E+05*	*2.60E+05*	*3.40E+05*	*5.70E+08*	*1.90E+06*	*160*	59 U	61 U	50 U
2,2,4-Trimethylpentane	540-84-1	*NA*	*NA*	*19,000*	*1.20E+05*	*ID*	*1.10E+05 (C)*	*5.20E+06*	*3.90E+07*	*9.60E+07*	*2.30E+11*	*ID*	*--*	*ID*	*2.00E+05 (C)*	*6.30E+06*	*4.00E+07*	*9.60E+07*	*1.00E+11*	*ID*	*--*	300 U	310 U	250 U
2-Butanone (MEK)	78-93-3	*NA*	*44,000*	*2.70E+07*	*31,000 (DD)*	*2.60E+05*	*5.40E+07 (C)*	*2.90E+07*	*2.90E+07*	*3.50E+07*	*6.70E+10*	*1.20E+08 (C)*	*--*	*7.60E+05*	*9.90E+07 (C)*	*3.50E+07*	*3.50E+07*	*3.60E+07*	*2.90E+10*	*7.00E+08 (C)*	*--*	300 U	310 U	250 U
4-Methyl-2-pentanone (MIBK)	108-10-1	*NA*	*ID*	*2.70E+06*	*12,000 (DD)*	*36,000*	*3.70E+07 (C)*	*4.50E+07*	*4.50E+07*	*6.70E+07*	*1.40E+11*	*5.60E+07 (C)*	*--*	*1.00E+05*	*6.90E+07 (C)*	*5.30E+07*	*5.30E+07*	*7.00E+07*	*6.00E+10*	*1.80E+08 (C)*	*--*	300 U	310 U	250 U
Acetone	67-64-1	*NA*	*34,000*	*1.10E+08*	*2.60E+05 (EE)*	*15,000*	*2.90E+08 (C)*	*1.30E+08*	*1.30E+08*	*1.90E+08*	*3.90E+11*	*2.30E+07*	*2.60E+05*	*42,000*	*5.40E+08 (C)*	*1.60E+08*	*1.60E+08*	*2.00E+08*	*1.70E+11*	*7.30E+07*	*7.80E+05*	1,200 U	1,200 U	1,000 U
Acrylonitrile	107-13-1	*NA*	*100 (M); 40*	*8.30E+06*	*1.2 (M*)*	*100 (M); 52*	*6,600*	*5,000*	*5,100*	*10,000*	*4.60E+07*	*16,000*	*--*	*220*	*35,000*	*17,000*	*17,000*	*31,000*	*5.80E+07*	*74,000*	*--*	300 U	310 U	250 U
Benzene	71-43-2	*NA*	*4,000 (X)*	*4.00E+05*	*1.7 (M*)*	*100*	*1,600*	*13,000*	*34,000*	*79,000*	*3.80E+08*	*1.80E+05*	*1.7 (M*)*	*100*	*8,400*	*45,000*	*99,000*	*2.30E+05*	*4.70E+08*	*8.40E+05 (C)*	*12 (M*)*	59 U	61 U	50 U
Bromochloromethane	74-97-5	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	59 U	61 U	50 U
Bromodichloromethane	75-27-4	*NA*	*ID*	*1.50E+06*	*0.61 (M*)*	*1,600 (W)*	*1,200*	*9,100*	*9,700*	*19,000*	*8.40E+07*	*1.10E+05*	*--*	*1,600 (W)*	*6,400*	*31,000*	*31,000*	*57,000*	*1.10E+08*	*4.90E+05*	*--*	59 U	61 U	50 U
Bromoform	75-25-2	*NA*	*ID*	*8.70E+05*	*45 (M*)*	*1,600 (W)*	*1.50E+05*	*9.00E+05*	*9.00E+05*	*9.00E+05*	*2.80E+09*	*8.20E+05*	*--*	*1,600 (W)*	*7.70E+05*	*3.10E+06*	*3.10E+06*	*3.10E+06*	*3.60E+09*	*3.80E+06 (C)*	*--*	59 U	61 U	50 U
Bromomethane	74-83-9	*NA*	*100*	*2.20E+06*	*0.90 (M*)*	*200*	*860*	*11,000*	*57,000*	*1.40E+05*	*3.30E+08*	*3.20E+05*	*--*	*580*	*1,600*	*13,000*	*57,000*	*1.40E+05*	*1.50E+08*	*1.00E+06*	*--*	240 U	240 U	200 U
Carbon disulfide	75-15-0	*NA*	*ID*	*2.80E+05*	*52 (M*)*	*16,000*	*76,000*	*1.30E+06*	*7.90E+06*	*1.90E+07*	*4.70E+10*	*7.20E+06 (C)*	*--*	*46,000*	*1.40E+05*	*1.60E+06*	*8.00E+06*	*1.90E+07*	*2.10E+10*	*4.30E+07 (C)*	*--*	59 U	61 U	50 U
Carbon tetrachloride	56-23-5	*NA*	*760 (X)*	*3.90E+05*	*0.31 (M*)*	*100*	*190*	*3,500*	*12,000*	*28,000*	*1.30E+08*	*96,000*	*--*	*100*	*990*	*12,000*	*34,000*	*79,000*	*1.70E+08*	*4.40E+05 (C)*	*--*	59 U	61 U	50 U
Chlorobenzene	108-90-7	*NA*	*500*	*2.60E+05*	*82*	*2,000*	*1.20E+05*	*7.70E+05*	*9.90E+05*	*2.10E+06*	*4.70E+09*	*4.30E+06 (C)*	*82*	*2,000*	*2.20E+05*	*9.20E+05*	*1.10E+06*	*2.10E+06*	*2.10E+09*	*1.40E+07 (C)*	*360*	59 U	61 U	50 U
Chloroethane	75-00-3	*NA*	*22,000 (X)*	*9.50E+05*	*330*	*8,600*	*2.90E+06 (C)*	*3.00E+07*	*1.20E+08*	*2.80E+08*	*6.70E+11*	*2.60E+06 (C)*	*330*	*34,000*	*5.30E+06 (C)*	*3.60E+07*	*1.20E+08*	*2.80E+08*	*2.90E+11*	*1.20E+07 (C)*	*1,500*	300 U	310 U	250 U
Chloroform	67-66-3	*NA*	*7,000*	*1.50E+06*	*0.26 (M*)*	*1,600 (W)*	*7,200*	*45,000*	*1.20E+05*	*2.70E+05*	*1.30E+09*	*1.20E+06*	*0.26 (M*)*	*1,600 (W)*	*38,000*	*1.50E+05*	*3.40E+05*	*7.90E+05*	*1.60E+09*	*5.50E+06 (C)*	*1.9 (M*)*	59 U	61 U	50 U
Chloromethane	74-87-3	*NA*	*ID*	*1.10E+06*	*6.9 (M*)*	*5,200*	*2,300*	*40,000*	*4.10E+05*	*1.00E+06*	*4.90E+09*	*1.60E+06 (C)*	*6.9 (M*)*	*22,000*	*10,000*	*1.20E+05*	*1.00E+06*	*2.50E+06*	*2.60E+09*	*7.40E+06 (C)*	*31 (M*)*	300 U	310 U	250 U
cis-1,2-Dichloroethene	156-59-2	*NA*	*12,000*	*6.40E+05*	*2.1 (M*)*	*1,400*	*22,000*	*1.80E+05*	*4.20E+05*	*9.90E+05*	*2.30E+09*	*2.50E+06 (C)*	*2.1 (M*)*	*1,400*	*41,000*	*2.10E+05*	*4.30E+05*	*1.00E+06*	*1.00E+09*	*8.00E+06 (C)*	*9.2 (M*)*	59 U	61 U	50 U
Cyclohexane	110-82-7	*--*	*--*	*--*	*320 (M*)*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	300 U	310 U	250 U
Dibromochloromethane	124-48-1	*NA*	*ID*	*6.10E+05*	*0.40 (M*,MM)*	*1,600 (W)*	*3,900*	*24,000*	*24,000*	*33,000*	*1.30E+08*	*1.10E+05*	*--*	*1,600 (W)*	*21,000*	*80,000*	*80,000*	*98,000*	*1.60E+08*	*5.00E+05*	*--*	59 U	61 U	50 U
Dibromomethane	74-95-3	*NA*	*NA*	*2.00E+06*	*3.5 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.50E+06 (C)*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06 (C)*	*--*	59 U	61 U	50 U
Dichlorodifluoromethane	75-71-8	*NA*	*ID*	*1.00E+06*	*12 (M*)*	*95,000*	*9.00E+05*	*5.30E+07*	*5.50E+08*	*1.40E+09*	*3.30E+12*	*5.20E+07 (C)*	*--*	*2.70E+05*	*1.70E+06*	*6.30E+07*	*5.50E+08*	*1.40E+09*	*1.50E+12*	*1.70E+08 (C)*	*--*	300 U	310 U	250 U
Diethyl ether	60-29-7	*NA*	*ID*	*7.40E+06*	*350*	*200*	*2.80E+07 (C)*	*8.50E+07*	*1.50E+08*	*3.40E+08*	*8.00E+11*	*1.10E+08 (C)*	*--*	*200*	*5.20E+07 (C)*	*1.00E+08*	*1.60E+08*	*3.50E+08*	*3.50E+11*	*3.60E+08 (C)*	*--*	240 U	240 U	200 U
Diisopropyl ether	108-20-3	*NA*	*ID*	*1,300*	*190 (M*,DD)*	*600*	*6.70E+05 (C)*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*9.20E+05 (C)*	*--*	*1,700 (C)*	*1.20E+06 (C)*	*3.20E+06*	*4.80E+06*	*1.00E+07*	*1.10E+10*	*3.00E+06 (C)*	*--*	300 U	310 U	250 U
