Memorandum

December 11, 2019

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Subject:	**Estimation of Mass Flux and Mass Discharge to Silver Creek RACER Trust Property, Toledo, Ohio**		

1. Introduction

This memorandum has been prepared to document a very conservative estimate of groundwater flux, contaminant mass flux, and total mass discharge from the west side of the capped Former Disposal Area (FDA) to Silver Creek, located south of the FDA. Figure 1 presents the location of the Site.

By utilizing very conservative estimates of input parameters into the calculations, a "worst case" scenario can be determined. This "worst case" scenario is then evaluated with respect to potential receptor effects, and can be used to determine if further evaluation is required. If, under very conservative estimates, there is no potential for receptor effects, then further evaluation would not be required. If the initial evaluation showed the potential for significant receptor effects, then additional data may be required to refine the inputs used in the calculations of environmental and/or receptor effects. A key component of this initial evaluation is the assumption that the sheet pile wall does not exist in this section of the FDA.

The information provided in this memorandum also supports the Migration of Contaminated Groundwater Under Control CA750 evaluation (GHD, 2019).

1.1 Overview of Groundwater Flux, Contaminant Mass Flux, and Total Mass Discharge

The Interstate Technology & Regulatory Council (ITRC) prepared and published the document entitled "Use and Measurement of Mass Flux and Mass Discharge" in August 2010. The mass flux and total mass discharge are useful for the assessment of:

- Reduction in total mass discharge along a flow path is the best estimate of natural attenuation of the plume
- The total mass discharge is the best estimate of the amount of contaminant leaving the Site
- The total mass discharge is the best estimate of loading to a receptor

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1.1.1 Definitions and Equations

Groundwater Flux

Groundwater flux is characterized as the flow of groundwater through a defined area during a defined period of time (ITRC, 2010). Groundwater flux is usually thought of as a volume per unit (or total) cross-sectional area per unit time ($L^3/L^2/T$). In addition, groundwater flux can be thought of as flow per unit time (L^3/T), without specifically defining the cross-sectional area. The relevant equation is the Darcy equation:

$$Q = K \times i \times A$$

Where:

Q = Volumetric flow per unit area per unit time ($L^3/L^2/T$)

K = Hydraulic conductivity (L/T)

i = Horizontal hydraulic gradient (L/L = unitless)

A = Unit (or total) cross-sectional area (L^2)

When unit cross-sectional area is 1, the Darcy equation simplified to specific discharge q = Ki, where q is expressed in units of L/T.

Mass Flux

Mass flux is characterized as the amount of chemical mass flowing through a defined unit area during a defined period of time (ITRC, 2010). Mass flux is usually thought of as mass per unit cross-sectional area per unit time. Furthermore, as chemical concentrations can vary laterally and/or vertically from sampling point to sampling point, mass flux is a unique calculated value for each unique unit cross-sectional area. The relevant equation is:

$$J = K \times i \times C$$

Where:

J = Contaminant mass flux ($M/T/L^2$)

K = Hydraulic conductivity (L/T)

i = Horizontal hydraulic gradient (L/L = unitless)

C = Concentration (M/L^3)

The mass flux is simply the concentration times the groundwater flux per unit area per unit time for each unique unit cross-sectional area.

Total Mass Discharge

The total mass discharge is characterized as the sum of the individual unit area mass fluxes for the entire cross-sectional area of the contaminant plume per unit time. The relevant equation is:

$$M = \int_A J \times \partial A$$

Where:

M = Total mass discharge (M/T)

$\int_A$ = Integration across the cross-sectional area

J = Contaminant mass flux per unique unit area ($M/T/L^2$)

∂A = Cross-sectional area (L^2)

1.1.2 Summary of Mass Flux Concepts

Mass flux (per unit area) and total mass discharge (sum of mass fluxes per unit area) are methods to evaluate chemical mass leaving a Site, potential loading and exposures at receptors, and aids in remedial design selection.

Mass flux/mass discharge evaluations are typically conducted using transects perpendicular to groundwater flow with at least several, and preferably a relatively large number of sampling points to develop the horizontal and vertical concentration profile along the transect. The cross-section profile should be delineated or at least estimates of where the contaminant plume is present and not present can be made with a degree of certainty in order to constrain the groundwater plume and resultant mass calculation. Additional information requirements include hydraulic conductivity estimates for each hydrostratigraphic unit and the horizontal hydraulic gradient.

The transect is divided into unit cells, each of which have a unique mass flux based on stratigraphy and geochemical concentrations. The unit cell dimensions can individually vary as long as the summation of the mass flux per unit cell can be achieved.

Spatial variability in hydraulic conductivity (physical property of the soil) is related to the Conceptual Site Model (CSM) defined hydrostratigraphy but can be much more variable than the CSM hydrostratigraphy indicates. For that reason, higher but still representative hydraulic conductivities can be used to represent worst-case (highest flux) scenarios.

Spatial variability in contaminant concentration is also related to the physical properties of the soil and the observation point location relative to the source. Spatial variability is controlled by monitoring point location plus advection, dispersion, diffusion, and various attenuation processes. Groundwater samples offer a transmissivity-weighted and concentration-transmissivity weighted average of the zone contributing water to the sampling device. Therefore, using the highest concentration in calculations provides a worst-case scenario, while the average concentration provides a realistic time-weighted scenario (assuming parameter concentrations do not have an underlying trend).

Thus for a reliable mass flux/total mass discharge evaluation, a relatively well-defined hydrostratigraphic transect with appropriate hydraulic conductivity values for each hydrostratigraphic unit is required. A contaminant concentration profile along the line of transect is also required.

2. Data Sources

This section presents the available data sources based on historic Site investigations and geochemical sampling. It is acknowledged that there are limited data available for this portion of the Site, and thus a very conservative approach has been taken for the mass flux and mass discharge evaluation. The available data is considered sufficient for the initial evaluation undertaken in this memorandum, in order to determine whether there is a potential for receptor effects.

As part of the mass flux and mass discharge evaluation, the groundwater levels in the soil materials west of the FDA are assumed to be in approximate equilibrium with precipitation recharge, within natural ranges of groundwater elevations. The FDA was capped with a synthetic liner and soil to prevent infiltration. Groundwater levels within the FDA are assumed to be at equilibrium with the very small amount of leakage through the cap, and the limited groundwater inflow from upgradient of the FDA in the predominantly silty clay material (e.g., MW117-99). The presence of the cover system significantly reduces the geochemical flux from the FDA.

Data from various historic investigations and reports have been incorporated into this memorandum either from the original source (historically submitted to USEPA), or as compiled in more recent reports submitted to USEPA. Where required, professional judgement (data review, literature sources, professional experience) has been used, and the rationale is discussed for each data point/data set. The data sources used to determine the various input parameters are described below. Section 3 presents the calculations of each input parameter.

Geological Cross-Sections

Geologic cross-sections have been prepared and submitted in at least two reports relevant to this memorandum and are attached to this memorandum: "Evaluation of Proposed Changes to the Groundwater/Leachate Collection and Discharge System Work Plan" (CRA, December 2010) (Attachment A) and "Final Corrective Measures Proposal" (GHD, 2019) (Attachment B).

Hydrostratigraphy

The general stratigraphic sequence consists of fill (where present), and native clay to silty clay, sand to silty sand, and clay to silty clay layers. The sand to silty sand unit(s) are found both within and on top of the clay to silty clay unit.

The hydrostratigraphic units consist of saturated portions of the fill, and saturated portions of the native sand to silty sand, and silty clay units. Portions of these units are above the water table (unsaturated) and are not considered part of the mass flux transects.

Hydraulic Conductivity

Hydraulic conductivity testing was conducted in approximately 1999 on eight monitoring wells installed during 1998 and 1999. Hydraulic conductivity testing has not been conducted on more recently installed monitoring wells. The results from the hydraulic conductivity testing (Attachment C) were reviewed and compared to the stratigraphic logs, and used to assign an estimated hydraulic conductivity value for the silty sand unit. In the absence of hydraulic conductivity testing of the silty clay unit, a value was assigned based on professional judgement and literature values.

Horizontal Hydraulic Gradient

Contoured groundwater elevations from June and December 2017, collected after the shutdown of the leachate collection system are presented in Attachment B. These groundwater elevation contours are for wells located within or adjacent to the FDA. On the west side of the FDA, there are no active monitoring wells between MW150-15 (near north end of sheet pile wall) and Silver Creek. As such groundwater elevations for MW150-15 and surface water elevations for Silver Creek can be used to establish an estimated horizontal hydraulic gradient.

Historical groundwater elevation contours from 1998 are also presented in Attachment B. These groundwater contours were developed from groundwater elevations measured prior to capping and installation of the sheet pile wall, and represent estimated natural horizontal hydraulic gradients prior to the implementation of remedial measures.

Geochemical Data

Tabulated geochemistry data is presented in Attachment D for the period 2012 through 2019 for monitoring wells in the vicinity of the west side of the FDA (MW146-12, MW150-15, MW151-15). These data reflect both pre- and post-leachate collection system shutdown. Both total and dissolved (field filtered via 0.45 µm in-line filter) concentrations are presented for polychlorinated biphenyls (PCBs) due to the strong tendency for PCBs to sorb to particulates and the very low solubility of PCBs. Concentrations of dissolved versus total PCBs vary, but dissolved (field filtered using 0.45 micrometre [µm] disposable inline filter) PCBs are often up to an order of magnitude lower in concentration than total (unfiltered) concentrations. These data have been screened against the USEPA Regional Screening Levels for Chemical Contaminants at Superfund Sites to identify parameter concentrations that may exceed screening levels. The parameter of concern at MW150-15 was vinyl chloride. Detections of polychlorinated biphenyls at MW146-12 have been also considered a parameter of concern.

3. Mass Flux and Total Mass Discharge Determination

The mass flux and total mass discharge data and calculations are described in the following subsections. These calculations use the limited available Site data in a very conservative fashion, as described below.

3.1 Determination of Input Values

Geologic Cross-Section

The portion of west to east geologic cross-section A-A', from HA-F4-00 through MW150-15 through MW146-12 to BH120-98 (and further east) is presented in Attachment B. This cross-sectional area is larger than the maximum width that the plume could be traveling south (out of the line of section) due to the presence of the sheet pile wall (south) and sheet pile wing wall (west).

The sheet pile wing wall is located just south of and between MW150-15 to MW146-12, and blocks flow from the south end of the FDA to Ditch A. The presence of the west to east sheet pile wall located south of MW146-12, would block all southward flow from the FDA, unless overtopped (groundwater elevations above 599 ft AMSL). Therefore, there is minimal actual groundwater flow to the south from MW146-12 to outside of the FDA because of the presence of the sheet pile wall. Any actual flow from the FDA would occur in a southwest direction from the west side of the central and north portions of the FDA toward existing monitoring wells MW151-15 and MW150-15. This flow is essentially "around" the west sheet pile wing wall. Once past the limits of the FDA, the groundwater flow is southward.

In order to simplify the calculations of mass flux in an area of potentially variable groundwater flow directions in such a small area, it has been assumed that groundwater flows southward only, and that the described cross-sectional area within the FDA contributes groundwater and chemical mass, despite the presence of the sheet pile wall. Assuming that the sheet pile wall and west sheet pile wing wall are absent is the most conservative assumption for groundwater flow.

For the purpose of the mass flux determination, the base of the geologic cross-section has been assigned an elevation of 590 feet Above Mean Sea Level (ft AMSL), at least 6 ft below the silty sand/clay contact. This represents a cross-sectional area of approximately 65 ft wide and 16 ft high (varying height due to topographic relief and varying groundwater elevation). The very low hydraulic conductivity, and thus low groundwater and mass flux from the lower silty clay zone, provides a reasonable lower elevation cutoff to groundwater discharge to Silver Creek.

For calculation purposes, the cross-sectional area was broken into two sections with four hydrostratigraphic units in each section (forming eight unit areas). Section 1 extends from near HA-F4-00 through MW150-15 to the midpoint between MW150-15 and MW146-12. This section is 34 ft wide. This easterly endpoint (midpoint between MW150-15 and MW146-12) is at the approximate westerly limit of waste within the FDA. It is assumed that little impacted groundwater exists beyond 10 ft west of HA-F4-00 (about 16 ft west of MW150-15), and this is considered the western limit of Section 1.

Section 2 extends from the midpoint between MW150-15 and MW146-12 (approximate western limit of waste within the FDA) to the midpoint between MW146-12 and BH120-98. This section is 30 ft wide, located wholly within the capped portion of the FDA, and includes the fill/waste within the FDA. This eastern section has been included for conservative calculation purposes in order to encompass the potential for groundwater to flow around the sheet pile wing wall, over the top of the sheet pile wall to the southwest during periods of high groundwater elevation, or beneath the sheet pile wall (within the lower silty clay unit). The actual flow beyond the sheet pile wall to the west, southwest, or south is expected to be minimal compared to the conservative groundwater flux calculations provided herein.

The sheet pile wing wall begins just south of the line of cross-section and is not shown on the cross-section (see the map presented as Figure 8 in Attachment B). However, the top of the sheet pile wing wall was installed to an elevation of 599 ft AMSL, and the bottom of the sheet pile wing wall was installed to an elevation of 588 ft AMSL, deep into the native silty clay unit. The sheet pile wing wall prevents groundwater flow from the south end of the FDA to the west.

Hydrostratigraphy

The hydrostratigraphic units consist of the saturated fill (east of the sheet pile wing wall), upper saturated clay unit, saturated silty sand unit, and lower saturated clay unit to an elevation of 590 ft AMSL.

Hydraulic Conductivity

The hydraulic conductivity of the clay to silty clay unit was assigned a value of 1 x 10^{-5} cm/sec, (0.028 ft/day) based on professional judgement and literature values for silty clay. This value is an estimated 1 order of magnitude higher than suggested based on the stratigraphic logs and the description of soil plasticity, for conservative calculation purposes. This allows for an order of magnitude greater groundwater and mass flux in order to be conservative.

The silty sand was assigned the highest hydraulic conductivity for silty sand of 4 x 10^{-3} cm/sec (11.3 ft/day) from the tabulated data provided in Attachment C. The range of hydraulic conductivity for the four silty sand wells tested historically (MW101-98, MW107-99, MW110-99, MW111-99) was 1.6 x 10^{-3} to 4.1 x 10^{-3} cm/sec (4.5 to 11.6 ft/day). These wells are located adjacent to the FDA, former stormwater pond (FSP) or on the adjacent property.

The hydraulic conductivity for the fill material has been assigned the same value as for silty sand as the fill material is generally composed of similar soil types.

Horizontal Hydraulic Gradient

The horizontal hydraulic gradient between MW146-12 (FDA) to MW150-15 is variable but on the order of 2 ft/40 ft to 3 ft/40 ft (0.05 to 0.075) from the east to the west in a very localized area. The horizontal hydraulic gradient from MW150-15 to Silver Creek is also variable but on the order of 2.5 ft/120 ft to 5 ft/120 ft (0.02 to 0.04). Historical hydraulic gradients (from prior to remedial activities) are approximately 8 ft/160 ft (0.05) (from former MW-1 to Silver Creek).

The applicable horizontal hydraulic gradients range from approximately 0.02 to 0.05, with 0.05 being the most conservative (highest) value, which was utilized for calculation purposes.

3.2 Determination of Groundwater Flux, Mass Flux, and Total Mass Flux

Groundwater Flux

The total groundwater flux is the sum of groundwater fluxes for each saturated hydrostratigraphic unit (sum of unit areas). Assuming the portion of the geologic cross-section described above is sufficiently representative for preliminary calculations, the saturated portions of the geologic cross-section can be determined using the maximum historic (and therefore most conservative) groundwater elevation for each monitoring location, which maximizes the cross-sectional area. Section 2 portion of the cross-sectional area

(midpoint between MW150-15 and MW146-12 to the midpoint between MW146-12 and BH120-98) has been assumed to contribute flow directly to Silver Creek despite the presence of the sheet pile wing wall and sheet pile wall that essentially blocks almost all flow from the FDA to Silver Creek. Section 2 of the cross-sectional area was included in order to be very conservative in the groundwater and mass flux calculations, which accounts for the potential for flow around the west sheet pile wing wall.