Ethyl-tert-butyl ether (ETBE)	637-92-3	*NA*	*ID*	*6.50E+05*	*NA*	*980*	*5.40E+05*	*1.90E+06*	*4.50E+06*	*1.10E+07*	*2.50E+10*	*ID*	*--*	*980*	*1.70E+06 (C)*	*2.30E+06*	*4.60E+06*	*1.10E+07*	*1.10E+10*	*ID*	*--*	300 U	310 U	250 U
Ethylbenzene	100-41-4	*NA*	*360*	*1.40E+05*	*12 (M*)*	*1,500*	*87,000*	*7.20E+05*	*1.00E+06*	*2.20E+06*	*1.00E+10*	*2.20E+07 (C)*	*12 (M*)*	*1,500*	*4.60E+05 (C)*	*2.40E+06*	*3.10E+06*	*6.50E+06*	*1.30E+10*	*7.10E+07 (C)*	*86*	59 U	61 U	50 U
Hexachloroethane	67-72-1	*NA*	*1,800 (X)*	*NA*	*3.2 (M*)*	*430*	*40,000*	*5.50E+05*	*9.30E+05*	*9.30E+05*	*2.30E+08*	*2.30E+05*	*--*	*1,200*	*79,000*	*6.60E+05*	*1.40E+06*	*1.40E+06*	*1.00E+08*	*7.30E+05*	*--*	300 U	310 U	250 U
Isopropylbenzene	98-82-8	*NA*	*3,200*	*3.90E+05*	*3.8 (M*)*	*91,000*	*4.00E+05 (C)*	*1.70E+06*	*1.70E+06*	*2.80E+06*	*5.80E+09*	*2.50E+07 (C)*	*--*	*2.60E+05*	*7.30E+05 (C)*	*2.00E+06*	*2.00E+06*	*3.00E+06*	*2.60E+09*	*8.00E+07 (C)*	*--*	59 U	61 U	50 U
Methyl-tert-butyl ether (MTBE)	1634-04-4	*NA*	*1.40E+05 (X)*	*5.90E+06*	*74 (M*)*	*800*	*9.90E+06 (C)*	*2.50E+07*	*3.90E+07*	*8.70E+07*	*2.00E+11*	*1.50E+06*	*74 (M*)*	*800*	*1.80E+07 (C)*	*3.00E+07*	*4.10E+07*	*8.90E+07*	*8.80E+10*	*7.10E+06 (C)*	*520*	59 U	61 U	50 U
Methylene chloride	75-09-2	*NA*	*30,000 (X)*	*2.30E+06*	*130*	*100*	*45,000*	*2.10E+05*	*5.90E+05*	*1.40E+06*	*6.60E+09*	*1.30E+06*	*130*	*100*	*2.40E+05*	*7.00E+05*	*1.70E+06*	*4.00E+06*	*8.30E+09*	*5.80E+06 (C)*	*570*	120 U	120 U	100 U
n-Butylbenzene	104-51-8	*NA*	*ID*	*1.00E+07*	*550*	*1,600*	*ID*	*ID*	*ID*	*ID*	*2.00E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*8.80E+08*	*8.00E+06*	*--*	59 U	61 U	50 U
n-Hexane	110-54-3	*NA*	*NA*	*44,000*	*24,000*	*1.80E+05 (C)*	*5.10E+05 (C)*	*3.00E+06*	*3.20E+06*	*6.20E+06*	*1.30E+10*	*9.20E+07 (C)*	*--*	*5.10E+05 (C)*	*9.50E+05 (C)*	*3.50E+06*	*3.50E+06*	*6.40E+06*	*5.90E+09*	*3.00E+08 (C)*	*--*	59 U	61 U	50 U
n-Propylbenzene	103-65-1	*NA*	*ID*	*1.00E+07*	*1,800 (DD)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*1.30E+09*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*5.90E+08*	*8.00E+06*	*--*	59 U	61 U	50 U
sec-Butylbenzene	135-98-8	*NA*	*ID*	*1.00E+07*	*3,800*	*1,600*	*ID*	*ID*	*ID*	*ID*	*4.00E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*1.80E+08*	*8.00E+06*	*--*	59 U	61 U	50 U
Styrene	100-42-5	*NA*	*2,100 (X)*	*5.20E+05*	*150*	*2,700*	*2.50E+05*	*9.70E+05*	*9.70E+05*	*1.40E+06*	*5.50E+09*	*4.00E+05*	*--*	*2,700*	*1.30E+06 (C)*	*3.30E+06*	*3.30E+06*	*4.20E+06*	*6.90E+09*	*1.90E+06 (C)*	*--*	59 U	61 U	50 U
t-Amyl methyl ether (TAME)	994-05-8	*NA*	*NA*	*4.40E+05*	*NA*	*3,900*	*58,000*	*3.40E+05*	*7.60E+05*	*1.80E+06*	*4.10E+09*	*2.90E+07 (C)*	*--*	*3,900*	*1.10E+05*	*4.00E+05*	*7.80E+05*	*1.80E+06*	*1.80E+09*	*9.50E+07 (C)*	*--*	300 U	310 U	250 U
t-Butyl alcohol	75-65-0	*NA*	*NA*	*1.10E+08*	*NA*	*78,000*	*3.10E+08 (C)*	*9.70E+07*	*2.00E+08*	*2.00E+08*	*1.30E+11*	*1.20E+08 (C)*	*--*	*2.20E+05*	*5.80E+08 (C)*	*1.20E+08*	*2.40E+08*	*2.40E+08*	*5.60E+10*	*3.90E+08 (C)*	*--*	3,000 U	3,100 U	2,500 U
t-Butylbenzene	98-06-6	*NA*	*ID*	*1.00E+07*	*0.64 (M*)*	*1,600*	*ID*	*ID*	*ID*	*ID*	*6.70E+08*	*2.50E+06*	*--*	*4,600*	*ID*	*ID*	*ID*	*ID*	*2.90E+08*	*8.00E+06*	*--*	59 U	61 U	50 U
Tetrachloroethene	127-18-4	*NA*	*1,200 (X)*	*88,000*	*6.2 (M*,EE)*	*100*	*11,000*	*1.70E+05*	*4.80E+05*	*1.10E+06*	*2.70E+09*	*2.00E+05 (C)*	*6.2 (M*)*	*100*	*21,000*	*2.10E+05*	*4.90E+05*	*1.10E+06*	*1.20E+09*	*9.30E+05 (C)*	*19 (M*)*	59 U	61 U	50 U
Tetrahydrofuran	109-99-9	*NA*	*2.20E+05 (X)*	*1.20E+08*	*13,000*	*1,900*	*1.30E+06*	*1.30E+07*	*6.70E+07*	*1.60E+08*	*3.90E+11*	*2.90E+06*	*--*	*5,400*	*2.40E+06*	*1.50E+07*	*6.70E+07*	*1.60E+08*	*1.70E+11*	*9.50E+06*	*--*	300 U	310 U	250 U
Toluene	108-88-3	*NA*	*5,400*	*2.50E+05*	*3,700 (EE)*	*16,000*	*3.30E+05 (C)*	*2.80E+06*	*5.10E+06*	*1.20E+07*	*2.70E+10*	*5.00E+07 (C)*	*3,700*	*16,000*	*6.10E+05 (C)*	*3.30E+06*	*3.60E+07*	*3.60E+07*	*1.20E+10*	*1.60E+08 (C)*	*16,000*	59 U	61 U	50 U
trans-1,2-Dichloroethene	156-60-5	*NA*	*30,000 (X)*	*1.40E+06*	*39 (M*,EE)*	*2,000*	*23,000*	*2.80E+05*	*8.30E+05*	*2.00E+06*	*4.70E+09*	*3.80E+06 (C)*	*39 (M*)*	*2,000*	*43,000*	*3.30E+05*	*8.40E+05*	*2.00E+06*	*2.10E+09*	*1.20E+07 (C)*	*340*	59 U	61 U	50 U
Trichloroethene	79-01-6	*NA*	*4,000 (X)*	*5.00E+05*	*0.33 (M*,DD)*	*100*	*1,000*	*11,000*	*25,000*	*57,000*	*1.30E+08*	*1.10E+05*	*0.33 (M*)*	*100*	*1,900*	*14,000*	*25,000*	*58,000*	*5.90E+07*	*6.60E+05 (C)*	*1.0 (M*)*	59 U	61 U	50 U
Trichlorofluoromethane	75-69-4	*NA*	*NA*	*5.60E+05*	*19 (M*)*	*52,000*	*2.80E+06 (C)*	*9.20E+07*	*6.30E+08*	*1.50E+09*	*3.80E+12*	*7.90E+07 (C)*	*--*	*1.50E+05*	*5.10E+06 (C)*	*1.10E+08*	*1.40E+11*	*1.40E+11*	*1.70E+12*	*2.60E+08 (C)*	*--*	59 U	61 U	50 U
Vinyl chloride	75-01-4	*NA*	*260 (X)*	*4.90E+05*	*0.082 (M*,MM)*	*40*	*270*	*4,200*	*30,000*	*73,000*	*3.50E+08*	*3,800*	*0.082 (M*)*	*40*	*2,800*	*29,000*	*1.70E+05*	*4.20E+05*	*8.90E+08*	*34,000*	*2.0 (M*)*	59 U	61 U	50 U
Xylenes, meta- & para-	179601-23-1	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	120 U	120 U	100 U
Xylene, ortho-	95-47-6	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	59 U	61 U	50 U
Xylenes, Total	1330-20-7	*NA*	*980*	*1.50E+05*	*280*	*5,600*	*6.30E+06 (C)*	*4.60E+07*	*6.10E+07*	*1.30E+08*	*2.90E+11*	*4.10E+08 (C)*	*280*	*5,600*	*1.20E+07 (C)*	*5.40E+07*	*6.50E+07*	*1.30E+08*	*1.30E+11*	*1.00E+09 (C)*	*1,200*	179 U	181 U	150 U

Table 1 - Soil Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location: *Depth Interval (ft):* *Investigative/Field Duplicate/QC:* *Laboratory ID:* *Collection Date:*		*Statewide Default Background Levels* [1]	*GSIP Criteria & RBSLs* [1]	*Soil Saturation Concentration SL* [1]	*Proposed VI Tier I SL* [2]	*Residential*								*Nonresidential*								SB-09 (4-8) Investigative 1909114-09 09/10/19	DUP1 Duplicate 1909114-10 09/10/19	Trip Blank QC 1909114-11 08/30/19
						DWP Criteria & RBSLs [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]	*DWP Criteria & RBSLs* [1]	*SVIAI Criteria & RBSLs* [1]	*Infinite Source VSIC & RBSLs* [1]	*Finite VSIC for 5 Meter Source Thickness* [1]	*Finite VSIC for 2 Meter Source Thickness* [1]	*PSI Criteria & RBSLs* [1]	*DC Criteria & RBSLs* [1]	*RIASL* [3]			
Polynuclear Aromatic Compounds	***CAS Number***																							
2-Methylnaphthalene	91-57-6	*NA*	*4,200*	*NA*	*1,700*	*57,000*	*2.70E+06*	*1.50E+06*	*1.50E+06*	*1.50E+06*	*6.70E+08*	*8.10E+06*	--	*1.70E+05*	*4.90E+06*	*1.80E+06*	*1.80E+06*	*1.80E+06*	*2.90E+08*	*2.60E+07*	--	270 U	270 U	--
Acenaphthene	83-32-9	*NA*	*8,700*	*NA*	*2.00E+05*	*3.00E+05*	*1.90E+08*	*8.10E+07*	*8.10E+07*	*8.10E+07*	*1.40E+10*	*4.10E+07*	--	*8.80E+05*	*3.50E+08*	*9.70E+07*	*9.70E+07*	*9.70E+07*	*6.20E+09*	*1.30E+08*	--	110 U	110 U	--
Acenaphthylene	208-96-8	*NA*	*ID*	*NA*	*NA*	*5,900*	*1.60E+06*	*2.20E+06*	*2.20E+06*	*2.20E+06*	*2.30E+09*	*1.60E+06*	--	*17,000*	*3.00E+06*	*2.70E+06*	*2.70E+06*	*2.70E+06*	*1.00E+09*	*5.20E+06*	--	110 U	110 U	--
Anthracene	120-12-7	*NA*	*ID*	*NA*	*1.30E+07*	*41,000*	*1.00E+09*	*1.40E+09*	*1.40E+09*	*1.40E+09*	*6.70E+10*	*2.30E+08*	--	*41,000*	*1.00E+09*	*1.60E+09*	*1.60E+09*	*1.60E+09*	*2.90E+10*	*7.30E+08*	--	110 U	110 U	--
Benzo(a)anthracene	56-55-3	*NA*	*NLL*	*NA*	*1.60E+05 (MM)*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	110 U	110 U	--
Benzo(a)pyrene	50-32-8	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+06*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*1.90E+06*	*8,000*	--	210 U	210 U	--
Benzo(b)fluoranthene	205-99-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*20,000*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*80,000*	--	210 U	210 U	--
Benzo(g,h,i)perylene	191-24-2	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*8.00E+08*	*2.50E+06*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*3.50E+08*	*7.00E+06*	--	210 U	210 U	--
Benzo(k)fluoranthene	207-08-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2.00E+05*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8.00E+05*	--	210 U	210 U	--
Chrysene	218-01-9	*NA*	*NLL*	*NA*	*NA*	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*2.00E+06*	--	*NLL*	*ID*	*ID*	*ID*	*ID*	*ID*	*8.00E+06*	--	110 U	110 U	--
Dibenzo(a,h)anthracene	53-70-3	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*2,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*8,000*	--	210 U	210 U	--
Fluoranthene	206-44-0	*NA*	*5,500*	*NA*	*NA*	*7.30E+05*	*1.00E+09*	*7.40E+08*	*7.40E+08*	*7.40E+08*	*9.30E+09*	*4.60E+07*	--	*7.30E+05*	*1.00E+09*	*8.90E+08*	*8.80E+08*	*8.80E+08*	*4.10E+09*	*1.30E+08*	--	110 U	110 U	--
Fluorene	86-73-7	*NA*	*5,300*	*NA*	*4.70E+05*	*3.90E+05*	*5.80E+08*	*1.30E+08*	*1.30E+08*	*1.30E+08*	*9.30E+09*	*2.70E+07*	--	*8.90E+05*	*1.00E+09*	*1.50E+08*	*1.50E+08*	*1.50E+08*	*4.10E+09*	*8.70E+07*	--	110 U	110 U	--
Indeno(1,2,3-cd)pyrene	193-39-5	*NA*	*NLL*	*NA*	*NA*	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*20,000*	--	*NLL*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*80,000*	--	210 U	210 U	--
Naphthalene	91-20-3	*NA*	*730*	*NA*	*67 (M*)*	*35,000*	*2.50E+05*	*3.00E+05*	*3.00E+05*	*3.00E+05*	*2.00E+08*	*1.60E+07*	--	*1.00E+05*	*4.70E+05*	*3.50E+05*	*3.50E+05*	*3.50E+05*	*8.80E+07*	*5.20E+07*	--	110 U	110 U	--
Phenanthrene	85-01-8	*NA*	*2,100*	*NA*	*NA*	*56,000*	*2.80E+06*	*1.60E+05*	*1.60E+05*	*1.60E+05*	*6.70E+06*	*1.60E+06*	--	*1.60E+05*	*5.10E+06*	*1.90E+05*	*1.90E+05*	*1.90E+05*	*2.90E+06*	*5.20E+06*	--	110 U	110 U	--
Pyrene	129-00-0	*NA*	*ID*	*NA*	*2.50E+07*	*4.80E+05*	*1.00E+09*	*6.50E+08*	*6.50E+08*	*6.50E+08*	*6.70E+09*	*2.90E+07*	--	*4.80E+05*	*1.00E+09*	*7.80E+08*	*7.80E+08*	*7.80E+08*	*2.90E+09*	*8.40E+07*	--	110 U	110 U	--
Metals, Total	***CAS Number***																							
Arsenic (B)	7440-38-2	*5,800*	*4,600*	*NA*	*NA*	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*7.20E+05*	*7,600*	--	*4,600*	*NLV*	*NLV*	*NLV*	*NLV*	*9.10E+05*	*37,000*	--	*5,300*	*5,100*	--
Barium (B)	7440-39-3	*75,000*	*4.40E+05 (G)*	*NA*	*NA*	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*3.30E+08*	*3.70E+07*	--	*1.30E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.50E+08*	*1.30E+08*	--	15,000	13,000	--
Cadmium (B)	7440-43-9	*1,200*	*3,600 (G,X)*	*NA*	*NA*	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.70E+06*	*5.50E+05*	--	*6,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.20E+06*	*2.10E+06*	--	200 U	200 U	--
Chromium, Total (B, H)	7440-47-3	*18,000 (total)*	*3,300*	*NA*	*NA*	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.60E+05*	*2.50E+06*	--	*30,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.40E+05*	*9.20E+06*	--	*6,300*	*5,200*	--
Copper (B)	7440-50-8	*32,000*	*75,000 (G)*	*NA*	*NA*	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.00E+07*	--	*5.80E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*7.30E+07*	--	9,200	8,400	--
Lead (B)	7439-92-1	*21,000*	*5.10E+06 (G,X)*	*NA*	*NA*	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*1.00E+08*	*4.00E+05*	--	*7.00E+05*	*NLV*	*NLV*	*NLV*	*NLV*	*4.40E+07*	*9.00E+05*	--	5,900	29,000	--
Mercury (Total) (B)	7439-97-6	*130*	*50 (M); 1.2*	*NA*	*0.027*	*1,700*	*48,000*	*52,000*	*52,000*	*52,000*	*2.00E+07*	*1.60E+05*	*0.027*	*1,700*	*89,000*	*62,000*	*62,000*	*62,000*	*8.80E+06*	*5.80E+05*	*0.12*	50 U	*80*	--
Selenium (B)	7782-49-2	*410*	*400*	*NA*	*NA*	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*1.30E+08*	*2.60E+06*	--	*4,000*	*NLV*	*NLV*	*NLV*	*NLV*	*5.90E+07*	*9.60E+06*	--	200 U	200 U	--
Silver (B)	7440-22-4	*1,000*	*100 (M); 27*	*NA*	*NA*	*4,500*	*NLV*	*NLV*	*NLV*	*NLV*	*6.70E+06*	*2.50E+06*	--	*13,000*	*NLV*	*NLV*	*NLV*	*NLV*	*2.90E+06*	*9.00E+06*	--	100 U	100 U	--
Zinc (B)	7440-66-6	*47,000*	*1.70E+05 (G)*	*NA*	*NA*	*2.40E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*1.70E+08*	--	*5.00E+06*	*NLV*	*NLV*	*NLV*	*NLV*	*ID*	*6.30E+08*	--	28,000	26,000	--
Solids, Total (%)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	*93.5*	*93.3*	*100*