The cross-sectional area for the saturated portion of each hydrostratigraphic unit area is:

Hydrostratigraphic Unit	Section 1 (west of FDA)	Section 2 (within FDA)
Saturated Fill	-	30 ft wide × average1.5 ft thick = 45 ft^2
Saturated Upper Clay	34 ft wide × average 3.9 ft thick = 133 ft^2	30 ft wide × average1.5 ft thick = 45 ft^2
Saturated Silty Sand	34 ft wide × 1 ft thick = 34 ft^2	30 ft wide × 1 ft thick = 30 ft^2
Saturated Lower Clay	34 ft wide × average 5.9 ft thick = 201 ft^2	30 ft wide × average 6.8 ft thick = 200 ft^2

The groundwater flux for each hydrostratigraphic unit area is the cross-sectional area multiplied by the assigned hydraulic conductivity value (11.3 ft/day for silty sand, 0.28 ft/day for silty clay) and the horizontal hydraulic gradient (0.05). The groundwater flux for each hydrostratigraphic unit is:

Hydrostratigraphic Unit	Section 1 (ft^3/day, Litres per day) (west of FDA)	Section 2 (ft^3/day, Litres per day) (within FDA)
Saturated Fill	-	11.3 ft/day × 0.05 × 45 ft^2 = 25.4 ft^3/day (719 L/day)
Saturated Upper Clay	0.028 ft/day × 0.05 × 133 ft^2 = 0.19 ft^3/day (5.4 L/day)	0.028 ft/day × 0.05 × 45 ft^2 = 0.06 ft^3/day (1.7 L/day)
Saturated Silty Sand	11.3 ft/day × 0.05 × 34 ft^2 = 19.2 ft^3/day (544 L/day)	11.3 ft/day × 0.05 × 30 ft^2 = 17.0 ft^3/day (481 L/day)
Saturated Lower Clay	0.028 ft/day × 0.05 × 201 ft^2 = 0.28 ft^3/day (7.9 L/day)	0.028 ft/day × 0.05 × 200 ft^2 = 0.28 ft^3/day (7.9 L/day)
Total estimated groundwater discharge	**19.7 ft^3/day (558 L/day) (31.6% of total)**	**42.7 ft^3/day (1,210 L/day) (68.4% of total)**

The total groundwater flux from the west side of the FDA to Silver Creek, using the very conservative assumptions of maximum historic groundwater elevation, highest hydraulic conductivity for the hydrostratigraphic unit, highest horizontal hydraulic gradient, and flow from the east side of the sheet pile wall directly to Silver Creek (without being restricted by the presence of the sheet pile wall) is approximately 19.7 + 42.7 = 62.4 ft3/day (558 + 1,210 = 1,768 L/day).

On the uncommon occasions when groundwater elevations at MW150-15 drop to very close to or below the base of the silty sand unit (595.5 ft AMSL), groundwater flux is limited to only the lower clay unit, less than 5 percent of the estimated groundwater flux from Section 1. When groundwater elevations at MW146-12 drop to below the elevation of the top of the sheet pile wall (599 ft AMSL) (which occurs more than one-half

of the time), groundwater flow is also restricted to the lower clay unit, resulting in groundwater flow in clay beneath the sheet pile wall or to the west in the zone upgradient (north) of the sheet pile wing wall.

Thus the total groundwater flux (62.4 ft3/day [1,768 L/day]) used for evaluation purposes is estimated to be approximately three times higher than the actual groundwater flux (that would occur under maximum groundwater elevations). The actual groundwater flux is conservatively estimated to be that from Section 1 of the cross-sectional area (approximately 20 ft3/day [570 L/day]) (since there is limited actual groundwater flow from Section 2 in the FDA). Actual groundwater discharge from Section 1 is overestimated in this calculation due to using the very conservative input values for the groundwater discharge calculations. Section 2 has been assumed to contribute significant quantities of groundwater for conservative calculation purposes, even though the sheet pile wall prevents most groundwater flow.

Geochemical Mass Flux for Vinyl Chloride

The geochemical mass flux for vinyl chloride for each hydrostratigraphic unit is the vinyl chloride groundwater concentration multiplied by the groundwater flux. This calculation assumes that the vinyl chloride groundwater concentration collected from the wells is representative of all the hydrostratigraphic zones, even though the groundwater is derived from the silty sand zone.

The geochemical mass flux was calculated using the highest and the average vinyl chloride concentrations measured during the period 2012 through 2018, after the leachate collection system was shut down. For Section 1 (monitoring well MW150-15), the vinyl chloride groundwater concentration was for the period 2015 through 2018, after the well was installed. The vinyl chloride groundwater concentrations, excluding the lowest value for duplicate samples) varied from 0.0074 milligrams per Litre (mg/L) to 0.043 mg/L, with an average concentration of 0.0184 mg/L and a median concentration (7 samples) of 0.016 mg/L. For Section 2 (monitoring well MW146-12 in the FDA), the vinyl chloride concentration (2012 through 2018, excluding the lowest value for duplicate samples) varied from 0.032 mg/L to 0.28 mg/L, with an average concentration of 0.16 mg/L and a median concentration (12 samples) of 0.145 mg/L.

The vinyl chloride geochemical mass flux for each hydrostratigraphic unit is (milligrams per day [mg/day]):

Hydrostratigraphic Unit	Section 1 (mg/day) (west of FDA)	Section 2 (mg/day) (within FDA)
Saturated Fill	-	(Max) 0.28 mg/L × 719 L/day = 201 mg/day (Avg) 0.16 mg/L × 719 L/day = 115 mg/day
Saturated Upper Clay	(Max) 0.043 mg/L × 5.4 L/day = 0.23 mg/day (Avg) 0.0184 mg/L × 5.4 L/day = 0.10 mg/day	(Max) 0.28 mg/L × 1.7 L/day = 0.48 mg/day (Avg) 0.16 mg/L × 1.7 L/day = 0.27 mg/day
Saturated Silty Sand	(Max) 0.043 mg/L × 544 L/day = 23.4 mg/day (Avg) 0.0184 mg/L × 544 L/day = 10.0 mg/day	(Max) 0.28 mg/L × 481 L/day = 135 mg/day (Avg) 0.16 mg/L × 481 L/day = 77 mg/day
Saturated Lower Clay	(Max) 0.043 mg/L × 7.9 L/day = 0.34 mg/day (Avg) 0.0184 mg/L × 7.9 L/day = 0.15 mg/day	(Max) 0.28 mg/L × 7.9 L/day = 2.2 mg/day (Avg) 0.16 mg/L × 7.9 L/day = 1.3 mg/day
Total estimated vinyl chloride mass flux	**(Max) 24.0 mg/day** **(Avg) 10.3 mg/day** **(5% to 7% of total mass flux)**	**(Max) 339 mg/day** **(Avg) 194 mg/day** **(93% to 95% of total mass flux)**

The maximum total vinyl chloride mass flux using the very conservative assumptions of maximum groundwater elevation, highest hydraulic conductivity, highest horizontal hydraulic gradient, maximum vinyl chloride concentration, and flow from the east side of the sheet pile wall directly to Silver Creek (without

being restricted by the presence of the sheet pile wall) is approximately 363 mg/day. The average total vinyl chloride mass flux using these very conservative assumptions is approximately 204 mg/day. However, as noted above, less than 10 percent of the total mass flux is derived from west of the FDA, and greater than 90 percent of the total mass flux is derived from very conservatively assuming that groundwater flows directly from the western portion of the FDA to Silver Creek.

Geochemical Mass Flux for Polychlorinated Biphenyls

The geochemical mass flux for polychlorinated biphenyls (PCBs) for each hydrostratigraphic unit is the PCBs groundwater concentration multiplied by the groundwater flux. This calculation assumes that the PCBs groundwater concentration collected from the wells is representative of all the hydrostratigraphic zones, even though the groundwater is derived from the silty sand zone.

The geochemical mass flux for MW146-12 was calculated using the highest and the average dissolved PCBs concentration measured during the period 2012 through 2018, after the leachate collection system was shut down. At MW146-12, a total of 5/13 samples (excluding duplicate samples) had detections of dissolved PCBs, with concentrations ranging from 0.000055 to 0.00026 mg/L (0.055 to 0.26 µg/L). For samples without detected PCBs, a value of one-half the reporting limit was assumed for the purpose of calculation of average concentrations. For Section 2, the average PCBs concentration (assuming non-detects at one-half of the reporting limit) was 0.00009 mg/L (0.09 µg/L).

The geochemical mass flux for MW150-15 was calculated using the highest reporting limit for dissolved PCBs concentrations, as all dissolved concentrations were not detected at the reporting limit during the period 2015 through 2018 (MW150-15 was installed during 2015). The average reporting limit dissolved concentration was calculated using a value of one-half the reporting limit value. At MW150-15, a total of 7 samples (excluding duplicate samples) had reporting limit concentrations ranging from 0.000095 to 0.00011 mg/L (0.095 to 0.11 µg/L). For Section 1, the average PCBs concentration (using one-half the reporting limit) was 0.000049 mg/L (0.049 µg/L).

The PCBs geochemical mass flux for each hydrostratigraphic unit is (micrograms per day [µg/day]):

Hydrostratigraphic Unit	Section 1 (µg/day) (west of FDA)	Section 2 (µg/day) (within FDA)
Saturated Fill	-	(Max) 0.26 µg/L × 719 L/day = 187 µg/day (Avg) 0.09 µg/L × 719 L/day = 64.7 µg/day
Saturated Upper Clay	(Max) 0.11 µg/L × 5.4 L/day = 0.59 µg/day (Avg) 0.049 µg/L × 5.4 L/day = 0.26 µg/day	(Max) 0.26 µg/L × 1.7 L/day = 0.44 µg/day (Avg) 0.09 µg/L × 1.7 L/day = 0.15 µg/day
Saturated Silty Sand	(Max) 0.11 µg/L × 544 L/day = 59.8 µg/day (Avg) 0.049 µg/L × 544 L/day = 26.7 µg/day	(Max) 0.26 µg/L × 481 L/day = 125 µg/day (Avg) 0.09 µg/L × 481 L/day = 43 µg/day
Saturated Lower Clay	(Max) 0.11 µg/L × 7.9 L/day = 0.87 µg/day (Avg) 0.049 µg/L × 7.9 L/day = 0.39 µg/day	(Max) 0.26 µg/L × 7.9 L/day = 2.1 µg/day (Avg) 0.09 µg/L × 7.9 L/day = 0.71 µg/day
Total estimated PCBs mass flux	**(Max) 61.3 µg/day (Avg) 27.4 µg/day (19% to 25% of total mass flux)**	**(Max) 315 µg/day (Avg) 109 µg/day (75% to 81% of total mass flux)**

The maximum total PCBs mass flux using the very conservative assumptions of maximum groundwater elevation, highest hydraulic conductivity, highest horizontal hydraulic gradient, maximum PCBs concentration (even where not detected above the reporting limits), and flow from the east side of the sheet pile wall

directly to Silver Creek (without being restricted by the presence of the sheet pile wall) is approximately 376 µg/day. The average total PCBs mass flux using these very conservative assumptions (and concentrations below the reporting limit at one-half the reporting limit value) is approximately 136 µg/day. However, as noted above, less than 25 percent of the theoretical total mass flux (as all dissolved concentrations were below reporting limits) is derived from west of the FDA, and greater than 75 percent of the theoretical total mass flux is derived from the very conservative assumptions that groundwater flows directly from the western portion of the FDA to Silver Creek.

Summary

These calculations are very sensitive to the input values. For example, using a hydraulic conductivity that is at the low end of the range of values for silty sand (1.6 x 10-3 cm/sec), would reduce the groundwater flux and thus total mass flux to approximately one-third of the calculated values presented above. Using lower (and more realistic) input values for groundwater elevation, horizontal hydraulic gradient, and chemical concentration also would result in lower calculated mass flux.

Section 2 of the cross-sectional area dominates the groundwater flux and total mass flux due to the assumed hydraulic conductivity of the saturated fill and the higher maximum and average vinyl chloride concentrations, and the detected (and thus higher maximum and average) PCBs concentrations.

The sheet pile wall significantly restricts flow from the FDA. The calculated mass flux from the FDA (assuming the sheet pile wall is absent) is approximately 90 percent of the total vinyl chloride mass flux, and 75 percent of the total PCBs mass flux. Assuming that the sheet pile wall is significantly restricting flow from the FDA (Section 2 of the cross-sectional area), would reduce the mass flux to less than 10 percent of the total flux for vinyl chloride and less than 25 percent of the total flux for PCBs.

3.3 Discharge to Silver Creek

The calculations of the vinyl chloride and PCBs mass flux per unit area of Silver Creek are presented below. These calculations assume that the groundwater is discharged to a small section of Silver Creek as defined below. In addition, these calculations assume that there are no decreases in parameter concentrations caused by biotic or abiotic transformation, volatilization, sorption, etc.

Silver Creek Discharge Area

Silver Creek is approximately 20 ft wide in this reach of creek. Therefore, most groundwater discharge to surface water from the north (FDA) side of the creek will theoretically occur in approximately one-half the creek width (10 ft). In order to simplify the calculation, it is assumed that the groundwater discharge cross-section will remain the same width at Silver Creek. For conservative calculation purposes (maximum surface water concentration at the sediment / surface water interface), it has been assumed that all groundwater will discharge as subsurface discharge within 5 ft of the creek width. The cross-sectional area that the discharge occurs in is thus the length of the discharge (64 ft) multiplied by the assumed width (5 ft). This is equal to 320 ft^2.

Vinyl Chloride

Allowing for the groundwater discharge cross-section to remain the same width at Silver Creek, the total maximum concentration-based vinyl chloride mass discharge per foot of Silver Creek length is 363 mg/day / 64 ft = 5.7 mg/ft of Silver Creek length. This mass would be discharged both as groundwater seeps above the surface water elevation in the creek, and as subsurface discharge of groundwater to surface water.

The maximum concentration-based vinyl chloride mass discharge per square foot is thus 363 mg/day / (64 ft × 5 ft) = 1.1 mg/ft2 over an area of 320 square feet. The average concentration-based vinyl chloride mass discharge per square foot is 204 mg/day / (64 ft × 5ft) = 0.64 mg/ft2 over an area of 320 square feet.

Polychlorinated Biphenyls

Allowing for the groundwater discharge cross-section to remain the same width at Silver Creek, the total maximum concentration-based PCBs mass discharge per foot of Silver Creek length is 376 µg/day / 64 ft = 5.9 µg/ft of Silver Creek length. This mass would be discharged both as groundwater seeps above the surface water elevation in the creek, and as subsurface discharge of groundwater to surface water.

The maximum concentration-based PCBs mass discharge per square foot is thus 376 µg/day / (64 ft × 5 ft) = 1.2 µg/ft2 over an area of 320 square feet. The average concentration-based PCBs mass discharge per square foot is 136 µg/day / (64 ft × 5ft) = 0.43 µg/ft2 over an area of 320 square feet.

3.4 Silver Creek Flow Rate Estimation

Silver Creek does not have a flow recording station. Therefore, in order to estimate the flow rate in Silver Creek, data for nearby creeks with flow recording stations were reviewed to determine an approximate flow rate per square mile of watershed. Flow records are available for the Ottawa River at University of Toledo (Toledo, Ohio), which is located in a similar physiographic region (approximately 4 miles from the Site), though with a larger drainage basin. These flow records for USGS gauging station 04177000 indicate a range of annual average discharge from 65.5 to 215.4 cubic feet per second (cfs), with a mean annual discharge of 130 cfs. The drainage basin for the Ottawa River at University of Toledo is approximately 150 square miles (mi2), resulting in an annual average drainage rate of approximately 0.87 cfs/mi2. Tributaries to the Maumee River (also in a similar physiographic region) have annual average drainage rates ranging from approximately 0.75 to 1.02 cfs/mi2.

The Silver Creek drainage basin upstream of Jackman Road is approximately 4 mi2 (USGS gauging station 04176880 information). Assuming an annual average flow rate of 0.75 cfs/mi2 (most conservative [lowest]) average annual flow rate for smaller tributaries in this area, the estimated annual average flow for Silver Creek is approximately 4 mi2 × 0.75 cfs/mi2 = 3 cfs. This flow rate equals approximately 260,000 cubic feet per day.

During baseflow stages, where flow is exceeded 90 percent of the time, the mean flow rate for the various tributaries declines to between 0.03 and 0.1 cfs/mi2 depending on watershed characteristics. Assuming that the baseflow rate for Silver Creek is near the low end of the baseflow mean flow rate for the various tributaries, the estimated baseflow for Silver Creek is approximately 4 mi2 × 0.03 cfs/mi2 = 0.12 cfs. This

flow rate equals approximately 10,370 cubic feet per day. The Silver Creek baseflow rate is expected to be exceeded 90 percent of the time, therefore, flow below the baseflow rate would potentially occur for only a few days per year.

3.5 Determination of Parameter Concentrations in Silver Creek

Calculated Vinyl Chloride Concentration in Silver Creek

The maximum vinyl chloride mass discharge to Silver Creek is approximately 363 mg/day. Using annual average flow rate conditions (260,000 ft3/day), this is approximately 0.0014 mg/ft3, or equal to a concentration of 0.000049 mg/L (0.049 micrograms per Litre [µg/L]). This is approximately 2 orders of magnitude below the USEPA Regional Screening Level of 0.002 mg/L (2 µg/L).

The maximum vinyl chloride mass discharge to Silver Creek is approximately 363 mg/day. Using baseflow rate conditions (10,370 ft3/day), this is approximately 0.035 mg/ft3, or equal to a concentration of 0.0012 mg/L (1.2 µg/L). This is below the USEPA Regional Screening Level of 0.002 mg/L (2 µg/L).

These estimated surface water concentrations are based on estimated flows in Silver Creek using flow data from tributaries in the same physiographic region. These concentrations also do not account for biotic and abiotic transformations or losses of vinyl chloride that may occur between the monitoring wells and Silver Creek or in the stream sediment, nor for any volatilization losses in Silver Creek. In addition, these concentrations were calculated using very conservative assumptions throughout the determinations, and represent "worst case" concentrations that would not be reached under naturally occurring conditions with similar measured concentrations in monitoring wells MW146-12 and MW150-15.

Calculated Polychlorinated Biphenyls Concentration in Silver Creek

The maximum PCBs mass discharge to Silver Creek is approximately 376 µg/day. Using annual average flow rate conditions (260,000 ft3/day), this is approximately 0.00145 µg/ft3, or equal to a concentration of 0.000051 µg/L. This is 4 orders of magnitude below the USEPA Regional Screening Level of 0.5 µg/L (0.0005 mg/L).

The maximum PCBs mass discharge to Silver Creek is approximately 376 µg/day. Using baseflow rate conditions (10,370 ft3/day), this is approximately 0.036 µg/ft3, or equal to a concentration of 0.0012 µg/L. This is below the USEPA Regional Screening Level of 0.5 µg/L (0.0005 mg/L).

These estimated surface water concentrations are based on estimated flows in Silver Creek using flow data from tributaries in the same physiographic region. These concentrations also do not account for biotic and abiotic transformations of PCBs that may occur between the monitoring wells and Silver Creek or in the stream sediment, nor for any attenuation through sorbing to soil and sediment losses. In addition, these concentrations were calculated using very conservative assumptions throughout the determinations, and represent "worst case" concentrations that would not be reached under naturally occurring conditions with similar measured concentrations in monitoring wells MW146-12 and MW150-15.

Summary

Based on the very conservative calculations of total mass discharge to Silver Creek presented in the preceding sections ("worst case" scenario), the concentrations of vinyl chloride and PCBs discharged to

Silver Creek under baseflow (very low flow) conditions are not predicted to exceed USEPA Regional Screening Levels. Therefore, the total mass discharge to Silver Creek does not require further evaluation unless vinyl chloride and PCBs concentrations exhibit a substantial and prolonged increase from the concentrations evaluated above.

4. Risk to Human and Ecological Receptors

Risks to human and ecological receptors were evaluated for groundwater monitoring events conducted over the past several years. Vinyl chloride and polychlorinated biphenyls (PCBs) are the constituents that have been detected in groundwater at concentrations that exceed conservative screening benchmarks and could potentially pose a risk to human and ecological receptors that are exposed to the surface water and sediment of Silver Creek.

Risk to ecological receptors was further evaluated by GHD for PCBs in sediment and surface water in a memorandum dated October 13, 2016 for sediment and surface water samples collected in June 2016. PCBs were not detected in samples collected from surface water or sediment. It was concluded that (using method detection limits in the absence of detections) PCBs were not present in concentrations in the sediment or surface water at concentrations that pose a risk to aquatic or benthic organisms, or other wildlife.

Vinyl Chloride

For humans, the USEPA Regional Screening Level value for vinyl chloride is 2 µg/L. The very conservative baseflow (where flow is exceeded 90 percent of the time) concentration estimate of 1.2 µg/L in Silver Creek is below the USEPA value for vinyl chloride. Vinyl chloride is expected to volatilize in surface water, further reducing exposure concentrations and potential for risk at and downstream from the Site. Therefore, under this very conservative evaluation, there is no expectation of unacceptable risk to human or ecological receptors.

Polychlorinated Biphenyls

The USEPA Regional Screening Level value for PCBs in non-drinking water is 0.0005 mg/L (0.5 µg/L). PCBs have not been detected, either as total or dissolved, in MW150-15 at reporting limits of less than 0.1 µg/L. As the average flow in Silver Creek (260,000 ft^3/day) is more than 4,000 times the conservative estimate of groundwater flux (62.4 ft^3/day), and the baseflow in Silver Creek (10,370 ft^3/day) is 166 times the conservative estimate of groundwater flux, concentrations of PCBs in the surface water of Silver Creek are expected to be orders of magnitude below the USEPA Regional Screening Level value. Because PCBs are hydrophobic, PCBs do preferentially partition to sediment. Sampling of Silver Creek in June 2016 documented concentrations of PCBs in both surface water and sediment that were below method detection limits. Therefore, under this very conservative evaluation, there is no expectation of unacceptable risk to human or ecological receptors.

Summary

The concentration of vinyl chloride detected in groundwater at MW150-15 results in a very conservative total mass flux of 363 mg/day. The cross-sectional area that this mass flux discharges through results in an

estimated groundwater concentration of 1.2 µg/L. This groundwater concentration (without dilution or attenuation in groundwater between MW150-15 and Silver Creek or in surface water) is below the USEPA Regional Screening Level value.

The lack of detections of PCBs at MW150-15 (at a reporting limit of 0.1 µg/L or less) results in an inability to calculate an actual total mass flux. The annual average Silver Creek flow rate (260,000 ft^3/day) is such that orders of magnitude of dilution occur, and the PCBs concentration would be well below the USEPA Regional Screening Level value.

This Preliminary Evaluation of Mass Flux and Mass Discharge to Silver Creek has used very conservative input parameters for each step of the various calculations. In order to account for the potential for flow around the west sheet pile wing wall, it was assumed that the wing wall and downgradient sheet pile were not present, and that groundwater flow was directly from that portion of the FDA to Silver Creek. The highest hydraulic conductivity for the silty sand material was used for the groundwater flux calculation, and an assumed hydraulic conductivity was used for the silty clay, which was an estimated one order of magnitude higher than the review of the soil material description indicated. The highest groundwater elevations were used to maximize the cross-sectional area, and the highest horizontal hydraulic gradients were used to calculate the highest groundwater flux. The highest parameter concentrations (2012 through 2018) were used to calculate chemical mass, assuming that the parameter concentrations were the same in both the silty sand unit (where the groundwater samples were obtained) and in the silty clay units and fill unit. This highest total groundwater mass flux was then assumed to enter Silver Creek with no attenuation mechanisms between the monitoring well and the creek. The Silver Creek parameter concentrations were calculated using baseflow conditions (where flow is exceeded 90 percent of the time). The result of these very conservative calculations was that the USEPA Regional Screening Level values were not exceeded. This indicates that no further evaluation is required.

Attachment A	Excerpts from CRA report 25
	Figure 2.2 Cross-Section Locations
	Figure 2.3 Cross-Section A-A’
Attachment B	Excerpts from GHD report 33
	Figure 1 Site Location
	Figure 8 Site Plan and Cross-Section Location
	Figure 9 Cross-Section A-A’
	Figure 10 Cross-Section B-B’
	Figure 11 Groundwater Contours – June 2017
	Figure 12 Groundwater Contours – December 2017
	Figure 16 Groundwater and Surface Water Elevations – March 6, 1998
Attachment C	Hydraulic Conductivity Test Results
Attachment D	Analytical Results Summary – Select Wells

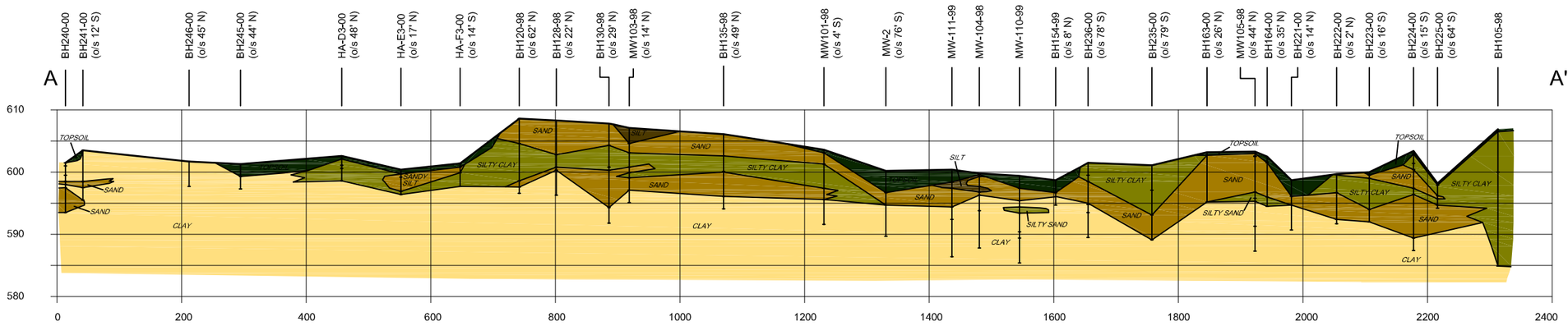
Attachment A
Excerpts from CRA Report 25

NOTE:
FIGURE IS TAKEN DIRECTLY FROM CRA REPORT 019 DATED DECEMBER 2000, AND DOES NOT REFLECT CHANGES TO SITE CONDITIONS SINCE THEN.

figure 2.2

CROSS SECTION LOCATIONS
MLC SITE 1099, TOLEDO 103C LANDFILL
Toledo, Ohio

12609-T04(025)GN-WA004 DEC 30/2010



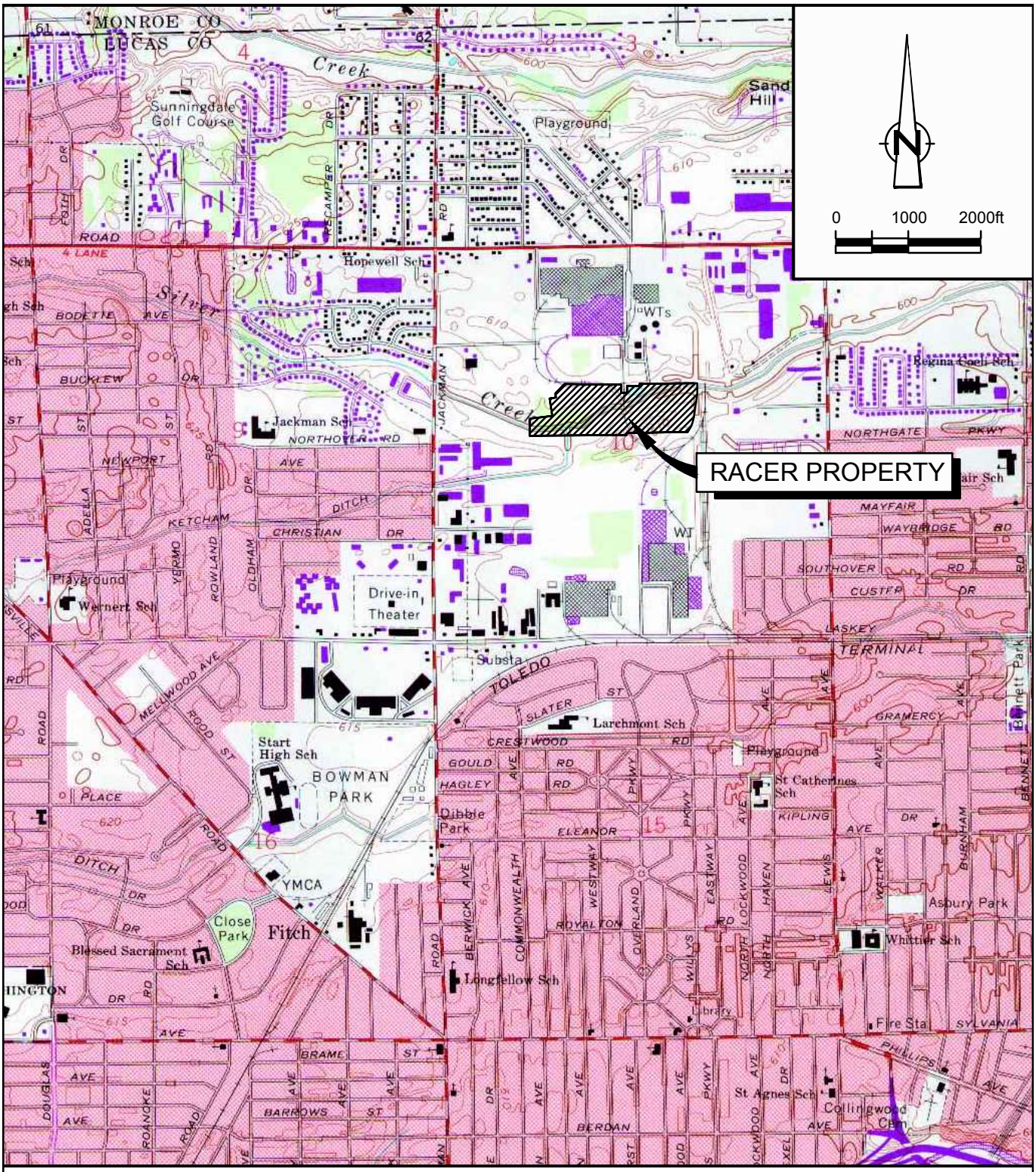
SCALE: HORIZ. 1"=200'
VERT. 1"=20'

NOTE:
FIGURE IS TAKEN DIRECTLY FROM CRA REPORT 019 DATED DECEMBER 2000, AND DOES NOT REFLECT CHANGES TO SITE CONDITIONS SINCE THEN.