Results expressed in µg/Kg dry weight.
Bolded values exceed Statewide Default Background Level and an applicable criterion or screening level.
Italicized values are below Statewide Default Background Level but exceed an applicable criterion or screening level.

Data Qualifiers:
J Estimated value
U Not detected

Footnotes/Abbreviations:
[1] Part 201 Soil Generic Cleanup Criteria and Screening Levels/Part 213 Risk-based Screening Levels, December 30, 2013 (GSI Criteria Updated June 25, 2018).
[2] Proposed VI Tier 1 Groundwater, Soil and Vapor Screening Levels, Part 201 Generic Screening Levels/Part 213 Risk-based Screening Levels, August 29, 2017.
[3] MDEQ Media Specific Volatilization to Indoor Air Interim Action Screening Levels, August, 2017.
These screening levels are not intended for compliance or for obtaining closure of a release. However, based upon adequate investigation and characterization, further action for these chemicals for volatilization to indoor air may not be necessary if concentrations do not exceed the residential screening levels for soil vapor, soil and shallow groundwater. Typically, an exceedance of a time-sensitive screening level in any media will warrant expedited investigation and possible mitigation.
* Laboratory reported unidentified peaks present in sample.
† Laboratory reported probable petroleum products present in sample.
(B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated criterion.
(C) Value is screening level based on the chemical-specific generic soil saturation concentration (Csat).
(G) Criterion dependent on receiving surface water hardness; calculated criteria based on water hardness of 150 mg/L.
(H) Data provided for total chromium only; evaluated against hexavalent Chromium criteria.
(M) Calculated criterion is below the target detection limit (TDL); first number is the criterion (TDL), the second is the risk-based value.
(M*) Calculated health-based value is below the analytical target detection limit (TDL), therefore, the TDL is the criterion. The TDL is established specific for an individual environmental medium. The volatilization to indoor air pathway is evaluated using criterion for soil, groundwater and vapor pursuant to R 299.27. When a volatilization to indoor air criterion is the TDL for one or more medium, further evaluation of the remaining media is required to demonstrate compliance for the pathway.
(X) Criterion is not protective for surface water used as a drinking water source.
(W) Concentrations of trihalomethanes must be added together to determine compliance with criterion.
(DD) Hazardous substance causes developmental effects. Residential criteria are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential criteria are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after a single exposure (SE) or full-term (FT) exposure. Oral exposure pathways are drinking water and soil direct contact. Inhalation exposure pathways are ambient air and volatilization to indoor air.
(EE) The residential or nonresidential acceptable air concentration (AAC) for the hazardous substance is not derived pursuant to the equations of R 299.26 and R 299.27. The identified hazardous substance may cause adverse human health effects for less than chronic exposures. The AAC for this hazardous substance is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or an acute initial threshold screening level (ITSL) by the department.
(MM) Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based values shall be modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
DC direct contact
DWP drinking water protection
GSIP groundwater surface water interface protection
ID Insufficient data to develop criterion.
NA not available
NLL Not likely to leach under most soil conditions.
NLV Not likely to volatilize under most conditions.
PSI particulate soil inhalation
RBSL risk based screening level
RIASL recommended interim action screening levels
SL screening level
SVIAI soil volatilization to indoor air inhalation
VI vapor intrusion
VSIC volatile soil inhalation criteria

Table 2 - Soil Data Exceeding GNRCC
Documentation of Due Care Compliance
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location (feet bgs)	Date Collected	Hazardous Substance	CAS No.	Concentration	Non-Residential Generic Cleanup Criteria Exceedance(s)
SB-01 (1-2)	9/10/2019	1,2,4-Trimethylbenzene	95-63-6	180	Proposed VI Tier I VV
		cis-1,2-Dichloroethene	156-59-2	4,000	DWPC, Proposed VI Tier I VV
		Ethylbenzene	100-41-4	92	Proposed VI Tier I VV
		trans-1,2-Dichloroethene	156-60-5	180	Proposed VI Tier I VV
		Trichloroethene	79-01-6	4,900	DWPC, GSIPC, SVIAIC, Proposed VI Tier I VV
		Vinyl chloride	75-01-4	260	DWPC, Proposed VI Tier I VV
		Phenanthrene	85-01-8	2200J	GSIPC
		Arsenic (B)	7440-38-2	12,000	DWPC, GSIPC
		Cadmium (B)	7440-43-9	860,000	DWPC, GSIPC
		Chromium, Total (B, H)	7440-47-3	49,000	DWPC, GSIPC
		Mercury (Total) (B)	7439-97-6	300	GSIPC, Proposed VI Tier I VV
		Selenium (B)	7782-49-2	1,000	GSIPC
SB-02 (5-6)	9/10/2019	cis-1,2-Dichloroethene	156-59-2	1,200	Proposed VI Tier I VV
		trans-1,2-Dichloroethene	156-60-5	260	Proposed VI Tier I VV
		Trichloroethene	79-01-6	480	DWPC, Proposed VI Tier I VV
		Arsenic (B)	7440-38-2	8,300	DWPC, GSIPC
		Lead (B)	7439-92-1	1,200,000	DWPC, GSIPC, DCC
		Mercury (Total) (B)	7439-97-6	400	GSIPC, Proposed VI Tier I VV
		Selenium (B)	7782-49-2	1,000	GSIPC
		Zinc (B)	7440-66-6	1,300,000	GSIPC
SB-03 (7-8)	9/11/2019	Selenium (B)	7782-49-2	500	GSIPC
SB-04 (3-4)	9/11/2019	Trichloroethene	79-01-6	19,000	DWPC, GSIPC, SVIAIC, Inviite Source VSIC, Proposed VI Tier I VV
		Acenaphthene	83-32-9	20,000	GSIPC
		Anthracene	120-12-7	55,000	DWPC
		Benzo(a)anthracene	56-55-3	86,000	DCC
		Benzo(a)pyrene	50-32-8	68,000	DCC
		Benzo(b)fluoranthene	205-99-2	86,000	DCC
		Fluoranthene	206-44-0	220,000	GSIPC
		Fluorene	86-73-7	21,000	GSIPC
		Naphthalene	91-20-3	34,000	GSIPC, Proposed VI Tier I VV
		Phenanthrene	85-01-8	250,000	DWCP, GSIPC
		Arsenic (B)	7440-38-2	7,700	DWPC, GSIPC
		Chromium, Total (B, H)	7440-47-3	29,000	GSIPC
		Mercury (Total) (B)	7439-97-6	1,400	GSIPC, Proposed VI Tier I VV
		Selenium (B)	7782-49-2	700	GSIPC
		Zinc (B)	7440-66-6	210,000	GSIPC
SB-05 (2-4)	9/11/2019	Trichloroethene	79-01-6	820	DWPC, Proposed VI Tier I VV
		Benzo(a)pyrene	50-32-8	8,100	DCC
		Fluoranthene	206-44-0	25,000	GSIPC
		Naphthalene	91-20-3	1,100	GSIPC, Proposed VI Tier I VV
		Phenanthrene	85-01-8	24,000	GSIPC
		Mercury (Total) (B)	7439-97-6	500	GSIPC, Proposed VI Tier I VV
		Zinc (B)	7440-66-6	450,000	GSIPC
SB-06 (8-9)	9/9/2019	Arsenic (B)	7440-38-2	24,000	DWPC, GSIPC
		Selenium (B)	7782-49-2	900	GSIPC