figure 2.3

SCHEMATIC CROSS-SECTION A-A'
MLC SITE 1099, TOLEDO 103C LANDFILL
Toledo, Ohio

Attachment B
Excerpts from GHD Report 33

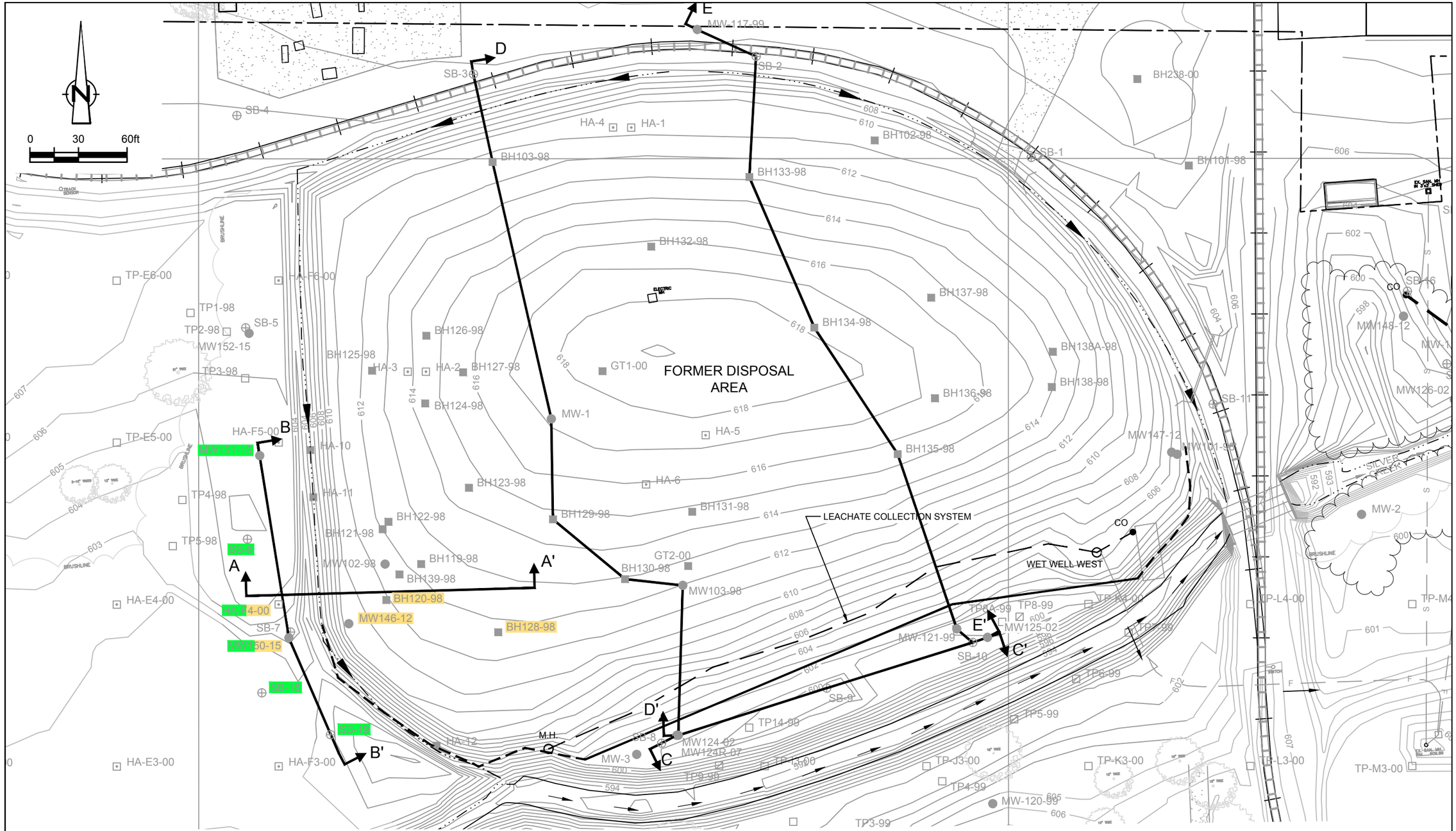


SOURCE: USGS QUADRANGLE MAP:
TOLEDO, OHIO-MICHIGAN

figure 1

SITE LOCATION
RACER SITE 1099, TOLEDO 103C LANDFILL
Toledo, Ohio

012609-T01(033)GN-DE001 NOV 28, 2018



LEGEND

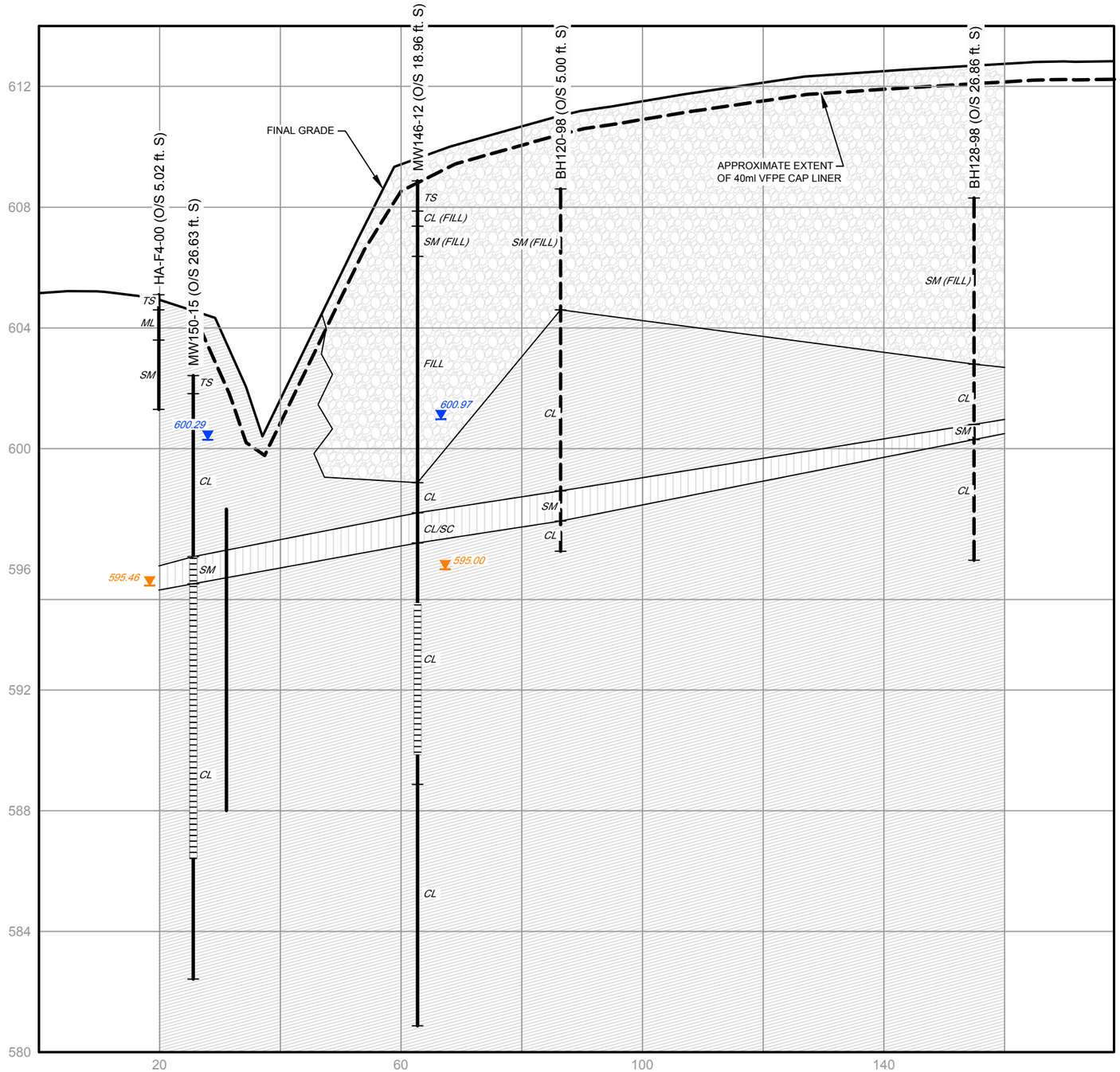
MW123-00 ●	MONITORING WELL
BH173-00 ■	HISTORICAL BOREHOLE
HA-F3-00 ⊡	HISTORICAL HAND AUGER
TP-J3-00 □	HISTORICAL TEST PIT
TP5-99 ▨	HISTORICAL TEST PIT, NOT SAMPLED
SB-14 ⊕	HPT SAMPLING LOCATION
M.H. ○	MANHOLE
CO ●	CLEANOUT
WET WELL ○	WET WELL
	SHEET PILE WALL
	VFPE LINER
	LEACHATE COLLECTION SYSTEM
	CROSS-SECTION A-A' LOCATIONS
	CROSS-SECTION B-B' LOCATIONS

Coordinate system: SPCS OHIO North NAD83/NAVD88 US Survey Ft.

figure 8

SITE PLAN AND CROSS-SECTION LOCATION
RACER PROPERTY
Toledo, Ohio

012609-T01(033)GN-DE006 APR 25, 2019



MW-146-12

LEGEND

- WELL DESIGNATION
- GROUND SURFACE
- STRATIGRAPHIC BOUNDARY
- CL — TYPICAL SOIL CLASSIFICATION
- SCREENED INTERVAL
- BOTTOM OF BORING
- O/S — OFFSET
- BOTTOM OF LINER
- SHEET PILE WALL
- FILL
- SILTY SAND
- CLAY
- MAXIMUM HISTORICAL GROUNDWATER ELEVATION (ft AMSL)
- MINIMUM HISTORICAL GROUNDWATER ELEVATION (ft AMSL)

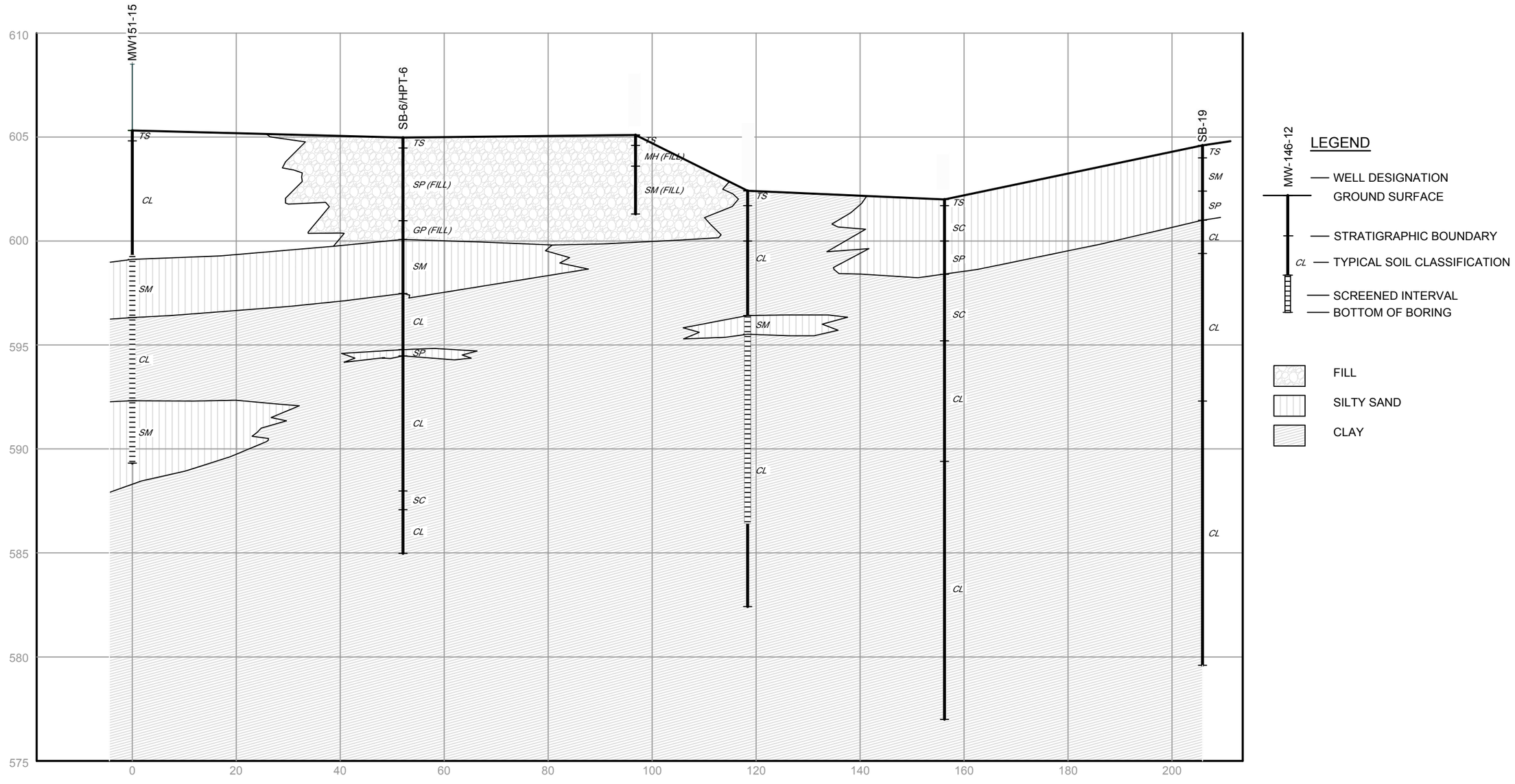
0 10 20ft

1"=4' VERTICAL
5x VERTICAL EXAGGERATION

figure 9

CROSS-SECTION A-A'
RACER PROPERTY
Toledo, Ohio

012609-T01(033)GN-DE006 MAY 10, 2019



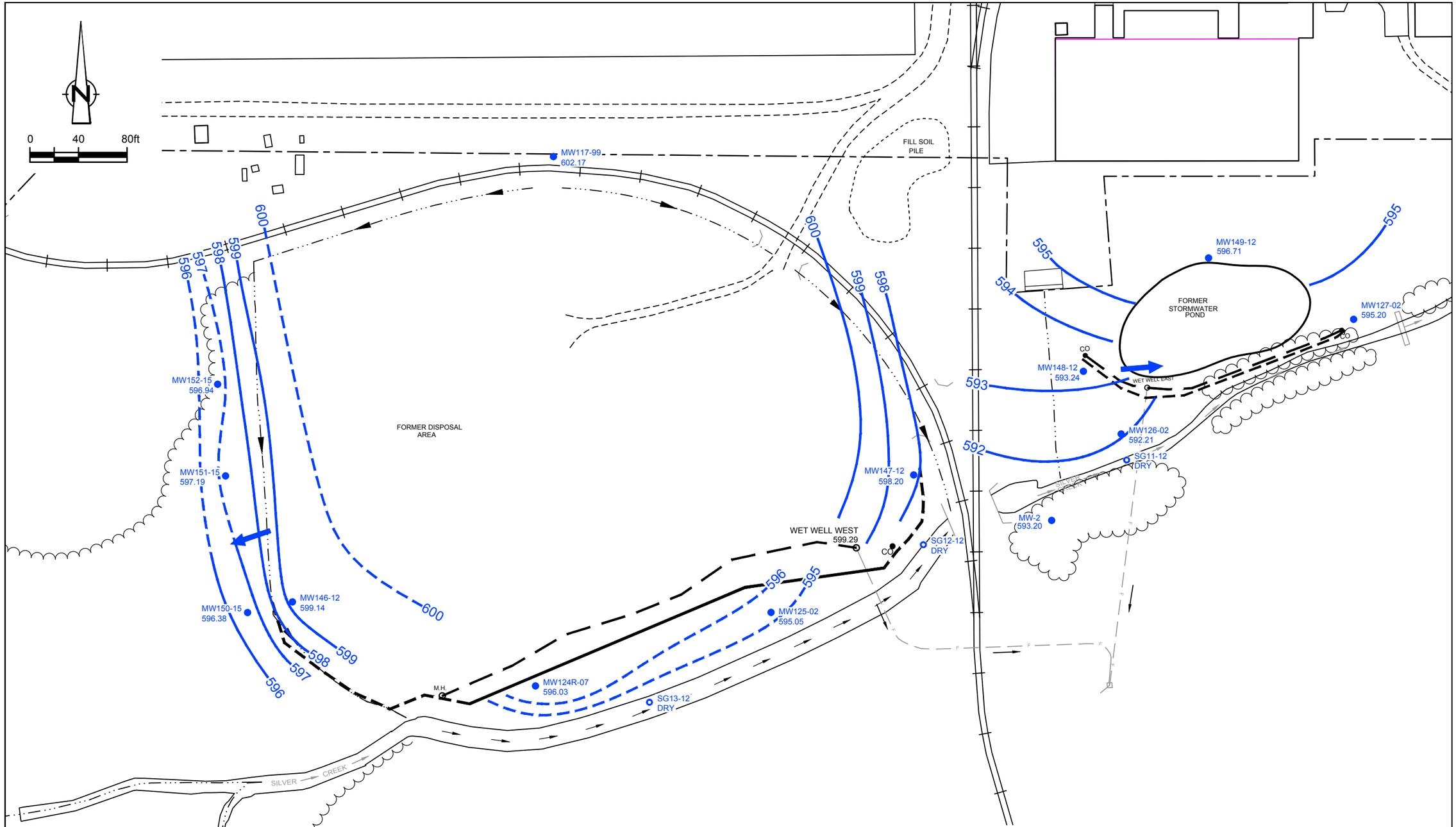
0 10 20ft

1"=4' VERTICAL
5x VERTICAL EXAGGERATION

figure 10

CROSS-SECTION B-B'
RACER PROPERTY
Toledo, Ohio

012609-T01(033)GN-DE006 MAY 10, 2019



GHD

Coordinate system: SPCS OHIO North NAD83/NAVD88 US Survey Ft.

figure 11

GROUNDWATER CONTOURS - JUNE 2017
RACER PROPERTY
Toledo, Ohio

012609-T01(033)GN-DE007 MAY 10, 2019

0 40 80ft

MW117-99
602.51

FILL SOIL PILE

FORMER DISPOSAL AREA

FORMER STORMWATER POND

MW149-12
597.15

MW127-02
595.62

MW148-12
595.37

CO

WET WELL EAST

MW126-02
593.92

SG11-12
DRY

MW147-12
598.64

MW-2
(594.43

SG12-12
NM

WET WELL WEST
599.41

MW152-15
599.46

MW151-15
599.25

MW146-12
599.32

MW150-15
597.54

MW125-02
596.78

MW124R-07
596.98

M.H.

SG13-12
594.97

SILVER CREEK

600 599 598 597 596 595 594

LEGEND

- MW123-00 — MONITORING WELL
- STAFF GAUGE
- 599.32 — GROUNDWATER ELEVATION
- 597 — GROUNDWATER CONTOUR (DECEMBER 18, 2017)
- * — SURFACE WATER ELEVATION NOT USED IN CONTOURING
- 600 — APPROXIMATE ELEVATION
- LEACHATE COLLECTION SYSTEM
- M.H. — MANHOLE
- CO — CLEANOUT
- WET WELL — WET WELL
- SHEET PILE WALL
- F — FORCEMAIN
- GROUNDWATER FLOW DIRECTION

Coordinate system: SPCS OHIO North NAD83/NAVD88 US Survey Ft.

figure 12

GROUNDWATER CONTOURS - DECEMBER 2017
RACER PROPERTY
Toledo, Ohio

012609-T01(033)GN-DE008 MAY 10, 2019

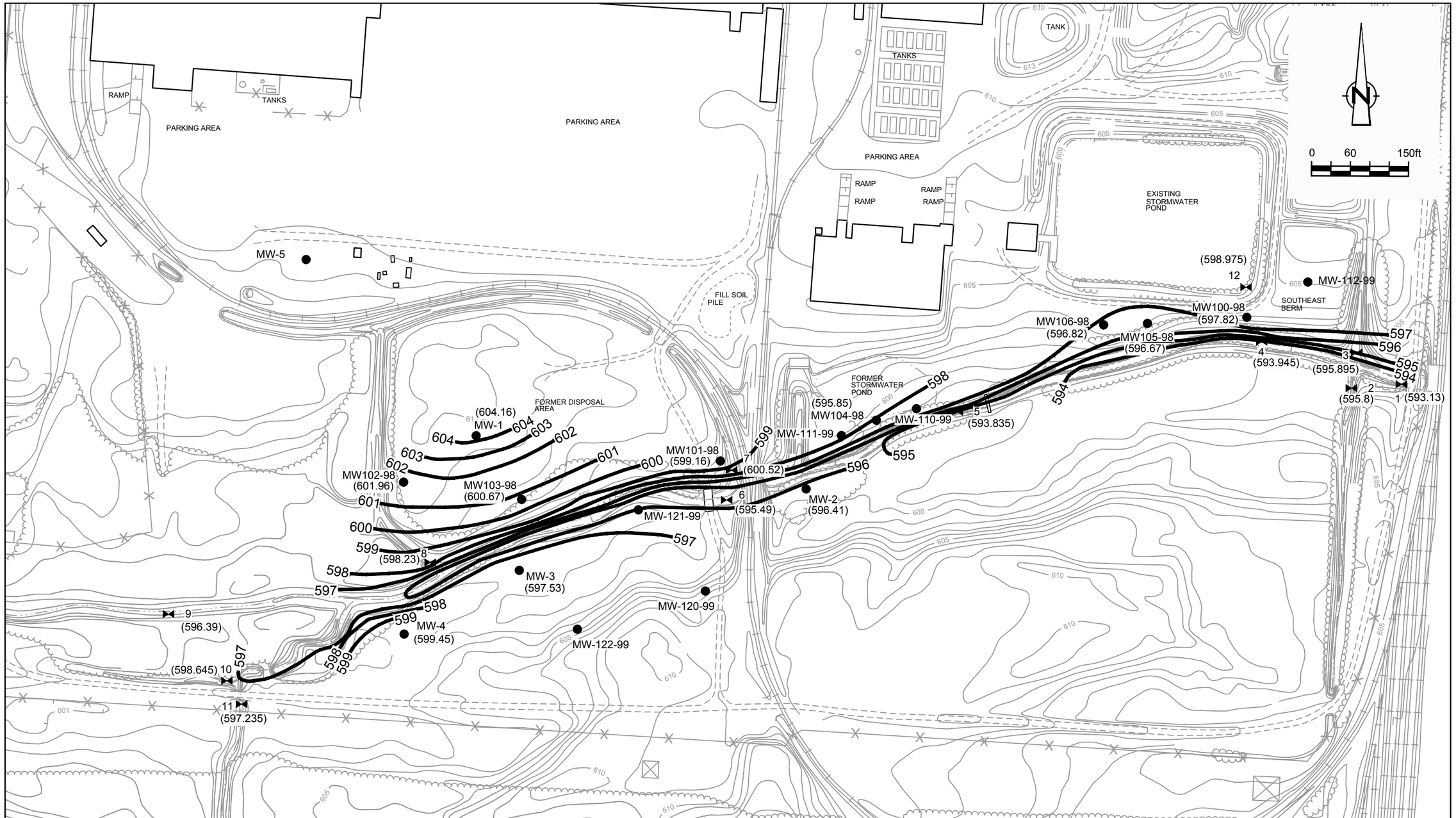


figure 16

GROUNDWATER AND SURFACE WATER ELEVATIONS - MARCH 6, 1998 RACER PROPERTY

Toledo, Ohio

012609-T01(033)GN-DE012 MAY 2, 2019

Attachment C
Hydraulic Conductivity Test Results

TABLE 1

HYDRAULIC RESPONSE TEST RESULTS SUMMARY
GM POWERTRAIN
TOLEDO, OH

		Results				Average		Geometeric Mean	
Well Id.	Test No.		Units		Units		Units		Units
MW100-98	Test 1	3.71E-04	ft/sec	1.13E-02	cm/sec	1.67E-02	cm/sec	1.53E-02	cm/sec
	Test 2	7.77E-04	ft/sec	2.37E-02	cm/sec				
	Test 3	2.89E-04	ft/sec	8.81E-03	cm/sec				
	Test 4	7.55E-04	ft/sec	2.30E-02	cm/sec				
MW101-98	Test 1	1.13E-04	ft/sec	3.45E-03	cm/sec	4.14E-03	cm/sec	4.09E-03	cm/sec
	Test 2	1.31E-04	ft/sec	3.99E-03	cm/sec				
	Test 3	1.64E-04	ft/sec	4.99E-03	cm/sec				
MW107-99	Test 1	4.69E-05	ft/sec	1.43E-03	cm/sec	1.55E-03	cm/sec	1.55E-03	cm/sec
	Test 2	5.51E-05	ft/sec	1.68E-03	cm/sec				
MW108-99	Test 1	1.60E-06	ft/sec	4.87E-05	cm/sec	4.87E-05	cm/sec	4.87E-05	cm/sec
MW110-99	Test 1	2.97E-05	ft/sec	9.06E-04	cm/sec	1.89E-03	cm/sec	1.62E-03	cm/sec
	Test 2	9.45E-05	ft/sec	2.88E-03	cm/sec				
MW111-99	Test 1	7.66E-05	ft/sec	2.33E-03	cm/sec	2.33E-03	cm/sec	2.33E-03	cm/sec
MW117-99	Test 1	2.60E-04	ft/sec	7.92E-03	cm/sec	1.38E-02	cm/sec	1.30E-02	cm/sec
	Test 2	6.03E-04	ft/sec	1.84E-02	cm/sec				
	Test 3	4.96E-04	ft/sec	1.51E-02	cm/sec				

TABLE 1

HYDRAULIC RESPONSE TEST RESULTS SUMMARY
GM POWERTRAIN
TOLEDO, OH

Well Id.	Test No.	Results	Units		Units	Average	Units	Geometeric Mean	Units
MW118-99	Test 1	1.47E-05	ft/sec	4.49E-04	cm/sec	5.19E-04	cm/sec	5.11E-04	cm/sec
	Test 2	2.14E-05	ft/sec	6.52E-04	cm/sec				
	Test 3	1.49E-05	ft/sec	4.55E-04	cm/sec				

Site			
Average	Units	Geometeric Mean	Units
5.13E-03	cm/sec	1.82E-03	cm/sec

TABLE 2

HYDRAULIC RESPONSE TEST RESULTS ANALYSIS
GM POWERTRAIN
TOLEDO, OH

Well Id.	*Average*	*Units*	*Geometeric Mean*	*Units*	*Analysis*[1]
MW100-98	1.67E-02	cm/sec	1.53E-02	cm/sec	Fine Sand
MW101-98	4.14E-03	cm/sec	4.09E-03	cm/sec	Silty Sand
MW107-99	1.55E-03	cm/sec	1.55E-03	cm/sec	Silty Sand
MW108-99	4.87E-05	cm/sec	4.87E-05	cm/sec	Sandy Silt
MW110-99	1.89E-03	cm/sec	1.62E-03	cm/sec	Silty Sand
MW111-99	2.33E-03	cm/sec	2.33E-03	cm/sec	Silty Sand
MW117-99	1.38E-02	cm/sec	1.30E-02	cm/sec	Fine Sand
MW118-99	5.19E-04	cm/sec	5.11E-04	cm/sec	Sandy Silt

1 - Source: Fetter, C.W., Applied Hydrogeology, Third Edition, Macmillan College Publishing Company, NewYork, 1994

Attachment D
Analytical Results Summary - Select Wells

Attachment D

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12
Sample Identification:		U.S. EPA	-12609-082812-DI	-12609-100212-DI	-12609-110812-DI	-12609-121112-DI	-12609-011613-DI	-12609-022013-DI	-12609-011414-DI	-12609-032714-DI	-12609-062315-DI	12609-121415-SK	12609-062016-SK	12609-121916-SK	12609-121916-SK
Sample Date:		Regional Screening	8/28/2012	10/2/2012	11/8/2012	12/11/2012	1/16/2013	2/20/2013	1/14/2014	3/27/2014	6/23/2015	12/14/2015	6/20/2016	12/19/2016	12/19/2016
Sample Type:		Levels													Duplicate
	Units	MCL													
Metals															
Aluminum	mg/L		--	0.18	0.033 J	0.05 U	0.019 J	0.11	--	--	--	--	--	--	--
Aluminum (dissolved)	mg/L		0.05 U	0.05 U	0.05 U	0.05 U	0.03 U	0.0031 J	--	--	--	--	--	--	--
Antimony	mg/L	0.006	--	0.00015 J	0.001 J	0.0022	0.0018 J	0.00029 J	--	--	--	--	--	--	--
Antimony (dissolved)	mg/L	0.006	0.00031 J	0.002 U	0.0003 J	0.00033 J	0.00038 J	0.00014 J	--	--	--	--	--	--	--
Arsenic	mg/L	0.01	--	0.0028 J	0.0021 J	0.0011 J	0.00076 J	0.0021	--	--	--	--	--	--	--
Arsenic (dissolved)	mg/L	0.01	0.0017 J	0.0025 J	0.0021 J	0.0014 J	0.0014 J	0.00074 J	--	--	--	--	--	--	--
Barium	mg/L	2	--	0.13	0.12	0.11	0.12	0.099	--	--	--	--	--	--	--
Barium (dissolved)	mg/L	2	0.13	0.13	0.12	0.13	0.11	0.095	--	--	--	--	--	--	--
Beryllium	mg/L	0.004	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Beryllium (dissolved)	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Cadmium	mg/L	0.005	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Cadmium (dissolved)	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Calcium	mg/L		--	93	94	89	94	94	--	--	--	--	--	--	--
Calcium (dissolved)	mg/L		100	96	92	90	92	93	--	--	--	--	--	--	--
Chromium	mg/L	0.1	--	0.002 U	0.002 U	0.002 U	0.0015 J	0.0012 J	--	--	--	--	--	--	--
Chromium (dissolved)	mg/L	0.1	0.002 U	0.002 U	0.002 U	0.002 U	0.0007 J	0.0011 J	--	--	--	--	--	--	--
Chromium VI (hexavalent)	mg/L	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L		--	0.002	0.0012	0.00065 J	0.00062 J	0.0011	--	--	--	--	--	--	--
Cobalt (dissolved)	mg/L		0.0017	0.0017	0.0015	0.0011 J	0.001 J	0.00087	--	--	--	--	--	--	--
Copper	mg/L	1.3	--	0.002 U	0.0022	0.0029	0.0059	0.0025	--	--	--	--	--	--	--
Copper (dissolved)	mg/L	1.3	0.002 U	0.002 U	0.002 U	0.00082 J	0.002 U	0.0011 J	--	--	--	--	--	--	--
Iron	mg/L		--	4.7	2.8 J	2.5 J	0.94 J	3	--	--	--	--	--	--	--
Iron (dissolved)	mg/L		1.8	4.6	4.5 J	4.9 J	2.2 J	2	--	--	--	--	--	--	--
Lead	mg/L	0.015	--	0.00061 J	0.001 U	0.001 U	0.0001 J	0.00022 J	--	--	--	--	--	--	--
Lead (dissolved)	mg/L	0.015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Magnesium	mg/L		--	35	36	35	39	34	--	--	--	--	--	--	--
Magnesium (dissolved)	mg/L		38	36	35	35	34	33	--	--	--	--	--	--	--
Manganese	mg/L		--	1.4	0.98	0.56 J	0.28 J	0.77	--	--	--	--	--	--	--
Manganese (dissolved)	mg/L		1	1.5	1.2	1.1 J	0.89 J	0.73	--	--	--	--	--	--	--
Mercury	mg/L	0.002	--	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	--	--	--	--	--	--	--
Mercury (dissolved)	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	--	--	--	--	--	--	--
Nickel	mg/L		--	0.007	0.0047	0.0047 J	0.0034 J	0.003	--	--	--	--	--	--	--
Nickel (dissolved)	mg/L		0.012	0.0054	0.0051	0.0058 J	0.0046 J	0.0033	--	--	--	--	--	--	--
Potassium	mg/L		--	1.7	1.2	1.2	4.7	1.8	--	--	--	--	--	--	--
Potassium (dissolved)	mg/L		1.6	1.4	1.2	1.1	1	1.5	--	--	--	--	--	--	--
Selenium	mg/L	0.05	--	0.005 U	0.005 U	0.005 U	0.0025 J	0.002 J	--	--	--	--	--	--	--
Selenium (dissolved)	mg/L	0.05	0.005 U	0.005 U	0.005 U	0.005 U	0.0019 J	0.0017 J	--	--	--	--	--	--	--
Silver	mg/L		--	0.001 U	0.001 U	0.001 U	0.00014 J	0.000067 J	--	--	--	--	--	--	--
Silver (dissolved)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--	--	--	--	--	--	--
Sodium	mg/L		--	230	240	250	230	210	--	--	--	--	--	--	--
Sodium (dissolved)	mg/L		260	240	230	250	220	210	--	--	--	--	--	--	--
Thallium	mg/L	0.002	--	0.002 U	0.002 U	0.002 U	0.000095 J	0.000018 J	--	--	--	--	--	--	--
Thallium (dissolved)	mg/L	0.002	0.00025 J	0.002 U	0.002 U	0.002 U	0.000034 J	0.001 U	--	--	--	--	--	--	--
Vanadium	mg/L	0.3	--	0.00048 J	0.00083 J	0.00072 J	0.0029	0.001 U	--	--	--	--	--	--	--
Vanadium (dissolved)	mg/L	0.3	0.02 U	0.02 U	0.00057 J	0.00047 J	0.0031	0.0015	--	--	--	--	--	--	--
Zinc	mg/L		--	0.02 U	0.02 U	0.02 U	0.0024 J	0.0021 J	--	--	--	--	--	--	--
Zinc (dissolved)	mg/L		0.02 U	0.02 U	0.02 U	0.0055 J	0.0024 J	0.0028 J	--	--	--	--	--	--	--
PCBs															
Aroclor-1016 (PCB-1016)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.00012 UJ	--	0.000095 U	0.000095 U	0.000095 U	0.000096 U	0.000096 U	0.000097 U
Aroclor-1221 (PCB-1221)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.00012 UJ	--	0.000095 U	0.000095 U	0.000095 U	0.000096 U	0.000096 U	0.000097 U
Aroclor-1232 (PCB-1232)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.00012 UJ	--	0.000095 U	0.000095 U	0.000095 U	0.000096 U	0.000096 U	0.000097 U
Aroclor-1242 (PCB-1242)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.00066 J	--	0.000095 U	0.00061	0.000095 U	0.000096 U	0.000096 U	0.000097 U
Aroclor-1254 (PCB-1254)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.0021 J	--	0.000095 U	0.00069	0.000095 U	0.00077	0.000096 U	0.000097 U
Aroclor-1260 (PCB-1260)	mg/L		0.00048 U	0.00011 U	0.00053 U	0.00049 U	0.00053 U	0.00012 UJ	--	0.000095 U	0.000095 U	0.000095 U	0.000096 U	0.000096 U	0.000097 U
Aroclor-1248 (PCB-1248)	mg/L		0.0068	0.0039	0.0083	0.005	0.0034	0.00012 UJ	--	0.00084	0.000095 U	0.00071	0.000096 U	0.00094	0.0011
Total PCBs	mg/L	0.0005	**0.0068**	**0.0039**	**0.0083**	**0.005**	**0.0034**	**0.00276 J**	--	**0.00084**	**0.0013**	**0.00071**	**0.00077**	**0.00094**	**0.0011**