Table 2 - Soil Data Exceeding GNRCC
Documentation of Due Care Compliance
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location (feet bgs)	Date Collected	Hazardous Substance	CAS No.	Concentration	Non-Residential Generic Cleanup Criteria Exceedance(s)
SB-07 (11-12)	9/9/2019	Chromium, Total (B, H)	7440-47-3	78,000	DWPC, GSIPC
		Copper (B)	7440-50-8	100,000	GSIPC
		Mercury (Total) (B)	7439-97-6	200	GSIPC, Proposed VI Tier I VV
		Selenium (B)	7782-49-2	2,800	GSIPC
SB-08 (8-12)	9/9/2019	Tetrachloroethene	127-18-4	200	DWPC, Proposed VI Tier I VV
		Trichloroethene	79-01-6	370	DWPC, Proposed VI Tier I VV

Results expressed in micrograms per kilogram (µg/Kg) dry weight.
GNRCC = non-Residential Generic Cleanup Criteria Exceedance(s)
J = estimated concentration
(B) = background may be substituted if higher than calculated cleanup criterion.
(H) = data provided for total chromium only; evaluated against hexavalent chromium criteria.
bgs = below ground surface
CAS = Chemical Abstract Service
DCC = direct contact criteria
DWPC = drinking water protection criteria
GSIPC = groundwater surface water interface protection criteria
SVIAIC = soil volatilization to indoor air inhalation criteria
VSIC = vapor soil inhalation criteria
Proposed VI Tier I VV = proposed vapor intrusion tier I vapor values

Table 3 - Groundwater Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Monitoring Location:		TMW-01	TMW-02	TMW-03	TMW-04	TMW-06	TMW-07	TMW-08	TMW-09	DUP1	Trip Blank	PIT01	*Nonresidential DWC [1]*	*GSI Criteria [1]*	*Nonresidential Groundwater VIAIC [1]*	*Water Solubility [1]*	*Flammability and Explosivity SL [1]*	*Proposed VI Tier I SL [2]*	*Nonresidential RIASL Shallow Groundwater [3]*	*Nonresidential RIASL Groundwater [3]*
Depth (ft):		8'-12'	7'-11'	8'-12'	8'-12'	9'-13'	12'-16'	11'-15'	8'-12'											
Laboratory ID:		1909113-01	1909113-02	1909113-03	1909113-04	1909113-05	1909113-06	1909113-07	1909113-08	1909113-09	1909113-10	1909113-11								
Collection Date:		09/10/19	09/10/19	09/11/19	09/11/19	09/09/19	09/11/19	09/09/19	09/10/19	09/10/19	08/27/19	09/11/19								
Volatile Organic Compounds	***CAS Number***																			
1,1,1,2-Tetrachloroethane	630-20-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*320*	*ID*	*96,000*	*1.10E+06*	*ID*	*3.1*	--	--
1,1,1-Trichloroethane	71-55-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*200*	*89*	*1.30E+06 (S)*	*1.33E+06*	*ID*	*180 (FF)*	*750*	*41,000*
1,1,2,2-Tetrachloroethane	79-34-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*35*	*78 (X)*	*77,000*	*2.97E+06*	*ID*	*2.4*	--	--
1,1,2-Trichloroethane	79-00-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*330 (X)*	*1.10E+05*	*4.42E+06*	*NA*	*0.00047 (M*)*	--	--
1,1-Dichloroethane	75-34-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*2,500*	*740*	*2.30E+06*	*5.06E+06*	*3.80E+05*	*4.7*	*14*	*540*
1,1-Dichloroethene	75-35-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*7.0*	*130*	*1,300*	*2.25E+06*	*97,000*	*18*	*45*	*860*
1,2,3-Trichlorobenzene	87-61-6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	*58*	--	--
1,2,3-Trichloropropane	96-18-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*120*	*NA*	*18,000*	*1.90E+06*	*NA*	*1.9*	--	--
1,2,3-Trimethylbenzene	526-73-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	*43*	*71*	*3,900*
1,2,4-Trichlorobenzene	120-82-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*70*	*99 (X)*	*3.00E+05 (S)*	*3.00E+05*	*NA*	*3.8 (M*)*	*5.8*	*460*
1,2,4-Trimethylbenzene	95-63-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*63 (E)*	*17*	*56,000 (S)*	*55,890*	*56,000 (S)*	*25*	*44*	*2,200*
1,2-Dibromoethane (EDB)	106-93-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*0.050*	*5.7 (X)*	*15,000*	*4.20E+06*	*ID*	*0.13*	--	--
1,2-Dichlorobenzene	95-50-1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*600*	*13*	*1.60E+05 (S)*	*1.56E+05*	*NA*	*370*	--	--
1,2-Dichloroethane	107-06-2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*360 (X)*	*59,000*	*8.52E+06*	*2.50E+06*	*1.4*	--	--
1,2-Dichloropropane	78-87-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*230 (X)*	*36,000*	*2.80E+06*	*5.50E+05*	*2.6*	--	--
1,3,5-Trimethylbenzene	108-67-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*72 (E)*	*45*	*61,000 (S)*	*61,150*	*ID*	*18*	*34*	*1,500*
1,3-Dichlorobenzene	541-73-1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*19*	*28*	*41,000*	*1.11E+05*	*ID*	*2.6*	*4.2*	*250*
1,3-Dichloropropene, cis-	10061-01-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--
1,3-Dichloropropene, trans-	10061-02-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--
1,3-Dichloropropene (Total)	542-75-6	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	*35*	*9.0 (X)*	*26,000*	*2.80E+06*	*1.30E+05*	*3.3*	--	--
1,4-Dichlorobenzene	106-46-7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*75*	*17*	*74,000 (S)*	*73,800*	*NA*	*5.9*	*15*	*930*
2,2,4-Trimethylpentane	540-84-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*ID*	*NA*	*2,300 (S)*	*2,330*	*160*	*160.0*	--	--
2-Butanone (MEK)	78-93-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*38,000*	*2,200*	*2.40E+08 (S)*	*2.40E+08*	*ID*	*2,600 (DD)*	--	--
4-Methyl-2-pentanone (MIBK)	108-10-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*5,200*	*ID*	*2.00E+07 (S)*	*2.00E+07*	*ID*	*720 (DD)*	--	--
Acetone	67-64-1	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	*2,100*	*1,700*	*1.00E+09 (S)*	*1.00E+09*	*1.50E+07*	*50,000 (FF)*	*62,000*	*4.70E+07*
Acrylonitrile	107-13-1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*11*	*2.0 (M); 1.2*	*1.90E+05*	*7.50E+07*	*6.40E+06*	*4.6*	--	--
Benzene	71-43-2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*200 (X)*	*35,000*	*1.75E+06*	*68,000*	*1.0*	*3.0*	*120*
Bromochloromethane	74-97-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*80 (W)*	*ID*	*37,000*	*6.74E+06*	*ID*	*1.2*	--	--
Bromoform	75-25-2	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	*80 (W)*	*ID*	*3.10E+06 (S)*	*3.10E+06*	*ID*	*89*	--	--
Bromomethane	74-83-9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*29*	*5.0 (M); 4.2*	*9,000*	*1.45E+07*	*ID*	*2.1 (M*)*	--	--
Carbon Disulfide	75-15-0	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*2,300*	*ID*	*5.50E+05*	*1.19E+06*	*13,000*	*92*	--	--
Carbon Tetrachloride	56-23-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*38 (X)*	*2,400*	*7.93E+05*	*ID*	*0.41 (M*)*	--	--
Chlorobenzene	108-90-7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*100*	*25*	*4.70E+05 (S)*	*4.72E+05*	*1.60E+05*	*33*	*54*	*2,700*
Chloroethane	75-00-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*1,700*	*1,100 (X)*	*5.70E+06 (S)*	*5.74E+06*	*1.10E+05*	*620*	*1,300*	*35,000*
Chloroform	67-66-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*80 (W)*	*350*	*1.80E+05*	*7.92E+06*	*ID*	*0.49 (M*)*	*1.3*	*61*
Chloromethane	74-87-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*1,100*	*ID*	*45,000*	*6.34E+06*	*36,000*	*15*	*30*	*810*
cis-1,2-Dichloroethene	156-59-2	**15**	1 U	1 U	3.0	1 U	1 U	1 U	1 U	1 U	1 U	2.9	*70*	*620*	*2.10E+05*	*3.50E+06*	*5.30E+05*	*3.4*	*5.8*	*240*
Cyclohexane	110-82-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--	--	--	--	--	*290*	--	--
Dibromochloromethane	124-48-1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*80 (W)*	*ID*	*1.10E+05*	*2.60E+06*	*ID*	*0.78 (M*,MM)*	--	--
Dibromomethane	74-95-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*230*	*NA*	*ID*	*1.10E+07*	*ID*	*8.8*	--	--
Dichlorodifluoromethane	75-71-8	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*4,800*	*ID*	*3.00E+05 (S)*	*3.00E+05*	*ID*	*13*	--	--
Diethyl Ether	60-29-7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*10 (E)*	*ID*	*6.10E+07 (S)*	*6.10E+07*	*6.50E+05*	*1,200*	--	--
Diisopropyl ether	108-20-3	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*86*	*ID*	*8,000 (S)*	*8,041*	*8,000 (S)*	*36 (DD)*	--	--
Ethyl-tert-butyl ether (ETBE)	637-92-3	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	*49 (E)*	*ID*	*5.60E+06 (S)*	*5.63E+06*	*ID*	*22*	--	--
Ethylbenzene	100-41-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*74 (E)*	*18*	*1.70E+05 (S)*	*1.69E+05*	*43,000*	*2.8*	*8.5*	*360*
Hexachloroethane	67-72-1	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	*21*	*6.7 (X)*	*50,000 (S)*	*50,000*	*ID*	*1.5 (M*)*	--	--
Isopropylbenzene	98-82-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*2,300*	*28*	*56,000 (S)*	*56,000*	*29,000*	*0.60 (M*)*	--	--
Methyl tert-Butyl Ether (MTBE)	1634-04-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*40 (E)*	*7,100 (X)*	*4.70E+07 (S)*	*4.68E+07*	*ID*	*250*	*610*	*32,000*
Methylene Chloride	75-09-2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*5.0*	*1,500 (X)*	*1.40E+06*	*1.70E+07*	*ID*	*79 (FF)*	*490*	*20,000*
n-Butylbenzene	104-51-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*230*	*ID*	*ID*	*NA*	*ID*	*44*	--	--
n-Hexane	110-54-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*8,600*	*NA*	*12,000 (S)*	*12,000*	*12,000 (S)*	*29*	--	--
n-Propylbenzene	103-65-1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*230*	*ID*	*ID*	*NA*	*ID*	*43 (DD)*	--	--
sec-Butylbenzene	135-98-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*230*	*ID*	*ID*	*NA*	*ID*	*270*	--	--
Styrene	100-42-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*100*	*80 (X)*	*3.10E+05 (S)*	*3.10E+05*	*1.40E+05*	*33*	--	--
t-Amyl Methyl ether (TAME)	994-05-8	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U	*190 (E)*	*NA*	*5.70E+05*	*2.64E+06*	*NA*	*3.9 (M*)*	--	--
t-Butyl alcohol	75-65-0	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	*11,000*	*NA*	*1.00E+09 (S)*	*1.00E+09*	*6.10E+07*	*230*	--	--
t-Butylbenzene	98-06-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*230*	*ID*	*ID*	*NA*	*ID*	*0.077 (M*)*	--	--
Tetrachloroethene	127-18-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*5.0*	*60 (X)*	*1.70E+05*	*2.00E+05*	*ID*	*1.5 (FF)*	*4.4*	*320*
Tetrahydrofuran	109-99-9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	*270*	*11,000 (X)*	*1.60E+07*	*1.00E+09*	*60,000*	*45,000*	--	--
Toluene	108-88-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*790 (E)*	*270*	*5.30E+05 (S)*	*5.26E+05*	*61,000*	*300 (FF)*	*850*	*1.10E+05*
trans-1,2-Dichloroethene	156-60-5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*100*	*1,500 (X)*	*2.00E+05*	*6.30E+06*	*2.30E+05*	*27 (FF)*	*78*	*6,500*
Trichloroethene	79-01-6	**51**	**5.6**	1 U	**84**	1 U	1 U	1 U	**1.1**	**1.1**	1 U	**16**	*5.0*	*200 (X)*	*4,900*	*1.10E+06*	*ID*	*0.073 (M*,DD)*	*0.21 (M*)*	*21*
Trichlorofluoromethane	75-69-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*7,300*	*NA*	*1.10E+06 (S)*	*1.10E+06*	*ID*	*22*	--	--
Vinyl Chloride	75-01-4	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*2.0*	*13 (X)*	*13,000*	*2.76E+06*	*33,000*	*0.12 (M*,MM)*	*1.8*	*28*
Xylenes, meta- & para-	179601-23-1	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	--	--	--
Xylene, ortho-	95-47-6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	--	--	--	--	--	--	--
Xylenes, Total	1330-20-7	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	*280 (E)*	*49*	*1.90E+05 (S)*	*1.86E+05*	*70,000*	*75*	*140*	*6,000*

Table 3 - Groundwater Data Summary
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Monitoring Location:		TMW-01	TMW-02	TMW-03	TMW-04	TMW-06	TMW-07	TMW-08	TMW-09	DUP1	Trip Blank	PIT01	*Nonresidential DWC [1]*	*GSI Criteria [1]*	*Nonresidential Groundwater VIAIC [1]*	*Water Solubility [1]*	*Flammability and Explosivity SL [1]*	*Proposed VI Tier I SL [2]*	*Nonresidential RIASL Shallow Groundwater [3]*	*Nonresidential RIASL Groundwater [3]*
Depth (ft):		8'-12'	7'-11'	8'-12'	8'-12'	9'-13'	12'-16'	11'-15'	8'-12'											
Laboratory ID:		1909113-01	1909113-02	1909113-03	1909113-04	1909113-05	1909113-06	1909113-07	1909113-08	1909113-09	1909113-10	1909113-11								
Collection Date:		09/10/19	09/10/19	09/11/19	09/11/19	09/09/19	09/11/19	09/09/19	09/10/19	09/10/19	08/27/19	09/11/19								
Polynuclear Aromatic Compounds	***CAS Number***																			
2-Methylnaphthalene	91-57-6	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	--	5 UJ	*750*	*19*	*25,000 (S)*	*24,600*	*ID*	*66*	--	--
Acenaphthene	83-32-9	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	--	1 UJ	*3,800*	*38*	*4,200 (S)*	*4,240*	*ID*	*3,900 (S)*	--	--
Acenaphthylene	208-96-8	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	--	1 UJ	*150*	*ID*	*3,900 (S)*	*3,930*	*ID*	*65*	--	--
Anthracene	120-12-7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*43 (S)*	*ID*	*43 (S)*	*43.4*	*ID*	*43 (S)*	--	--
Benzo(a)anthracene	56-55-3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*8.5*	*ID*	*NLV*	*9.4*	*ID*	*9.4 (S)*	--	--
Benzo(a)pyrene	50-32-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*5.0*	*ID*	*NLV*	*1.62*	*ID*	*NA*	--	--
Benzo(b)fluoranthene	205-99-2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*1.5 (S,AA)*	*ID*	*ID*	*1.5*	*ID*	*NA*	--	--
Benzo(g,h,i)perylene	191-24-2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*1.0 (M); 0.26 (S)*	*ID*	*NLV*	*0.26*	*ID*	*NA*	--	--
Benzo(k)fluoranthene	207-08-9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*1.0 (M); 0.80 (S)*	*NA*	*NLV*	*0.80*	*ID*	*NA*	--	--
Chrysene	218-01-9	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*1.6 (S)*	*ID*	*ID*	*1.6*	*ID*	*NA*	--	--
Dibenzo(a,h)anthracene	53-70-3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	*2.0 (M); 0.85*	*ID*	*NLV*	*2.49*	*ID*	*NA*	--	--
Fluoranthene	206-44-0	1 U	1.0	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*210 (S)*	*1.6*	*210 (S)*	*206*	*ID*	*NA*	--	--
Fluorene	86-73-7	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	--	1 UJ	*2,000 (S)*	*12*	*2,000 (S)*	*1,980*	*ID*	*1,700 (S)*	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	2 U	*2.0 (M); 0.022 (S)*	*ID*	*NLV*	*0.022*	*ID*	*NA*	--	--
Naphthalene	91-20-3	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	--	1 UJ	*1,500*	*11*	*31,000 (S)*	*31,000*	*NA*	*4.2 (M*)*	--	--
Phenanthrene	85-01-8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*150*	*2.0 (M); 1.7*	*1,000 (S)*	*1,000*	*ID*	*0.077 (M*)*	--	--
Pyrene	129-00-0	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	--	1 U	*140 (S)*	*ID*	*140 (S)*	*135*	*ID*	*140 (S)*	--	--
Metals, Total	***CAS Number***																			
Arsenic (B)	7440-38-2	**950**	**19**	**190**	**180**	**36**	**130**	**77**	**16**	**17**	--	1 U	*10*	*10*	*NLV*	*NA*	*ID*	*NA*	--	--
Barium (B)	7440-39-3	400	350	820	**2,200**	150	250	220	220	230	--	130	*2,000*	*670 (G)*	*NLV*	*NA*	*ID*	*NA*	--	--
Cadmium (B)	7440-43-9	2.0	1.2	1.6	1.4	0.80	0.30	0.2 U	1.1	1.2	--	0.2 U	*5.0*	*3.0 (G,X)*	*NLV*	*NA*	*ID*	*NA*	--	--
Chromium, Total (B, H)	7440-47-3	**120**	**33**	**63**	**31**	**41**	**19**	6.6	**14**	**15**	--	1 U	*100*	*11*	*NLV*	*NA*	*ID*	*NA*	--	--
Copper (B)	7440-50-8	**170**	**100**	**200**	**140**	**65**	**39**	7.7	**25**	**25**	--	1 U	*1,000 (E)*	*13 (G)*	*NLV*	*NA*	*ID*	*NA*	--	--
Lead (B)	7439-92-1	**1,100**	**630**	**120**	**91**	**53**	**35**	**7.6**	**48**	**51**	--	1 U	*4.0 (L)*	*34 (G,X)*	*NLV*	*NA*	*ID*	*NA*	--	--
Mercury (B)	7439-97-6	**0.30**	**0.40**	**0.20**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	*2.0*	*0.0013*	*56 (S)*	*56*	*ID*	*0.088*	*0.14*	*7.2*
Selenium (B)	7782-49-2	**18**	1.9	3.4	2.2	2.8	1.6	1 U	1.5	1.3	--	1 U	*50*	*5.0*	*NLV*	*NA*	*ID*	*NA*	--	--
Silver (B)	7440-22-4	**0.40**	**0.30**	**0.50**	**0.30**	**0.30**	0.2 U	0.2 U	0.2 U	0.2 U	--	0.2 U	*98*	*0.20 (M); 0.060*	*NLV*	*NA*	*ID*	*NA*	--	--
Zinc (B)	7440-66-6	**990**	**430**	**470**	**320**	**290**	81	100	**300**	**320**	--	5 U	*5,000 (E)*	*170 (G)*	*NLV*	*NA*	*ID*	*NA*	--	--