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12
Sample Identification:		U.S. EPA	-12609-082812-DI	-12609-100212-DI	-12609-110812-DI	-12609-121112-DI	-12609-011613-DI	-12609-022013-DI	-12609-011414-DI	-12609-032714-DI	-12609-062315-DI	12609-121415-SK	12609-062016-SK	12609-121916-SK	12609-121916-SK
Sample Date:		Regional Screening	8/28/2012	10/2/2012	11/8/2012	12/11/2012	1/16/2013	2/20/2013	1/14/2014	3/27/2014	6/23/2015	12/14/2015	6/20/2016	12/19/2016	12/19/2016
Sample Type:		Levels													Duplicate
	Units	MCL													
Aroclor-1016 (PCB-1016) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.0001 U	0.000099 UJ	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Aroclor-1221 (PCB-1221) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.0001 U	0.000099 UJ	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Aroclor-1232 (PCB-1232) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.0001 U	0.000099 UJ	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Aroclor-1242 (PCB-1242) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.0001 U	0.000099 UJ	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Aroclor-1248 (PCB-1248) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.00025	0.000099 UJ	--	0.000096 U	0.000095 U	0.000076 J	0.000095 U	0.00026	0.00026
Aroclor-1254 (PCB-1254) (dissolv	mg/L		--	0.00014	0.000099 U	0.0001 U	0.0001 U	R	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Aroclor-1260 (PCB-1260) (dissolv	mg/L		--	0.000095 U	0.000099 U	0.0001 U	0.0001 U	R	--	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000095 U	0.000096 U
Total PCBs (dissolved)	mg/L	0.0005	--	0.00014	ND	ND	0.00025	ND	--	ND	ND	0.000076 J	ND	0.00026	0.00026
Total Petroleum Hydrocarbons (TPH)															
Total Petroleum Hydrocarbons (C	mg/L		0.37 J	--	0.48 U	--	0.24 J	0.48 U	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C	mg/L		1.2 U	--	0.42 J	--	1.6	0.29 J	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (C	mg/L		0.24	--	0.19 U	--	0.12 U	0.14	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs)															
2,2'-Oxybis(1-chloropropane) (bis(	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
2,4-Dichlorophenol	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
2,4-Dimethylphenol	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
2,4-Dinitrophenol	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
2,4-Dinitrotoluene	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
2,6-Dinitrotoluene	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
2-Chloronaphthalene	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
2-Chlorophenol	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
2-Methylnaphthalene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
2-Methylphenol	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
2-Nitroaniline	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
2-Nitrophenol	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
3&4-Methylphenol	mg/L		0.002 U	--	0.0008 J	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
3-Nitroaniline	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4,6-Dinitro-2-methylphenol	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4-Chloroaniline	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4-Nitroaniline	mg/L		0.002 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
4-Nitrophenol	mg/L		0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
Acenaphthene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Acenaphthylene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Acetophenone	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Anthracene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Atrazine	mg/L	0.003	0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Benzaldehyde	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Benzo(a)anthracene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Benzo(a)pyrene	mg/L	0.0002	0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Benzo(b)fluoranthene	mg/L		0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	mg/L		0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Benzo(k)fluoranthene	mg/L		0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Biphenyl (1,1-Biphenyl)	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	mg/L		0.001 U	--	0.00025 J	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP	mg/L	0.006	0.00085 U	--	0.0021 U	--	0.0022 U	0.0019 U	--	--	--	--	--	--	--
Butyl benzylphthalate (BBP)	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Caprolactam	mg/L		0.0051 U	--	0.028	--	0.0079	0.0049 U	--	--	--	--	--	--	--
Carbazole	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12
Sample Identification:		U.S. EPA	-12609-082812-DI	-12609-100212-DI	-12609-110812-DI	-12609-121112-DI	-12609-011613-DI	-12609-022013-DI	-12609-011414-DI	-12609-032714-DI	-12609-062315-DI	12609-121415-SK	12609-062016-SK	12609-121916-SK	12609-121916-SK
Sample Date:		Regional Screening	8/28/2012	10/2/2012	11/8/2012	12/11/2012	1/16/2013	2/20/2013	1/14/2014	3/27/2014	6/23/2015	12/14/2015	6/20/2016	12/19/2016	12/19/2016
Sample Type:		Levels													Duplicate
	Units	MCL													
Chrysene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	mg/L		0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Dibenzofuran	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Diethyl phthalate	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Dimethyl phthalate	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Di-n-butylphthalate (DBP)	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Di-n-octyl phthalate (DnOP)	mg/L		0.001 UJ	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Fluoranthene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Fluorene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Hexachlorobenzene	mg/L	0.001	0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Hexachlorobutadiene	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	mg/L	0.05	0.01 U	--	0.011 U	--	0.011 U	0.0097 U	--	--	--	--	--	--	--
Hexachloroethane	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	mg/L		0.0002 UJ	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Isophorone	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Naphthalene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Nitrobenzene	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	mg/L		0.001 U	--	0.0011 U	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Pentachlorophenol	mg/L	0.001	0.0051 U	--	0.0053 U	--	0.0056 U	0.0049 U	--	--	--	--	--	--	--
Phenanthrene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Phenol	mg/L		0.0017	--	0.0014	--	0.0011 U	0.00097 U	--	--	--	--	--	--	--
Pyrene	mg/L		0.0002 U	--	0.00021 U	--	0.00022 U	0.00019 U	--	--	--	--	--	--	--
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	mg/L	0.2	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,1,2,2-Tetrachloroethane	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,1,2-Trichloroethane	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,1-Dichloroethane	mg/L		0.0017 J	--	0.0022 J	--	0.0012 J	0.0017 J	0.001 U	0.0019 J	0.0017 J	0.0015 J	0.01 U	0.0015 J	0.0014 J
1,1-Dichloroethene	mg/L	0.007	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,2,4-Trichlorobenzene	mg/L	0.07	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,2-Dibromo-3-chloropropane (DB	mg/L	0.0002	0.02 U	--	0.02 U	--	0.008 U	0.018 U	0.002 U	0.013 U	0.011 U	0.008 U	0.02 U	0.0067 U	0.0067 U
1,2-Dibromoethane (Ethylene dibr	mg/L	0.00005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,2-Dichlorobenzene	mg/L	0.6	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,2-Dichloroethane	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,2-Dichloropropane	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,3-Dichlorobenzene	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
1,4-Dichlorobenzene	mg/L	0.075	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
2-Butanone (Methyl ethyl ketone)	mg/L		0.1 U	--	0.1 U	--	0.04 U	0.091 U	0.01 U	0.067 U	0.057 U	0.04 U	0.1 U	0.033 U	0.033 U
2-Hexanone	mg/L		0.1 U	--	0.1 U	--	0.04 U	0.091 U	0.01 U	0.067 U	0.057 U	0.04 U	0.1 U	0.033 U	0.033 U
4-Methyl-2-pentanone (Methyl iso	mg/L		0.1 U	--	0.1 U	--	0.04 U	0.091 U	0.01 U	0.067 U	0.057 U	0.04 U	0.1 U	0.033 U	0.033 U
Acetone	mg/L		0.1 U	--	0.1 U	--	0.04 U	0.091 U	0.01 U	0.067 U	0.057 U	0.04 U	0.1 U	0.033 U	0.033 U
Benzene	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Bromodichloromethane	mg/L	0.08	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Bromoform	mg/L	0.08	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Bromomethane (Methyl bromide)	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Carbon disulfide	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Carbon tetrachloride	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Chlorobenzene	mg/L	0.1	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Chloroethane	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 UJ	0.01 U	0.0033 U	0.0033 U
Chloroform (Trichloromethane)	mg/L	0.08	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Chloromethane (Methyl chloride)	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
cis-1,2-Dichloroethene	mg/L	0.07	**0.36**	--	**0.29**	--	**0.13**	**0.22**	0.001 U	**0.17**	**0.14**	**0.072**	**0.097**	0.036	0.036
cis-1,3-Dichloropropene	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Cyclohexane	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 UJ	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Dibromochloromethane	mg/L	0.08	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Dichlorodifluoromethane (CFC-12	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Ethylbenzene	mg/L	0.7	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Isopropyl benzene	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-146-12
Sample Identification:		U.S. EPA	-12609-082812-DI	-12609-100212-DI	-12609-110812-DI	-12609-121112-DI	-12609-011613-DI	-12609-022013-DI	-12609-011414-DI	-12609-032714-DI	-12609-062315-DI	-12609-121415-SK	-12609-062016-SK	-12609-121916-SK	-12609-121916-SK
Sample Date:		Regional Screening	8/28/2012	10/2/2012	11/8/2012	12/11/2012	1/16/2013	2/20/2013	1/14/2014	3/27/2014	6/23/2015	12/14/2015	6/20/2016	12/19/2016	12/19/2016
Sample Type:		Levels													Duplicate
	Units	MCL													
Methyl acetate	mg/L		0.1 U	--	0.1 U	--	0.04 U	0.091 U	0.01 U	0.067 U	0.057 U	0.04 U	0.1 U	0.033 U	0.033 U
Methyl cyclohexane	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 UJ	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Methyl tert butyl ether (MTBE)	mg/L		0.05 U	--	0.05 U	--	0.02 U	0.045 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Methylene chloride	mg/L	0.005	0.01 U	--	**0.01**	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Styrene	mg/L	0.1	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Tetrachloroethene	mg/L	0.005	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Toluene	mg/L	1	0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
trans-1,2-Dichloroethene	mg/L	0.1	0.015	--	0.011	--	0.004	0.0086 J	0.001 U	0.008	0.0063	0.0043	0.0047 J	0.0027 J	0.0028 J
trans-1,3-Dichloropropene	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Trichloroethene	mg/L	0.005	**0.011**	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Trichlorofluoromethane (CFC-11)	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U	0.0067 U	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Trifluorotrichloroethane (CFC-113	mg/L		0.01 U	--	0.01 U	--	0.004 U	0.0091 U	0.001 U*	0.0067 UJ	0.0057 U	0.004 U	0.01 U	0.0033 U	0.0033 U
Vinyl chloride	mg/L	0.002	**0.13**	--	**0.084**	--	**0.032**	**0.14**	0.001 U	**0.19 J**	**0.15**	**0.11**	**0.22**	**0.089**	**0.089**
Xylenes (total)	mg/L	10	0.02 U	--	0.02 U	--	0.008 U	0.018 U	0.002 U	0.013 U	0.011 U	0.008 U	0.02 U	0.0067 U	0.0067 U
General Chemistry															
Alkalinity, total (as CaCO3)	mg/L		770	--	760	--	730	770	--	--	--	--	--	--	--
Ammonia	mg/L		0.047 J	--	0.20 U	--	0.20 U	0.20 U	--	--	--	--	--	--	--
Ammonia-N	mg/L		--	--	--	--	--	--	--	--	--	--	--	--	--
Biochemical oxygen demand (BO	mg/L		2.0 U	--	2.0 U	--	2.0 U	2.0 U	--	--	--	--	--	--	--
Carbon (dissolved)	mg/L		13	--	18	--	20	--	--	--	--	--	--	--	--
Chemical oxygen demand (COD)	mg/L		14 J	--	28	--	36	22	--	--	--	--	--	--	--
Chloride	mg/L		32	--	31	--	35	32	--	--	--	--	--	--	--
Cyanide (total)	mg/L	0.2	0.010 U	--	0.010 U	--	0.010 U	0.010 U	--	--	--	--	--	--	--
Dissolved organic carbon (DOC)	mg/L		--	--	--	--	--	17	--	--	--	--	--	--	--
Fluoride	mg/L	4	0.22 J	--	0.22 J	--	0.22 J	0.19 J	--	--	--	--	--	--	--
Hardness	mg/L		410	--	550	--	390	410	--	--	--	--	--	--	--
Nitrate (as N)	mg/L	10	0.10 U	--	0.10 U	--	0.28	0.10 U	--	--	--	--	--	--	--
Nitrite (as N)	mg/L	1	0.10 U	--	0.10 U	--	0.10 U	0.10 U	--	--	--	--	--	--	--
Oil and grease (HEM), polar	mg/L		4.9 U	--	1.1 J	--	4.9 U	4.9 U	--	--	--	--	--	--	--
Oil and grease (HEM), total	mg/L		--	--	--	--	--	--	--	--	--	--	--	--	--
Orthophosphate	mg/L		0.10 U	--	0.10 U	--	0.10 U	0.10 U	--	--	--	--	--	--	--
pH, lab	s.u.		7.10	--	7.17 J	--	7.48 J	7.31 J	--	--	--	--	--	--	--
Phenolics (total)	mg/L		0.040 U	--	0.040 U	--	0.040 U	0.040 U	--	--	--	--	--	--	--
Phosphorus	mg/L		0.10 U	--	0.066 J	--	0.033 J	0.059 J	--	--	--	--	--	--	--
Sulfate	mg/L		150	--	130	--	160	120 J	--	--	--	--	--	--	--
Sulfide	mg/L		1.0 U	--	1.0 U	--	1.0 U	1.0 U	--	--	--	--	--	--	--
Total dissolved solids (TDS)	mg/L		2100	--	1000	--	890	990	--	--	--	--	--	--	--
Total kjeldahl nitrogen (TKN)	mg/L		5.0 U	--	5.0 U	--	5.0 U	5.0 U	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/L		14	--	11	--	17	12	--	--	--	--	--	--	--
Total suspended solids (TSS)	mg/L		4.0	--	9.0	--	4.0	7.0	--	--	--	--	--	--	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
R - Rejected.

[1] US EPA RSL - US EPA (United States Environmental Protection Agency) Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites, Target Hazard Quotient (THQ) =1, Effective March 2019.