Results expressed in µg/L.
Bolded values exceed an applicable criterion or screening level.

Data Qualifiers:
J Estimated value
U Not detected

Footnotes/Abbreviations:
[1] Part 201 Groundwater Generic Cleanup Criteria/Part 213 Tier 1 Risk-based Screening Levels, January 10, 2018 (GSI Criteria Updated June 25, 2018).
[2] Proposed VI Tier 1 Groundwater, Soil and Vapor Screening Levels, Part 201 Generic Screening Levels/Part 213 Risk-based Screening Levels, August 29, 2017.
[3] MDEQ Media Specific Volatilization to Indoor Air Interim Action Screening Levels, August, 2017.
These screening levels are not intended for compliance or for obtaining closure of a release. However, based upon adequate investigation and characterization, further action for these chemicals for volatilization to indoor air may not be necessary if concentrations do not exceed the residential screening levels for soil vapor, soil and shallow groundwater. Typically, an exceedance of a time-sensitive screening level in any media will warrant expedited
(B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated criterion.
(E) Aesthetic drinking water value. Notice of aesthetic impact may be employed as an institutional control if concentration exceeds the aesthetic DWC but not the health-based DW value.
(G) Criterion dependent on receiving surface water hardness; calculated criteria based on water hardness of 150 mg/L.
(H) Data provided for total Chromium only; compare to hexavalent Chromium criteria.
(L) Concentrations up to the State action level of 15 µg/L may still allow for drinking water use if soil concentrations are below 400 mg/Kg.
(M) Calculated criterion is below the target detection limit (TDL); first number is the criterion (TDL), the second is the risk-based value.
(M*) Calculated health-based value is below the analytical target detection limit (TDL), therefore, the TDL is the criterion. The TDL is established specific for an individual environmental medium. The volatilization to indoor air pathway is evaluated using criterion for soil, groundwater and vapor pursuant to R 299.27. When a volatilization to indoor air criterion is the TDL for one or more medium, further evaluation of the remaining media is required to demonstrate compliance for the pathway.
(S) Criterion defaults to the hazardous substance-specific water solubility limit.
(W) Concentrations of trihalomethanes must be added together to determine compliance with the DWC.
(X) Criterion is not protective for surface water used as a drinking water source.
(AA) Use 10,000 µg/L where groundwater enters a structure through the use of a water well, sump or other device. Use 28,000 µg/L for all other uses.
(DD) Hazardous substance causes developmental effects. Residential criteria are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential criteria are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after a single exposure (SE) or full-term (FT) exposure. Oral exposure pathways are drinking water and soil direct contact. Inhalation exposure pathways are ambient air and volatilization to indoor air.
(FF) The residential or nonresidential acceptable air concentration (AAC) for the following volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures. The short-term exposure for shallow groundwater screening levels or criterion is based solely on the equations o
(MM) Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based values shall be modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
DWC drinking water criterion
GSI groundwater surface water interface
ID Insufficient data to develop criterion.
NA not available
NLV Not likely to volatilize under most conditions.
RIASL recommended interim action screening levels
SL screening level
VI vapor intrusion
VIAIC volatilization to indoor air inhalation criteria

Table 4 - Groundwater Data Exceeding GNRCC
Documentation of Due Care Compliance
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location (feet bgs)	Date Collected	Hazardous Substance	CAS No.	Concentration	Non-Residential Generic Cleanup Criteria Exceedance(s)
TMW-01 (8-12)	9/10/2019	cis-1,2-Dichloroethene	156-59-2	15	Proposed VI Tier I VV
		Trichloroethene	79-01-6	51	DWC, Proposed VI Tier I VV
		Arsenic (B)	7440-38-2	950	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	120	DWC, GSIC
		Copper (B)	7440-50-8	170	GSIC
		Lead (B)	7439-92-1	1,100	DWC, GSIC
		Mercury (Total) (B)	7439-97-6	0.30	GSIC
		Selenium (B)	7782-49-2	18	GSIC
		Silver (B)	7440-22-4	0.40	GSIC
		Zinc (B)	7440-66-6	990	GSIC
TMW-02 (7-11)	9/10/2019	Trichloroethene	79-01-6	5.6	DWC, Proposed VI Tier I VV
		Arsenic (B)	7440-38-2	19	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	33	GSIC
		Copper (B)	7440-50-8	100	GSIC
		Lead (B)	7439-92-1	630	DWC, GSIC
		Mercury (Total) (B)	7439-97-6	0.40	GSIC
		Silver (B)	7440-22-4	0.30	GSIC
		Zinc (B)	7440-66-6	430	GSIC
TMW-03 (8-12)	9/11/2019	Arsenic (B)	7440-38-2	190	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	63	GSIC
		Copper (B)	7440-50-8	200	GSIC
		Lead (B)	7439-92-1	120	DWC, GSIC
		Mercury (Total) (B)	7439-97-6	0.20	GSIC
		Silver (B)	7440-22-4	0.50	GSIC
		Zinc (B)	7440-66-6	470	GSIC
TMW-04 (8-12)	9/11/2019	Trichloroethene	79-01-6	84	DWC, Proposed VI Tier I VV
		Arsenic (B)	7440-38-2	180	DWC, GSIC
		Barium (B)	7440-39-3	2,200	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	31	GSIC
		Copper (B)	7440-50-8	140	GSIC
		Lead (B)	7439-92-1	91	DWC, GSIC
		Silver (B)	7440-22-4	0.30	GSIC
		Zinc (B)	7440-66-6	320	GSIC
TMW-06 (9-13)	9/9/2019	Arsenic (B)	7440-38-2	36	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	41	GSIC
		Copper (B)	7440-50-8	65	GSIC
		Lead (B)	7439-92-1	53	DWC, GSIC
		Silver (B)	7440-22-4	0.30	GSIC
		Zinc (B)	7440-66-6	290	GSIC
TMW-07 (12-16)	9/11/2019	Arsenic (B)	7440-38-2	130	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	19	GSIC
		Copper (B)	7440-50-8	39	GSIC
		Lead (B)	7439-92-1	35	DWC, GSIC

Table 4 - Groundwater Data Exceeding GNRCC
Documentation of Due Care Compliance
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Location (feet bgs)	Date Collected	Hazardous Substance	CAS No.	Concentration	Non-Residential Generic Cleanup Criteria Exceedance(s)
TMW-08 (11-15)	9/9/2019	Arsenic (B)	7440-38-2	77	DWC, GSIC
		Lead (B)	7439-92-1	7.6	DWC
TMW-09 (8-12)	9/10/2019	Trichloroethene	79-01-6	1.1	Proposed VI Tier I VV
		Arsenic (B)	7440-38-2	16	DWC, GSIC
		Chromium, Total (B, H)	7440-47-3	14	GSIC
		Copper (B)	7440-50-8	25	GSIC
		Lead (B)	7439-92-1	48	DWC, GSIC
		Zinc (B)	7440-66-6	300	GSIC
PIT 01	9/11/2019	Trichloroethene	79-01-6	1.1	DWC, Proposed VI Tier I VV

Results expressed in micrograms per liter (µg/L).
J = estimated concentration
(B) = background may be substituted if higher than calculated cleanup criterion.
(H) = Data provided for total chromium only; evaluated against hexavalent chromium criteria.
bgs = below ground surface
CAS = Chemical Abstract Service
DWP = drinking water criteria
GSIC = groundwater surface water interface criteria
Proposed VI Tier I VV = proposed vapor intrusion tier I vapor values