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15
Sample Identification:		U.S. EPA	12609-062617-SK	12609-121817-SK	12609-121817-SK	12609-061918-SK	12609-061915-DM	12609-121815-SK	12609-121815-SK	12609-062316-SK	12609-122816-SK	12609-063017-SK	12609-122617-SK	12609-122617-SK	12609-061918-SK
Sample Date:		Regional Screening	6/26/2017	12/18/2017	12/18/2017	6/19/2018	6/19/2015	12/18/2015	12/18/2015	6/23/2016	12/28/2016	6/30/2017	12/26/2017	12/26/2017	6/19/2018
Sample Type:		Levels			Duplicate				Duplicate					Duplicate	
	Units	MCL													
Metals															
Aluminum	mg/L		--	--	--	--	0.15	0.011 J	0.13 J	0.01 J	0.05	0.25 U	0.25	0.09	--
Aluminum (dissolved)	mg/L		--	--	--	--	0.012 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.035 J	0.05 U	--
Antimony	mg/L	0.006	--	--	--	--	0.00077 J	0.00028 J	0.00024 J	0.002 U	0.00042 J	0.002 U	0.002 U	0.002 U	--
Antimony (dissolved)	mg/L	0.006	--	--	--	--	0.0006 J	0.00032 J	0.002 UJ	0.002 U	0.00034 J	0.002 U	0.0013 J	0.002 U	--
Arsenic	mg/L	0.01	--	--	--	--	0.0063	0.0018 J	0.0054 J	0.0056	0.0078	**0.063**	**0.014**	**0.018**	--
Arsenic (dissolved)	mg/L	0.01	--	--	--	--	0.005 U	0.0026 J	0.0077 J	0.0063	0.0073	**0.038**	**0.016**	**0.016**	--
Barium	mg/L	2	--	--	--	--	0.095	0.056	0.048	0.049	0.079	0.086	0.11	0.1	--
Barium (dissolved)	mg/L	2	--	--	--	--	0.085	0.055	0.053	0.055	0.078	0.083	0.097	0.1	--
Beryllium	mg/L	0.004	--	--	--	--	0.001 U	0.00027 U	0.00024 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Beryllium (dissolved)	mg/L	0.004	--	--	--	--	0.001 U	0.00011 U	0.000098 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Cadmium	mg/L	0.005	--	--	--	--	0.00018 J	0.000081 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Cadmium (dissolved)	mg/L	0.005	--	--	--	--	0.00018 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Calcium	mg/L		--	--	--	--	110	120	110	120	150	110	160	150	--
Calcium (dissolved)	mg/L		--	--	--	--	120	120	110	140	150	99	150	150	--
Chromium	mg/L	0.1	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.0012 J	0.01 U	0.002 U	0.002 U	--
Chromium (dissolved)	mg/L	0.1	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.0007 J	0.002 U	0.002 U	0.002 U	--
Chromium VI (hexavalent)	mg/L	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	mg/L		--	--	--	--	0.00084 J	0.00086 J	0.0012	0.0017	0.00036 J	0.005 U	0.0013	0.0012	--
Cobalt (dissolved)	mg/L		--	--	--	--	0.00067 J	0.0011 J	0.0011	0.002	0.00035 J	0.0011	0.0013	0.0012	--
Copper	mg/L	1.3	--	--	--	--	0.0022 J	0.0013 J	0.00087 J	0.002 U	0.003	0.002 U	0.002 U	0.002 U	--
Copper (dissolved)	mg/L	1.3	--	--	--	--	0.0033 J	0.0011 J	0.002 U	0.002 U	0.0024	0.002 U	0.002 U	0.002 U	--
Iron	mg/L		--	--	--	--	0.31	0.12 J	0.81 J	1.1	0.46	6.3	2.1	2.5	--
Iron (dissolved)	mg/L		--	--	--	--	0.1 U	0.23 J	1.2 J	1.3	0.4	5.2	2.2	2.3	--
Lead	mg/L	0.015	--	--	--	--	0.00027 J	0.001 U	0.00015 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Lead (dissolved)	mg/L	0.015	--	--	--	--	0.00047 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Magnesium	mg/L		--	--	--	--	54	52	54	62	51	35	62	59	--
Magnesium (dissolved)	mg/L		--	--	--	--	61	59	54	66	53	42	57	59	--
Manganese	mg/L		--	--	--	--	0.2	0.32	0.28	0.35 J	0.019	0.095	0.37	0.51	--
Manganese (dissolved)	mg/L		--	--	--	--	0.19	0.36	0.23	0.45 J	0.023	0.099	0.43	0.47	--
Mercury	mg/L	0.002	--	--	--	--	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	--
Mercury (dissolved)	mg/L	0.002	--	--	--	--	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	--
Nickel	mg/L		--	--	--	--	0.0038	0.0041	0.0042	0.0046	0.011	0.0023	0.0059	0.0049	--
Nickel (dissolved)	mg/L		--	--	--	--	0.0045	0.0047	0.005	0.0052	0.009	0.0022	0.0046	0.005	--
Potassium	mg/L		--	--	--	--	4.5	2.1	2	1.6	1.4	2.4 J	1.3	1.6	--
Potassium (dissolved)	mg/L		--	--	--	--	3.5	2	2.1	1.6	1.3	2.1	1.4	1.5	--
Selenium	mg/L	0.05	--	--	--	--	0.00052 J	0.0004 J	0.00061 J	0.00072 J	0.0069	0.005 U	0.005 U	0.005 U	--
Selenium (dissolved)	mg/L	0.05	--	--	--	--	0.00056 J	0.00053 J	0.00044 J	0.00072 J	0.0073	0.005 U	0.00098 J	0.005 U	--
Silver	mg/L		--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.000033 J	0.001 U	0.001 U	0.001 U	--
Silver (dissolved)	mg/L		--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Sodium	mg/L		--	--	--	--	470	500	510	430	180	280	230	260	--
Sodium (dissolved)	mg/L		--	--	--	--	550	510	480	420	190	320	240	240	--
Thallium	mg/L	0.002	--	--	--	--	0.002 U	0.000074 J	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Thallium (dissolved)	mg/L	0.002	--	--	--	--	0.002 U	0.002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Vanadium	mg/L	0.3	--	--	--	--	0.005 U	0.0025 J	0.0011 J	0.005 U	0.0016 J	0.025 U	0.001 J	0.005 U	--
Vanadium (dissolved)	mg/L	0.3	--	--	--	--	0.005 U	0.0024 J	0.00079 J	0.005 U	0.0014 J	0.005 U	0.005 U	0.005 U	--
Zinc	mg/L		--	--	--	--	0.0092 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Zinc (dissolved)	mg/L		--	--	--	--	0.011 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
PCBs															
Aroclor-1016 (PCB-1016)	mg/L		0.000095 U	0.000096 U	0.000095 U	0.000098 U	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1221 (PCB-1221)	mg/L		0.000095 U	0.000096 U	0.000095 U	0.000098 U	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1232 (PCB-1232)	mg/L		0.000095 U	0.000096 U	0.000095 U	0.000098 U	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1242 (PCB-1242)	mg/L		0.000095 U	0.00025	0.00032	0.00027	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1254 (PCB-1254)	mg/L		0.000095 U	0.00081	0.00088	0.00094	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1260 (PCB-1260)	mg/L		0.000095 U	0.000096 U	0.000095 U	0.000098 U	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Aroclor-1248 (PCB-1248)	mg/L		0.0015	0.000096 U	0.000095 U	0.000098 U	0.000096 U	0.000095 U	0.000095 U	0.000095 U	0.000097 U	0.000098 U	0.000098 U	0.000097 U	0.000096 U
Total PCBs	mg/L	0.0005	**0.0015**	**0.00106**	**0.0012**	**0.00121**	ND	ND	ND	ND	ND	ND	ND	ND	ND

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15
Sample Identification:		U.S. EPA	12609-062617-SK	12609-121817-SK	12609-121817-SK	12609-061918-SK	12609-061915-DU	12609-121815-SK	12609-121815-SK	12609-062316-SK	12609-122816-SK	12609-063017-SK	12609-122617-SK	12609-122617-SK	12609-061918-SK
Sample Date:		Regional Screening	6/26/2017	12/18/2017	12/18/2017	6/19/2018	6/19/2015	12/18/2015	12/18/2015	6/23/2016	12/28/2016	6/30/2017	12/26/2017	12/26/2017	6/19/2018
Sample Type:		Levels			Duplicate				Duplicate					Duplicate	
	Units	MCL													
Aroclor-1016 (PCB-1016) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1221 (PCB-1221) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1232 (PCB-1232) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1242 (PCB-1242) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1248 (PCB-1248) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1254 (PCB-1254) (dissolv	mg/L		0.000097 U	0.000055 J	0.000043 J	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Aroclor-1260 (PCB-1260) (dissolv	mg/L		0.000097 U	0.000099 U	0.000095 U	0.000098 U	0.00011 U	0.000098 U	0.000095 U	0.000095 U	0.000096 U	0.000095 U	0.000097 U	0.000097 U	0.000095 U
Total PCBs (dissolved)	mg/L	0.0005	ND	0.000055 J	0.000043 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons (TPH)															
Total Petroleum Hydrocarbons (C	mg/L		--	--	--	--	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.5 U	0.48 U	0.48 U	--
Total Petroleum Hydrocarbons (C	mg/L		--	--	--	--	0.22 J	0.48 U	0.21 J	0.28 J	0.27 J	0.59	0.55	0.79	--
Total Petroleum Hydrocarbons (C	mg/L		--	--	--	--	0.029 J	0.063 U	0.1 U	0.1 U	0.071 J	0.044 J	0.1 U	0.1 U	--
Semi-Volatile Organic Compounds (SVOCs)															
2,2'-Oxybis(1-chloropropane) (bis(	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
2,4,5-Trichlorophenol	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
2,4,6-Trichlorophenol	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
2,4-Dichlorophenol	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2,4-Dimethylphenol	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2,4-Dinitrophenol	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	R	0.0048 U	0.0049 U	--
2,4-Dinitrotoluene	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
2,6-Dinitrotoluene	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
2-Chloronaphthalene	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
2-Chlorophenol	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
2-Methylnaphthalene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
2-Methylphenol	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
2-Nitroaniline	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2-Nitrophenol	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
3&4-Methylphenol	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
3,3'-Dichlorobenzidine	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
3-Nitroaniline	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4,6-Dinitro-2-methylphenol	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
4-Bromophenyl phenyl ether	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chloro-3-methylphenol	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chloroaniline	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chlorophenyl phenyl ether	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Nitroaniline	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Nitrophenol	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
Acenaphthene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Acenaphthylene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Acetophenone	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Anthracene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Atrazine	mg/L	0.003	--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Benzaldehyde	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Benzo(a)anthracene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(a)pyrene	mg/L	0.0002	--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(b)fluoranthene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(g,h,i)perylene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(k)fluoranthene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Biphenyl (1,1-Biphenyl)	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
bis(2-Chloroethoxy)methane	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
bis(2-Chloroethyl)ether	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
bis(2-Ethylhexyl)phthalate (DEHP	mg/L	0.006	--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
Butyl benzylphthalate (BBP)	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Caprolactam	mg/L		--	--	--	--	0.00072 J	0.0048 U	0.0049 U	0.00035 J	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
Carbazole	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15
Sample Identification:		U.S. EPA	12609-062617-SK	12609-121817-SK	12609-121817-SK	12609-061918-SK	12609-061915-DU	12609-121815-SK	12609-121815-SK	12609-062316-SK	12609-122816-SK	12609-063017-SK	12609-122617-SK	12609-122617-SK	12609-061918-SK
Sample Date:		Regional Screening	6/26/2017	12/18/2017	12/18/2017	6/19/2018	6/19/2015	12/18/2015	12/18/2015	6/23/2016	12/28/2016	6/30/2017	12/26/2017	12/26/2017	6/19/2018
Sample Type:		Levels			Duplicate				Duplicate					Duplicate	
	Units	MCL													
Chrysene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Dibenz(a,h)anthracene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Dibenzofuran	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Diethyl phthalate	mg/L		--	--	--	--	0.0011 J	0.0019 U	0.0019 U	0.002 U	0.00087 J	0.0019 U	0.0019 U	0.0019 U	--
Dimethyl phthalate	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Di-n-butylphthalate (DBP)	mg/L		--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
Di-n-octyl phthalate (DnOP)	mg/L		--	--	--	--	0.002 U	0.0019 U	0.0019 U	0.002 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Fluoranthene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Fluorene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Hexachlorobenzene	mg/L	0.001	--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Hexachlorobutadiene	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Hexachlorocyclopentadiene	mg/L	0.05	--	--	--	--	0.01 U	0.0095 U	0.0097 U	0.0098 U	0.0099 U	0.0097 U	0.0095 U	0.0097 U	--
Hexachloroethane	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Indeno(1,2,3-cd)pyrene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Isophorone	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Naphthalene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00014 J	0.00019 U	--
Nitrobenzene	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
N-Nitrosodi-n-propylamine	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
N-Nitrosodiphenylamine	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Pentachlorophenol	mg/L	0.001	--	--	--	--	0.005 U	0.0048 U	0.0049 U	0.0049 U	0.005 U	0.0049 U	0.0048 U	0.0049 U	--
Phenanthrene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Phenol	mg/L		--	--	--	--	0.001 U	0.00095 U	0.00097 U	0.00098 U	0.00099 U	0.00097 U	0.00095 U	0.00097 U	--
Pyrene	mg/L		--	--	--	--	0.0002 U	0.00019 U	0.00019 U	0.0002 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Volatile Organic Compounds (VOCs)															
1,1,1-Trichloroethane	mg/L	0.2	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L		0.013 U	0.01 U	0.025 U	0.0019 J	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.00017 J
1,1-Dichloroethene	mg/L	0.007	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.07	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DB	mg/L	0.0002	0.027 U	0.02 U	0.05 U	0.02 U	0.004 U	0.0033 U	0.0033 U	0.0033 U	0.002 U	0.005 U	0.002 U	0.002 U	0.002 U
1,2-Dibromoethane (Ethylene dibr	mg/L	0.00005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.6	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.075	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone)	mg/L		0.13 U	0.1 U	0.25 U	0.1 U	0.0014 J	0.017 U	0.017 U	0.017 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U
2-Hexanone	mg/L		0.13 U	0.1 U	0.25 U	0.1 U	0.02 U	0.017 U	0.017 U	0.017 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl iso	mg/L		0.13 U	0.1 U	0.25 U	0.1 U	0.02 U	0.017 U	0.017 U	0.017 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L		0.13 U	0.1 U	0.25 U	0.1 U	0.02 U	0.017 U	0.017 U	0.017 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U
Benzene	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.08	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.08	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Carbon tetrachloride	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.1	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.08	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.07	**0.086**	**0.075**	**0.079**	0.065	0.044	0.053	0.049	0.039	0.0094	0.069	0.011	0.022	0.02
cis-1,3-Dichloropropene	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.08	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.7	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-146-12	MW-146-12	MW-146-12	MW-146-12	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15	MW-150-15
Sample Identification:		U.S. EPA	12609-062617-SK	12609-121817-SK	12609-121817-SK	12609-061918-SK	12609-061915-DU	12609-121815-SK	12609-121815-SK	12609-062316-SK	12609-122816-SK	12609-063017-SK	12609-122617-SK	12609-122617-SK	12609-061918-SK
Sample Date:		Regional Screening	6/26/2017	12/18/2017	12/18/2017	6/19/2018	6/19/2015	12/18/2015	12/18/2015	6/23/2016	12/28/2016	6/30/2017	12/26/2017	12/26/2017	6/19/2018
Sample Type:		Levels			Duplicate				Duplicate					Duplicate	
	Units	MCL													
Methyl acetate	mg/L		0.13 U	0.1 U	0.25 U	0.1 U	0.02 U	0.017 U	0.017 U	0.017 U	0.01 U	0.025 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.05 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.005 U
Styrene	mg/L	0.1	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	1	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.1	0.0066 J	0.0062 J	0.025 U	0.0063 J	0.0044	0.0053	0.0046	0.0036	0.00037 J	0.0025	0.00094 J	0.0012	0.0012
trans-1,3-Dichloropropene	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.005	0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113	mg/L		0.013 U	0.01 U	0.025 U	0.01 U	0.002 U	0.0017 U	0.0017 U	0.0017 U	0.001 U	0.0025 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.002	**0.26 J**	**0.22**	**0.23**	**0.28**	**0.0098**	**0.0081 J**	**0.027 J**	**0.017**	**0.0074**	**0.043**	**0.0036**	**0.0087**	**0.016**
Xylenes (total)	mg/L	10	0.027 U	0.02 U	0.05 U	0.02 U	0.004 U	0.0033 U	0.0033 U	0.0033 U	0.002 U	0.005 U	0.002 U	0.002 U	0.002 U
General Chemistry															
Alkalinity, total (as CaCO3)	mg/L		--	--	--	--	1100	1200	1400	1300	630	700	920	990	--
Ammonia	mg/L		--	--	--	--	0.13 J	0.12 J	0.20 U	0.060 J	0.20 U	0.32	--	--	--
Ammonia-N	mg/L		--	--	--	--	--	--	--	--	--	--	0.20 U	0.20 U	--
Biochemical oxygen demand (BO	mg/L		--	--	--	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	--
Carbon (dissolved)	mg/L		--	--	--	--	--	--	--	--	--	--	--	--	--
Chemical oxygen demand (COD)	mg/L		--	--	--	--	36	31	26	18	21	26	36	27 J	--
Chloride	mg/L		--	--	--	--	69	74	70	65	46	34	41	50	--
Cyanide (total)	mg/L	0.2	--	--	--	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--
Dissolved organic carbon (DOC)	mg/L		--	--	--	--	15	11	12	11	9.6	8.3	12	12	--
Fluoride	mg/L	4	--	--	--	--	0.090 J	0.14 J	0.14 J	0.26 J	0.22	0.28	0.26	0.27	--
Hardness	mg/L		--	--	--	--	1100	540	530	640	610	460	720	730	--
Nitrate (as N)	mg/L	10	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--
Nitrite (as N)	mg/L	1	--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--
Oil and grease (HEM), polar	mg/L		--	--	--	--	4.8 U	6.0 U	6.3 U	4.7 U	4.8 U	--	--	--	--
Oil and grease (HEM), total	mg/L		--	--	--	--	--	--	--	--	--	1.1 J	4.8 U	4.9 U	--
Orthophosphate	mg/L		--	--	--	--	0.10 U	--	--	0.012 J	0.040 J	0.10 U	0.060 J	0.10 U	--
pH, lab	s.u.		--	--	--	--	7.30	7.10 J	7.09 J	7.12 J	7.3 J	7.2 J	7.1 J	7.1 J	--
Phenolics (total)	mg/L		--	--	--	--	0.040 U	0.015 J	0.040 UJ	0.040 U	0.040 U	0.040 U	0.040 U	0.045	--
Phosphorus	mg/L		--	--	--	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.25	0.10 U	0.10 U	--
Sulfate	mg/L		--	--	--	--	350	370	360	290	270	130	190	240	--
Sulfide	mg/L		--	--	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Total dissolved solids (TDS)	mg/L		--	--	--	--	1700	1700	1700	1700	1100	1100	1300	1400	--
Total kjeldahl nitrogen (TKN)	mg/L		--	--	--	--	5.0 U	5.0 U	5.0 U	25	5.0 U	1.7 J	5.0 U	5.0 U	--
Total organic carbon (TOC)	mg/L		--	--	--	--	16	13	12	5.0	9.7	8.0	13	12	--
Total suspended solids (TSS)	mg/L		--	--	--	--	4.0	4.0 UJ	5.0 J	3.0 J	4.0	20	12	7.0	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
R - Rejected.

[1] US EPA RSL - US EPA (United States Environmental Protecti

Attachment D

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15
Sample Identification:		U.S. EPA	-12609-061815-DM	12609-121615-SK	12609-062216-SK	12609-062216-SK	12609-122016-SK	12609-062917-SK	12609-122217-SK	12609-061918-SK-002
Sample Date:		Regional Screening	6/18/2015	12/16/2015	6/22/2016	6/22/2016	12/20/2016	6/29/2017	12/22/2017	6/19/2018
Sample Type:		Levels				Duplicate				
	Units	MCL								
Metals										
Aluminum	mg/L		0.63	0.032 J	0.15 J	0.05 UJ	0.16	0.11	0.042 J	--
Aluminum (dissolved)	mg/L		0.13	0.022 J	0.05 U	0.05 U	0.027 J	0.05 U	0.05 U	--
Antimony	mg/L	0.006	0.00031 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	--
Antimony (dissolved)	mg/L	0.006	0.00027 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	--
Arsenic	mg/L	0.01	0.005 U	0.00069 J	0.0016 J	0.0018 J	0.00074 J	0.0028 J	0.005 U	--
Arsenic (dissolved)	mg/L	0.01	0.005 U	0.00079 J	0.0017 J	0.0017 J	0.00048 J	0.0049 J	0.005 U	--
Barium	mg/L	2	0.083	0.058	0.059	0.054	0.056	0.059 J	0.051	--
Barium (dissolved)	mg/L	2	0.08	0.058	0.058	0.056	0.055	0.072 J	0.052	--
Beryllium	mg/L	0.004	0.001 U	0.000062 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Beryllium (dissolved)	mg/L	0.004	0.001 U	0.000087 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Cadmium	mg/L	0.005	0.001 U	0.000086 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Cadmium (dissolved)	mg/L	0.005	0.001 U	0.000084 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Calcium	mg/L		250	260	250	250	210	240	170	--
Calcium (dissolved)	mg/L		260	260	260	250	210	250	160	--
Chromium	mg/L	0.1	0.0028	0.002 U	0.002 U	0.002 U	0.00044 J	0.002 U	0.002 U	--
Chromium (dissolved)	mg/L	0.1	0.0026	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	--
Chromium VI (hexavalent)	mg/L	0.1	--	--	--	--	--	--	--	--
Cobalt	mg/L		0.0016	0.00018 J	0.001 U	0.001 U	0.00014 J	0.0013 J	0.001 U	--
Cobalt (dissolved)	mg/L		0.0016	0.00025 J	0.001 U	0.001 U	0.001 U	0.0035 J	0.001 U	--
Copper	mg/L	1.3	0.003	0.0012 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	--
Copper (dissolved)	mg/L	1.3	0.003	0.00082 J	0.002 U	0.002 U	0.0024	0.0021 U	0.0017 J	--
Iron	mg/L		0.63	0.091 J	0.45	0.42	0.2	0.98 J	0.06 J	--
Iron (dissolved)	mg/L		0.2	0.08 J	0.36	0.36	0.1 U	2.4 J	0.1 U	--
Lead	mg/L	0.015	0.001 U	0.001 U	0.00024 J	0.001 U	0.001 U	0.001 U	0.001 U	--
Lead (dissolved)	mg/L	0.015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Magnesium	mg/L		97	100	110	110	85	100	55	--
Magnesium (dissolved)	mg/L		100	110	110	110	87	110	54	--
Manganese	mg/L		0.2	0.018 J	0.051	0.039	0.0023 J	0.15 J	0.005 U	--
Manganese (dissolved)	mg/L		0.17	0.024 J	0.038	0.037	0.00037 J	0.53 J	0.005 U	--
Mercury	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 UJ	0.000094 J	0.0002 U	0.0002 U	--
Mercury (dissolved)	mg/L	0.002	0.0002 U	0.0002 U	0.0002 UJ	**0.0083 J**	0.000095 J	0.0002 U	0.0002 U	--
Nickel	mg/L		0.0038 J	0.002 J	0.002 U	0.002 U	0.002 U	0.0026 J	0.002 U	--
Nickel (dissolved)	mg/L		0.0047 J	0.0031 J	0.002 U	0.002 U	0.002 U	0.0052 J	0.002 U	--
Potassium	mg/L		1.8	0.39 J	0.36 J	0.35 J	0.24 J	0.61 J	1 U	--
Potassium (dissolved)	mg/L		1.5	0.38 J	0.32 J	0.32 J	0.21 J	1.5 J	1 U	--
Selenium	mg/L	0.05	0.005 U	0.0005 J	0.005 U	0.005 U	0.00099 J	0.005 U	0.005 U	--
Selenium (dissolved)	mg/L	0.05	0.005 U	0.00046 J	0.005 U	0.005 U	0.00082 J	0.005 U	0.005 U	--
Silver	mg/L		0.000021 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Silver (dissolved)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Sodium	mg/L		57	63	60	61	52	63 J	30	--
Sodium (dissolved)	mg/L		58	63	62	62	53	80 J	31	--
Thallium	mg/L	0.002	0.000098 J	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Thallium (dissolved)	mg/L	0.002	0.002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	--
Vanadium	mg/L	0.3	0.005 U	0.00083 J	0.005 U	0.005 U	0.00077 J	0.005 U	0.005 U	--
Vanadium (dissolved)	mg/L	0.3	0.005 U	0.00079 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	--
Zinc	mg/L		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
Zinc (dissolved)	mg/L		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--
PCBs										
Aroclor-1016 (PCB-1016)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Aroclor-1221 (PCB-1221)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Aroclor-1232 (PCB-1232)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Aroclor-1242 (PCB-1242)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Aroclor-1254 (PCB-1254)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Aroclor-1260 (PCB-1260)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 UJ	0.0001 U	0.000097 U	0.000097 U
Aroclor-1248 (PCB-1248)	mg/L		0.000095 U	0.000095 U	0.000098 U	0.000099 U	0.000097 U	0.0001 U	0.000097 U	0.000097 U
Total PCBs	mg/L	0.0005	ND	ND	ND	ND	ND	ND	ND	ND

Attachment D

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15
Sample Identification:		U.S. EPA	-12609-061815-DU	12609-121615-SK	12609-062216-SK	12609-062216-SK	12609-122016-SK	12609-062917-SK	12609-122217-SK	12609-061918-SK-002
Sample Date:		Regional Screening	6/18/2015	12/16/2015	6/22/2016	6/22/2016	12/20/2016	6/29/2017	12/22/2017	6/19/2018
Sample Type:		Levels				Duplicate				
	Units	MCL								
Aroclor-1016 (PCB-1016) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1221 (PCB-1221) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1232 (PCB-1232) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1242 (PCB-1242) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1248 (PCB-1248) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1254 (PCB-1254) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000095 U	0.000095 U	0.000096 U	0.000097 U
Aroclor-1260 (PCB-1260) (dissolv	mg/L		0.000096 U	0.000097 U	0.000096 U	0.000097 U	0.000049 J	0.000095 U	0.000096 U	0.000097 U
Total PCBs (dissolved)	mg/L	0.0005	ND	ND	ND	ND	0.000049 J	ND	ND	ND
Total Petroleum Hydrocarbons (TPH)										
Total Petroleum Hydrocarbons (C	mg/L		0.48 U	0.48 U	0.49 U	0.49 U	0.49 U	0.48 U	0.48 U	--
Total Petroleum Hydrocarbons (C	mg/L		0.24 J	0.19 J	0.22 J	0.26 J	0.27 J	0.19 J	0.75	--
Total Petroleum Hydrocarbons (C	mg/L		0.1 U	0.059 U	0.1 U	0.1 U	0.052 J	0.1 U	0.1 U	--
Semi-Volatile Organic Compounds (SVOCs)										
2,2'-Oxybis(1-chloropropane) (bis(	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
2,4,5-Trichlorophenol	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
2,4,6-Trichlorophenol	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
2,4-Dichlorophenol	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2,4-Dimethylphenol	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2,4-Dinitrophenol	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	R	0.0049 U	--
2,4-Dinitrotoluene	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
2,6-Dinitrotoluene	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
2-Chloronaphthalene	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
2-Chlorophenol	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
2-Methylnaphthalene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
2-Methylphenol	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
2-Nitroaniline	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
2-Nitrophenol	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
3&4-Methylphenol	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
3,3'-Dichlorobenzidine	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
3-Nitroaniline	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4,6-Dinitro-2-methylphenol	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
4-Bromophenyl phenyl ether	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chloro-3-methylphenol	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chloroaniline	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Chlorophenyl phenyl ether	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Nitroaniline	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
4-Nitrophenol	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
Acenaphthene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Acenaphthylene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Acetophenone	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Anthracene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Atrazine	mg/L	0.003	0.001 U	0.00096 U	0.00096 U	0.00099 U	0.0019 U	0.0019 U	0.0019 U	--
Benzaldehyde	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.0019 U	0.0019 U	0.0019 U	--
Benzo(a)anthracene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(a)pyrene	mg/L	0.0002	0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(b)fluoranthene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(g,h,i)perylene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Benzo(k)fluoranthene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Biphenyl (1,1-Biphenyl)	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
bis(2-Chloroethoxy)methane	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
bis(2-Chloroethyl)ether	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
bis(2-Ethylhexyl)phthalate (DEHP	mg/L	0.006	0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
Butyl benzylphthalate (BBP)	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Caprolactam	mg/L		0.0052 U	0.0048 U	0.00032 J	0.00044 J	0.0049 U	0.0049 U	0.0049 U	--
Carbazole	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[1]	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15
Sample Identification:		U.S. EPA	-12609-061815-DM	12609-121615-SK	12609-062216-SK	12609-062216-SK	12609-122016-SK	12609-062917-SK	12609-122217-SK	12609-061918-SK-002
Sample Date:		Regional Screening	6/18/2015	12/16/2015	6/22/2016	6/22/2016	12/20/2016	6/29/2017	12/22/2017	6/19/2018
Sample Type:		Levels				Duplicate				
	Units	MCL								
Chrysene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Dibenz(a,h)anthracene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Dibenzofuran	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Diethyl phthalate	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Dimethyl phthalate	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Di-n-butylphthalate (DBP)	mg/L		0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
Di-n-octyl phthalate (DnOP)	mg/L		0.0021 U	0.0019 U	0.0019 U	0.002 U	0.0019 U	0.0019 U	0.0019 U	--
Fluoranthene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Fluorene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Hexachlorobenzene	mg/L	0.001	0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Hexachlorobutadiene	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Hexachlorocyclopentadiene	mg/L	0.05	0.01 U	0.0096 U	0.0096 U	0.0099 U	0.0097 U	0.0097 U	0.0097 U	--
Hexachloroethane	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Indeno(1,2,3-cd)pyrene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Isophorone	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Naphthalene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Nitrobenzene	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
N-Nitrosodi-n-propylamine	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
N-Nitrosodiphenylamine	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Pentachlorophenol	mg/L	0.001	0.0052 U	0.0048 U	0.0048 U	0.005 U	0.0049 U	0.0049 U	0.0049 U	--
Phenanthrene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Phenol	mg/L		0.001 U	0.00096 U	0.00096 U	0.00099 U	0.00097 U	0.00097 U	0.00097 U	--
Pyrene	mg/L		0.00021 U	0.00019 U	0.00019 U	0.0002 U	0.00019 U	0.00019 U	0.00019 U	--
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane	mg/L	0.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.007	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.07	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DB	mg/L	0.0002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dibromoethane (Ethylene dibr	mg/L	0.00005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.6	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone)	mg/L		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	mg/L		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl iso	mg/L		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzene	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.08	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.08	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon tetrachloride	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.08	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.07	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.08	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.7	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Attachment D

Groundwater Analytical Results Summary - Selected Wells on the West Side of the Former Disposal Area
RACER Trust Property
Toledo, Ohio

Sample Location:		US EPA RSL[(1)]	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15	MW-151-15
Sample Identification:		U.S. EPA	-12609-061815-DM	12609-121615-SK	12609-062216-SK	12609-062216-SK	12609-122016-SK	12609-062917-SK	12609-122217-SK	12609-061918-SK-002
Sample Date:		Regional Screening	6/18/2015	12/16/2015	6/22/2016	6/22/2016	12/20/2016	6/29/2017	12/22/2017	6/19/2018
Sample Type:		Levels				Duplicate				
	Units	MCL								
Methyl acetate	mg/L		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U
Styrene	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113	mg/L		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	10	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
General Chemistry										
Alkalinity, total (as CaCO3)	mg/L		740	960	840	840	670	770	510	--
Ammonia	mg/L		0.19 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	--	--
Ammonia-N	mg/L		--	--	--	--	--	--	0.20 U	--
Biochemical oxygen demand (BO	mg/L		2.0 U	2.0 U	2.0 UJ	2.0 UJ	2.0 U	2.0 U	2.0 U	--
Carbon (dissolved)	mg/L		--	--	--	--	--	--	--	--
Chemical oxygen demand (COD)	mg/L		12	10	10 U	6.6 J	13	22	15	--
Chloride	mg/L		83	120	88	87	82	83	41	--
Cyanide (total)	mg/L	0.2	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	--
Dissolved organic carbon (DOC)	mg/L		11	5.8	3.9	4.0	5.6	5.5	5.6	--
Fluoride	mg/L	4	0.065 J	0.092 J	0.18 J	0.19 J	0.11	0.16	0.13	--
Hardness	mg/L		1200	1100	1100	1100	950	960	650	--
Nitrate (as N)	mg/L	10	0.10 U	0.10 U	0.10 U	0.10 U	8.2 J	0.10 U	0.10 U	--
Nitrite (as N)	mg/L	1	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--
Oil and grease (HEM), polar	mg/L		4.9 U	5.6 U	4.8 U	4.8 U	4.8 U	--	--	--
Oil and grease (HEM), total	mg/L		--	--	--	--	--	1.1 J	4.8 U	--
Orthophosphate	mg/L		0.10 U	--	0.10 U	0.14	0.035 J	0.10 U	0.044 J	--
pH, lab	s.u.		7.19	7.07 J	6.93 J	6.84 J	7.3 J	6.9 J	7.2 J	--
Phenolics (total)	mg/L		0.019 J	0.016 J	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	--
Phosphorus	mg/L		0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	--
Sulfate	mg/L		420	290	350	360	240	57	120	--
Sulfide	mg/L		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Total dissolved solids (TDS)	mg/L		1400	1300	1400	1400	1100	1200	720	--
Total kjeldahl nitrogen (TKN)	mg/L		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
Total organic carbon (TOC)	mg/L		7.7	5.8	3.6	3.9	6.1	5.4	5.3	--
Total suspended solids (TSS)	mg/L		11	7.0	3.0 J	2.0 J	4.0 U	11	4.0 U	--

Notes:
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
R - Rejected.

(1) US EPA RSL - US EPA (United States Environmental Protecti