Table 5 - Exposure Pathway Evaluation - Soil

Documentation of Due Care Compliance

Klein Tools, 121 Water St., Jonesville, Michigan

September 2019

Pathway	Potentially Complete Exposure Pathway?	Criteria Exceeded	Location Exceeded (Depth Feet BGS)	Notes
		NonResidential		
DWPC	Yes	Anthracene	SB-04 (3-4)	Pathway is restricted, municipal water is provided.
		Arsenic	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-06 (8-9)	
		Cadmium	SB-01 (1-2)	
		Chromium, Total	SB-01 (1-2)	
			SB-07 (11-12)	
		cis-1,2-Dichloroethene	SB-01 (1-2)	
		Lead	SB-02 (5-6)	
		Phenanthrene	SB-04 (3-4)	
		Tetrachloroethene	SB-08 (8-12)	
		Trichloroethene	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-05 (2-4)	
		Vinyl chloride	SB-01 (1-2)	
GSIPC	Yes	Acenaphthene	SB-04 (3-4)	This criterion is not used to assess due care obligations with regards to exposure controls. GSIPC and GSIC were established to assess the potential impacts of a contaminant to flora and fauna in surface water bodies.
		Arsenic	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-06 (8-9)	
		Cadmium	SB-01 (1-2)	
		Chromium, Total	SB-01 (1-2)	
			SB-04 (3-4)	
			SB-07 (11-12)	
		Copper	SB-07 (11-12)	
		Fluoranthene	SB-04 (3-4)	
			SB-05 (2-4)	
		Fluorene	SB-04 (3-4)	
		Lead	SB-02 (5-6)	
		Mercury	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-05 (2-4)	
			SB-07 (11-12)	
		Naphthene	SB-04 (3-4)	
			SB-05 (2-4)	
		Phenanthrene	SB-01 (1-2)	
			SB-04 (3-4)	
			SB-05 (2-4)	

Table 5 - Exposure Pathway Evaluation - Soil

Documentation of Due Care Compliance

Klein Tools, 121 Water St., Jonesville, Michigan

September 2019

Pathway	Potentially Complete Exposure Pathway?	Criteria Exceeded	Location Exceeded (Depth Feet BGS)	Notes
		NonResidential		
GSIPC (continued)	Yes	Selenium	SB-01 (1-2)	This criterion is not used to assess due care obligations with regards to exposure controls. GSIPC and GSIC were established to assess the potential impacts of a contaminant to flora and fauna in surface water bodies.
			SB-02 (5-6)	
			SB-03 (7-8)	
			SB-04 (3-4)	
			SB-06 (8-9)	
			SB-07 (11-12)	
		Trichloroethene	SB-01 (1-2)	
			SB-04 (3-4)	
		Zinc	SB-02 (5-6)	
			SB-04 (3-4)	
			SB-05 (2-4)	
DCC	Yes	Benzo(a)anthracene	SB-04 (3-4)	NonResidential pathway is restricted due to depth of contaminant and presence of the building and pavement.
		Benzo(a)pyrene	SB-04 (3-4)	
			SB-05 (2-4)	
		Benzofluroanthene	SB-04 (3-4)	
		Lead	SB-02 (5-6)	
SVIAIC	Yes	Trichloroethene	SB-01 (1-2)	Pathway is relevant due to the potential migration of volatile chemicals in the subsurface into overlying building; however, the building is vacant with restricted access.
			SB-04 (3-4)	
Proposed VI Tier I VV	Yes	1,2,4-Trimethylbenzene	SB-01 (1-2)	Pathway is relevant due to the potential migration of volatile chemicals in the subsurface into overlying building; however, the building is vacant with restricted access.
		cis-1,2-Dichloroethene	SB-01 (1-2)	
			SB-02 (5-6)	
		Ethylbenzene	SB-01 (1-2)	
		Mercury	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-05 (2-4)	
			SB-07 (11-12)	
		Naphthene	SB-04 (3-4)	
			SB-05 (2-4)	
		Tetrachloroethene	SB-08 (8-12)	
		trans-1,1-Dichloroethene	SB-01 (1-2)	
			SB-02 (5-6)	
		Trichloroethene	SB-01 (1-2)	
			SB-02 (5-6)	
			SB-04 (3-4)	
			SB-05 (2-4)	
			SB-08 (8-12)	
		Vinyl chloride	SB-01 (1-2)	

DWPC - Drinking Water Protection Criteria

GSIPC - Groundwater/Surface Water Protection Criteria

DCC - Direct Contact Criteria

SVIAIC - Soil Volatilization to Indoor Air Inhalation Criteria

Proposed VI Tier I VV = Proposed Vapor Intrusion Tier I Vapor Values

Table 6 - Exposure Pathway Evaluation - Groundwater

Documentation of Due Care Compliance

Klein Tools, 121 Water St., Jonesville, Michigan

September 2019

Pathway	Potentially Complete Exposure Pathway?	Criteria Exceeded	Location Exceeded (Depth Feet BGS)	Notes
		NonResidential		
DWC	Yes	Arsenic	TMW-01 (8-12)	Pathway is restricted, municipal water is provided.
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-08 (11-15)	
			TMW-09 (8-12)	
		Barium	TMW-04 (8-12)	
		Chromium, Total	TMW-01 (8-12)	
		Lead	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-08 (11-15)	
			TMW-09 (8-12)	
		Trichloroethene	Pit 01 (NA)	
			TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-04 (8-12)	
GSIC	Yes	Arsenic	TMW-01 (8-12)	This criterion is not used to assess due care obligations with regards to exposure controls. GSIPC and GSIC were established to assess the potential impacts of a contaminant to flora and fauna in surface water bodies.
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-08 (11-15)	
			TMW-09 (8-12)	
		Barium	TMW-04 (8-12)	
		Chromium, Total	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-09 (8-12)	
		Copper	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-09 (8-12)	
		Lead	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-07 (12-16)	
			TMW-09 (8-12)	
		Mercury	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
		Selenium	TMW-01 (8-12)	
		Silver	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
		Zinc	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-03 (8-12)	
			TMW-04 (8-12)	
			TMW-06 (9-13)	
			TMW-09 (8-12)	
Proposed VI Tier I VV	Yes	cis-1,2-Dichloroethene	TMW-01 (8-12)	Pathway is relevant due to the potential migration of volatile chemicals in the subsurface into overlying building; however, the building is vacant with restricted access.
		Trichloroethene	TMW-01 (8-12)	
			TMW-02 (7-11)	
			TMW-04 (8-12)	
			TMW-09 (8-12)	
			Pit 01 (NA)	

NA= Not Applicable

DWC = Drinking Water Criteria

GSIC = Groundwater/Surface Water Criteria

Proposed VI Tier I VV = Proposed Vapor Intrusion Tier I Vapor Values

Table 7 - Soil Gas and Indoor Air Data Exceedances
Documentation of Due Care Compliance
Klein Tools, 121 Water St., Jonesville, Michigan
September 2019

Sample Type	Sample Location	Date Collected	Hazardous Substance	CAS No.	Concentration	Non-Residential Generic Cleanup Criteria Exceedance(s)
Soil Gas	19VP-01-SS	9/10/2019	Trichloroethene	79-01-6	520	Proposed VI Tier I VV[(1)]
	19VP-02-SS	9/10/2019	Trichloroethene	79-01-6	1,000	Proposed VI Tier I VV[(1)]
	19VP-03-SS	9/10/2019	Trichloroethene	79-01-6	2,700	Proposed VI Tier I VV[(1)]
	19VP-04-SS	9/10/2019	Chloroform	67-66-3	370	Proposed VI Tier I VV[(1)]
			cis-1,2-Dichloroethene	156-59-2	1,300	
			Trichloroethene	79-01-6	690,000	
	19VP-05-SS	9/10/2019	Trichloroethene	79-01-6	740	Proposed VI Tier I VV[(1)]
	19VP-07-SS	9/10/2019	Chloroform	67-66-3	86	Proposed VI Tier I VV[(1)]
			cis-1,2-Dichloroethene	156-59-2	310	
			Trichloroethene	79-01-6	84,000	
	19VP-08-SS	9/10/2019	Chloroform	67-66-3	39	Proposed VI Tier I VV[(1)]
			cis-1,2-Dichloroethene	156-59-2	670	
			Trichloroethene	79-01-6	60,000	
	19VP-09-SS	9/10/2019	Trichloroethene	79-01-6	110	Proposed VI Tier I VV[(1)]
Indoor Air	IA-04-24	9/9/2019	Trichloroethene	79-01-6	11	Nonresidential $RIASL_{12}$ Indoor Air[(2)] Nonresidential $TSRIASL_{12}$ Indoor Air[(2)]

Results are expressed in micrograms per cubic meter ($\mu g/m^3$).

[(1)]Proposed VI Tier 1 Groundwater, Soil and Vapor Screening Levels, Part 201 Generic Screening Levels/Part 213 Risk-based Screening Levels, August 29, 2017.

[(2)] *MDEQ Media Specific Volatilization to Indoor Air Interim Action Screening Levels, August, 2017.*

These screening levels are not intended for compliance or for obtaining closure of a release. However, based upon adequate investigation and characterization, further action for these chemicals for volatilization to indoor air may not be necessary if concentrations do not exceed the residential screening levels for soil vapor, soil and shallow groundwater. Typically, an exceedance of a time-sensitive screening level in any media will warrant expedited investigation and possible mitigation.